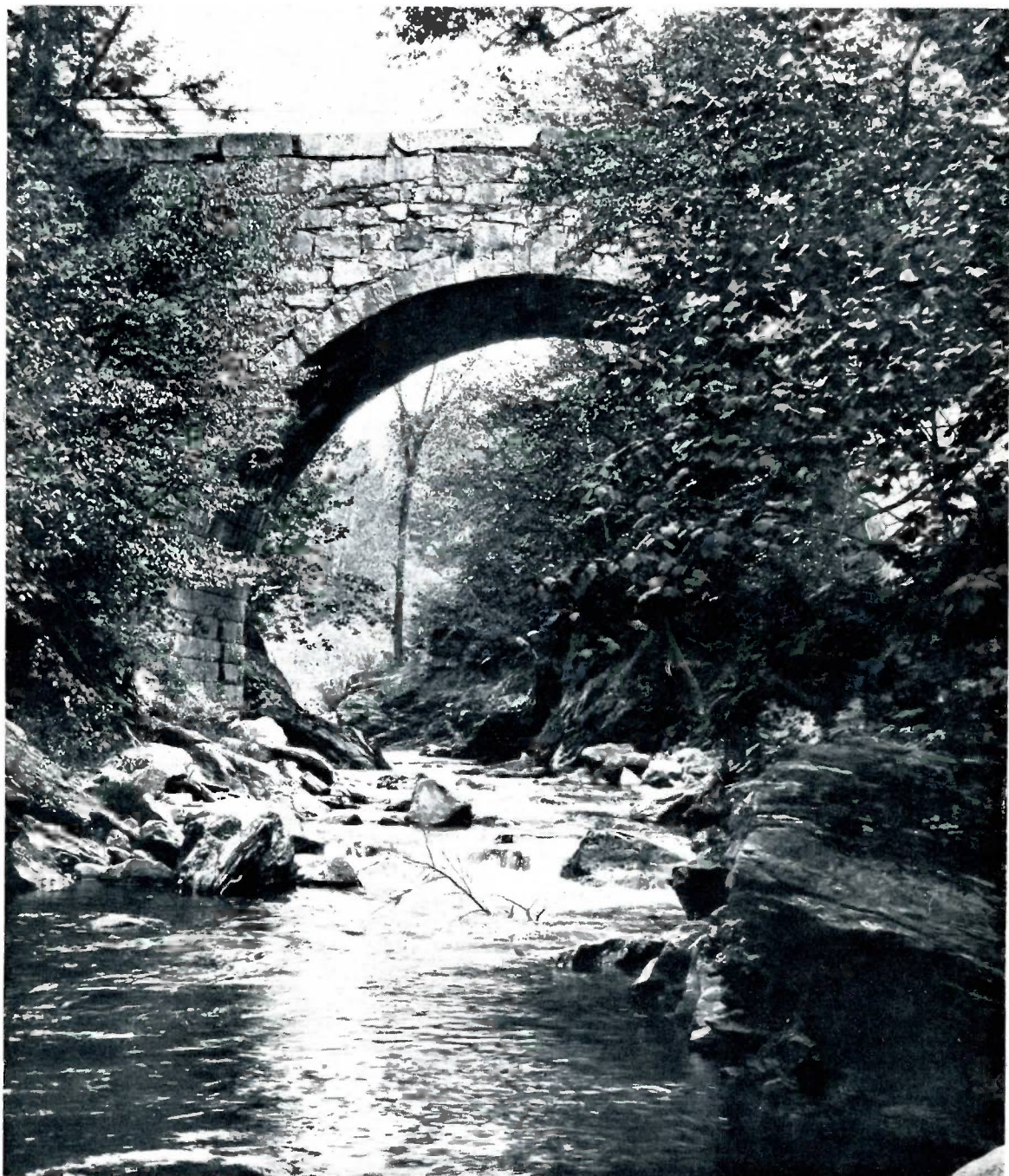


# MUELLER RECORD

PUBLISHED AT DECATUR, ILLINOIS



By Underwood & Underwood

JULY, 1934

# The BIGGEST BUYERS Prefer This MUELLER H 9045



Now while your mind is on the subject ask us for further particulars with your order for an H-9045 to test out and make comparisons.

Mueller Co. make a complete line of regulators for all purposes and relief valves of various types. Will be glad to send you a catalog.

Trade Mark  
**MUELLER**  
Reg. U. S. Pat. Off.

## *A New Standard for Relief Valves*

Don't forget that when you need a relief valve BAD you want it GOOD. Take no chances—run no risks—get a Mueller H-9045 and play safe.

Some of the biggest users in the country have tested out this NEW VALVE and adopted it because it proved up as reliable, giving them just what they demand—dependable action with a degree of perfection hitherto unknown in any relief valve.

This is exactly what we are inviting you to do—test out our new H-9045, compare it with any other relief valve, and we will leave it to our valve to prove its own case.

# MUELLER CO.

DECATUR, ILLINOIS

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Vol. XXIII

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No. 247

### SHORTAGE OF BATHS

In a recent survey in the Real Property Inventory the United States Department of Commerce made some startling discoveries. This survey covered sixty-three cities. In eight of these it was found that half of 54,300 homes had no bath tubs or showers. This average is quite probable in a complete survey of a national character. The owners or occupants of fifty per cent of homes that do have a tub or shower are so accustomed to their use that they cannot conceive of a home lacking in them.

The federal government is considering an extension of credit for modernizing work and if the plan goes through it will mean a lot of plumbing work. The plumbing trade has long recognized that many homes are still without bathing facilities, but this last survey shows the number greater than it was generally believed to be.

Persons who consider a daily bath as necessary as a daily breakfast wonder how any home could be complete in its health and happiness without a tub or shower.

The opportunities for sales of bath equipment should be seized by every plumber. Lavatories, tubs, and toilets are now reasonably priced and there are many types of shower heads available. There are patterns that are very inexpensive which can be profitably installed at a reasonable cost.

Any plumber might easily uncover any number of prospects by conducting a somewhat similar survey in his own city. No doubt such a survey would uncover hundreds of homes without baths of any kind, whose owners could be sold if the proposition were put up to them in the right way with good selling talk.

### EDITOR HAS HOT AIR SUPPLY

Editors are familiar with air. They use it in their profession. Some times their whims are filled with pleasant little "puffs." Again a scorching hot blast blisters the hide of some one who has incurred the editorial displeasure. Or one may be frozen stiff by cold shafts of sarcasm of ten below temperature.

This familiarity with air currents proved valuable to Editor Einer Lund of Decorah, Iowa, when he struck a cave from which is-

sued a steady blast of unchanging temperature. While digging a basement for a new home, workmen struck this air current. It came from the peak of two inverted V-shaped ledges of rock.

Mr. Lund ran a twelve inch clay pipe into the opening and extended the pipe to the refrigerator in his kitchen. The scheme worked so well, he decided to pipe the air into several rooms. And now an electric fan in the pipe blows the air through the house.

When the temperature is a hundred above or thirty below zero, Mr. Lund can flood his home, and does, with forty-two degree air direct from the cave, in which the temperature remains unchanged throughout the year.

### AND IT KEPT THEM BUSY

No matter how desperate or serious a situation may become, there is always some one with a sense of humor to get some fun out of it with a wisecrack or sarcastic comment. The depression has not been provocative of much humor but has not escaped entirely. A down east manufacturer kept his factory running throughout the depression. During that period his engineers designed machinery which made unnecessary so many employes, but none of the old employes were laid off, when conditions began to improve, a fact which greatly surprised his friends, one of whom asked the manufacturer how he did this.

"Oh, that's easy," was his reply. "It's true that not so many persons are necessary to produce the goods, but I manage to find something for them to do."

"And what is that?" continued the friend.

"Well, I put all the surplus help at work studying codes and filling in government blank reports on this, that, and the other thing, and believe me they are busy."

### Deacon Knew the Rules

Parson: "My fren's, I'se got a call to another church."

Deacon: "How much more does you all git?"

Parson: "Three hundred dollahs."

Deacon: "You should be more conspicuous in your language, Parson. You all hasn't had a call, you has had a raise."

## THE MUELLER RECORD

Published at Decatur, Illinois, by MUELLER CO.,  
Manufacturers of Vital Spots Products for the Plumb-  
ing, Water and Gas Industries.

C. N. WAGENSELLER, EDITOR

### AN ELUSIVE WORD

#### It Took Eleven Persons and a State Uni- versity to Run Down "Synecdoche"

Etymology has always possessed an intriguing interest for us. Consequently, when we came across the word "synecdoche" in "The Kalends" of Waverly Press we sat up and took notice. Knowing "The Kalends" to be the excellent house organ of a large publishing house, specializing in medical and scientific works, our first thought was that "synecdoche" might be a medical term, which was far from a prize winning guess.

##### Another Poor Guess

The writer in "The Kalends" informed us that in pronouncing the word to put the accent upon the "nec," which left an impression that the word might be a new term for that modern pastime of necking and perhaps another step in the direction of present day frankness which leaves nothing to the imagination. The next statement that "It is reported that it took eleven people and the English department of the University of South Carolina to run down the jawbreaker," fired our imagination to heights usually reached in a thrilling murder mystery.

##### Unjust Reflection on Webster

Here, we felt, was most assuredly something new in the English language, and we reflected unkindly upon Webster for having overlooked a good bet and left eleven people and the English department of a university to run down to its secret lair an unknown word. But Webster doesn't overlook many words, and he had not overlooked "synecdoche." Rhetorically the word is a figure or trope by which a part is put for the whole (as, fifty sail for fifty ships), the whole for a part (as, the smiling year for spring), the species for the genus (as, the cutthroat for assassin), etc.

##### Still Unsatisfied

The only synonym given by Webster has an equally mysterious sound and spelling—it is "metonymy."

This was all very interesting to us, but still left our inquiring mind unsatisfied.

Why did it take eleven people and the English Department of a university to run down the "jaw breaker" when a dictionary was nearby.

#### Death of H. J. Prange

Mr. Harry J. Prange died recently at Kansas City. He was formerly a prominent citizen of Kansas City, and an uncle of Mrs. Watson Stewart whose husband was recently elected Mayor of Chanute.

### GOIN' FISHIN'

#### There Is More to It Than Holding a Pole and Baiting Hook

The fishing in Lake Decatur is better this season than for a number of years past. Some fine catches are reported, and among the lucky ones are some members of our organization. The banks of the lake are lined every day with men, women and children sitting at the end of a pole patiently awaiting a nibble. The fact that there are still many unemployed is responsible for the increased number of anglers. Many persons regard fishing as a lazy man's pastime. It may be true that lazy men fish, but all fishermen are not lazy. Some real good hard-headed men do a good job of thinking while waiting for a bite, and others get great joy from nature's surroundings. There is, to many anglers, "more in going fishing than the fish a feller gets" as aptly expressed by the unknown author of the following bit of verse:

#### GOIN' FISHIN'

Maybe I won't catch nothin'  
Because the sun's too bright  
For the fish to rise to flies today,  
But I don't care a mite.

I can hear the pines a-whisperin'  
When they're swayin' in the breeze  
And hear the birds a-singin'  
As they fly among the trees.

I can hear the brook a-gurglin',  
And can look up in the sky  
And see the pretty color of  
The clouds as they float by.

I may come home with empty creel  
And yet with no regrets,  
For there's more to goin' fishin'  
Than the fish a feller gets.

—Selected.

#### WASHINGTON, D. C., SITE

Washington, the national capitol, which many of our plumber readers recently visited to attend the Master Plumbers Convention, was selected as the site of federal government July 16, 1790. The city is co-extensive with the District of Columbia. It embraces an area of 69 square miles. The required amount of land was offered to Congress by the states of Virginia and Maryland. Originally it was a square tract the sides of which measured about ten miles each. In 1846 that portion derived from Virginia was receded to that state. A French engineer, L. Enfant, is credited with having laid out the original plan by direction of George Washington.

#### And They Say "Likker" Is No Good

"Did you get home all right last night, sir?" asked the street car conductor.

"Of course—why not?" came back the passenger.

"Well, when you got up to give your seat to that lady last night, you were the only two passengers in the car."

## WATER WORKS CONVENTION

### Meeting in New York Was Success From Every Angle

No visitor or delegate to the meeting of the American Water Works Association Convention, held at the Commodore Hotel, New York City, June 4-8, questions the success of the gathering. The business sessions were instructive, beneficial, and constructive. The social events measured up to expectations. The management was flawless and the convention of 1934 is written into the record as an outstanding achievement in the history of the association.

It was voted unanimously that the NRA code was unnecessary in the water works field, in this department the competition prevailing in general business being absent.

Deputy Administrator Peebles came from Washington to the convention at the invitation of President Malcolm Pirnie. He said that it was difficult to find any benefits which might accrue by the application of the code except perhaps benefits of a psychological character.

#### Prizes Awarded

F. G. Cunningham, chairman of the John M. Diven Memorial Award Committee, announced Leonard P. Wood, engineer of the Board of Water Supply, New York City, as winner of the prize. The award was based on service to the association during the year in its convention activities and also as chairman of the sub-committee on cast iron pipe.

The Goodell prize, through James E. Gibson, was awarded to Willard T. Chevalier, vice president of the McGraw-Hill Publishing Company. This award was for the outstanding paper of the year. "The Place of Public Works in the Economical Scheme" was the title of Mr. Chevalier's paper.

#### Dam Named for Morris

A resolution was passed unanimously commending city officials of Pasadena, California, for changing the name of the Pine Canyon Dam to Morris Dam in honor of S. B. Morris, Chief Engineer of Water Works, Pasadena. The dam was built under his supervision.

The Nicholas J. Hill, Jr. cup, the chairman announced, was awarded the Canadian section which showed a 20 per cent gain in membership.

The registration this year was 30 per cent above that at the Chicago convention in 1933.

#### Self-Service

"Aren't you afraid the birds will eat your seeds? You ought to put up a scarecrow."

"Oh, it's not worth it. There's always one of us in the garden."—London Answers.

#### Balky at the Post

Helen: "So Peggy's new boy's a Scotchman? How does he treat her?"

Mabel: "Very reluctantly, I believe."—Sydney (Australia) Bulletin.

## WORDS THAT GIVE TROUBLE

### "Couple" and "Consensus" Have Proved Bothersome to Many

Some of the most generally used words give people a lot of trouble. There is the word "couple," variously used to express a "few" or "several" of anything. The word means "two" but this "two" are of the same kind connected or considered together. One writer on English holds it incorrect to say: "He went to Chicago a couple of days ago," insisting that it is not clear how many days ago it was. Accepting the literal meaning of the word, it would be "two days ago." Despite the writer's contention, we note some masters of English use the word in much the same sense as above referred to. Sir P. Sidney refers to "a couple of Shepherds," Addison to "a couple of drops," Dickens, "a couple of miles," and Addison, "a couple of weeks." We take it for granted that they meant "two" of each thing referred to.

#### Dictionaries Do Not Agree

"Consensus" is another word that has caused the purists to rave and tear their hair. About 99 out of a hundred persons say it and write it "consensus of opinion." Webster gives this meaning: "Agreement in opinion, custom or function, accord." On that authority one would feel compelled to admit that "consensus" should be used without employing the words "of opinion." There have been almost endless arguments on this word and regardless of Webster, they will continue. Even philologists do not agree, so why expect the common herd to try to straighten out word puzzles. They will not do it. In fact, they have used "consensus of opinion" so long and fervently that they have finally put it across as proper English.

#### Standard Endorses Common Usage

If you bank on Webster you will not agree to this, but if your lexicological deity is the Standard Dictionary, you have another big, broad field of argument with any follower of Webster.

"Consensus of opinion," Standard Dictionary says, "is some times condemned as unjustifiable tautology, but accepted as standard English. Consensus in its original sense means 'feeling together'. If this does not indictate opinion it certainly connotes unanimity. While the phrase may have been condemned by some purists as apparently tautological, consensus of opinion is good English; there may be consensus of evidence, force, function, opinion, thought, etc."

If you believe in safety practice safety. Doing so day by day is not only self protection, but it has a good influence on those with whom you are associated.

#### So Surprised

He: "I just got a set of balloon tires."

She: "Why, George, I didn't know you had a balloon."

## IN MEMORY OF SONG WRITER

### Two Leading Americans Pay Tribute to Stephen C. Foster

The daily press recently published a picture of the birth place of Stephen Collins Foster, one of America's best known and most beloved song writers. This home is now one of Pittsburgh's historic landmarks. The paper stated that Henry Ford had seen a picture of the house on the back of one of Foster's compositions and immediately dispatched his agents to purchase the house for removal to Dearborn, Michigan.

#### Began in His Youth

Stephen Collins Foster was born in 1826 at Lawrenceville, near Pittsburgh, and died in 1864. In the period between the dates mentioned, he produced some 125 compositions, some of his best known songs before he was twenty years of age. His musical talent manifested itself at an early age and he was given a thorough training. Many of his compositions were all his own, both as to music and words.

#### Live Forever

Some of his songs will never die. Among them are "Old Folks at Home," "Old Black Joe," "Nelly Was a Lady," "Massa's in the Cold, Cold Ground," "Come Where My Love Lies Dreaming," "Nellie Bly," "My Old Kentucky Home Goodnight," "Old Dog Tray," and a host of others.

The plaintive melody of his music has a heart appeal that few song writers have acquired.

Many of his songs were produced at a time when negro minstrelsy was a popular amusement, and naturally fitted into the programs of these entertainments, which had a good deal to do with spreading their popularity. The civil war, which stirred northern sympathy and sentiment for the slaves, gave Foster music and words a new and tender meaning, but with all these causes long passed away the Foster music still clutches the heart strings of the American people.

#### Erects Foster Hall

Mr. Ford is not alone in appreciation of the great song writer. Josiah Kirby Lilly, of Indianapolis, has expressed his admiration and devotion to Foster music by the erection of Foster Hall on his country estate near the Hoosier capital. Here he has collected and catalogued the most complete library of Foster music and relics in the world. Foster Hall, on the Lilly estate, is a beautiful grey granite building of fireproof construction located amid native forest trees, shrubbery, and flowers. It is equipped with a magnificent pipe organ and a large phonograph. Mr. Lilly's great success as a practical business man failed to cool his youthful sentimental love of Foster music. In acquiring his collection, he spent thousands of dollars. He was aided by a staff of members of the Congressional Library of Washington, who checked the authenticity of copies of Foster's work.

### The First Effort

Fletcher Hodges, Jr., of the secretarial staff of Foster Hall, writing for the house organ of the Indianapolis Engraving Company, says:

"According to Washington authorities, this is the first instance known wherein anyone has ever attempted to reproduce authentic copies from United States archives of all the works of any author or composer in their entirety. Mr. Lilly has been very highly complimented on his persistence in the face of great obstacles and his willingness to spare no expense to accomplish his heart's desire.

"The work of caring for and continuing to supplement the Foster collection now requires practically the full time of several persons in addition to Mr. Lilly. At Washington, in the Library of Congress, are Walter R. Whittlesey and Mrs. Katherine Copley, while at Foster Hall are Mr. Lilly, Miss Dorothy Jane Black, Fletcher Hodges, Jr., and Eli Messenger."

### Another Famous Song Writer

Another interesting bit of news concerns America's best loved song writer, Francis Scott Key, whose stirring "Star Spangled Banner" is known to every school child. Key was an American lawyer and also a poet. His "Star Spangled Banner" was an inspirational effort. While detained as a visitor on a British vessel during the war (1814), he was a witness to the bombardment of Ft. McHenry near Baltimore, Md. The next morning he wrote "The Star Spangled Banner."

The original manuscript was recently sold at auction for \$24,000 to the trustees of the Henry Walter's estate for placement in the Walter's Museum at Baltimore. Previously this precious manuscript had been in the possession of the Walter's family for many years. In view of the fact that Ft. McHenry is not far from Baltimore, and that Francis Scott Key was a native of Frederic County, Md., it is appropriate that the manuscript should be held in the archives of a building in the state's first city. The price paid for it, \$24,000, is doubtless more than Key's entire writings netted him in life.

### GEORGE F. UBER DEAD

George F. Uber died at his home in Philadelphia recently. He was widely known in the plumbing industry. Mr. Uber was 79 years of age and had been in the plumbing business at the corner of Thirteenth and Fairmount St., Philadelphia, since 1876. He was one of the organizers and formerly president of the Master Plumbers Association of Philadelphia. He was also a charter member of the National Association of Master Plumbers, and was present at the first gathering of that organization at New York in 1883. He had a record of attending each one of the next fifty meetings of the Association and on the occasion of the 50th anniversary gathering was the object of much attention and was given special honors. Mr. Uber is survived by his wife and daughter.

## HOLD YOUR "HOSES"

### Circus Parade Gives Decatur People an Old Fashioned Thrill

The circus season is here and Decatur has already enjoyed the big Hagenbeck-Wallace aggregation with other big shows coming later on. Who does not like a circus and animal show? We confess unashamedly and unrestrainedly that we never recovered from circus fever which attacked us at the early age of six years. The morning the big show was here we arose at 5 A. M., got an early breakfast, backed the old bus out and accompanied by the party of the second part, followed our old established practice of "helping unload the show." And it was not on account of the children that we did so. Others may have given that as a reason, but we are just honest enough to admit that personal curiosity and interest were the activating motives in our case.

#### It Was Well Worth It

We were well repaid for our loss of that last morning nap, and found that about all the rest of the town was suffering with the same disease which contributed to one of the nicest traffic jams we have ever been in since those on Michigan Avenue during the Century of Progress last year.

The Hagenbeck-Wallace show was an imposing array, wagons newly painted in brilliant reds and golds, and everything clean, bright and attractive. It was a sight worth seeing.

Where is the man who lacks enthusiasm for such a sight as a circus presents in the early morning sun, and who wouldn't miss a few hours of sleep to see a herd of thirty big elephants filling themselves full of fresh Illinois prairie grass. Big men have paid thousands of dollars and traveled thousands of miles to Africa to see elephants, but the circus brings them right to your door yard.

An old retired circus man once told the writer that he knew of no one thing that gave more for your money than a circus—he was not far from right, if not entirely right.

#### One Man Sees Two Performances

This brings to mind an old circus addict who comes to Decatur every time there is a big show and spends the day and night attending both performances. He says there is too much for anyone to grasp at one sitting. He is another man who speaks words of truth and wisdom about shows.

The writer, by reason of former newspaper association, knows a good deal about a circus that is denied the general public. It has been our privilege to have been taken through the dressing tents of the biggest shows to see and study what went on. We learned on one visit that the big tent and accessories occupy the same relative position every day. A member of the big organization, the moment he sees the big top, knows instantly the location of every part of the city of canvas.

On one occasion we had the pleasure, and it was a real pleasure, of meeting the Fish sis-

ters who did a team equestrienne act. They were seated on their horses waiting to be called for their act. Both were pretty, intelligent and vivacious. What gave charm to the meeting was the fact that they were granddaughters of Dan Rice, a pioneer circus man.

Returning to the circus which provoked these random and reminiscent thoughts, Decatur people got a big thrill out of the street parade, the first in many years. It was a spectacular event. There was not a single runaway and no handsome man on a gaily caparisoned white horse preceded the parade, announcing: "Hold your 'hoses,' the elephants are coming."

And what made us sore was the fact that we could not take time off to see that glittering spectacle. But we planned to see the evening performance and were more convinced than ever that the gentleman who attends both performances is correct—there is too much to see at one sitting.

#### Mueller Employes See the Parade

P. S.: And we saw the parade after all. It passed within a block of the factory just at lunch hour. President Adolph Mueller passed the word that the company had decided that everyone should see the parade and if late coming back to work, which everyone was, there would be no deduction from pay. It was a very generous move, and much appreciated. The parade was everything promised—gorgeous, and worth going a long way to see. Thirty enormous elephants brought up the rear and to make it a real circus day, two kids of equal size and age staged the prettiest boy fight we have seen since school days. The mere fact that tons of elephant flesh were passing within two or three feet of "the ring" did not interest the kids in the least.

#### Unprofessional

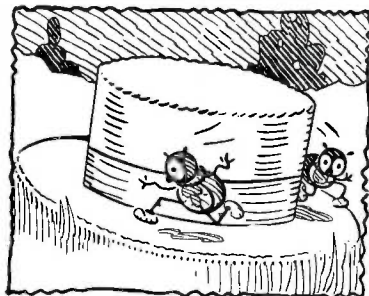
Burglar (about to give son thrashing): "Mind you, this is not so much for pinching the jam, but for the careless way you've left your fingerprints about."—London Passing Show.

#### Easy Cure

White: "Do you know, I'm losing my memory—it's worrying me to death."

Brown (sympathetically): "Never mind, old chap. Just forget all about it."—London Answers.

### ANNUAL TRACK MEET



"Say, the Old Man's hat certainly makes a fine running track for us."

# I'm Tellin' You



"My business is picking up," said the hobo when he shot an extra large "snipe."

\* \*

Scotchmen like asparagus because there are a lot of tips to go with it.

\* \*

Hard times have made many people hard boiled.

\* \*

"My connections," said Sylvia of our telephone board, "are with the finest people in the country."

\* \*

Madeleine Misard, a French writer, calls attention to the fact that Anti-Vivisectionists do not mind eating animals. Right back at you, Madeleine. Animals do not mind eating Anti-Vivisectionists, either.

\* \*

Physicians in Washington, D. C., are puzzled by the case of a man who has been laughing steadily for twenty-five years. Must have been a cracker-jack joke that started him off.

\* \*

A judge in a recent divorce case held that both husband and wife were wrong. If the pair could understand that two wrongs do not make a right, they might possibly patch up their domestic infelicity.

\* \*

Don't get gay when you're full of bananas. Remember that the banana got skinned.

\* \*

There isn't a thing on earth, says one of the uplift papers, that an honest man need be afraid of. Oh, yez, says you, what about Dillinger and his ilk.

\* \*

Mr. Spinglemeyer, a resident of the state of Kansas, inserted an advertisement in the paper to this effect: "Wanted—The Lord to send us a soaking rain." Two hours after the paper came from the press it rained good and plenty. Does advertising pay? Ask Mr. Spinglemeyer. His advertisement got him into the front page news of many papers.

Birds do not use bright colored material in building their nest. They are wise enough to know that bright colors attract attention. Birds of the air and bough do not want to be seen—that's where they differ from birds of the boulevard.

\* \*

Have you heard of the queen of the nudist colony who was sued for her laundry bill?

We have been tormented by a persistent summer cold. First the EYES had it, then the NOES had it, and then the whole subject was laid on the table.

\* \*

There are 40,000 persons in the United States with a million dollars or more. By process of elimination we are the first one counted out.

(Continued on page 18)

## A NEW FIRE HAZARD

**Especially to Be Avoided by Gentlemen of Rotund Proportions and Husky Throats**

"A veterinarian, rotund and heavy," says Arland D. Weeks, writing in that excellent publication, *The American City*, "was seated among a group of college men. Suddenly his clothing began to smoke in the region of a coat pocket. The blaze, as the newspapers would say, was quickly extinguished. To give the account a detective story element, I may say that the veterinarian had a harsh voice and a husky throat.

"Now leave we the veterinarian and take our position beside another reputable citizen, who has just alighted from his automobile in the evening for the purpose of better reading election bulletins at which a crowd gazes. Presently the reputable citizen, who rubbed against the steering wheel in getting out of his car, is seen to be agitated and to be thumping himself; indeed he is putting out a fire originating in a suit-coat pocket. Again, the blaze is quickly extinguished. This person, like the veterinarian, had a husky throat, and, like the veterinarian, carried potassium chlorate throat tablets in the same pocket with safety matches.

"Inasmuch as a preparation of potassium chlorate is used on the striking surface of safety match boxes, the deduction is that potassium chlorate tablets and safety matches should be carried in separate pockets. One wonders how many fires of this origin may have occurred, when in a single city two instances come under the direct observation of one witness."

In view of this enlightening information, we concur in the advice of Mr. Weeks. May we add as a bit of precautionary advice that under no circumstances should one carry these tablets and safety matches in the trouser hip pockets because of the surface possibilities of greater and more annoying burns.



### CRICKETS STOP WATER FLOW

#### Get in Faucet of Testing Machine in Receiving Department

Dickens' "Cricket on the Hearth" was an interesting story as portrayed by the famous author in print or as dramatized and acted on the stage by the great actor, Joseph Jefferson, but just now "Cricket in the Faucet" interests us more.

Crickets prefer indoor life rather than the great open spaces, a fact which has greatly annoyed Decatur residents during the past few months. In fact, we have had almost a plague of crickets and the Mueller factory has not been immune, as Marshall Hobbs and Louie Rohr in the Receiving Department have learned by experience. In that department there is a testing machine and one part of it is an ordinary sill stop. When Louie attempted to test out a piece of returned goods, he failed to get a flow of water through the outlet faucet. After repeated trials, he gave up and instituted an investigation, finally locating the trouble in the outlet faucet.

#### Crickets the Cause

He took it apart and in the seat opening found several of the little black insects which completely obstructed the flow. After getting rid of them, the faucet responded with perfect service as Mueller goods always do. The crickets made their entrance through the spout of the faucet and crawled into the seat recess when the faucet was opened.

We cite this incident at some length to show to readers one of the many things that can happen to plumbing.

The entrance of crickets through the spout may be prevented by the use of a small screen covered cap slipped over the spout. For permanent use, however, this device is not considered wholly sanitary.

#### Use Our Strainer

Mueller Co. make a straining device which is efficient and reliable in keeping all foreign substances from entering indoor pipes and fittings. They give positive protection, are inexpensive, and should be used on every water service pipe just after it enters the basement. Insects, bits of pipe scale, small shells, grit, etc., are intercepted by these strainers and deposited in a chamber in the lower portion of the device. The strainer can be cleaned when necessary by the simple operation of taking a plug out of the bottom.

But use discretion. Before you do this be sure the water stop just inside the basement wall is closed. Otherwise, the water works will be pumping more water into your basement than you can handle.

Laboratory scales that weigh a millionth of a milligram are being perfected.

In Austria, electric current is available in nearly all settled communities.

It is believed by the Kulin of Australia, that the spirits of the dead ascend to heaven by the rays of the sun.

### LOT OF HOTTENTOT TOT ROT

Dr. R. M. Yergason of Hartford, Conn., is responsible for this one sent to Kalends of Waverly Press, Baltimore.

If a Hottentot taught a Hottentot tot  
To talk, ere the tot could totter,  
Ought the Hottentot tot be taught  
To say ought or nought  
Or what ought to be taught her?

If to hoot and toot, the Hottentot tot,  
Be taught by the Hottentot tutor,  
Ought the tutor get hot, if the Hottentot tot,  
Hoot and toot at the Hottentot tutor.

### BELIEVE IT OR NOT

You don't have to take our word for it, but here are some geographic oddities that we will wager you were never taught in school. The National Geographic Society is given credit for compiling them.

The city of Reno, Nevada, is 100 miles farther west than Los Angeles.

Jacksonville, Florida, is farther west than Cleveland, Ohio.

One travels south from Detroit to reach the nearest part of Canada.

In Panama the sun rises in the Pacific and sets in the Atlantic—due to a gigantic bend in the isthmus.

The city of New York lies west of the Pacific—at least that part of the Pacific that touches Africa, in Chile.

### Gas Convention

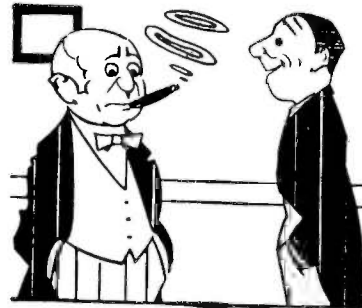
The National Association of Master Plumbers and American Water Works Association have held conventions. The next big convention will be that of the American Gas Association at Atlantic City, October 29th to November 2nd. It will be a large and important gathering.

### Lucky Coincidence

Motorist (held up for speeding): "I was hurrying up to town to see my solicitor."

Traffic Cop (writing his ticket): "Well, you'll have some more news for him now."—London Humorist.

### RIGHT IN THE EYE



Sour Grapes: "That was some peach I saw you with last night."

Friend: "She was no peach; she was a grapefruit. I squeezed her and she hit me in the eye."

## GIVES BERMUDA GOOD WATER

W. D. Turner, Professor of Chemical Engineering, Columbia University, Solves a Vexatious Water Problem and Gives the Island a Plentiful Fresh Water Supply.

(By W. D. Turner)



W. D. Turner

Until 1929 Bermuda had to depend entirely for fresh water on rain water collected from the roofs or specially constructed catchments, or on importations from New York. In times of long continued drought these sources naturally became depleted, and with many thousand visitors coming annually to their shores, individuals as well as public organizations were frequently pressed to secure fresh water.

The small area of the islands, less than that of Manhattan Island, means that there are no surface waters such as streams and rivers. Furthermore, the islands as a group represent a porous coral formation, and no method had been found to collect underground fresh water without salt contamination from the sea water which permeates this coral structure.

### Rain Doesn't Fluctuate Seasonally

The rainfall in Bermuda does not fluctuate seasonally, though there are dry and wet months, dry and wet years, and as every tourist knows, dry and wet days. The total annual rainfall is somewhere between 40 and 60 inches, which is comparable with the rainfall in New Jersey. Since the soil is quite porous, the water must drop rather rapidly through a nearly vertical course until it comes to a position where it floats on top of the salt water. Being lighter in gravity, it will not sink through the salt, but will flow laterally in either direction towards sea level. The natural resistance to flow set up by the soil will cause a hydrostatic head to build the water up in a lens-shaped stratum higher in the middle and tapering down to sea level at the edges.

Calculations of drainage area from contour maps and engineering survey, together with the estimates of the probable run-off of the area, indicated the amount of this fresh water lens reservoir which must be tapped to furnish any desired quantity of fresh water. In order to get at the water at least expense, a site was selected where the runoff from a relatively large area would be concentrated in a relatively narrow valley.

To tap this water, a trench about 400 feet long, cutting across the valley-like swale in the hillside, was dug down to the fresh water level, then through this thin lens to within a few inches of the sea water level. It intercepted the fresh water lens for a depth of about 18 inches, still with a trench bottom 6 inches above sea level. During the excavation thousands of tiny springs were intercepted which

began at once to feed fresh, living water into the trench.

### Central Pumping Station

This water was diverted from both ends to a central pumping station in the middle, through open joint tile laid on the bottom of the trench on an incline of about 1 inch per 50 feet. The open joints were carefully covered with coarse rock, after which the entire trench was back-filled and closely packed with coral sand. Thus any surface water flowing down the hillside during a storm would flow over the trench, or would find its way into the trench from the surface through at least four feet of coral sand.

### Good Fresh Water

When the test pumps were started, the flow of water came fresh and sweet, and in volumes beyond the capacity of the pumps to measure. An analysis of the water indicated a salt content of about 80 parts per million. The hardness was found to be upwards of 250 parts per million, expressed as calcium carbonate. As was to be expected, only a small amount of this hardness was magnesium and only a small amount was sulphate, the hardness naturally having developed from the coral limestone formation.

But since Bermudians are used to rain water, a plant furnishing a very hard water would have difficulty in competing with the individual rain water systems. It was therefore decided to install a complete softening plant to take the water directly from the central pumping basin and to deliver it as soft as possible to the distribution reservoir.

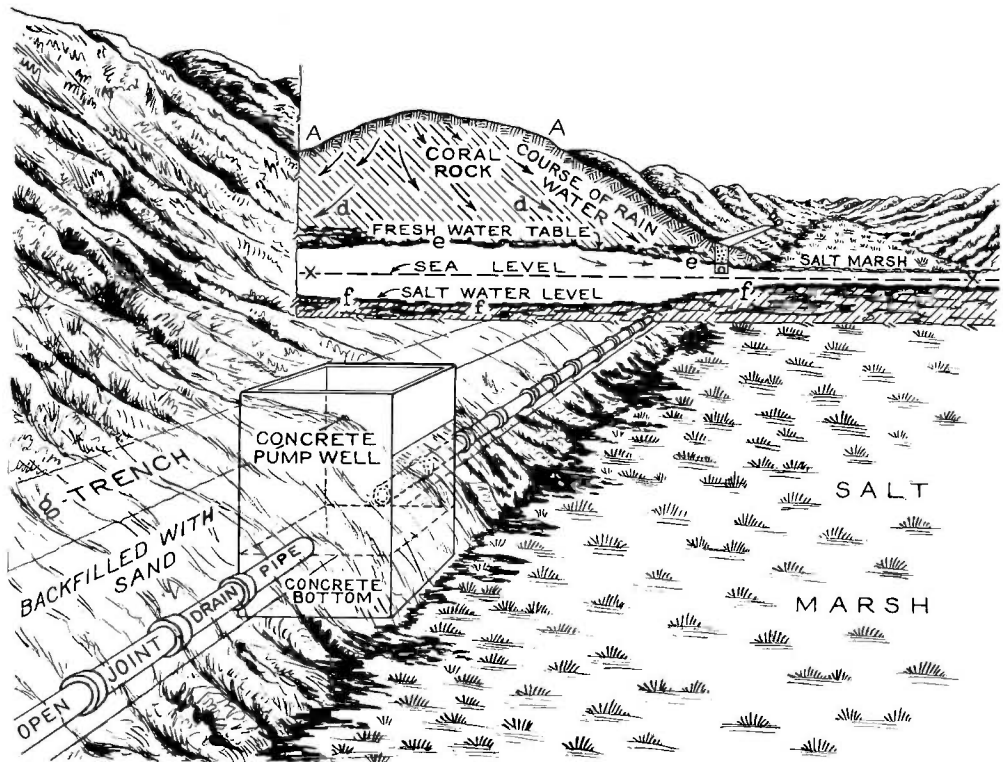
### The Softening Plant

The softening plant consists of a chemical house where lime and sodium aluminate are mixed and delivered to a set of two mixing chambers, where they are metered and introduced into the stream of incoming raw water. From the mixing chambers the treated water flows into a settling basin (provided with a sludge spider for sludge blow-off) which delivers settled water at the far end to two filter beds arranged for rapid sand filtration. The filters deliver the water to the customary clear well, from which it flows after chlorination to the pump house to be pumped to the reservoir at a distance of about 4,000 feet up a gentle slope to the highest available site.

The softening plant is designed to take an ultimate flow of 400 gallons per minute, and the control is entirely automatic. The sizes of the various units were computed for 20 minutes' retention in the mixing chambers and 8 hours in the settling basin at maximum flow, and a maximum flow through the sand filters of 120 million gallons per acre per day.

### A Special Gate Box

In this particular installation the use—and no in-



A Diagram of Plan for Collecting Fresh Water

considerable expense—of valves for controlling the mixing chambers was eliminated by designing a special gate box to be installed on the partition between the two mixing chambers. The gate box was provided with down-take pipes consisting of 10-inch asbestos water main. This gate box with its adjustable gates and down-takes, constitutes the entire control mechanism for diversion of the water through either or both mixing chambers, serially or in parallel, and furnishes a ready method for controlling the overflow height of the entire system.

The chemical treatment is somewhat novel. In order to make the water as soft as possible, both lime and soda ash would normally be used. However, the sulphate content of this particular water is unusually low; hence the principal treatment is with lime only. To supplement the lime, sodium aluminate is used in a concentration of 1.2 grains per gallon. It has accomplished three desirable results: (1) Development of an excellent rapid settling flow. (2) Precipitation in the form of aluminate of such calcium or magnesium as would have been held in solution as sulphate, thus eliminating the use of caustic soda. (3) Such thorough and complete purging of the water that virtually no residual colloidal suspension of hardness remains. This plant regularly delivers a water with a residual hardness of 40 to 41 parts, yet with the desired total alkalinity.

#### Asbestos Pipe Used

The question of distributing the water demanded special attention because of the soil conditions in Bermuda—the sodium chloride content, that of sea level; the porous nature of the coral rock; and the high moisture content of a sub-tropical climate. Ordinary steel pipe or cast iron bell and spigot pipe would have a relatively short life under these conditions. Corrosion-proof alloy pipe would be resistant but would be very expensive in first cost. After a thorough investigation, asbestos pipe was selected and installed for all lines larger than two inches. The cost at first seemed high, but since asbestos pipe is lighter, strength for strength, than cast iron, the freight differential on asbestos pipe gave it a competitive place with the corrosion resistant alloy pipes.

It was predicted that chlorination would be essential to cut down bacterial contamination. The use of chlorine presented some difficulties, particularly because liquid chlorine in cylinders is subject to shipping regulations prohibiting transportation on passenger vessels. Since it would have to be shipped out of New York, and since almost the entire trade between New York and Bermuda is carried by passenger vessels, it was decided to install a single cell electrolytic chlorine generator to produce sodium hypochlorite, which is delivered through an auxiliary minor flow directly into the outlet lines from the filters to the clear well. Chlorination with this equipment is adjusted to .2 of a part per million residual chlorine. This is maintained merely as a precautionary measure, since analysis seldom discloses any *B. coli*, even in the 10 cc. samples. The capacity of the chlorinating unit is such that if necessary, with present flow of about 240,000 gallons per day, the residual chlorine can be increased up to two parts per million by the extremely simple device of increasing the electrical current flow through the outfit.

#### Seven Million Gallons a Month

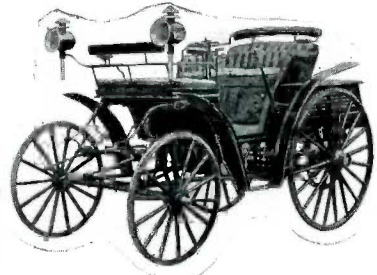
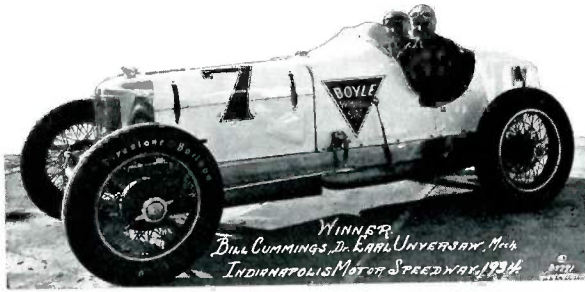
With the entire system as thus described, it is now possible to deliver a pure fresh, soft water at the rate, under present operating conditions, of seven million gallons per month, carrying a residual hardness of about 40 parts per million, a residual salt content of about 80 parts per million, a residual *B. coli* content of less than one in 10 cc., throughout the populated district of Hamilton and the south shore of Hamilton harbor in a pipe line system which adds no contamination to the water and which should resist corrosion for a very long time.

#### Skin Game

She: "Just how many times can a fox be skinned for his fur?"

Guide: "Three times, madam. Any more than that would spoil his temper."

## TWO HISTORIC AUTOMOBILE RACES



If automobile development is measured by the yardstick of speed, it has certainly whizzed along in the 39 years since Mueller's car won the initial road race. The official name in those days was "motorcycle." The word automobile was unknown. The progress of the Mueller car was an average of ten miles per hour, while Wild Bill's average was more than 104 per hour. According to this, Wild Bill would have covered 1,040 miles in the ten hours the Mueller car was on the road. This would mean that he could drive from Decatur to New York City (roughly a thousand miles) while the Mueller car was driving from Decatur to East St. Louis (about one hundred miles). These comparisons emphasize, more vividly perhaps, the progress of automobiles since that historic day the Mueller car won the first American automobile race and May 30 last when Wild Bill set up a new mark on the famous Indianapolis speedway.

But there are other interesting facts.

The first race was run through deep snow and mostly over country roads.

The last one on a specially prepared track.

The first car was equipped with a home-made carburetor, designed and built by H. Mueller, and spark plug invented by the late Philip Mueller.

The last car was equipped with every up-to-the-minute accessory.

And while the first car was designed and built in Germany, it was entirely rebuilt in the Mueller factory by the late Hieronymus Mueller without any specially designed tools such as are in use now.

Taking it by and large, we are still proud of the old car. Its speed qualities were a bigger sensation in the days of thirty-nine years ago than Wild Bill's trim little No. 7 of today.

It attracted more attention than any car of the present—and what's more it would claim the spot light today if it were to be sent ambling through any business section, but for a different reason.

The Automobile Trade Journal, writing of that early race, says:

"Various difficulties and obstacles resulted in postponement of the race. The third date set was on November 2, 1895, but in place of the scheduled event a consolation race was announced for the Duryea Motor Wagon Co.

car and the Mueller Mfg Co. car, both entrants in the regular race and both ready to start. This race was arranged over a course to Waukegan, Illinois, and return, a distance of 92 miles. The Mueller car completed the course and was declared winner of the special purse of \$500. The important significance of this event lies in the fact that it constituted the first automobile racing competition. The start was made at 9:14 A. M. and the finish was at 6:43 P. M.

The regular race was run on November 29, 1895, in streets covered by deep snow. The start was about 8 A. M. and the finish at 7:18 P. M. The Mueller car finished second, winning \$1,500. The average speed was 10 miles an hour."

### THREE DAYS CHICAGO-DECATUR

Speaking of old-time automobiles, here was an interesting bit of news 25 years ago as reproduced by the Decatur Herald:

"Dr. Luther P. Walbridge and Robert Mueller accompanied by their families returned from Chicago yesterday in their new Studebaker 'Thirties' under the direction of two men sent out by the Chicago house to see that everything went smoothly. The party left Chicago at 3 p. m. Tuesday and spent the night at Ottawa. They reached Bloomington the next night and came on to Decatur yesterday. The men are well satisfied with the cars. The ignition system is of the magneto plug type that never fails to flash. The Studebaker company like most automobile firms is suffering from an auto famine and the men feel they are lucky to get the cars."

Today the average automobile makes this trip in five to six hours.

### Medicine a La Carte

Friend: "Why do you always inquire what your patients eat? Does it help your diagnosis?"

Doctor: "No, but it helps my charges for professional services."—Passing Show.

### Might Be Hotter

Minister: "Would you care to join us in the missionary movement?"

Flapper: "I'm just crazy to learn it. Is it anything like the Charleston?"

## Senior Class Has Picnic Mueller Heights



—Photo by E. H. Langdon

A group of seniors snapped at the annual picnic of the graduating class, held May 28 at Mueller Heights

### NEW OFFICIALS

The following have been named as officials of the Water and Light Department of the City of Columbia, Mo.: Superintendent, D. Elrow Crane; Assistant Superintendent, Virgil Farmer; Secretary, Paul A. Williams.

### THE FRONT COVER

What a place for a summer vacation. An old stone bridge, woods, and a brook where trout abound. It fulfills in a most graphic way the poet's words, "woody and wild and lonesome," but it is not wild at all, situated as it is in one of the oldest parts of the United States. The photographer found it all in the fine old state of New Hampshire.

### A RUBBER HOSE CONNECTION Furnished a Garage Man Free Gas—and a Big Fire

Gas and water thieves are not uncommon, but they seldom get the spotlight although they do get caught. We recall a case where a prominent business man worked some trick whereby he got his supply without paying for it. The details escape us at this time. Electricity was not then in use, and the old fashioned custom of keeping open nights was still the rule. It did not take long to detect the leak. The nightly illumination of the store did not correspond to the meter reading. When confronted with the facts, the merchant was glad to settle at the gas company's figure.

### SUCH A LOVELY PLACE

"Good cook is offered splendid view from kitchen window on main thoroughfare with constant arrests, small accidents, ambulance calls and other interesting incidents at all hours of day and evening."—Advt.

### MEMPHIS' BIG FIRE TRUCK

The city of Memphis has a new fire ladder truck and it is a whopper. This piece of apparatus is 60 feet long and weighs 24,100 pounds. There is an 85 foot hydraulic ladder which can be raised in twenty seconds. The truck also carries 300 feet of ground ladders, a life net, chemical tank, and miscellaneous pieces of fire apparatus. This is one of seven of this type of trucks now in use in the United States. The Illinois Central railroad faced a problem in effecting delivery of this big truck.

A special automobile car, the largest box car in the country, nearly twice as long as the average freight car, was used to transport the truck from Kenosha, Wis., where it was built. The dimensions of this car are 72 feet 3 inches long, 10 feet high and 8 feet 9 inches wide. It has doors at the ends as well as on the sides.

Minister: "Rastus, don't you know it's wrong to play cards on the Sabbath?"

Rastus: "Yes, parson, an', believe me, Ah's payin' for mah sins."

### ODDS AND ENDS

You will admit that Boulder Dam is a sizeable job, but unless you have been there you may not be able to comprehend its titanic greatness. Just as a beginning it cost \$10,000,000 to get ready to start actual work. That tidy sum covered the cost of getting tools and labor on the ground.

\* \*

Diamonds are obtained from the bed of river by divers who imperil their lives to obtain precious stones. They can be obtained without peril from your favorite uncle, and are especially plentiful at this time.

# CHICAGO'S CENTURY OF WATER WORKS PROGRESS

City's Supply and Distribution System an Outstanding Achievement in the Science of Hydraulics—Miles of Tunnels Under the Bed of Lake Michigan—Pumpage Averages Nearly Billion Gallons Daily and Supplies Nearly Four Million Persons.

*"Chicago is rightfully proud," said Mayor Kelly, "of its municipally owned water works and the progress it has made within the span of a century. It not only pumps more water than any other system, but it supplies this commodity to our citizens and neighboring towns at the lowest rate of any large city in America."*



EDWARD J. KELLY  
Mayor of Chicago

When Ellis Sylvester Chesbrough, an eastern engineer of international reputation, came to Chicago in 1855 with a proposal for a water tunnel five feet in diameter under Lake Michigan to an intake two miles out, engineers of two continents sat up and took notice. The laity, not knowing what it was all about, may have been mildly interested. There were many who questioned the feasibility of the proposal. In the face of pronounced opposition, the undertaking was begun on March 17, 1864. Three years later it was completed. Mr. Chesbrough's judgment was fully vindicated. This was Chicago's first big step in municipal water works development which has led by degrees to the present stupendous water distribution system which today serves more than four millions of people in the city and environs, makes possible the vast business and industrial enterprises, contributes to the health and welfare of the people, and furnishes protection against fire.

## A Sixteen Foot Tunnel

The seventh and largest of all tunnels—sixteen feet in diameter—is now being built, and there are twelve pumping stations equipped with the best mechanical aids known to the science of hydraulics.

That magnificent spectacle—"A Century of Progress Exposition," stretching its gilded and glorified length along the shores of Lake Michigan, would tell an incomplete story without the history of Chicago's achievement in the field of water works endeavor. In fact, there could be no such undertaking if it were not for the city's ability to send pure lake water rushing through mains reaching in all directions.

Nothing is so vitally needful to man's existence, to the development of municipalities, to the growth of industry and commerce as water works. No one knows this better than the talented engineers and hard-headed business men of Chicago.

## Three Outstanding Names

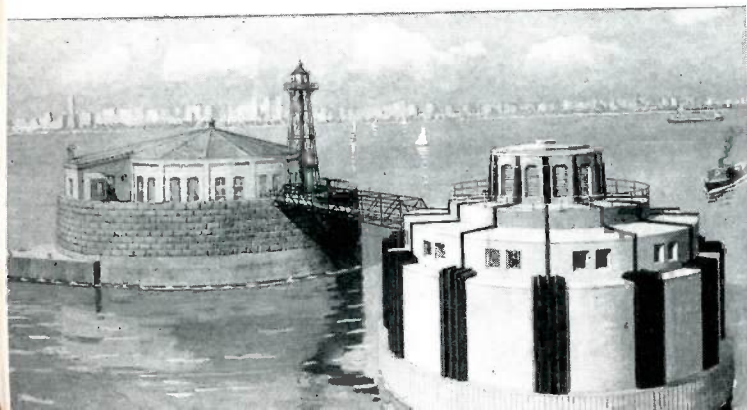
The names of three great engineers are inseparably connected with the history of Chicago's Municipal Water Works. They are:

Ellis Sylvester Chesbrough  
Dewitt Clinton Cregier  
John Ericson

Each of these men, outstanding leaders in their profession, was invaluable in the upbuilding of the system.

The early settlers reached the present site of Chicago in 1803. There was no water problem then. The lake and river furnished the settlers an ample supply. As the settlement grew, wells became necessary. In 1834 the village trustees had a public well dug at which is now the corner of Cass and Austin Streets. In 1836 the state legislature granted a seventy year charter for incorporation of the Chicago Hydraulic Co. to supply water to the city. The

The Carter H. Harrison Crib and new W. E. Dever Crib under construction.



company did not start work until 1840. Two years later at a cost of \$24,000 the city's first works were completed and ready for operation. The population was 4,500.

The intake pipe extended by means of a pier about 150 feet into the lake off Lake Street, terminating in a suction well for a 25 h.p. steam pumping engine. The pumping station was located at Lake Street and Michigan Avenue. The water was elevated to a wooden tank, flowing therefrom by gravity through wooden mains. There were two miles of these mains, made of ten foot cedar logs bored from two to six inches.

In 1851 the city had a population of 35,000. In February of that year the legislature gave the city a charter to build and operate its own water works plant. Wm. J. McAlpine was brought from New York City to make an investigation and design the first municipally owned plant. On his recommendation, the water works was located on the lake front off Chicago Avenue. The system was designed to serve 100,000 people. The intake was placed six hundred feet out in the lake. The pumping station housed an 8 M.G.D. single acting pumping engine. There were  $8\frac{3}{4}$  miles of cast iron mains. In 1857 a second pump of 12 M.G.D. was installed.

It was about this time that discovery was made of the fact that community health demanded an intake further out in the lake.

#### Chesbrough's Daring Proposal

It was at this point of development that Engineer Chesbrough stepped into the picture with his daring proposal of a two mile long tunnel under the lake and the erection of the now historic water tower. It alone came through the Chicago fire undamaged. It is no longer of service, but a cherished object of historic interest to all Chicagoans. It symbolizes the close of early water works endeavor and the beginning of the system of today.



LORAN D. GAYTON  
Asst. City Engineer

#### The Tunnel System

Chicago's first water tunnel commanded the attention, interest, and admiration of the engineering world, and brought to Ellis Sylvester Chesbrough international fame.

The plan called for water delivery of 50 M.G.D.; the tunnel to be dug through clay; depth below lake level 60 feet; distance 10,567 feet; lined with two shells of brick



The new 16 foot tunnel 200 feet below lake level costing \$13,500,000. It is now building and is known as Chicago Ave. Tunnel.

to a finished diameter of five feet.

There was much doubt and criticism but the Council passed the necessary ordinance. The Board of Water Commissioners awarded the contract October, 1860, to J. J. Dull and James McGowan of Pittsburgh, Pa., the second of seven bidders. The finish cost was \$457,845.00 equal to \$18.45 per lineal foot.

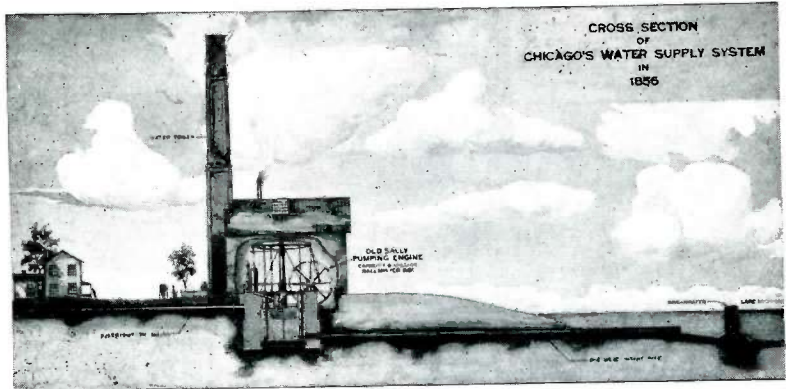
#### Progressed 12 Feet Daily

The work was commenced March 17, 1864, progressing day and night about twelve foot per day. The crib was successfully launched July 24, 1865, and placed in position. The intake shaft was built and tunneling shoreward started. At 3:40 P. M., November 30, 1866, the two working heads under the lake met, being only seven inches out of alignment. The last masonry stone was laid by Mayor Rice with special ceremonies on December 6, 1866, completing the first tunnel. March 8, 1867, the tunnel was filled with water and later was pumped out for final inspection. The official dedication was on March 25, 1867, the first day water was pumped from the new lake tunnel. The new North pumping station (now Chicago Avenue Pumping Station) was completed in 1869.

#### The Big Fire

The great Chicago Fire of October 8th and 9th, 1871, so damaged the machinery of this new station as to put it out of service for eight days. While the new tunnel had temporarily solved Chicago's water quality problem, this great conflagration brought serious emphasis on the need for a better balanced water system for fire protection in the city. A break in a water main crossing

Cross section of Chicago's first municipally owned water works system when city had population of 35,000 in 1851.



the river, coupled with an increasing demand for additional water service on the west side, resulted in a decision being made shortly after the great fire to build a new tunnel and pumping station to serve the west side.

The second tunnel, also through clay, was begun on July 12th, 1872, and completed on July 7, 1874. It started at a land shaft near the original tunnel shaft and terminated on the lake end in a shaft within the original two mile crib. The land section crossed the city diagonally under private property to a suction well under the new West Side pumping station located at Ashland Avenue and 22nd Street. The new tunnel was 31,490 feet in total length, 7 feet in diameter and lined with brick with several land shafts for construction purposes.

Because of interference with deep foundations and pilings for large buildings, the land section of this tunnel was abandoned in 1909, when the Blue Island Avenue tunnel was put into service. This tunnel, 8 feet in diameter, and under the city streets, was built under private contract in 1907-9 and was Chicago's first long concrete lined tunnel. In 1932 it was dewatered for the first time in 23 years and found to be in good physical condition.

A second 7-foot diameter brick tunnel from the Two-Mile Crib to the Chicago Avenue Pumping Station, which is also cross connected to the Northwest Land Tunnel, was built in 1895 and is

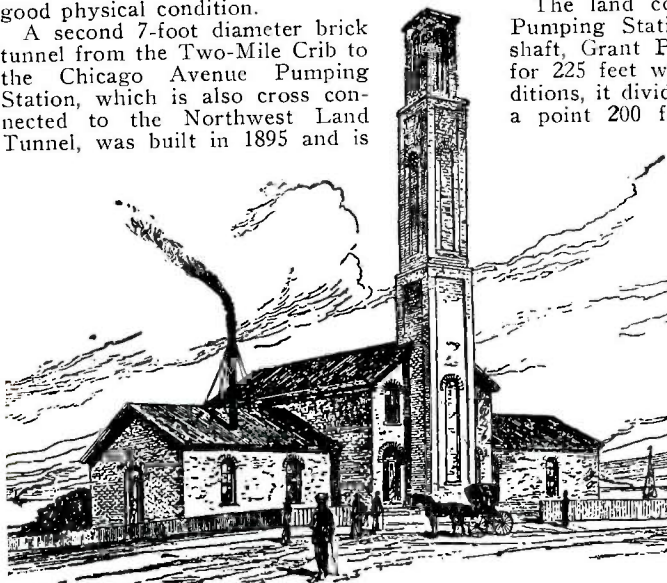
still in service, making a total of three tunnels from this crib. Its intake is between the old crib and the protecting breakwater.

#### The Four Mile Tunnel

The four mile tunnel off 12th Street was the third undertaking. Work started November, 1887. Water was admitted December, 1892. The original diameter was intended to be 8 feet with brick lining to serve the 14th St. and Central Pumping Station, the latter now known as the Harrison St. Station. Two hundred and seventy-eight feet were completed when serious difficulties with quicksand and swelling clay were encountered. The contractor was permitted to continue with two 6-foot diameter drifts to a point 8,870 feet west of the crib where the two tunnels were united as an eight foot tunnel. The intake shaft for this tunnel is protected by a crib consisting of two concentric steel shells set on a wooden grillage and in 39 feet of water. The crib was sunk in October, 1889.

The land connection to the 14th Street Pumping Station starts at the Park Row shaft, Grant Park. It is 8 feet in diameter for 225 feet where, on account of soil conditions, it divides into two 6 foot sections to a point 200 feet north of the station. It then returns to 8 foot diameter. A 7 foot branch connecting the cross town tunnel was finished in 1889 to supply the new Central Pumping Station.

As this tunnel was partially under private property the portion west of Grant Park was abandoned in 1907, when the 7 foot Polk Street tunnel was constructed. It cross connects the Four Mile and Blue Island Avenue



The original Municipal Water Works System at Chicago Avenue with a capacity of 8 M.G.D. Pumps operated nine hours daily and Sunday if emergency occurred.



tunnel systems, serving the Harrison Street Pumping Station.

The Carter Harrison intake is three-quarters of a mile northeast of the Two-Mile Crib, and supplies northeast lake and northwest land tunnels supplying central and central west areas, serving Central Park, Springfield Avenue, and part of Chicago Avenue Pumping Station. Extensive annexations in 1889 made necessary this crib and tunnel project. The crib is built of two concentric steel shells on a wooden grillage and has a masonry and brick superstructure. Diameter of the shells is 112 and 62 feet respectively.

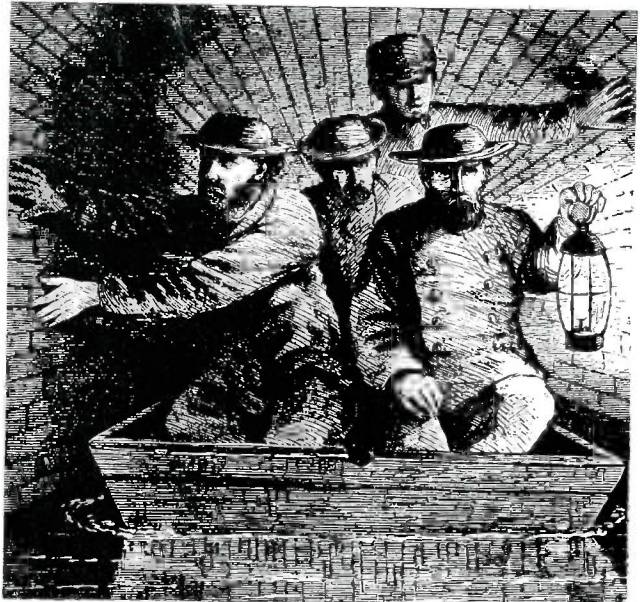
Authority for the tunnel system was given by the Council in March, 1896. The contract for the lake section, 10 feet in diameter and 14,033 feet long, through clay and brick lined, was awarded July, 1896. The work was completed January, 1899. The land section is 10 feet diameter from the shore shaft at Oak Street to the junction shaft at Green Street. Here the tunnel divides into two 8 foot auxiliary tunnels northwest 22,184 feet and southwest 19,856 feet to Springfield Ave. and Central Park Pumping Stations. These tunnels, through clay and rock, were completed in 1900. Being under private property these tunnels are scheduled for abandonment, although in good physical condition, when the new Chicago Avenue tunnel is completed.

Annexation of Hyde Park and Lake View in 1889 gave the city two new intakes, since abandoned, and required that new tunnel systems to serve south and north sections of the city.

Hyde Park, when annexed, was supplied with water from a 6 foot tunnel with submerged intake 5,036 feet from shore. To improve the quality of the water and provide additional quantities for the 1893 World's Fair, it was decided to construct a new intake two miles from shore with 7 foot tunnel connecting with the 6 foot tunnel. Due to lack of time, the plan had to be changed. As completed, the system consisted of a 7 foot tunnel from the new intake to a point 4,876 feet from the crib with 5 foot and 7 foot diameter branch tunnels to the pumping station.

The 5 foot section was abandoned in 1926. The 68th Street crib intake now serves one 7 foot diameter brick tunnel to the 68th Street Pumping Station. The old Hyde Park 6 foot tunnel with submerged intake has been abandoned.

The 68th Street crib is of timber construction with masonry and brick superstructure.



Final inspection of the first tunnel. (From Harper's Weekly, April 20, 1867.) This is the Chesbrough tunnel which amazed engineers on two continents.

Near it is the Ed. F. Dunne Crib, put in service December, 1911, to supply the Southwest Lake and Land Tunnel system.

Work on this system began in April, 1906. Its lake section is 14 foot in diameter from intake shaft to Yates Avenue land shaft; through rock and is lined with concrete. This was the first tunnel Chicago constructed through rock. Its depth varies from 92 to 148 feet below Chicago datum.

The land sections extends west under 73rd Street to Western Avenue. It has four branches:

An 8 foot drift to the 68th Street Pumping Station.

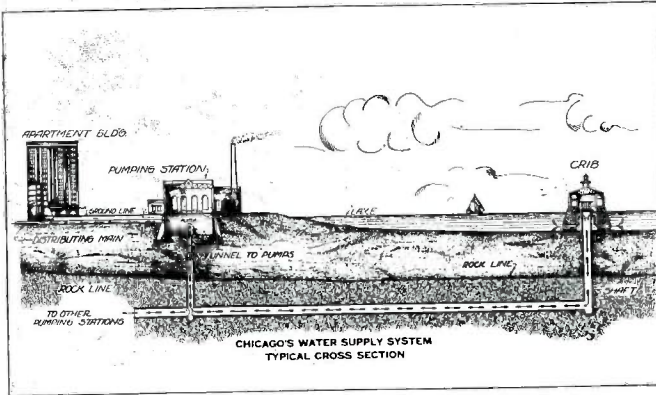
A 9 foot section south in State Street to the Roseland Station.

A 5 foot tunnel north in Cottage Grove Avenue to Washington Park Pumping Station of the South Park Commission.

A 12 foot western branch in 73rd Street and Western Avenue to the Western Avenue Pumping Station.

The Dunne crib is of steel construction on a wooden grillage. It consists of two concentric shells 110 and 60 foot in diameter filled with concrete. The superstructure is masonry and brick. This intake supplies the south and southwest sections and has a capacity of 500 M.G.D.

By annexing the Village of Lake View, Chicago inherited a contract for a 6 foot diameter brick lined tunnel through clay to an intake one mile from shore north of Montrose Avenue where the village already owned a pumping station and shore intakes. It was also agreed to extend the tunnel 10,000 feet into the lake with a new crib.



A typical cross section of Chicago's Water Supply System of the present day.

These improvements were not finished until July, 1896.

In 1912 it was decided to locate a new intake about three miles off shore at Wilson Avenue with a tunnel west to a pumping station in Mayfair, and to connect the 6 foot Lake View tunnel to this new tunnel through a stub to the Lake View crib.

This new and gigantic tunnel project inaugurated several major changes in construction practice. The crib is of all metal construction with flotation chambers built between the steel shells, the latter being 90 and 50 foot in diameter and having cutting edges to effect a seal at the lake bottom. No gates were provided. It was floated into position and sunk in July, 1915.

The west lake and land sections were constructed by the city day labor account and the entire tunnel was completed for official inspection in March, 1918. The total length of the new Wilson Avenue tunnel from the crib to the new Mayfair Pumping Station is 43,268 feet and the cost, including the crib, was about \$3,900,000.00.

A branch tunnel in Clarendon Avenue from the Wilson Avenue tunnel to the Lake View Pumping Station was built 1,381 feet long and 8 feet in diameter by city day labor in 1913. When the spur tunnel from the Wilson Avenue Tunnel to the Lake View Tunnel was built in 1918, it made the Lake View crib unnecessary and in 1922 the intake shaft was domed over and two years later this crib was demolished.

Increasing demands for additional water service in the central and west portions of the city with the necessity for abandoning tunnels under private property, were factors which led to a decision reached in 1922 to build Chicago's latest and largest tun-

nel system. This is known as the Chicago Avenue tunnel which is still under construction. When finished, this project will cost about \$13,500,000. Its lake intake is within a crib immediately adjacent to the Carter Harrison Crib 13,830 feet off shore at Chicago Avenue. This crib is all steel and is very much like the Wilson Avenue crib, its shells being 90 and 40 foot in diameter. The tunnel when finished will extend westward 7.81 miles from the lake intake. There will be a north branch 10 foot in diameter to the Springfield Avenue Pumping station 1.41 miles long, and another, 13 foot branch 1.86 miles long, southward to the Central Park station. Two 10 foot stubs will connect to the Chicago Avenue Pumping Station. Under Lake Shore Drive a second northerly branch 10 foot in diameter and .30 miles long connects to the shore shaft of the northeast lake tunnel. The tunnel is through solid limestone about 200 feet below lake level and is lined with concrete.

#### Pumping Stations

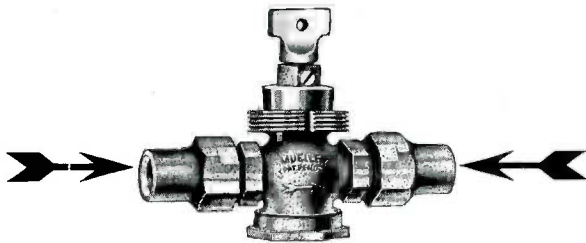
Chicago in 1934 has twelve water pumping stations with a total rated capacity of 1945.5 M.G.D. In 1840 the single pump at the Chicago Hydraulic Co. plant had a rated capacity of 25 barrels per minute or approximately 1.8 M.G.D. In these ninety-two years Chicago has probably had more experience with pumping engines than any city in the world. Its water works have seen the reciprocating type of pump and steam engines develop through their various stages of design and efficiency only to be superseded by the newer centrifugal pumps.

(Continued on Page 20)



Section of a 24" cast iron main laid in 1854 and removed in 1932. This main, when removed, was in good condition and still serviceable.

# Avoid "Robber Stops"



H-15150

Mueller Copper Service Stop—  
Honest to the last grain of metal

If a pump or a valve in the plant leaks you can re-pack it—it isn't much of a job, in plain sight and easy to get to.

But what about curb stops, buried three or four feet under ground?

When they leak you may or may not find it out.

If you do find it out you have an expensive job on hand—if you do not that curb stop robs you year after year.

Cheap curb stops are robbers. Keep away from them if you don't want to be robbed day in and day out.

*Your best protection against "robber stops" is Mueller Copper Service pipe stops, with positive non-leaking joints. If they cost a few cents more it is because of the good brass of which they are made—85% copper—accurate machining—a 200 pound pressure test—critical inspection—and better than all the name on them—a badge of quality for more than 75 years.*

Better pay a few cents more in the beginning rather than lose dollars in the end.

#### SPECIAL ATTENTION

Your attention is called to Section 11 Mueller Water Works Catalog H. for new curbs, new branch water connections, U branches and Tees. Also page 192 for tools.

Trade Mark  
**MUELLER**  
Reg. U. S. Pat. Off

**MUELLER COMPANY, Decatur, Illinois**

## Another Jumble of German Words

Readers of the Mueller Record continue to get a great kick out of the large German words and to send in additional specimens.

Mr. E. A. Halliday, manager of the Bassett Plumbing and Heating Co., Everett, Washington, writes:

"We read your magazine each month with much enjoyment and are sending you the following tongue-twister for some of your German friends to solve.

### WHY BEAT ABOUT THE BUSH

"According to The Kalends, house organ of the Waverly Press, in Baltimore, there is a paper published in Dresden, Germany, which thinks there are kangaroos (Beutelratte) in South Africa, and that the Hottentots (Hottentotten) put them in cages (Kotter) provided with covers (Lattengitter) as protection against the weather (Wetter).

"The cages are therefore called Lattengitterwetterkotter, and the imprisoned kangaroo is, quite obviously, a Lattengitterwetterkotterbeutelratte.

"One day an assassin (Attentatter) was arrested for the murder of a Hottentot woman (Hottentottenmutter), mother of two stupid children of Strattertrottel. The woman, in the German language, is entitled Hottentottenstrattertrottelmutter, and her assassin is designated as a Hottentottenstrattertrottelmutterattentatter.

"The murderer was confined in a kangaroo cage, that is to say, a Beutelrattenlattengitterwetterkotter, from which he escaped a few days later, but was soon recaptured by a native who reported at the mayor's office. 'I have captured the Beutelratte,' he announced.

"Which one?" asked the mayor.

"The Attentatterlattengitterwetterkotterbeutelratte."

"Which Attentatter are you talking about?" demanded the mayor. 'We have several in custody.'

"The Hottentottenstrattertrottelmutterattentatter," the native explained.

"Then," said the mayor, 'you dunderhead, why did you not say at once the Hottentottenstrattertrottelmutterattentatterlattengitterwetterkotterbeutelratte?'"

### I'M TELLING YOU

Betwixt the politicians, the drouth, and political regulations of amount to be grown, it looks like the crops will be small enough in size to make the few bushels grown worth real money.

\* \*

It looks as if the moving pictures are to be all washed up.

\* \*

The drouth and the terrific heat prompts Julius Staudt of the Traffic Department to observe: "It isn't the heat as much as it is the stupidity."

### Never Dated Him Up

The student approached the library desk and boldly inquired of the sweet young thing behind it: "Do you have anything on Milton?"

"I'm sorry, young man, but I've never been out with the gentleman."

### Hot Stuff

Caustic Critic: "Gee, but you have a lot of bum jokes in this issue."

Badger Editor: "Oh, I don't know. I put a bunch of them in the stove and the fire just roared."

### FROM LOUISVILLE, KY.

Mr. Fred Erhart, A. I. A., Department of Buildings, Louisville, Ky., reads the Mueller Record regularly and likes it. Our recent articles on jawbreaking words captured Mr. Erhart's attention and he contributes another which is quite deserving of a place in the Record's museum of verbal monstrosities. Mr. Erhart says:

"May I add another jaw breaker to your list of long German nouns? The list up to now has been very interesting, though the last one of seventy-six letters is rather a fanciful compilation.

"Here is the word that was impressed upon my memory more than fifty years ago:

"Neapolitanischerdudelsackspfeifenmacher-gesellenherberge.

"It means, 'Meeting room of the journeyman bagpipe makers of Naples'.

"I always read your Record with much interest."

### FROM GARY, IND.

If you are still interested in Das Grosse Deutsche Wort, here is one that has "Aktien-gesellschaft fuer Anilinfabrikation" beaten a few miles:

Gesundheitswiederherstellungsmittelzusammenmischungsverhaeltnisskundiger.

If you print it, get it spelled CORRECTLY! 72 letters!

Yours very truly,  
J. H. LINDBLOM.

### Big Transaction Fell Through

First Bum: You know, Bill, tomorrow I'm going to buy this railroad. I'm going to buy all the railroads in the country, all the automobiles, all of the steamships—everything. What do you think of that?

Second Bum: You can't. I won't sell.

### THE LAST WAS THE WORST



Fair Young Thing: "Not only has Jack broken my heart and wrecked my whole life, but he has spoiled my entire evening."

JACK WRIGHT IN BUSINESS

Former Member of Our Sarnia Force Is Located at Montreal

Jack Wright, with hosts of friends in Canada and the United States, is now president and general manager of the Canadian Plumbing and Heating Specialties Company, Ltd., Montreal, Canada. Members of the Mueller



Co., Decatur, Illinois, and Mueller, Ltd., Sarnia, Ontario, are particularly interested in Jack because his early training in the business in which he is now engaged came through his association with Mueller, Ltd. Jack had a narrow escape from being a sailor. His father is a veteran in the service of the Canadian Steamship Lines and as a lad, Jack looked forward to the time when he would be sailing the Great Lakes if not the great oceans. At the age of 12 he took a summer job as bell boy on one of the passenger boats of the Great Lakes fleet. When he was 14 the family moved to Sarnia, where Jack pursued his studies at Sarnia High School and later the business college. He still stuck to the boats during the summers, rising to the post of head bell boy on the Noronic, then assistant purser on the Noronic and the Harmonic, and finally purser on the Huronic.

Finishing school in 1918, Jack joined Mueller, Ltd., and went on the road in 1922, traveling in eastern, western and northern Ontario. In 1930 he made his headquarters in Montreal and took over all the territory from Belleville to Halifax. The more he saw of Montreal the more he liked—some people are funny that way—and, finally, gratified a cherished ambition by settling down to business for himself, buying out the business of S. T. Hadley Company.

Jack's friends in Canada and the United States wish him the greatest success in his new venture as a dealer in plumbing and heating goods.

A new electrotic process makes it possible to give aluminum a silver brightness.

COINCIDENCE OF NAMES

A Good Police Story Devoid of Sawed Off Shot Guns and Riots

It is a relief and a pleasure to read a police story not filled with gangsters, machine guns, bank robberies and hold ups. The "Christian Science Monitor" publishes this one under an Orange, N. J., date line.

Police Lieutenant Thomas Riley was doing desk duty. On a bench sat Reservemen Augustus Johnson and Edward Burke.

In from the snowstorm straggled a vagrant asking for food and shelter.

"Name, please," said the Lieutenant.

"Augustus Johnson," the man said.

"Huh?" said Reserveman Augustus Johnson. "Can you prove it?"

Mr. Johnson could, with army discharge papers, showing he lived in Scranton, Pa.

The Lieutenant ordered a meal for Mr. Johnson.

"Quite a coincidence," said he—but he hadn't seen anything yet.

In wandered another warmth-seeker.

"My name," he said when asked, "is Edward Burke."

The officers gasped, especially Reserveman Burke, when the wanderer produced a Massachusetts driver's license to show he was indeed Edward Burke.

The Lieutenant laughed and changed the order two dinners.

Then in walked a third stranger, seeking lodging.

"I know," said Lieut. Thomas Riley, eyeing him suspiciously, "your name is . . . ?"

"Thomas Riley," said the man, producing a birth certificate bearing the city seal of Minneapolis.

"Tell them, said the Lieutenant, when he regained his breath, "Tell them to make it three dinners."

The First R. R.

The first railroad track was twenty-three miles in length and was the property of the Baltimore and Ohio.

FRESH HEIR



Proud Father (to bank manager): "I want to see you about opening an account for the new arrival at our house. How shall we distinguish it from mine?"

Manager: "Suppose we call it the Fresh Heir Fund?"

(Continued from Page 16)

Only one station, Lake View, is now equipped entirely with triple expansion pumping engines. Seven are operated with centrifugal pumps only and the other four have both types of pumping equipment. Of the present twelve pumping stations four are dependent on electrical power and eight are steam operated. The proposed new Cermak station will use electric power supplanting two steam and one electric stations.

Chicago's pumping stations deliver water from the suction wells connected to the tunnel system directly into the mains. Each has its own service area, pumping against the others to maintain as near a uniform pressure in the system as possible. Pumps are operated to maintain service on a predetermined pressure schedule, based on consumption and pressure requirements in the respective pumping station districts.

The first municipally owned pumping station was at the site of the present Chicago Avenue pumping station. Its original pumping engine, affectionately nick-named "Old Sally," was installed under the direction of DeWitt C. Cregier in 1853. It was a vertical condensing steam engine with a single acting pump of 8.0 M.G.D. capacity. It served the city faithfully for over 50 years, and outlived Mr. Cregier by six years.

This station was wrecked and the present Chicago Avenue station with the old water tower erected in its place in 1867-69. By successive stages the pumping equipment in this station has been increased in capacity by additional and enlarged units, until today it has a maximum pumping capacity of 210 M.G.D., 160 M.G. of which are motor driven centrifugal pumps.

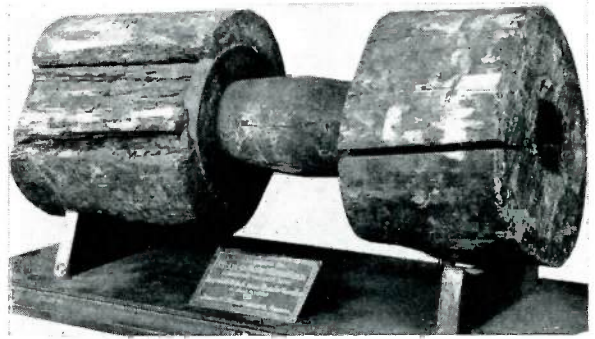
#### Told By Statistics

Chicago's water works system is such a vast public enterprise that a complete description would require a large volume. The appended statistics tell the best story to those familiar with water works practice.

### Summary of Statistics — Chicago Water Works—Year Ending December 31, 1933

#### Water Consumption

Population of Chicago (Estimated).....	3,681,265
Population of Outside Communities supplied through Chicago Water Works System .....	400,207
Total Population supplied.....	4,081,472
Pumpage to City of Chicago—gal.....	365,110,126,510
Water delivered through meters to Towns outside Chicago—gal.....	13,565,873,490
Total Pumpage of Water System—gal.....	378,676,000,000
Average daily pumpage of Water System—gallons .....	1,037,470,000
Maximum day's pumpage of Water System, June 28, 1933—gallons.....	1,269,270,000
Water passed through meters within Chicago City Limits—gallons.....	97,330,235,010



One of the original water mains of the Chicago Water Supply System laid in 1840. This consisted of 10 foot cast-iron bored 2" to 6". Note how they were connected at the ends.

Percentage of Water Consumption metered—City .....	26.66
Gallons per day to each inhabitant—City .....	271.73
Gallons per day to each inhabitant—Suburbs .....	92.87

#### Services

Kind of Pipe and Sizes Lead, 3/4" to 2"—Cast Iron, 3" to 16"	
Assessed Services .....	303,671
Metered Services .....	112,984
Total Services .....	416,655
Percentage of Services Metered .....	27.12
Revenue from Assessed Rates .....	\$3,447,193.77
Revenue from Metered Rates .....	\$8,871,688.68
Percentage of Revenue from Metered Rates .....	72.01

#### Distribution System

Kind of Pipe .....	Cast Iron
Size (inches) .....	4" to 54"
Total in use—miles .....	3,723.69
Hydrants in use .....	39,586
Gate Valves in use .....	35,719
Pressure Range in Mains—lbs. per sq. in. ....	25 to 65

#### Historical

Chicago, incorporated as village .....	August 10, 1833
Chicago, incorporated as city .....	March 4, 1837
State charter to Chicago Hydraulic Co. for first public water supply .....	January 18, 1836
First public water service began .....	1840
City obtains permission from legislature to build water system .....	February 15, 1851
City supplied by own water works system .....	February, 1854
First cast iron pipe in distribution system laid in Clark Street .....	1852
Work on first water tunnel under Lake began .....	March 17, 1864
Water from first crib intake and tunnel delivered to City .....	March 25, 1867
New North Pumping Station (Present Chicago Ave. Sta.) put in service .....	July 20, 1867
Great Chicago fire damaged North Pumping Station and left City without water for 8 days .....	October 8-9, 1871

#### Financial

Cost of water works system to Dec. 31, 1932 .....	\$134,291,277.95
Appraised value of system to Dec. 31, 1932 .....	\$113,676,294.56
Total revenue from water system for 1932 .....	\$12,438,094.34
Cost of Operation including interest, 1932 .....	\$5,829,953.27
Cost of repairs and renewals, 1932 .....	\$2,590,256.22
Cost of Construction, 1932 .....	\$3,987,729.31

#### Statistical

Lake Intake Crib in Use .....	6
Lake Intake Crib under construction .....	1
Water Pumping Stations in use .....	14

Water Pumping Stations under construction.....	1
Sewage pumping stations.....	2
Municipal Power Plant.....	1
Tunnels connecting cribs with pumping stations:	
Miles in use .....	62.6
Miles under construction .....	11.5

**Tunnels**

	Year Placed In Service	Present Length in Service—Miles	Diameter—Feet
Chicago Ave. 5 ft.....	1867	2.01	5
Chicago Ave. 7 ft.....	1875	2.05	7
Chicago Ave. 7 ft.....	1887	2.01	7
Four-mile Lake .....	1892	6.64	8 & 6
14th St. P. S. connections .....	1892	.50	8 & 6
Lake View .....	1892	2.0	6
68th St. ....	1894	2.40	7
Northeast Lake .....	1900	2.66	10
Northwest Lake .....	1900	9.6	10 & 8
Chicago Ave. Tunnel Ext. from N. W. Land .....	1900	.3	7, 6 & 5
Chicago Ave. P. S. ....	1904	.17	6 & 5
New Polk St. ....	1907	1.42	7
Blue Island Ave. ....	1909	5.21	8
Southwest Lake and Land .....	1911	10.1	14, 12 & 9
68th St. P. S. connections to S. W. Land .....	1916	.63	8 & 6
Wilson Ave. ....	1918	8.62	13, 12 & 8
Western Ave. ....	1927	6.02	12 & 10
Harrison St. cross connection .....	1932	.24	7
Chicago Ave. Lake and Land .....	Under construction	11.5	16, 13 & 10

**Pumping Stations**

Station	Year Placed In Service	Present Installed Capacity—Million Gals. Daily
Chicago Avenue .....	1854	210
22nd Street .....	1876	114
Lake View .....	1889 by annexation	100
68th Street .....	1889 by annexation	184
14th Street .....	1892	107.5
Central Park .....	1900	180
Springfield .....	1901	180
Roseland .....	1911	100
Mayfair .....	1913	255
Western Avenue .....	1927	300
Thos. Jefferson .....	1928	160
Cermak .....	Under construction	300

**Chlorination**

Plans for filtration of the water supply of the City of Chicago are, at present, in a preliminary stage and an experimental plant is now in operation at the 68th Street pumping station. In the meantime liquid chlorine is introduced into the water supply at the various pumping stations as a safeguard for the public health.

The quantity of chlorine mixed with the water supply depends entirely upon meteorologic and hydraulic conditions, causing an excessive or diminishing pollution of Lake Michigan water.

The liquid chlorine is delivered in heavy iron cylinders, each containing 100 pounds, which are attached to chlorinators at the pumping stations when required for use. At present there are 67 chlorinators installed for continuous service.

Patient: "Who's that other dentist?"  
Office Girl: "Oh, he's just here to fill in."

**Chicago Master Plumber Elected at Recent Convention**



JOHN J. CALNAN, Chicago Pres. N. A. of M. P.

The annual meeting of the National Association of Master Plumbers in Washington, D. C., drew 376 delegates and attracted some 2,000 visitors. It was an important meeting. The amoebic epidemic of last year was the major topic of discussion.

John J. Calnan, of Chicago, was elected president unanimously, a high compliment to a man who has given much time and intelligent effort to local, state and national plumbing interests.

The other officers elected were: Vice President, George W. Frank of Buffalo, N. Y.; Treasurer, H. O. Green of Tulsa, Okla.; Secretary, Charles Gawne of Chicago.

Chicago was named as the next convention city.

The Woman's Auxiliary of the National Association met and elected Mrs. Robert Liss of Chicago president. Other officers are:

First Vice President, Mrs. F. C. Kuetemeyer of Milwaukee; Second Vice President, Mrs. O. G. Johnson of Minneapolis; Third Vice President, Mrs. George Doench of Cincinnati; Treasurer, Mrs. J. H. Heidweiler of Trenton, N. J.; Historian, Mrs. E. D. Hornbrook of Kansas City.

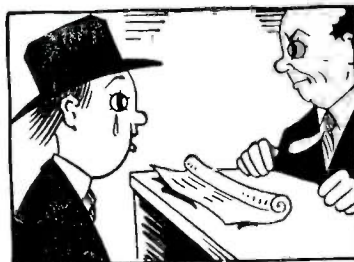
Actor: "A horse! A horse! My kingdom for a horse!"

Voice from the gallery: "Will a jackass do?"

Actor: "Sure. Come on down."

Double-hung windows are closed automatically when it rains by a new device embodying springs which are released when rain strikes a blotter-like paper link attached to the sill.

**THREW A SCARE INTO HIM**



Smith reported for work after his wife had presented him with triplets. The boss called him into the office, handed him an illuminated scroll and a silver cup in recognition of the triple blessing he had bestowed upon his country.

Smith: "Thanks very much, sir. But—er—is this cup mine now, or do I have to win it three years in succession?"

## Fine Plant For Small City



L. R. NAYLOR  
Mayor



JASPER AVERY  
City Engineer

The high service pumping station. It houses the filtration basins in the room at the rear, the high service pumps, all automatic control panels and cabinets, chlorinating devices, the wet wells, main office, and chemical testing laboratory.



LEE HARVEY  
Supt. of Water Works

The smaller brick building which houses the garage mining chambers lies at the rear on the west side of the plant site. The 30,000 gallon wash water tower is at the rear on the east side. Between the two buildings are the sod covered coagulation building.

## Conneaut's Self-Liquidating Water Works

On Friday, June 1st, the City of Conneaut, Ohio, dedicated a new \$275,000 municipal water works, but that does not begin to tell the story. There are many interesting highlights. There was a large contingent of visiting officials, health officers and engineers. These visitors made an inspection of the plant at 2:30 P. M. From 3 to 9 P. M. the citizens inspected their handsome new utility and at 6 P. M. there was a banquet at the lake for the visiting officials, health officers and engineers. From that on the new improvement became a practical, every day utility, serving the citizens with clear Lake Erie water, chemically treated in accordance with the best known and modern methods which guarantees healthful water to all users.

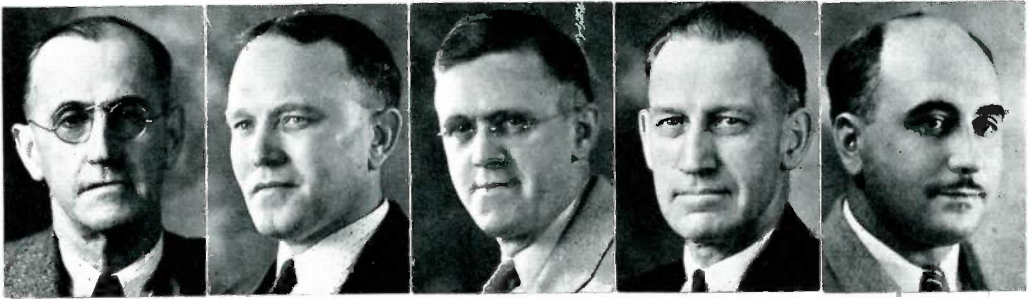
The Conneaut Water Works has the basis of the first self-liquidating loan made by the Reconstruction Finance Corporation. That's an easy thing to say, but between the launching of the negotiations and the consummation of the loan, the city officials had many feverish hours when it appeared that their well-laid plans were going awry at a moment when success seemed to be within their grasp. The orig-

inal negotiations began when a Toledo bond house in April, 1932, offered to handle the loan. This led to weeks of discussion ending in a decision of city officials to deal directly with the R.F.C. With the loan practically in sight an old ordinance relating to a mortgage on the old plant bobbed up to upset all the plans and schemes of weeks.

It was then the officials turned their activities to another plan.

They set up a new table of amortization, a schedule that threw the burden of financing on the earnings of the new plant for the first ten years of its operation instead of equitably spreading it over a period of thirty years. Under the new plan, the city saw its way clear, by revising estimates on the earning capacity of the new system, to pay off bonds on the old plant by 1941 and on the new plant by 1953. It took until June 24, 1933, to convince the R.F.C. that the new plan was practicable and it was on this date that final approval of the plan and agreement to purchase the bonds was given by the federal loan board. If ever the financial schedule is upset and it becomes impossible to pay off the bonds, holders of the mortgage are





Left to Right—Commissioners S. J. Blake, T. C. Baldwin, A. L. Lamp and Harland Sanford. William Kantola, Chief Inspector.

entitled to take over the plant and operate it.

With more or less assurance that the new plan would pass the R.F.C., the water works commission proceeded with the work and accepted the following bids May 22, 1933.

Arthur G. McKee Co. Construction of the low and high service pumping units, distribution system and coagulation and mixing chamber—\$116,611.95.

Chicago Bridge and Iron Works, for a 500,000 gallon elevated tank and a 30,000 gallon wash water tower, \$22,729.

Merritt-Chapman Scott Co., construction of intake and low service break water, \$61,912.50.

These bids were \$34,713 less than the engineer's estimates. The bids were approved by the R.F.C. on the same day the loan was approved.

Contractors were at work July 8th and continued through the fall and winter until March 20, 1934, when the plant was in operation.

**Operation Started March 20**

Preliminary and final tests were completed in March and Tuesday, March 20, 1934, at 9 a. m. the new plant began regular operation, taking over the burden of supplying the city with water. The old plant on Broad St. became idle for the first time in 45 years. Fires were kept in the boilers at the old pumping station until April 6, when it became apparent that the new plant was fully capable of regularly and efficiently supplying the city with water.

**High Lights and Side Lights**

The source of supply is Lake Erie. The crib is 28 feet square, built of 12 in. x 12 in. northern oak and divided into nine compartments.

The intake pipe is 24 inches in diameter, 94-foot sections, laid in a special channel dredged for it and covered with loose shale and sand. It is beneath the level of the lake bed and its length is 1,905 feet.

The low service pumping station at the shore end of the intake houses a unit for elevating the water to the top of a 70-foot bluff to the mixing chambers. The pumps are in a water tight room 3 feet below lake level so that they are always automatically primed. The small pump is a one and one-half M.G.D. operated by a 25 h.p. motor. The large pump is a 3 M.G.D. operated by a 50 h.p. motor. The pumps are arranged to create a positive suction. They pump the water to the mixing

chambers, from which point it flows by gravity through the other units. There are two mixing chambers each of a 20 minute detention period.

The two coagulation basins have a capacity of 250,000 gallons and a detention period of four hours. Each basin measures 40x70 feet, is known as "The-around-the-end-type" with a capacity of one and one-half M.G.D.

Consumption at present is one and a quarter M.G.D. which calls for the use of one basin only.

There are four filter basins with a capacity of 750,000 M.G.D. each or a total of three M.G.D. Twenty-eight inches of graded pure silica gravel and twenty inches of pure silica sand are used in filtering.

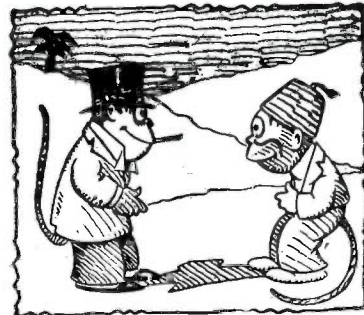
There are two clear wells with a combined capacity of 180,000 gallons. Chlorine is added by an automatic device at a predetermined dosage in a 12 inch pipe through which the water passes to the wet well for pumping to consumers.

There are two high service pumps, one of one and a half M.G.D. operated by a 75 h.p. motor and the other 3 M.G.D. operated by 150 h.p. motor. The pumps act automatically, singly or together. When both pumps are working, their combined capacity is four and one-half M.G.D.

The new water tank in Clark St. has a capacity of 500,000 gallons. It is 165 feet high over-all.

Plans and specifications for the new plant

**MONKEY BUSINESS**



First Monk: "What makes Mr. Porcupine so conceited?"  
Second Monk: "Why, everyone gets stuck on him."

were prepared by the George B. Gascoigne Engineering Co. of Cleveland and the firm had general supervision of the work.

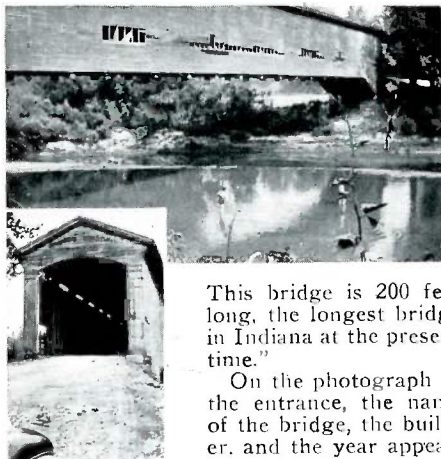
The history of Conneaut's water works system, old and new, could not be written without reference to Lee Harvey, superintendent. The new plant was dedicated on June 1st, the 33rd anniversary of Mr. Harvey's connection with the water supply department. He came to the old company June 1, 1901. His long service as superintendent and his knowledge of details of plant and distribution systems makes him an invaluable asset to the city. Practically every improvement up to the time of the present modern plant was made under his direction with common labor. His long years of service are filled with many pleasant recollections together with troublesome problems he has had to solve, but he can forget the troubles now in the satisfaction he gets out of the modern plant with its new, smooth-working pumps, modern methods, and everything clicking regularly—and above all the esteem and appreciation of his fellow citizens for nearly a third of a century.

### COVERED BRIDGES

#### Indiana Has a Lot of Them—One 200 Feet Long—A Three Way Bridge

Mr. Clyde G. Holmes, a plumber of Vincennes, Indiana, writes us:

"Inasmuch as we enjoy your articles on 'Covered Bridges,' we are enclosing two views of a covered bridge across Sugar Creek, near the little town of Annapolis, Parke County, Indiana. This is known as the Jackson Bridge. It was built by J. J. Davis in 1861.



This bridge is 200 feet long, the longest bridge in Indiana at the present time."

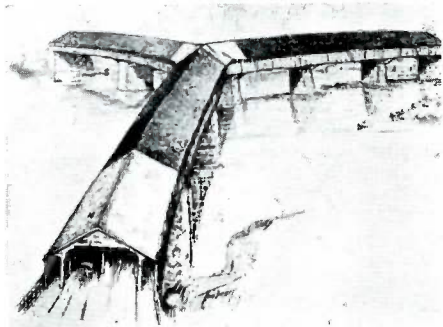
On the photograph of the entrance, the name of the bridge, the builder, and the year appear, but too indistinct to reproduce in half-tone. Then there are what appears to be three or four names to the side, possibly officials who had charge of the work.

Indiana has many covered bridges. There are sixty-four in the vicinity of Turkey Run and The Shades, two scenic parks well known to automobilists. The oldest wooden bridge in Indiana is said to be south of Raccoon. It

crosses the creek by that name and was built in 1838, ninety-six years ago.

In the March issue of Mueller Record there was an unillustrated article on the "Y" bridge at Zanesville, Ohio. Mr. Elmer U. Barnett, of East Fultonham, now sends us a picture of this bridge and we reprint a description.

"I am herewith attaching a picture of our most noted bridge, that of the old covered "Y" bridge in Zanesville, Ohio. This bridge was built in 1833, at a point in Zanesville where the Licking River empties into the Muskingum River main line, being on the National Highway and the branch reaching from the river middle to the point of land be-



tween Muskingum and Licking Rivers. This bridge was replaced by a concrete "Y" bridge in 1901 and while the water in the 1913 flood of this community was said to be as high as ten feet above some parts of the "Y" bridge, it stood the strain and only lost some of its concrete walls along the sides that are possibly five feet above the main floor."

### OLD TIME AUTO DEALER

Twenty-five years ago the automobile industry was just getting a good start. It was still in the stage of development and regarded as the rich man's plaything. No one then thought it would reach the stage where poor as well as rich would enjoy the pleasure of a self-propelled vehicle on rubber tires. Neither did anyone dream that the popularity of automobiles would in a quarter of a century make street car lines a drug on the market. The most interesting thing about the automobiles of that day is that most of them are no longer on the market. One Decatur dealer was agent for the following cars:

#### A Line of Seventeen

Wayne, Autocar, Pope Toledo, Pope Hartford, Pope Tribune, Stevens, Duryea, Chalmers Detroit, Pope Waverly, Cadillac, Stoddard-Dayton, Mitchell, Thomas Flyer, Locomobile.

In this list we recall only one car which still holds a prominent place in the automobile field. We do not note the name of the most used car among the list handled by this Decatur agent. We recall, however, that this lo-

(Continued on Page 25)

**DARKTOWN STUFF**



**And Rastus Was Out**

Two hundred pound Rastus slid into second base and tore the seat out of his breeches. They called the game on account of darkness.

**Mistakes of Moses**

Judge: "Uncle Mose, your first wife tells me you are three months behind in alimony payments."

Mose: "Yassuh, Judge, 'but hit ain't no fault o' mine. You see, Judge, mah second wife didn't turn out to be as good a worker as she let on she was."

**Exporter**

Sam: "What are you doing now?"

Bo: "I'm an exporter."

Sam: "An exporter?"

Bo: "Yassah. Just fired by the Pullman Company."

**Pays in Advance**

Judge: "George, you are guilty of having stolen two chickens from Mr. Harrison's coop last week. The fine will be \$5."

"Yassuh, jedge," said George, placing a \$10 bill on the clerk's desk. "Ah's givin' yo' 10 bucks which will pay yo' up to an' includin' nex' Sattidy night."

**Rastus Knew Not Moving**

Rufus: "Mistah Lawyer, ah wants to get a divorce."

Lawyer: "What seems to be the matter, has your wife left you?"

Rufus: "No, sah, dat's jes de trouble. She won't leave."

**Just Like Culled Folk**

Mandy: "Miss Sally, what is dis heah companyate marriage I heahs so much about?"

Miss Sally: "Why, Mandy, it is a new sort of arrangement whereby two people simply agree to live together for a while to see if they really are going to get along."

Mandy: "Laws, Miss Sally, whi' folks sut-tinly is gittin' moh like us niggers ev' day, ain't dey?"

**On the Firing Line**

Rastus: "Say, Mose, was you eba on de firin' line?"

Mose: "Yas, suh, Rastus! One day de boss stood us all in a line, an' I was de first one fired."—Tennessee Mason.

(Continued from Page 24)

cal agent had an opportunity to buy stock in this particular low priced car, which he did not handle, but failed to avail himself of the opportunity.

**Missed the Mark**

Irate Master (to Negro Servant): "Jefferson, I thought I told you to get a domestic turkey. This one has shot in it."

Jefferson: "I done got a domestic turkey, sah."

Master: "Well, how did the shot get in it?"

Jefferson: "I 'specks they was meant for me, sah."

**Had His Number**

Mandy: "You-all reminds me of one of dem flying machines."

Rastus: "How cum, woman? Cause I is such a high flyer?"

Mandy: "No, sah, cullud man; it's jest 'cause you ain't no use on earth."

**Worrying Over Wrong Problem**

There was a big religious revival going on among the colored folk. Many souls had been saved, but there was one hardened sinner who refused to answer the Lord's call.

There was much singing and praying and exhorting, but the old fellow wouldn't budge from his seat and join the prayer circle down before the pulpit.

"Why won't you come?" demanded the preacher. "Why won't you?"

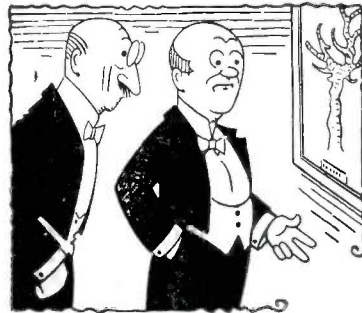
"Well, brother," the ancient replied, "I'se got a difficulty. I can't quite see how I'se gonna git mah nightgown on ovah my wings when I gits to Glory."

"Don't you go worryin' 'bout that," retorted the evangelist. "You' difficulty is gonna be how is you gonna git your hat on ovah your horns."

**High Fliers**

The usual height at which swallows, wild ducks, geese, and other birds fly when traveling long distances is from 1,000 to 2,500 feet. Cranes have been known to fly five miles above the earth.

**MEANT THE SAME THING**



Mr. Dollar (arriving at a dinner party with family): "Please announce Mr. and Mrs. Dollar and daughter."  
New Butler (in loud voice): "Three bucks."

## Two Bits of Illinois Scenery

Pond lilies in bayou near  
"The Cabin" on the Okaw  
River



*Those virgin lillies, all  
the night  
Batting their beauties  
in the lake,  
That they may rise  
more fresh and bright,  
When their beloved  
sun's awake.*

Photos by O. C. Keil

We have printed many pictures of beautiful bits of scenery elsewhere in the country and now we present two scenes in Illinois which we think possess many elements of summer beauty. These pictures were taken near Adolph Mueller's cabin on the Okaw river, about 70 miles south of Decatur. Just a short distance from the cabin is a bayou where fish are quite plentiful. The beautiful wooded shore line, the pond lilies floating on the surface of the bayou, the many different birds in the air and in the trees combine to make a summer picture that all visitors to the Okaw cabin enjoy and appreciate.

Headed by Adolph and Robert Mueller, a bunch of employes spent several days at the cabin in the Okaw bottoms just preceding Memorial Day. It was the first big party of the spring season and a very successful one. The grounds and cabin were in excellent shape and there was good fishing, plenty to eat, lots of sociability all the time, especially in the evening. Adolph prepared one chicken dinner which reflected his ability as a chef. Everybody said it was a great meal, and everybody proved an able "bellied" seaman at the table.

The company included: Bill Ferry, Charles Cochran, Robert Mueller, C. W. Hathaway, J. W. Simpson, O. C. Keil, Ed. Stille, J. W. Wells, Burt Jackson, Frank Edmonson, Bob Lusk, George White, J. C. Hamilton, Ellis Roberts, Dick Moore and Adolph Mueller.

### POISON IVY AND "SICH LIKE"

#### Public Health Bureau Issues Warning for Benefit of City Outing Fiends

When you go on your summer vacation this year, don't get too sociable with poison ivy, poison oak, poison sumach and their ilk. If you do you'll suffer more misery than the city dweller who mistook the baby skunk for a kitten and picked it up. Your only advantage after an encounter with poison woodland vines and shrubs would be that you will not be so objectionable in company.

The matter of encountering this natural poisonous plants and vines is of sufficient importance for the National Public Health service to issue a warning.

In the eastern and western parts of the United States the poison ivy and poison oak abound, and in the middle states the poison sumach is most prevalent.

#### Poison Ivy Most Common

Of all these poisonous shrubs, poison ivy is the plant most frequently encountered by the unsuspecting city visitor to the country, and this is true in spite of the fact that it is easiest of its kind to recognize.

Poison ivy usually climbs by means of root-lets over rocks, walls and trees, and is often confused with the Virginia creeper. It may be easily distinguished from other creepers, however, by its three divided leaves, the harmless form having five leaves. This one distinguish-

ing mark: if borne in mind will serve as a warning against poison ivy.

**Due to Sap**

The resinous sap exuded from poison ivy when injured sets up an intense irritation which spreads rapidly. Attacks usually subside in from four to six days.

The inflammation may be averted, even after the plant has been handled, if the exposed part is washed carefully in soap and water and alcohol. but the washing must be thorough or it will tend only to spread the inflammation.

**Cures Suggested**

One of the best methods of treating this poisonous condition is bathing with salt water, sea water if available. Another good application consists of one teaspoonful of boric acid in a quart of water. The large blisters may be punctured and the contents allowed to drain. The affected parts should be bathed every day and carefully dried without rubbing, and bathing should be followed by another application of boric acid. The best advice, however, is to learn the plant and scrupulously avoid it.

There are individuals who are never subject to ivy poisoning, but it is not safe to depend on immunity.

We have known some immune persons who could bite a poison ivy vine and get away with it, but it would kill the ivy.

**Stay Away from Mushrooms**

Another thing to leave alone is mushrooms. Few people know their mushrooms. There are many different varieties, some the delight of epicures and others sure death to anyone eating them. An authority said recently that a piece of poisonous mushroom as big as your thumb nail will cause almost instant death.

**OFFICE JOKES**



Oh, No

Smith: "I'm looking for a good stenographer."

Jones: "Reformed, have you?"

Make a Memo

Business Man: "Smith, you know I'm rather forgetful?"

Smith: "Yes, sir."

Business Man: "Then remind me to give you notice at the end of the month."

Plays No Favorites

First Steno: "George's mustache makes me laugh."

Second Steno: "Tickled me, too."

Seasonable Showing

Mary had a little dress,  
Dainty, chic, and airy;  
It didn't show the dirt a bit,  
But gosh, how it showed Mary!

**Business Is Business**

Flora: "Should a girl permit her boss to kiss her during business hours?"

Dora: "Sure, if he means business."

**Sir! You're Mistaken**

Auditor: "Now, let's see your pink slips."

Filing Clerk: "Sir! I am not the clerk in a lingerie department."

**Fly and Out**

Marie: "Oh! It must be nice to be an aviator."

Eddie: "Yeah. Wanta fly?"

Marie: "Oh! You bet I do."

Eddie: "All right, just a minute, I'll catch you one."

**Comfortable Feeling**

Zenz: "Did you enjoy your vacation?"

Littlechild: "Yeh, but there's nothing like the feeling of a good desk under your feet again."

**Early Morning Gossip**

Bud Simpson: "You know that I caught a pickerel the other day that weighed eleven pounds?"

Orville Keller: "Aw, go on, Simpson, you're talking about minnows."

**Profitless Promotion**

Clerk (in private office): "As I am getting married, sir, is there any chance of an increase in salary?"

Boss: "If you don't get out of here quick, we'll make you a partner and you won't get anything."

**Surprise Hair Tonic**

Wife: "It's a bottle of hair tonic, dear."

Hubby: "Nice of you, darling, but I don't need hair tonic."

Wife: "True enough, but your stenographer does. So much of her hair is coming out on your coat."

"You brute, where did you kick that dog?"

"Ah, madame, thereby hangs the tail."—Princeton Tiger.

**ILLUSTRATED**

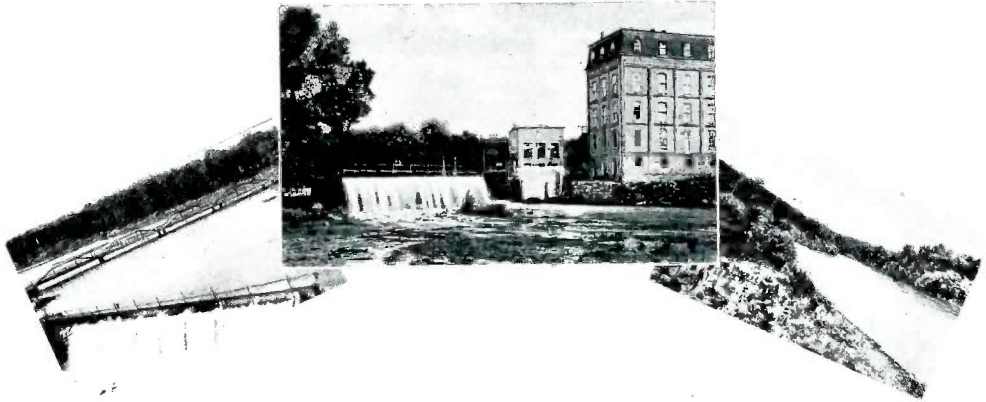


Stenographer: "Howja spell 'sense'?"

Manager: "Dollars and cents or horse sense?"

Stenographer: "Well, like in 'I ain't seen him sense—'"

## *Eighteen Acres of Bubbling Spring*



In the Ozark mountains of north Arkansas, Fulton county, a single spring produces enough water to supply the city of New York, it is claimed. Because of its immense size, one of the largest in the world, it is called Mammoth Spring. It covers 18 acres with turbulent, bubbling, frothing water which flows away for fifty miles as Spring river. The town nearby has the same name as the spring.

Charles Cochran and Hugh Baker, of the Mueller organization, were in that section of the country recently buying cattle with which to stock one of Adolph Mueller's farms on the Okaw. They made it their business to visit this famous spring, and say it is one of nature's greatest wonders.

### **Could Supply New York**

Mr. S. T. Hays, a leading business man of the town of Mammoth Springs, says:

"Mammoth Spring may be equal to the task of supplying New York City water but it is far from New York, far from any metropolis, in fact, and its pure, cold water does not supply any city. But the huge spring, gushing from the foot of a hill at the rate of 600,000 gallons a minute, is utilized in other ways. Man has harnessed the tremendous water power, and the spring and Spring river which flows from it now generates 1,300 horsepower, furnishing electricity for five towns. Engineers claim that power dams could be built every one and one-half miles of the 50 miles of Spring river.

### **Uncle Sam Utilizes Spring**

"The United States government also utilizes the spring water. The Bureau of Fisheries discovered that the cold water is ideal for the propagation of small-mouth black bass, one of the most difficult game fish to raise by artificial means. The government maintains a modern hatchery near the spring, where black bass and other game fish are raised and transplanted in public waters.

### **Grows Fish Moss**

"Mammoth Spring is responsible, too, for a unique industry. Fishmoss, a green water plant that is used in goldfish bowls and aquar-

iums, is gathered from the spring and upper Spring river and is shipped to pet stores and goldfish dealers throughout the United States. Mammoth Spring is one of the few places in the Mid-west where *Myriophyllum* fishmoss grows in sufficient quantities to permit marketing, and the plants growing in the icy water of the spring are better than those secured from other sources, dealers claim.

"About 15 different kinds of aquatic plants grow in and around Mammoth Spring and Spring river, but gatherers have found a market for only four or five of them. Gathering and marketing these plants keeps them busy, however, and several men are given steady employment.

"At Mammoth Spring, Nature has created a wonderful playground. Thousands of tourists and vacationists visit the spring each summer, and it is fast becoming one of the most popular recreation centers in the Ozarks. Hotels and resorts at Mammoth Spring and on Spring river offer first class accommodations, with fishing, swimming, dancing, boating and many other amusements.

### **Beautiful Sight**

"A visit to Mammoth Spring is a revelation of Nature at its finest. The 18-acre spring, pillowed against the green Ozark hills, rivaling the sky with its azure color, is a restful scene of peace and beauty. And Spring river, turbulent and boisterous, plunging off the Ozark plateau in a mad froth of white rapids, pausing now and then in quiet pools, twisting through broad valleys and around lofty crags, is a paradise for those seeking peace with Nature.

### **An Indian Legend**

There is a legend, originated by the red men who once roamed the Ozark forests, it is claimed, and repeated now by older residents living near Mammoth Spring, which tells how Mammoth Spring was started. Long years ago, the legend goes, when the red man hunted the Ozark hills, Nitilita, the daughter of Chief Red Cloud, married Towakawnee the Brave. While the tribe was celebrating the wedding, a drouth came over the land, and Red Cloud

sent some young warriors to the Great River (Mississippi) for water.

"The warriors delayed their return, and many of the Indians perished, among them Nitilita. Overcome with grief, Towakawnee struck his head on a rock and died.

"When the warriors finally returned, Red Cloud ordered them put to death. A large grave was dug and the warriors were buried together. Suddenly a great roar was heard from the earth, and the ground trembled and opened. From the opening a stream burst forth and rushed down the valley. Red Cloud, overcome with fear and repentance, plunged into the river and was carried away.

"At twilight, when the world has settled down for a night of rest, and peaceful quiet hangs over the big spring, a hissing noise sounds from the black mysterious water. It is caused from carbonic gas held in solution, but that's not the tale older residents tell. When tourists ask them what makes the hissing sound, they put their fingers to their lips, and then tell them it is the dying gasps of Indian warriors.

"Then they tell the story of a spring that came from a grave."

### UNDEVELOPED IDEAS

The late Thomas A. Edison was talking one day with the governor of North Carolina, and the governor complimented him on being a great inventor.

"I am not a great inventor," said Mr. Edison. "But you have over a thousand patents to your credit, haven't you?"

"Yes, but about the only invention I can really claim as absolutely original is the phonograph," was the inventor's reply.

"Just what do you mean?" asked the governor.

"Well," explained Mr. Edison, "I guess I'm an awfully good sponge. I absorb ideas from every source I can, and put them to practical use. Then I improve them until they become of some value. The ideas I use are mostly ideas of people who don't develop them."

—Rays of Sunshine.

### "SMART ALECKS"

A "smart aleck" always takes risks because he thinks it is smart to do so. Some day the "smart aleck" gets hurt. The poorest time to show off is when working around machines. The machine cannot think, can't stop itself, and is not particular on how or where it hurts you. You can think. It's wise not to use your head to do "smart aleck" tricks. Use it methodically and systematically to go about any task and show off your good sense, concentrating your mind and efforts to do your work well without taking the slightest chance of injury to yourself. There is nothing cowardly in being careful.

The neon lamp used in television is capable of extinguishing and relighting itself as many as 100,000 times a second.

## *Calls to Mind Mrs. Partington's Fight With the Ocean*

When you undertake a task it is wise that you know how to handle it and to know also what tools to use if any. Lots of people fail because they go about a job in the wrong way. As an instance, we have seen men waste time and energy trying to make a coal chisel answer for a screw driver, or using a pair of pliers for a hammer. They remind us of Mrs. Partington of Sidmouth, England, a very good woman but with a mistaken sense of the fitness of things. Sidney Smith, the brilliant author, referred to her in a speech made by him at Tuyn-ton.

### Shouldn't Meddle With Tempest

He said: "I do not mean to be disrespectful, but the attempt of the Lord to stop the progress of reform, reminds me very forcibly of the great storm of Sidmouth, and the conduct of the excellent Mrs. Partington on that occasion. In the winter of 1824, there set in a great flood upon that town—the tide rose to an incredible height; the waves rushed in upon the houses; and everything was threatened with destruction. In the midst of this sublime and terrible storm, Dame Partington, who lived upon the beach, was seen at the door of her house with mop and pattens (shoes) trundling her mop, squeezing out the sea water, and vigorously pushing away the Atlantic Ocean. The Atlantic was roused; Mrs. Partington's spirit was up; but I need not tell you that the contest was unequal. The Atlantic Ocean beat Mrs. Partington. She was excellent at a slop or puddle, but she should not have meddled with a tempest."

### The Cocktail Hour

Ze Americaine he is ver' funny. Ze Frenchman can nev' understand heem—jus' like ze Americaine cocktail. Firs' he put een whiskey to make ze drink strong, zen he put in water to make her weak, zen he drop in some sugar to make her sweet, nex' he put in lemon to make her sour, zen he say "here's to you" an' he dreenk her he'self!

### WEIGHS WORDS



Wife: "Don't misunderstand me. I weigh my words before I speak."

Husband: "Well, I might misunderstand you, but I'll never accuse you of giving short weight."

## BANQUET GIVEN WM. W. BRUSH

Retiring Engineer New York Water Dept.  
Honor Guest at Waldorf-Astoria

After 40 years of service, William W. Brush has retired as chief engineer of the Department of Water, Gas, and Electricity of New York City. Mr. Brush was one of the best known engineers in the water works industry, as well as one of the most active in promoting its interests. Mr. and Mrs. Brush are now in Europe on a two months vacation and sight-seeing tour. Before they left, Mr. Brush was the guest of honor on the evening of June 14th at a banquet given at the



Wm. W. Brush

Waldorf-Astoria Hotel, New York City. The company included 200 friends and associates of the distinguished engineer. His long and notable service in New York and the valuable work he performed were subjects of sincere eulogistic speeches by many friends.

Among the speakers were Abel Wolman, Chief Engineer of the Maryland State Board of Health; Maurice P. Davidson, Water Commissioner, New York; Malcolm Pirnie, retiring President of the American Water Works Association; Col. Willard Chevalier, Vice President of the McGraw-Hill Company; Denis F. O'Brien, President, A. P. Smith Mfg. Company, and William J. Orchard, of the Wallace & Tiernan Company, and President of the Water Works Manufacturers' Association.

Mr. Wolman as toastmaster cited the attainments and qualifications of Mr. Brush and Mr. Davidson reviewed his accomplishments as chief engineer of the New York Department of Water, Gas, and Electricity.

The final speaker, Maurice P. Davidson, presented Mr. Brush with a gift from members of the Water Works Manufacturers' Association.

The committee on arrangements for the banquet was composed of Nicholas S. Hill, Jr., Frank A. Barbour, Charles H. Becker, George W. Biggs, Jr., R. K. Blanchard, E. D. Case, Allan W. Cuddeback, F. C. Cunningham, John Dietz, Dr. Frank Hale, Burt Hodgman, Franklin C. Hopkins, John A. Kienle, Reeves J. Newsom, Guy C. Northrop, Fred Shepperd, Arthur Tuttle, Seth M. VanLoan, Robert Spurr Weston, Beekman C. Little and Karl M. Mann.

Palms are tropical plants related to lilies on one hand and grasses on the other.

It's fair to derive knowledge even from one's enemies.

## THE STATUE OF LIBERTY

Bartholdi's Great Creation Has Demonstrated the Serviceability of Copper

Americans returning from Europe are always on edge to catch a first glance of the Bartholdi statue of Liberty enlightening the world as the big liner works her way into New York harbor. To Americans this statue is symbolic of Americanism next in order after the Stars and Stripes. This statue has for more than 50 years resisted the elements and the salt air, two elements very destructive of most metals. The statue of Liberty with an outward exterior of thin copper, has successfully resisted the inroads of gnawing time for more than a half century.

### History Is Interesting

The statue has an interesting history. It was a gift from France to the United States designed to commemorate the one hundredth anniversary in 1876 of American Independence. It was nearly ten years later that the gigantic task was completed and the statue was dedicated. The delay was due to French inability to raise the necessary funds. French school children finally saved the day by contributing small coins to the sum of \$750,000, the amount necessary to complete the work. The formal presentation was made on July 4, 1884, eight years after the date originally intended.

The only portion of the statue in America on the original date was the great forearm. It was sent in advance for exhibition at the Centennial Exposition in Philadelphia, and then sent to Madison Square Garden for New York to see before being returned to France.

A French war vessel brought the statue complete in 1885, meeting a great and enthusiastic naval demonstration in New York harbor. The unveiling and dedication took place on October 28, 1886. From that date to this Liberty has stood with torch aloft, a welcome beacon to Americans returning home and to hundreds of thousands of emigrants who come to find the liberty which the statue symbolizes.

Including the huge foundation, the statue rises to a height of over 300 feet. The statue alone weighs 450,000 pounds or 225 tons.

The interior is a network of iron covered with sheet copper formed to the figure of a gigantic woman. These copper sheets are bolted to the frame work. The figure from the base to the top of the torch measures 151 feet and 5 inches. The copper exterior has become a weathered green. It was selected as the outside casing because of its imperviousness to the elements, its ductibility and its strength. The name of Frederic August Bartholdi as the designer of this statue will live as long as the statue stands. A boat makes hourly trips from the Battery to Bedloe's Island, and in a single day 10,728 persons have made the trip, the average being around 3,000. Nine out of every ten of

(Continued on Page 32)



## Sons and Daughters of Mueller Employes



Upper row, reading left to right: Miss Jane Hawkins, daughter of Mr. and Mrs. Orville J. Hawkins. Mr. Hawkins is head of the Gas Division Sales Department. Miss Elizabeth Hunt, daughter of Mr. and Mrs. Roy Hunt. Mr. Hunt is connected with Plant 2. Miss Berenice Bixler, daughter of Mr. and Mrs. John A. Bixler. Mr. Bixler is connected with the Sales Department. Miss Georgette A. Robinson, daughter of Mr. and Mrs. Ward Robinson. Mr. Robinson is connected with the Engineering Department.

Lower row: Jack Enloe, son of Mr. and Mrs. W. S. Enloe. Mr. Enloe is paymaster. Orville J. Hawkins, Jr., son of Orville J. Hawkins, mentioned above. Jack Rubicam, son of Mr. and Mrs. C. E. Rubicam. Mr. Rubicam is in the Tool Department. Everett Pippin, son of Mr. and Mrs. Marion Pippin. Mr. Pippin is at the head of the Tool Tempering Department. Walter Pritchett, son of Mrs. Elsie Hart of the Cost Department.

### Each Gets Ten Dollars

The nine young folks pictured above are sons and daughters of Mueller employes and are recent graduates of the Decatur High School. In accordance with a company custom of some years standing, each of these graduates receives a graduation gift of \$10.00. The gift was originally given in the expectation that the recipient made it the nucleus of a savings account, but of course, there is no hard and fast rule in regard to this. We feel that readers of the Record will join us in the thought that this is a fine looking bunch of boys and girls and the company, the Record, and all their friends join in wishing them a happy and successful life.

It is said that 290 people are now living on Robinson Crusoe's island. We rise to a point of order. Do they still have their Friday down there?

Virtually, there are only four countries not under white control. They are China, Japan, Abyssinia and Turkey.

### ALWAYS SOMETHING NEW

New suspenders do not require buttons. Clasps adjust to the trousers as one's anatomy dictates.

A new automatic separator for compressed air is said to remove all dirt, oil or water and deliver clean, dry air. It operates only when air is being used.

A new tread design for tires is said to be both non-skid and noiseless.

Of still greater interest to autoists is the new tube which can be run flat without being cut into ribbons. There is another tube incorporating new pucture sealing principles and light enough for use on the smallest cars.

A new oil for use when breaking in cars which produces a perfectly running motor and permits higher speeds while breaking in the car.

There is now a frameless bronze fly screen for double hung windows. Screws at top and bottom to secure it. There is a device at the bottom for adjusting the tension.

Bad news for sniffing dogs. A new compound in tube form is offensive to Fido and his friends, but unnoticeable to human noses. Squeeze it around trees and shrubs and Fido takes the hint and trots away.

There is a new dual purpose radio for household or automobile use. It can be used on the front or back seat of the car.

A two speed transmission is built into the pedal assembly of bicycles. A small lever enables the rider to shift gears instantly.

A new electric unit built like a hand gun emits from a nozzle instantaneous concentrated heat. It is offered for garage use for thawing radiators, drying spark plugs, etc.

## WEST COAST FISHERMAN



Here we have Emmett Reedy, formerly in charge of the plumbing division in the Decatur factory, now superintendent of the Mueller Co. Pacific Coast Factory, with a string of fish. He sent a snap shot back to show Lake Decatur fishermen what one may do with rod and line in the Pacific Ocean and mountain streams. "Steam" Bill Ferry and "Spark Plug" Stille sniffed disdainfully and suspiciously without making comment, but Superintendent Roarick came right out with what he thought:

"You can do a lot of great things in California, but Emmett Reedy can't make me believe that you can catch those big fish in an oat field. My guess is that they were caught in a fish peddler's wagon with about fifty cents."

## SCHOOL FOR MAYORS

A small country school, located in the southwest corner of Allen county, Kansas, enjoys a somewhat unusual reputation of producing competent men for the office of mayor. At the present time three men in different Kansas towns hold the position of mayor. All of them studied their "readin', 'riting, and 'rithmetic" in Cottage Grove School referred to.

They are: Mayor Watson Stewart, of Chanute; Mayor Harmon Hobart, of Iola; Mayor J. W. Braucher, of Humboldt.

The first two named were classmates and cousins. Mr. Braucher, who was younger, was a later pupil.

The original stone building in the district was built in 1870. The school was within easy walking distance of the homestead staked out by Stewart's father, Capt. Samuel J. Stewart, in 1856. Captain Stewart was a member of the first territorial legislature and served in both legislative houses after Kansas was admitted to statehood. The stone building was replaced with a modern school about ten years ago.

(Continued from Page 30)

these visitors are from outside of New York. Bedloe Island is a government army post. Fort Woods is located there. The island is now officially known as Liberty Island, but the public generally cling to the old name.

## TWENTY-EIGHT DAY MONTH

To the experts who wend their way through stacks of statistics, the five-week and four-week months as well as other traits of the prevailing calendar provide annoying obstacles, says the United States News.

Last summer, when the NRA was just getting under way, a number of Federal economists adopted a four-week month, 13 to the year, as a practical way of measuring the progress of industry. Impressed by this, some 40 industries have adopted the 13-month calendar for their statistics.

At that time, few industries had adequate systems of gathering production and cost data and other facts. Codifying by the NRA, however, has led to creation of fast fact services in most industries.

Among industries using the 13-month calendar are cotton textile, wool textile, silk textile, fabricated metal products, men's clothing, photographic manufacturers, automotive parts and equipment, and corset and brassieres. More than 700 companies are running on a 13-month basis.

Boss: Mike, I'm going to make you a present of this pig.

Mike: Sure, an' 'tis just like you, sor!

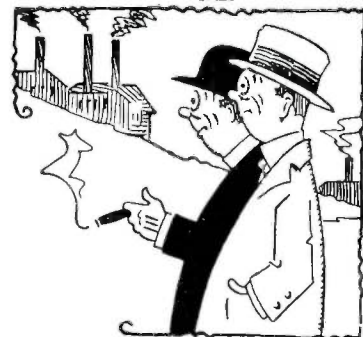
And if someone asked us to work the word Apostle into a sentence we would say, "Have you got apostle post package there for us?"  
—Lite.

A helm is a little thing but it governs the course of the ship.

A sound conscience is a strong wall of defense.

Hasty climbers have sudden falls.

## PUBLIC UTILITY REGULATOR



"If I could get at the Gas Company I'd make 'em change their tune."  
"From long to short meter, I presume."

# STYLES

*may Change*

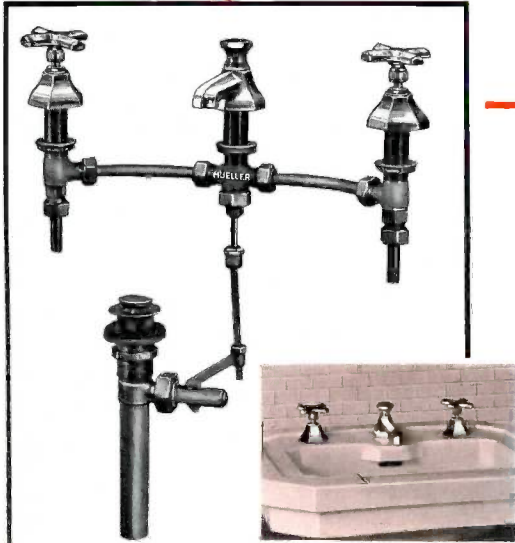


#### Years of Service—negligible repairs

"In the latter part of 1921 we installed 470 Mueller Self-Closing Lavatory Faucets, two in each of 235 rooms in the Rialto Office Building. I have nothing but the highest praise for the durability and serviceableness of these faucets. During these thirteen years of constant use the replacements or repairs that have been necessary have been minor, and the total cost would not equal the cost of one faucet, which is the best recommendation I can make."

(Signed) E. N. HART  
Manager Rialto Office Bldg., San Francisco

*—but Quality lives on*



### MUELLER Quality— *at a reasonable price*

The new Mueller Art Craft Staple Line is strictly in key with the times. It offers richness of finish and design at a reasonable price that makes it popular everywhere. A typical Lavatory Combination is illustrated above. Ask for new circular covering an ideal line of Art Craft Staple replacement units for sinks, lavatories and bathrooms.

**Y**OUR experience has shown you that there is more than one satisfactory *design* for a faucet—but only one way to make a GOOD faucet.

Throughout America there are examples of this—Mueller Faucets that have seen twenty to thirty years of service with an almost unbelievably low maintenance cost. They lack the shining Chromium and modern design of modern Muellers, but the old Muellers and the modern Muellers have one thing in common—that uncompromising craftsmanship without which good design is meaningless.

In this age when sharp competition has too often induced hurried methods and skimping of materials, Mueller Faucets, combining modern design with old-time thoroughness of construction, are the sound answer to all faucet requirements.

See the *old* Muellers—hear the story of their performance from those who have lived with them. Then consider the fact that *modern* Muellers are made by a concern that has never deviated from its high standards. That will be your *final* reason for recommending and installing only Muellers.

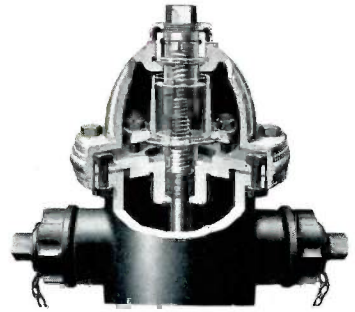
MUELLER CO., Decatur, Illinois

Factories: Decatur, Ill.; Chattanooga, Tenn.; Los Angeles, Calif.; Sarنيا, Ont.  
Branches: New York and San Francisco

# MUELLER FAUCETS

DEPENDABLE SINCE 1857

*At last...*



*... a fire hydrant that is*

## **ALWAYS READY**

Just a simple change—but it marks one of the greatest advances ever made in fire hydrants. It ends the task of oiling hydrant after hydrant—a job that must be done if fire hydrants are to be *ready always*—a job too often neglected—*until too late!*

This simple change is illustrated in the close-up detailed above. It is the new and exclusive dry-top, self-oiling feature of the new improved Columbian Fire Hydrant. The operating stem is literally bathed in oil, and an oil film is forced over other parts requiring lubrication each time the valve is closed. This special Columbian Lubricant flows and lubricates perfectly at any temperature down to 46 degrees below zero.

A hydrant so LUBRICATED *is always ready.*

There are so many additional features to the Improved Columbian Hydrant that you will be well repaid for asking us for details.

Columbian Gate Valves have also been greatly improved.

Any Mueller or Columbian representative carries working models of Hydrants and Gate Valves. Ask for a demonstration or write us for new Bulletin W-34.

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FIRE HYDRANT *and* GATE VALVE

