

MUELLER RECORD



JUNE • 1951

MUELLER LINE STOPPER FITTINGS

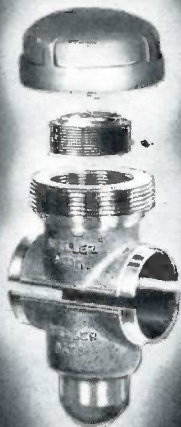
for use on
STEEL, CAST IRON or COPPER GAS MAINS
with HIGH or INTERMEDIATE PRESSURE



WELDING TYPE FITTING
FOR STEEL PIPE



MECHANICAL JOINT TYPE FITTING
FOR STEEL OR CAST IRON PIPE



SOLDERWELD TYPE FITTING
FOR COPPER PIPE

Mueller Line Stopper Equipment and Fittings permit you to make a positive shut-off with absolute safety and without interruption of service when working with high or Intermediate Gas Pressures. These Fittings are furnished as split units, ready to place over the pipe and either weld, bolt or "Solderweld" to the desired position. No cutting of the pipe is necessary to install them. For example you can:

EXTEND DEAD-ENDS - - -

No interruption of service . . .

Any present Dead-End can be extended and no special provision need be made for extending Dead-Ends in the future. You merely install a fitting at any time, stop off the line through the fitting, add the extension and turn on the service. The Fitting is Double-Sealed and remains in the line.

MAKE LATERAL CONNECTION - -

No interruption of service . . .

Any type of Lateral Connection may be made without the use of an expensive valve. Just attach a Fitting to a short length of pipe and weld the pipe to the main and drill through it into the main. With a Mueller Rubber Stopper the Fitting is then used as a valve while the work is being completed. Removing the stopper admits pressure to the completed lateral. The only capital investment is the Fitting—not an expensive valve.

ISOLATE A SECTION OF LINE - -

No interruption of service . . .

Any length section of line can be repaired or replaced by using two Fittings with the Mueller By-Pass Rubber Stoppers that serve as valves while By-Passing around the isolated section. When the work is completed, all material except the Fittings is salvaged for future use. Learn more about this Time Proven procedure. Write for our Catalog No. 50 that will soon be ready for you.

MUELLER CO.

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MUELLER RECORD

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HERMAN E. JACKSON, Editor

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Just Between Us...

Summer time is fishing time—or camping time. Camp! What magic that word holds for the many who love God's great outdoors. Camp—the place to pit your skill against the forces of nature and defy them to keep you from having a wonderful time. The spot where the magic of a campfire lures, where comradeship, under the spell of glowing embers and soft music from the throats of the campers, ripens into lifelong friendships. Yes, camp offers a glorious adventure for young and old.

But it isn't all romance and serious stuff. There is the humorous side of camp life, too. Like the time my daughter had a run-in with the vagaries of life in the open. She had joined the Girl Scouts the very day she was ten years old. And for her the highlight of the year was the troop camp each summer. By the time she was twelve she had learned to blow the bugle and had been

(Continued on Page 20)

Gas Lighting For Trains

THE ILLINOIS CENTRAL Railroad is celebrating their 100th Anniversary this year. They are giving the event quite a bit of publicity. I read with interest some of the history of this progressive railroad. Today's modern trains are a far cry from the trains run in the early days of railroading. I found myself thinking back to the trains on which I used to ride when a boy. Perhaps they were noisy, dirty, and poorly lighted, but they were the best transportation in their day.

The way the early trains were lighted intrigued me. The popular interurban or traction car was electrically driven, and so could have electric lights. But the steam train boasted no such luxury. Most of the early trains carried oil lamps in the passenger cars. These could upon occasion sputter and smoke, and once the lamp chimney was blackened, little illumination was provided.

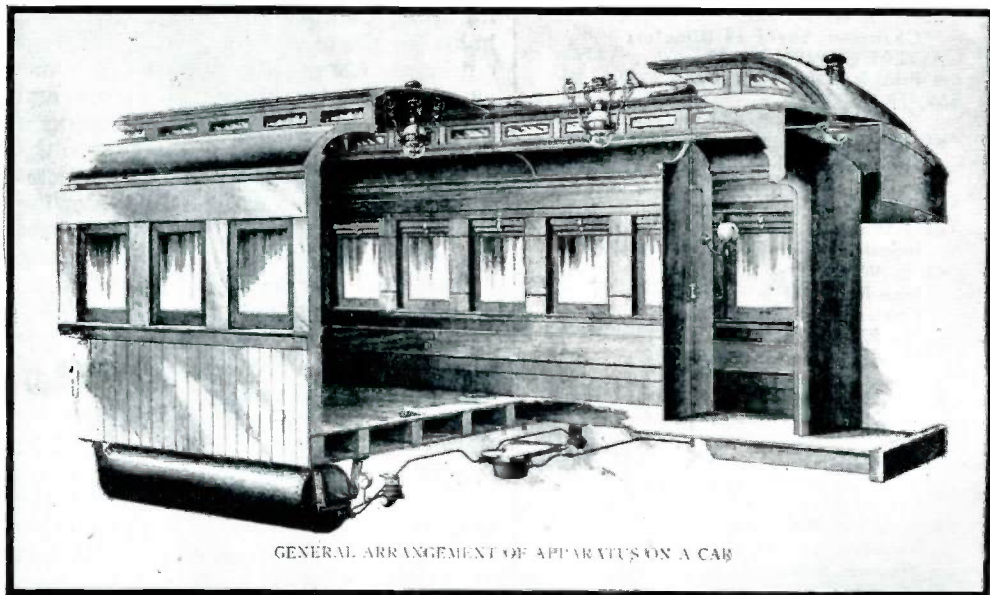
And then came gas lights. The gas first used in railway cars was Pintsch

gas, which was named after its German inventor, Richard Pintsch. It was not what we commonly call "bottled gas," since it was not a liquid gas. It was a compressed gas made by the destructive distillation of oil. It was cracked from petroleum in a furnace at a temperature of 900° C. This produced a fixed gas which did not liquefy when compressed. A special washing process removed the tars from the gas. Pintsch gas was very good for lighting purposes as one foot of this oil gas was equal to the illuminating power of five feet of coal gas.

Gas Carried In Holders

When this was compressed into tanks or "holders," as they were called, gas lighted trains were then possible. These holders were from 16 to 20 inches in diameter, and the length varied from six to nine and a half feet. It was found practical to fill these tanks to a pressure of ten atmospheres. That is, if the holder had 100 cubic feet of volume, 1,000 cubic

Cut-away view showing storage tank, piping, and lamp arrangement for lighting a railway coach.



GENERAL ARRANGEMENT OF APPARATUS ON A CAR

feet of gas was forced into it. Most railroads adopted standard sizes of holders, and added more or less tanks in accordance with the light requirements of each car. In any case the amount of gas carried was fifteen to twenty per cent more than the computed consumption of the car. This was to allow for delays and other difficulties that might be encountered. The tanks were usually fastened underneath the car where they would be less conspicuous. The accompanying illustration shows one such installation.

When the changeover to gas lights was first made, the oil lamps were replaced by flat-flame burners. In my boyhood days we called them "governor" burners. They produced a yellow light, and flickered constantly because of varying pressures in the main or the fickleness of the wind through an open window. And always there was the ever present danger of fire.

In looking over the pages of a catalog put out in 1908 by The Safety Car Heating and Lighting Company of New York, I saw their recommendations. In the words of the catalog, "In cars already built, it is found best to replace each oil lamp with a four-flame gas lamp. This gives more light to each car, but that is desirable, and more is expected of gas than of oil."

Later the Welsbach burner or incandescent mantle was perfected and these quickly replaced the flat-flame lamps. It was found that with the new mantles that the illumination could be increased three-fold. At the same time, these mantles consumed but two-thirds the amount of gas used by a flat-flame lamp. A single mantle lamp was used to replace each flat-flame burner. Yet the car was lighted better.

Placing Of Lamps

The average coach (first class) had five or six center lamps. They were spaced not over nine feet apart to give sufficient illumination. If the end lights were near the doors, the toilets were built with glass tops to eliminate the need of bracket lamps in them. End platforms carried a vestibule lamp. Second class coaches carried fewer center lamps.

Dining cars required center lamps op-

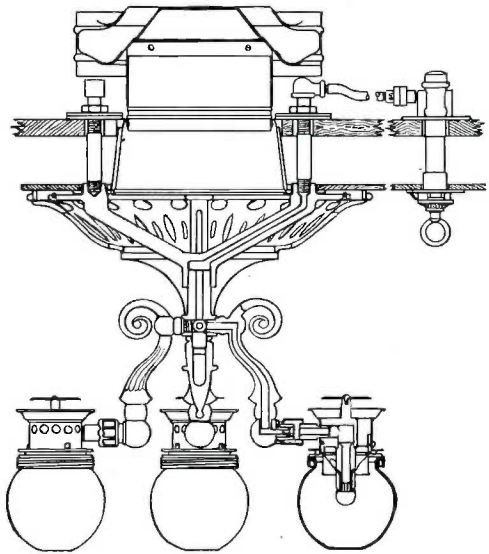


Diagram of ceiling fixture fitted with four mantle lamps.

posite each table. For the first class trains the center lamps were placed between tables and a bracket lamp was mounted over each table. Bracket lamps were used in the kitchen, toilets, and long hallways. Postal cars had the center lamps bunched and over the letter table and cases. A single lamp was enough for the storage end of the car. Sleeping cars had center lights opposite each berth section. In parlor cars they were six to eight feet apart. Smoking rooms and drawing rooms had center lamps.

Quantity Of Gas Used

The amount of gas used was important when computing the size of holder needed. The single flat-frame lamp burned three-fourths of a cubic foot of gas per hour. The vestibule lamp with two flat-frames consumed one cubic foot. The center type with four flat-frames required three cubic feet. In contrast, a small mantle lamp needed but eight-tenths of a cubic foot per hour. A large mantle lamp burned two cubic feet. With this information and knowing the number of lamps in the car, it was easy to estimate the holders needed. Except for the mail cars, few lamps burned throughout the entire period of darkness.

The lamps themselves were very orna-

(Continued on Page 6)

SNAKES ALIVE!

SPRING RAINS ARE OVER and summer has set in. New housing is going up in the sparsely settled districts. Water companies are extending mains and running services. Gas companies are building miles of new transmission lines. Many farm taps are being made. Much of this work is being done in open territory which isn't too far from being as nature made it. Wherever there is tall grass, brush, rocks, swamps, and other suitable cover one will find snakes.

Perhaps you will not call snakes an occupational hazard, but the danger is there if you are working in snake country. So we wish to discuss here the varieties of poisonous snakes and how to recognize them. And what to do if bitten by one of them.

Because of popular misconceptions about snakes, many people are afraid of all snakes. For that reason it is still a common practice among many people to kill every snake they see. Actually this is very foolish. The snakes are the farmer's friend. They eat snails, worms, insects, mice, rats, and gophers.

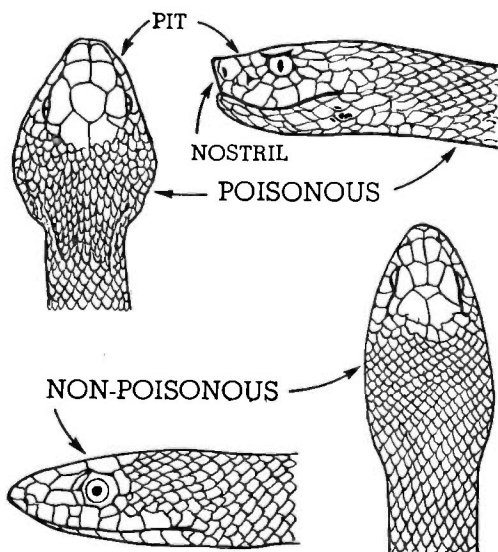
Folks still believe that the forked tongue of a snake is used to poison his victim. Many think that certain kinds have "stingers" in their tails. A horse-hair rope laid around a bed on the ground will keep snakes away. All snakes are slimy. Of course, these superstitions are not true. When one substitutes knowledge for ignorance, fear of snakes will vanish.

Now we do not mean that you should not be afraid of poisonous snakes. We mean that you should not fear all snakes. Just ignore the harmless ones, and have a healthy respect for those you cannot identify. Since there are but four main types of poisonous serpents, it is logical that not every snake you will see will be dangerous. Your editor has done a lot of tramping and camping in the woods, and has seen but one poisonous snake outside of a zoo—a copperhead.

Know The Difference

According to authorities it is fairly easy to tell the poisonous variety from the harmless ones. In general, the head of a non-poisonous snake is blunt and round. From above, the lines of the head sweep back into the body with little to separate the head from the body. The pupils of the eye are round. The little pen sketches here will show the differences.

The poisonous snakes, so the snake book tells us, are flat on top of the head. When viewed from above, the head has a triangular shape somewhat like that of an arrowhead. The back part of the head is much wider than the body. The eyes set up close to the flat part of the head. The pupils of the eyes are elliptical, like those of a cat, except in the



coral snake where they are round. This is a good indicator. Another sure sign of danger is that these snakes have a pit or depression between the nostril and the eye. For this reason they are called pit vipers. These are false nostrils and have little use. If you are close enough

to see these pits or examine the pupils of the eyes you are much too close for safety.

Snake men say that if you want to examine a snake at closer range, a long pole with a fork or Y on the end will help. Pin down the snake just back of the head with the fork. But be careful! They wriggle out easily if very large. All snake men that we have talked to wear high leather boots. This is because the greatest danger is below the knee. Snakes spring from the ends of their ribs, and usually from a coiled position.

FANGS ON A RATTLESNAKE



Therefore no snake can get more than one-half to two-thirds of his body off the ground when he strikes. Actually, most snakes will crawl away if given a chance. They never advance or make hostile movements of attack. But if the poisonous ones are stirred up, they will attack in self defense. At close quarters their attitude, especially with rattlesnakes, spells one word—BEWARE!

Four Poisonous Varieties

The copperhead has vivid markings resembling an hourglass. It is hazel brown in color with the crossband markings a rich chestnut brown, giving it a kind of copper appearance. They rarely exceed three feet in length. They range from central Massachusetts to northern Florida. Westward to Illinois in the north and to Oklahoma and Texas in the south.

The water moccasin is often called the cottonmouth because of its habits when

surprised. It draws its head back and opens its mouth wide ready to strike. This reveals the white mouth parts. This snake is dull olive or brownish color. The markings are indistinct in a mature snake. It is a thick-bodied reptile with a short, blunt tail. It is one of the largest poisonous water serpents in the United States. It will average four feet in length with a body $2\frac{1}{2}$ inches in diameter. It is found from Virginia to Florida. Westward they are seen as far as southern Illinois and in the south they are found as far west as Texas.

The rattlesnakes are more numerous, snake books listing sixteen distinct species. Nearly every state has one or more varieties. Size varies with the species, running from 17 inches up to an average of six feet for the diamond-back rattler. The colors may vary from brown and gray to dull yellow or pink. The markings vary from crossbands and blotches to well defined diamonds. Positive identification is assured when the rattle is seen or heard. The rattlesnake always warns with his rattle before he strikes.

The coral snake is the most beautiful of all the snakes. From available information we learn that these are of small to moderate size—28 inches being an average. They are ringed with scarlet, yellow, and black bands. The pupils of the eyes are round and not elliptical, and the head is blunt but flat. There are imitations among the non-poisonous serpents, notably the scarlet king snake. Unless you are sure, avoid all similarly colored snakes. The best means of identification is in the bands of color. In the coral snake the red and yellow bands touch one another. A good catch-phrase to remember is: "Red and yellow—kill a fellow." In the harmless scarlet king snake the red and black bands touch one another. The phrase to remember here is: "Red and black—friend of Jack."

Coral snakes are found in the southeast from North Carolina to Florida and follow the gulf states as far west as Texas. They range up into the Mississippi valley states as far as the Ohio river.

The coral snake has fairly short, permanently erect fangs. But their venom is deadly. It acts upon the nerves. One writer says that as many as 50 per cent of these bites are fatal. In the three

other types of venomous reptiles the fangs are long and curved. They fold back into the mouth and are raised when striking. The two fangs are hollow or grooved, which enables them to carry the poison from the glands above into the flesh of the victim.

Treatment Of Snake Bite

Every line crew working in snake country should carry a snake bite kit. This consists of a razor blade or special knife, a rubber tube, a suction cup, and an antiseptic. A bite from a non-poisonous serpent is not serious and if the skin is punctured, the wound should be treated like any other cut or scratch. If nothing happens within ten minutes you are safe.

Snake experts who have dealt with snake bites say that with the venomous kind the first aider must work fast. A burning is felt within three to five minutes, and within ten minutes swelling begins. The bite is readily identified by the two deep holes punched by the fangs. Quickly sterilize the skin around the wound and also sterilize the razor blade. Squeeze the skin and make an X-shaped cut on each fang mark. Do not let the victim watch what you do. Make the cuts one-quarter inch long and one-quarter inch deep. This starts bleeding. Be careful not to cut an artery. Tie the rubber tubing one and one-half to two inches above the fang marks to stop swelling. Tie just tightly enough to prevent the blood in the veins from running toward the heart. But not so tight as to stop the artery from flowing. Apply the suction device immediately and pump the blood from the cuts. Continue this for at least 20 minutes out of each hour. In between suction periods keep wet, antiseptic compresses on the wound to keep it open and draining.

As swelling progresses, move the rubber tube to upper edge of the swollen area. More X-shaped cuts may be necessary. Most first aid books recommend that you loosen the band briefly every fifteen minutes to restore circulation. But not so much as to permit poison to be carried farther into the body. Of course, a doctor should be sent for. He will bring the proper anti-venom serums. Always treat the patient for

shock as well. If the victim must be transported, keep up the treatment.

Here is a case where an ounce of prevention is worth a pound of cure. A little caution as to where one walks, and especially as to where one puts his hands in climbing rocky areas is all that is needed. Proper clothing helps. If canvas or leather leggings are used, be sure to include high-top shoes. Otherwise the ankle region is readily exposed to bites, and most of them occur on the feet. If one is bitten, then prompt treatment plus the use of anti-venom serum as soon as possible, will likely prevent death. But the experience will be painful.

■ ■ ■

Gas Lighting For Trains

(Continued from Page 3)

mental affairs of polished brass. The lamp globes were of glass, either clear or milk white. As I recall them, they gave out a good amount of light. The illustrations show some of the details.

With the improvement of electrical equipment, all trains were eventually lighted with electricity. Each car was equipped with its own generator and storage batteries. The lights were lit by a generator while the train was under way. The batteries were charged at the same time. When the train stopped, the batteries furnished the necessary current.

Wherever there are men with minds there is sure to be progress. No one is content to live in the "good old days" when something better may be had. This is just as true in any business as it was with the railroads and their oil lamps. They wanted better lighting and they got it.

■ ■ ■

Seneca:—

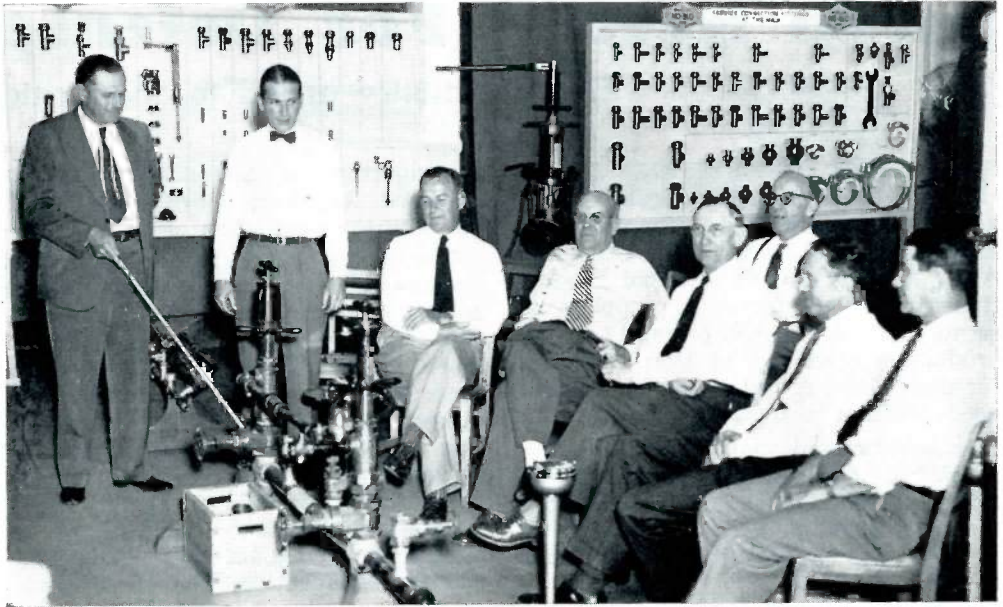
If anger is not restrained, it is frequently more hurtful to us than the injury that provokes it.

Butler:—

A man convinced against his will is of the same opinion still.

Goldsmith:—

In arguing, too, the parson owed his skill, for even vanquished he could argue still.



Left to right: O. H. Fleenor, Gas Distribution Superintendent, NIPSCO, Hammond, Indiana; R. K. Levey, Mueller Co.; M. C. Hanson, Gas Distribution Superintendent, NIPSCO, Peru, Indiana; R. J. Bower, Gas Distribution Superintendent, NIPSCO, Ft. Wayne, Indiana; A. F. Lindeman, Purchasing Agent, NIPSCO, Hammond, Indiana; T. A. Larry, Gas Engineering Consultant, Mueller Co.; Earl Burkhardt, Ass't. Purchasing Agent, NIPSCO, Hammond, Indiana; and R. L. Jolly, Mueller Co., Chicago office.

Hoosier Company Sends Gas Men Here

On May 24 there came to Decatur a group of gas executives from the Northern Indiana Public Service Company of Hammond, Indiana. They came to attend a conference on modern methods and equipment for the safe distribution of gas. Now this may not seem to be anything unusual at the first glance, as many similar groups have been taking advantage of this educational opportunity. But in this instance it was a situation a little out of the ordinary.

In 1936 Mueller Co. marketed their first line stopper fitting designed to permit the making of repairs to a gas line without interrupting the service. That fitting was installed in Hammond, Indiana. This was the first operation of its kind in the entire middle west. Mr. O. H. Fleenor, shown holding the pointer in the picture, was at that time a welder.

It was he who did the welding on this first fitting. It was done under the direction of Mr. T. A. Larry, our Gas Engineering Consultant, who is also seen in the above group. Mr. Fleenor has since risen to the position of gas distribution superintendent of NIPSCO. The two had a good time recalling experiences surrounding the first operations at Hammond.

Today, great advances have been made in equipment. Fittings are no longer exclusively the welded type. Mechanical joint fittings have been developed. The range of sizes has increased so that eight-inch mains can be stopped off with absolute safety. Many operations are now possible that could not have been done with the first equipment available. This gas "short course" is planned to make these latest advances available to any group of gas executives who can arrange to attend. We are happy to have been hosts to the progressive NIPSCO group.

Scrap Needed For Defense

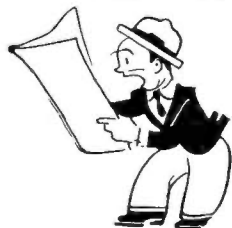
. . . Every industry urged to cooperate

THE FLOW OF IRON AND STEEL scrap to mills and foundries is not keeping pace with needs, according to a statement issued by Manly Fleischmann, Administrator for the National Production Authority. Increased supplies of scrap must be received promptly or the production schedules of iron and steel for the defense program and our civilian needs will not be met.

It is estimated that 32,500,000 gross tons of purchased scrap will be required this year, an increase of 3,000,000 gross tons over 1950. In 1952, an even greater amount will be needed to keep things running smoothly.

For this reason, a special program is being conducted by the National Production Authority to seek out dormant scrap and place it in normal channels as quickly as possible. The cooperation and assistance of business, industry, and agriculture has been requested, for these are so essential to the success of the program.

Dormant scrap is defined as obsolete machinery, tools, jigs, dies, fixtures, and other equipment. This includes items that are broken, worn beyond repair, abandoned, or in need of parts that can no longer be obtained. Water and gas companies should be able to contribute a fair share of scrap to this defense need.



Wow! It really is serious!

We know of an instance where a small 3-inch main was dug up and replaced by larger pipe to take care of increased demands upon the water system. The smaller size was no longer being used although the pipe was in good condition. Such cast iron pipe makes excellent scrap. There should be other sources. Obsolete valves, older type fire hydrant barrels broken in traffic accidents, meter box covers, broken service boxes, and so on. The size of the piece isn't

as important as the amount of scrap collected. Anything added to the total, helps in the production of steel.

The average citizen may ask why steel production is so vitally important. The answer is clear. Peak steel production means that the defense production requirements of the nation will be met with a minimum of disturbance to our civilian economy. If our steel production goals are not attained, increased curtailment of civilian production is inevitable.



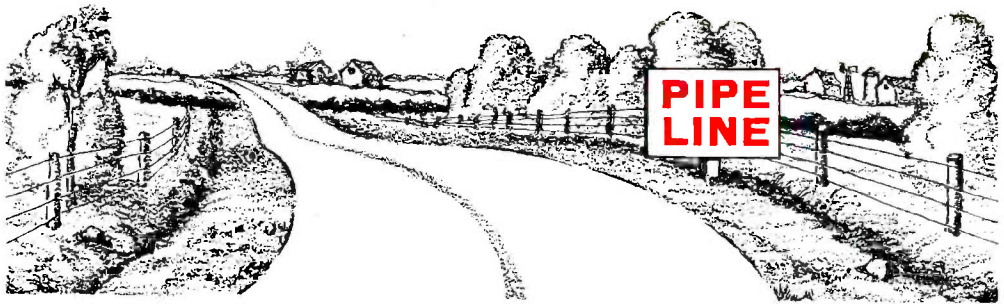
Make a complete survey for scrap.

Steel Plants Expand

Every effort is being made to expand existing facilities for making steel, and to build new plants wherever possible. One of the 200 companies that make up the iron and steel industry today is planning facilities to produce 740,000 more tons of steel per year at Sparrows Point, Maryland. In another plant at Lackawanna, New York, more than a million tons will be made. New Jersey is to have a brand new plant of more than a million tons capacity. At Morrisville, Pennsylvania, another complete new mill is going up. The yearly capacity of this one will be 1,800,000 tons. The traditional steel centers—Pittsburgh, Youngstown, and Chicago—are busier than ever with new coke ovens, new furnaces, and new finishing mills. Other mills in the West and South are showing corresponding increases in their output.

According to Mr. Fleischmann's report, steel production during 1950 totaled 96,700,000 tons. In the spring of 1951 the industry was operating at an annual rate of 104,000,000 tons. By the end of 1951 the capacity should reach 107,000,000 tons. By the close of 1952 total production capacity should be 117,500,000 tons. Over 29,500,000 gross tons of purchased scrap were consumed in 1950.

(Continued on Page 14)



Pipe Line Nearing Completion

A FEW WEEKS AGO we were driving west from Indianapolis on U.S. 36. We were returning from a trip to Indiana. About 18 miles east of Decatur, there was a large sign bearing one large word:

"PIPELINE"

Perhaps there was a detour ahead. We surely did not see anything. Then there was a break in the trees along the roadside, and one could see evidence of the pipeline. Far to each side of the highway ran a long mound of dirt. Workers had already tunneled under the highway. What pipeline was this anyway? Since it was Sunday, no workers were around, so we could not ask questions.

The next day a little inquiry gave us the answer. It was the new line being run by the Texas Illinois Natural Gas Pipeline Company. We had not expected to find the line this far north. It was not supposed that it would be completed until late fall of this year. The new line will carry natural gas into the Chicago area from the Texas gulf coastal region. The pipeline will be 1,331 miles long and is 30 inches in diameter over most of the route. This new project is the culmination of a far reaching program to supply more gas to Indiana and Illinois. Especially to the Chicago area.

The first gas service in the city of Chicago was supplied by The Chicago Gas Light & Coke Company. In 1855, the present Peoples Gas Light & Coke Company was created by an act of the state legislature. This company has had exclusive rights since 1900.

In the years that followed, gas service developed through successive periods

of growth as Chicago's population and its importance as a world center of industry and trade increased.

First Big Step

One of the important milestones was reached on October 16, 1931. On that day the supply resources available to the city were vastly broadened with completion of the first high pressure natural gas pipeline from the Panhandle and western Oklahoma fields.

Since then, the supply distributed in Chicago has been a mixed gas of 800 B.T.U. content consisting of approximately 85 per cent natural and 15 per cent manufactured, by thermal content.

At the end of the last war everyone was expecting a "post-war slump." But it never did materialize. Conditions improved. The demand for gas increased. Coal and oil prices were soaring while gas rates remained the same. More people wanted gas for heating as well as cooking. But there was the problem of getting scarce materials, especially the steel pipe needed, to run a new pipeline. This was eventually licked, and in 1949 a second natural gas pipeline was completed. The new line paralleled the first from the Texas Panhandle and western Oklahoma gas fields, and ran to the Chicago area. One line was 24 inches and the other 26 inches in diameter. The dual, high pressure pipelines had a daily capacity of more than 500,000,000 cubic feet.

On December 16, 1948, Peoples Gas became the principal company in a fully integrated system having its own gas wells in the Texas Panhandle and west-

ern Oklahoma fields, and its own natural gas transmission lines.

Peoples Gas Gains Control

This important change took place when the Chicago company acquired all of the stock of Texoma Natural Gas Company and Natural Gas Pipeline Company of America, which produce and transmit the natural gas supply. Peoples Gas had held a minority interest in these companies since 1931. The pipeline companies supply the greater Chicago region utilities and other customer companies elsewhere in Illinois, Indiana, Iowa, Kansas, and Nebraska.

Peoples Gas thus obtained control over its source of supply and of the fully integrated physical system, which starts hundreds of feet below the earth's surface in the gas fields of the Southwest 1,000 miles away and ends at the appliances of the hundreds of thousands of customers in northern Illinois.

Peoples Gas, reaching out across five states to insure a supply for its Chicago market, thus became the major company in a 1,000-mile dual pipeline system supplying customer companies in an extended area of the Middle West having a population of 6,300,000.

But of more importance to Chicago, acquisition of pipeline companies by this operating utility helped speed plans for construction of a third pipeline, this one to run from the Gulf Coast area of Texas, south of Houston, a distance of 1,330 miles. Necessary approval to build the line was obtained by a newly formed Peoples Gas affiliate, Texas Illinois Natural Gas Pipeline Company in June, 1950, from the Federal Power Commission.

Operations Begin Promptly

In August, 1950, a little more than a month after the FPC granted authorization for the building of the new line, operations were started. Today the line is well along its way, and its completion is scheduled for the latter part of 1951. The initial capacity will be 305,000,000 cubic feet daily, 80 per cent of this to be used in the Chicago area. The ultimate capacity is expected to reach 518,000,000 cubic feet daily. To do this, new gas reserves are to be acquired. Some

72 miles of new line in Texas will be laid in order to carry this additional gas to the system. Also, there will be additional compressor stations for pumping the gas. When completed, the new 30-inch line will more than equal the total capacity of the present dual system from the Texas Panhandle and western Oklahoma region.

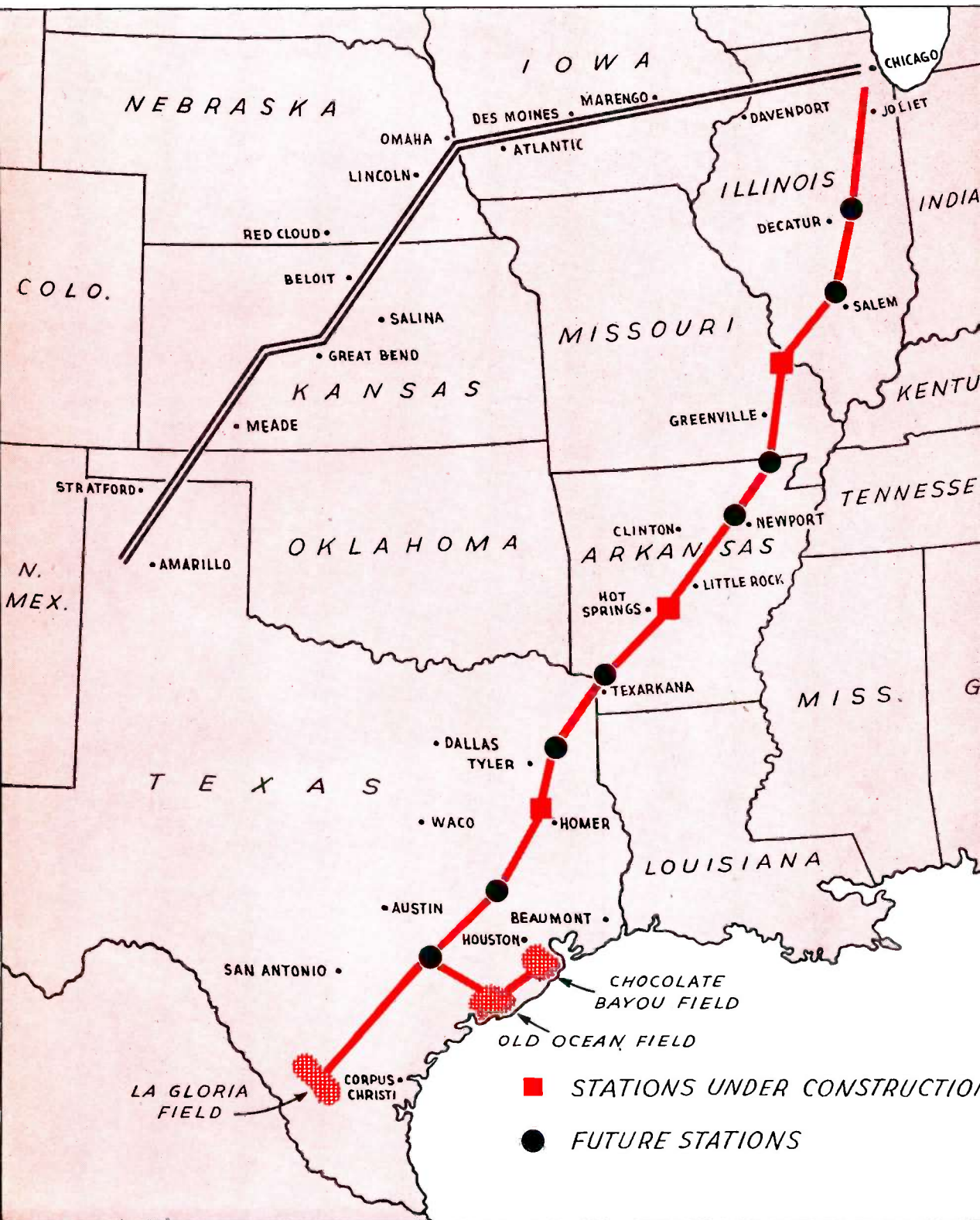
Texas Illinois plans to distribute some of its gas to Illinois communities along the route of its line. We know that a few of the cities near Decatur are to receive gas. Among them are Sullivan, Bement, Salem, and Altamont. Five of the present gas companies which are already customers are to receive additional volumes of gas. Three distributing companies are to be allocated increased daily amounts under FPC authorization.

Some idea of the size of this operation may be gained from the fact that it will be the third and largest line built within the last 20 years to transmit gas from Texas to Indiana and Illinois. The estimated cost of the complete line is well over \$120,000,000.

To supply the current services in the Chicago area requires the following properties:

- 132,000 acres of leaseholds in the Texas Panhandle gas field.
- 230 producing natural gas wells.
- 2,600 miles of field gathering lines and high pressure transmission mains.
- 2 gasoline extraction plants.
- 12 field and main line compressor stations.
- 15 production and distribution stations.
- 17 gas storage holders.
- 3,700 miles of distribution gas mains.
- 18,681,000 feet of service pipe.

When the new pipeline is finished, these figures will increase substantially, for many are on the waiting list for gas service.



The Glorious Fourth and the Flag



The glorious Fourth's a holiday
To celebrate in your manner—
And proudly to the world display
Our glorious Spangled Banner.

The recent antics of our thermometer remind us that July is almost here. And July—as every small boy knows—brings the Fourth, a day for frankfurters and fireworks! Well, maybe not the fireworks, since most states have banned them in the interest of safety and longer life for our children. For most of us it is a holiday to be celebrated with picnics and parades, ball games, bruised fenders, fishing, or just listening to speeches.

★ We call it Independence Day and declare our independence by getting too much sunburn, eating too many peanuts, and getting into traffic jams. We crowd the playgrounds, pack the beaches, and drink prodigious quantities of soda pop.

★ But underneath it all we are conscious that we are celebrating a mighty important event—the birth of our country, a country in which men are free to do as they like so long as they do not harm others. That was a bold ideal only 175 years ago—back in 1776 when the Declaration of Independence was adopted by the Continental Congress. But our forefathers dared to defend it and thus made possible this wonderful land of ours.

★ Remembering this, it is fitting that Old Glory—the symbol of the great and good about our country—should fly in front of every home and public building on this anniversary of the Declaration of Independence and the first statement of the noble faith that:

★ “All men are created equal (and) that they are endowed by their Creator with

certain unalienable rights, that among these are Life, Liberty, and the pursuit of Happiness.”

★ So let us display the flag—and display it proudly—on Independence Day. And let us display it reverently, respectfully—not just draped over a bannister or permitted to trail in the dust. Display it as it deserves to be displayed, so that it can wave proudly before every home in our land.

★ Of course, the Fourth of July is not the only day the flag should be put out in front of your home or business. There is Flag Day, the birthday of the Stars and Stripes. Also Lincoln's Birthday, Washington's Birthday, Memorial Day, Labor Day, and Armistice Day. When the flag is flown from a pole, carried in a parade, or hung on a wall in your office or in front of your home, there is a right way to do it. The National Flag Code gives accurate details to fit every situation confronting any citizen. If you do not know these rules, consult any Boy or Girl Scout, or ask some active member of the American Legion or other organization of war veterans. For most of us, who will likely hang the flag from the upper part of the porch or from a window, it is sufficient to remember that the flag should be displayed flat and not draped. And keep in mind that the blue field with the stars is to the upper left of the observers, whether the flag is hung vertically or horizontally.

★ Yes, every American should be proud to show his true colors, which on this day will be Red, White, and Blue.

THOUGHT OF THE MONTH:



He who parades his own virtues
seldom leads the parade.

Well Driller Says Water Table Is Lowering

THERE IS SOME EVIDENCE that the water table is lowering. This may not be the case in every area, as conditions may be such as to keep it up to the usual level. But in some parts of the country it has definitely lowered. I have my authority from a man who should know. He is John Schull of Selma, Indiana. He is a well driller by trade, and has been drilling wells for some fifty years.

Selma is located in Delaware county, six miles east of Muncie, the county seat. This county is in the northeast section of central Indiana. Way back in 1903 there were many oil wells in this part of the state. There once was a number of gas wells. But the oil and gas have been pumped out, and the little drilling done today is for water.

Mr. Schull, whom I have known a long time, stated that at one time he could bring in a lot of good wells at forty feet. It was easy to find water at that level. Sometimes he had to go to sixty feet. Now he has to go down anywhere from sixty to three hundred feet. His guess is that the average run of the wells is one hundred feet. When asked what caused this lowering of the water table over the years, he said that it was due to increased use of the water supply. Air conditioning systems use a lot of water. Industry uses more water. Farmers who once pumped all water by hand, now have electric pumps and running water in the house and other buildings.

John Schull says that he never guarantees a customer that he will find water at a certain depth or place. He does not profess to know what is beneath the surface of the earth, and has no idea how far down he will have to drill to strike water. There is no "sure thing" in his language.

We recently sent Mr. Schull a copy of our April Mueller Record which con-

tained our story on water-divining. He says that many people still believe in water-witching, and are sure that water underground can be successfully located that way. He has drilled wells where the location of the well was first determined by a hazel fork. He has no faith in this method, however. In fact, he says that he has tried it along with another person. The other fellow's stick would move down, while his would not.

Mr. Schull, who is now seventy-eight, does not do as much drilling as he once did because of a recent illness. He turns over most of the drilling to his son, Gilbert, who has been associated with him in the business for many years. Now he "just goes along." When he began in this business years ago the drilling rig was equipped with a big boiler and a steam engine. There was always the problem of hauling water and fuel for the boiler. Today, his diesel driven rig is a lot easier to handle and more efficient.

Although John Schull has been a well driller most of his life, he owned and operated for years the Selma Gas Company. This supplied gas to most of the homes in Selma. He was on our customer list for a long time. A few years ago he decided to lighten his responsibilities, and sold his interests to the Central Indiana Gas Co. of Muncie.

No, one does not need a college degree to know that the water table has lowered. The continually increasing lengths of cable that must be reeled off the drum on the drilling rig is evidence enough that the water is farther down than it used to be.

■ ■ ■

Be Not Profane

It chills my blood to hear our God supreme

Rudely appealed to on each trifling theme.

Maintain your ranks! Vulgarity despise!

To swear is neither brave, polite, or wise.

You would not swear upon a bed of death.

Reflect! Your Maker may now stop your breath.

—Order of the Builders.

Scrap Needed

(Continued from Page 8)

The estimate for 1951 is 32,500,000 gross tons, or an increase of 3,000,000 gross tons. In 1952 the need will be even greater, and may require an additional 3,000,000 tons of purchased scrap.

What Is Steel Made From?

Steel is composed of approximately one-half scrap and one-half pig iron. Scrap is used to make new steel and iron because it adds to the quality of steel and helps keep the cost down. Because scrap is composed of iron and steel, the refining process is shortened and perhaps made more complete. For every ton of scrap used we conserve approximately two tons of iron ore, one ton of coal, nearly a ton of limestone, and other materials.

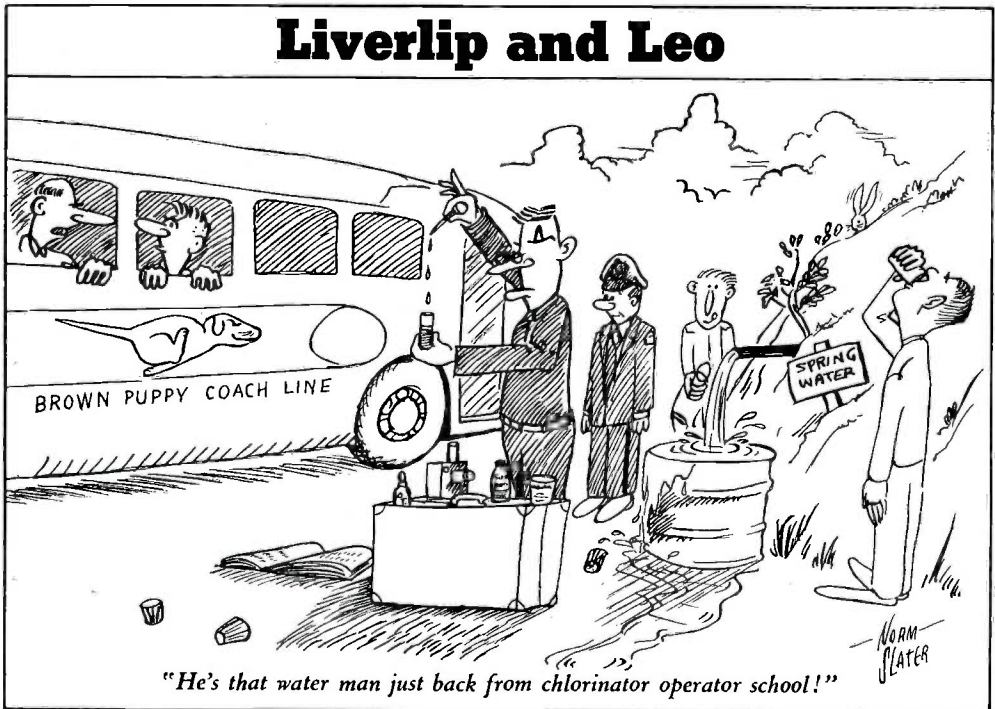
The immediate collection of scrap is so important right now because the steel mills are operating with a dangerously short supply, with some plants on a hand-to-mouth or day-to-day basis. The mills not only require more scrap for immediate consumption, but they also need substantial inventory increases to

carry them through the winter months when seasonal collections fall off.

The Government itself is taking steps to increase the available amount of scrap. There is definite action underway to increase the flow of scrap from Europe and the Pacific area. The Department of Defense is carrying out an extensive dormant - scrap program. All camps, posts, depots, naval shipyards, stations, and naval and air bases are being surveyed. Storage warehouses are being reviewed. Even obsolete ships, which are one of the best sources for scrap, are being appraised for availability as scrap.

Of course, all municipalities, counties, and states will cooperate. Water works, sewage plants, highway departments, and others will do what they can to add to the nation's scrap pile. At the present time the National Production Authority plans no household scrap drives such as the Government sponsored during the

(Continued on Page 17)



THE PUZZLE BOX

We are getting some fan mail from our Puzzle Box readers. We are always glad to hear from them. Especially if a puzzle which we can use is sent along. Below we print a second teaser sent in by Mr. T. W. Boone, who manages the City Gas Company in Olney, Texas.

Salesman and the Clerks

A salesman walked into a hardware store, and said to the clerk, "If you will give me as much money as I now have in my pocket, I will spend \$10 with you." The clerk agreed, and the salesman spent \$10. Then he went over to a clothing store and repeated the offer. The clerk accepted, and the salesman spent another \$10. The third time he went into a drug store, and the offer was again accepted. But this time, when he left the store he was broke. . . How much money did the salesman have when he entered the first store?

■ ■ ■

We show here two more puzzles sent in by Mr. M. Siegel of the E. Keeler Company of Williamsport, Pa. You can try your slide rule on the first one. If you can see through the window puzzler, you are doing better than we did.

Window Puzzle

An architect designed a window four feet square. After it was put in the house, the new owner complained that it let in too much light. So the architect cut down on the light by making half of the window opaque. When this was done he still had a square area of clear glass four feet wide and four feet high. How did he do it?

The Numbers Game

Here is a quickie by Mr. Siegel. What is it that you can buy by paying 25c for 1; 75c for 100; and 50c for 57?

■ ■ ■

This last puzzle was sent in by Mr. Henry Pursley, one of our loyal readers

in Chattanooga, Tennessee. If you can not figure it out then just give the apples away.

The Apple Salesmen

Four boys were sent out to sell some apples. The first boy had 19 apples. The second boy had 29 apples. The third boy had 39 apples. The fourth boy was given 49 apples. They were instructed to sell their apples at the same price. When the boys returned they had all sold all their apples. The odd part was that each boy had the same amount of money. How was this accomplished?

The answers will appear in the August Mueller Record.

■ ■ ■

That Penny Trick

Since we published the penny trick in the last issue there has been a run on pennies at the banks. Our readers are finding that a lot of pennies can be put into one glass. The highest score reported at this writing is 83 pennies, five more than your editor was able to get in before the water ran over. Anyone do better than that?

Answer to April Puzzle

The problem was to see how many different ways the words in the following sentence could be rearranged and still have them make sense.

"The ploughman homeward plods his weary way."

We figured that getting the right answer was no job for an amateur like us. So we called in Dr. Qwert Yuiop, our editorial consultant. With a great deal of pomposity, Dr. Yuiop informed us that by the judicious use of commas, a much larger number of arrangements were possible. So many, in fact, that there is not room enough to print them here. The good doctor was a little dilatory about giving us the answer. But the deadline for our magazine was almost here, so we jerked the papers out of his hand. There were 120 different arrangements on the papers. If any reader gets more than that, please let us know. The doctor seems to think that there are more than 120 ways to write the sentence.

The Executive's Dictionary

or

Gobbledegook Explained

With big business, the government, the military, CMP, the DO's, and other Alphabets taking over Washington, a new language has come into being. Sometimes called "Gobbledegook," it is designed to impress the uninitiated and conceal the ignorance of the initiated. One of our readers gave us this list. Unfortunately, he did not remember where he found it, so we cannot give proper credit to the clever author who compiled this glossary of business terms.

A PROGRAM—any assignment that can't be completed by one telephone call.

TO EXPEDITE—to confound confusion with commotion.

CHANNELS—the trail left by inter-office memos.

COORDINATOR—the guy who has a desk between two expeditors.

CONSULTANT (or expert)—any ordinary guy more than 50 miles from home.

TO ACTIVATE—to make carbons and add more names to the memo.

TO IMPLEMENT A PROGRAM—hire more people and expand the office.

UNDER CONSIDERATION — never heard of it.

UNDER ACTIVE CONSIDERATION—we're looking in the files for it.

A MEETING—a mass mulling by master-minds.

CONFERENCE—a place where conversation is substituted for the dreariness of labor and the loneliness of thought.

TO NEGOTIATE—to seek a meeting of minds without a knocking together of heads.

RE-ORIENTATION — getting used to working again.

RELIABLE SOURCE—the guy you just met.

INFORMED SOURCE—the guy who told the guy you just met.

UNIMPEACHABLE SOURCE—the guy who started the rumor originally.

A CLARIFICATION—to fill in the background with so many details that the foreground goes underground.

WE ARE MAKING A SURVEY — we need more time to think of an answer.

NOTE AND INITIAL—let's spread the responsibility for this.

SEE ME, OR LET'S DISCUSS—come down to my office, I'm lonesome.

LET'S GET TOGETHER ON THIS—I'm assuming you're as confused as I am.

GIVE US THE BENEFIT OF YOUR PRESENT THINKING — we'll listen to what you have to say as long as it doesn't interfere with what we've already decided to do.

WILL ADVISE YOU IN DUE COURSE —if we figure it out, we'll let you know.

POINT UP THE ISSUE—to expand one page to fifteen pages.

THE ISSUE IS CLOSED—I'm tired of the whole affair.

■ ■ ■

Automobile Taxes Big Share Of Car Cost

Did you ever stop to think about what makes a new automobile cost so much? Has it occurred to you that the tax set-up might have a lot to do with it? Unfortunately, it does. About 25 per cent of the delivered purchase price is tax in some form. Some statistician has taken the trouble to figure out the tax bite on one \$2,000 automobile. We give you his figures below.

Income tax on manufacturer (industry average)	\$ 90.00
F.O.A.B., unemployment taxes..	12.00
Transportation tax	2.50
Excise taxes	
Vehicle	77.00
Tires	7.00
Gas and oil	1.00
Radio	6.00
Heater	4.50
Sales tax, vehicle	43.00
Sales and use tax on supplies....	2.50
License plates and title.....	12.00
Dealer's income tax	157.00
Dealer personal and property taxes	80.00
Other dealership taxes and fees	17.00

Total.....\$511.50

(Dealer taxes shown above represent the dealer's total tax liability divided by the number of new vehicles retailed.)

It does not stop here, however. After you get the car your local assessor slaps another tax on you for having it in your possession. You can't win.

Get Out And Dig

For each potato that you eat
Somebody had to dig;
For every ounce of porker meat
Somebody fed a pig.
When genial warmth contents your soul
While flames within your furnace roll,
For every little lump of coal
Somebody had to dig.
For every comfort that you claim
Somebody has to dig.
No matter if you play the game
A patriot or a prig.
So when the call goes forth anew
To follow duty ever true,
Remember, friend, it's up to you—
Get right out and dig.

—Author unknown.

■ ■ ■

Scrap Needed

(Continued from Page 14)

last war. Individuals who have accumulated scrap metal should get in touch with their local scrap dealer.

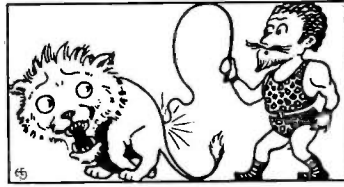
Now Is The Time

To get the scrap metal back in circulation is the aim of the program. But of more importance is the need to get the scrap in NOW! Executives should cut the red tape and get surveys of potential scrap under way at once. As soon as this is completed crews should be put to work wrecking, dismantling, collecting, and sorting out. All dormant scrap should be disposed of as quickly as possible. This, so Mr. Fleischmann tells us, should be done through the normal channels. All scrap dealers are equipped to properly prepare all scrap to the exact specifications of the consuming mills and foundries.

If there are Scrap Mobilization Committees in your community, by all means work closely with them. Appoint a salvage committee to implement the program, and give them power to act. The big thing is to get the scrap in and have it disposed of quickly.

NUTSHELL NOVELS

BY SKIPPER



The Lyin' Tamer

An immense crowd had jammed the tent of Tingaling Brothers Circus. Amid thunderous applause, Monsieur Le Moppe, the famous lion tamer, entered the arena and put his jungle kings through their stunts. Of the twelve lions in the cage, the biggest and tamest was Nero, the pride of the circus.

At the end of the act the Monsieur stepped out of the arena, and twirling his long mustache, said, "Ladeez and gentlemen! I am now about to perform ze most daring and amazing trick ever done by ze human inside ze lion's cage. I am going to put my head inside of Nero's open mouth. I am ze only man in ze world zat has ever done zis trick!"

So saying, he stepped into the arena. The bands stopped playing and the crowd hushed. The Monsieur commanded Nero to open his mouth. The lion obeyed. Then with a graceful bow, Le Moppe bent over and laid his head sideways between Nero's gleaming, sharp teeth. The crowd was breathless till the band broke the spell. They cheered and cheered. The Monsieur was so delighted he began nodding his thanks for the applause, while his head was yet in Nero's mouth. Unfortunately, in making his repeated nods, he was tickling Nero's nose with his long mustache, unawares. And Nero, obeying nature, without any warning—sneezed!

The End.

(Editor's note: Two days later, Monsieur Le Moppe was the headliner in the largest circus funeral ever held.)

Off the .. Record ..

Epitaph

Here lies the body of Jonathan Gay;
He died maintaining his right of way.
He was right, dead right, as he sped
along,
But he's just as dead as if he'd been
wrong.

Wife: "Doctor, just what is really the
trouble with my husband?"

Doctor: "He has a very bad case of
voluntary inertia."

Wife: "Do tell! And here I thought all
the time it was just plain laziness."

This is a woman's world. When a man
is born people ask, "How is the mother?"
When he marries, they exclaim, "What
a lovely bride!" Then when he dies, they
inquire, "How much did he leave her?"

New Bride: "I want a nice, tender
steak, please."

Butcher: "Will round steak do,
ma'am?"

New Bride: "The shape doesn't in-
terest me, just as long as it is steak."



Daffynitions

Stop Sign: A place where you shift to
a lower gear, but keep right on driving.

Cannibal cook: "Shall I boil the mis-
sionary, boss?"

Chief: "Don't be silly. Can't you see
he's a friar?"

A citizen of the big city was walking
along a dark street one night when a
thug stepped from behind a tree and
stuck a gun in his ribs. "Hand over your
money!" he barked. "Or I'll blow your
brains out!"

The citizen promptly replied, "Blow
away, brother. I can live in this town
without brains, but I gotta have money!"

Teacher: "Alvin, I can't read this ex-
cuse from your father very easily. He
doesn't write very well, does he?"

Alvin: "No, ma'am. My pencil was a
little stubby."

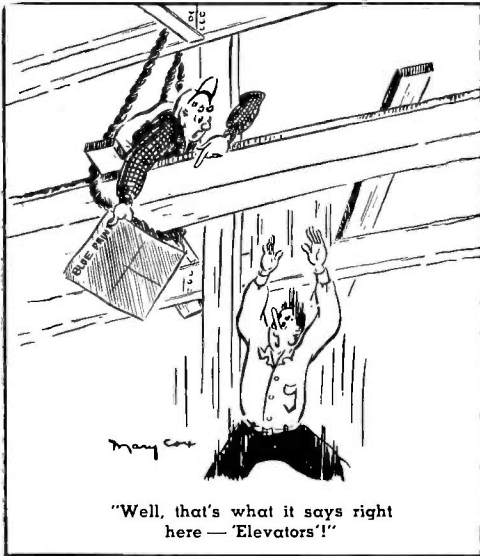
Don't worry about finding your sta-
tion in life. Someone will be sure to tell
you where to get off.

Economy is a way of spending money
without getting any fun out of it.

Salesman: "I represent the ABC Wool
Company, lady. Would you be interested
in some colorful yarns?"

Housewife: "Yeah. Tell me a couple."





Famous Lights

Northern ———. Moon ———. ———
 ning. By the dawn's early ———. ———
 out. Out like a ———. Broadway's white
 ———s.

■ ■ ■

"Look at that crazy fellow crawling
 up the side of that silo."

"There's no silo there."

"Man, that fellow sure enough is
 crazy, isn't he?"

■ ■ ■

Nifty Secretary: "Your wife wants to
 kiss you over the phone, sir."

Busy Executive: "Take the message
 and I'll get it from you later."

■ ■ ■

Singer: "Don't you like my voice?"

Accompanist: "Madam, I've played on
 the white keys and I've played on the
 black keys, but why must you always
 sing in the cracks?"

■ ■ ■

Two ardent disciples of Izaak Walton
 went fishing. After a while one said to
 the other, "Had any luck yet?"

"No," was the reply. "I can't get the
 cork out."

■ ■ ■

An unfortunate citizen was applying
 for relief, and the girl at the desk was
 filling out the questionnaire.

"Do you owe any back house rent?"
 she asked.

He stiffened with dignity. "Ma'am,
 we've got modern plumbing."

Famous Last Words

"Man! This tastes like the real stuff!"

■ ■ ■

New Steno: "I get lots of practice on
 my typewriter now that my husband is
 away. I write him a letter every night."

Old Steno: "Do you use the touch
 system?"

New Steno: "I sure do! I ask for
 money in every letter."

■ ■ ■

Toast: "Here's to my wife and sweet-
 heart. May they never meet."

■ ■ ■

Newcomer: "How much do you pay
 for your bed and board at your rooming
 house?"

Old Timer: "I pay \$6.00 a week for
 the bed, but the place is so dull that I
 get bored for nothing."

■ ■ ■

I went to the drug store for candy;
 I bought a big box—'twas a dandy.

But my girl turned me down

So I came back to town.

As bait for another 'twill come handy.

■ ■ ■

Character is what you are. Reputation
 is what you get caught at.

■ ■ ■

"Last night an old friend of mine
 bored me for three hours telling me
 about his asthma."

"Why didn't you trump him with your
 gallstones story?"

"Darn it, I led with that one."

Just Between Us

(Continued from Page 1)

appointed troop bugler. That summer she was the first up in the morning and the last in at night—the privilege of the camp bugler.

For her, the impressive color ceremonies were the big events of the day. Twenty-four Girl Scouts in uniform stood stiffly at attention and saluted Old Glory in the morning while she played "To The Colors." And in the evening as the Stars and Stripes were reverently lowered, they stood solemn-faced while she blew "Retreat." But not for long. The first two days she did well enough. Then she began to slip. Blowing the bugle began to be difficult. She blew until red in the face. Sour notes came out at intervals or none at all. The Scouts grinned, snickered, and laughed in spite of the mumbled reprimands from the leaders. It was embarrassing for her.

The fourth day was visitors' day, and we went out early. She immediately asked me what was wrong with her bugling. I suggested that the slide might leak air. Perhaps her lips were weak from lack of regular practice. Maybe something had blocked the passage of air. So we went up to her tent to see. She kept it laying on an orange crate "dressing table." I picked it up to blow a few notes. I had been a bugler when I was a Scout, too. I could scarcely blow a note. I grew red in the face. Little air was getting through. I upended the bugle and looked in the bell. Deep down in the brass funnel was a mud-daubers' nest! Each day, no matter how many times she blew the bugle, a wasp had added a little mud. By the time I arrived the bell was pretty well blocked off. A long stick removed the nest, and that night retreat went off in real style for the visitors.

Camp has a way of bringing out the best in a girl or boy. Or the worst. The best possible way to learn a man's character is to go camping with him two weeks. If he is lazy, it shows up fast. If he is a bluffer, you soon learn it. If he is a sponger, it doesn't take long to find it out. And if he is steady, dependable, and willing to carry his share of the load, that comes out, too.

A Bryan Story

The other day I received a fine letter from my good friend, Edwin F. Jackson of Los Angeles. (Nope, no relation at all.) He is a registered Professional Engineer on the west coast. He says that when he saw our cartoon on the manure spreader (P. 18, Feb. issue) that he was reminded of a good tale about William Jennings Bryan.

It seems that Mr. Bryan went deep into a farming county in his campaign for president. The farmers gathered to hear the silver tongued orator. But someone forgot to provide a rostrum for W. J. B. to stand on. So one of the farmers got out his manure spreader, and they boosted the great and good Mr. Bryan up onto it. He opened his remarks with: "I have spoken from a great many different places, but this is the first time that I ever spoke from a Republican platform."

■ ■ ■

Is This A Record?

On Route U.S. 36 running between Decatur and Indianapolis is a long stretch of straight highway over which I have traveled many a time. Beginning east of Decatur at a place called Casner, the road runs 69 miles without the slightest turn. Then it runs into an S-curve and continues another ten straight miles where it encounters the hills that lead to the Wabash River valley in western Indiana. I was told when I moved to Illinois that this 69-mile strip was the longest straight stretch of pavement in the United States. Does any of our readers know of a longer one? We would like to hear about it.

■ ■ ■

Our Cover Picture

June 14 is Flag Day and July 4 is Independence Day. Two great days in American history. Two fine months in which to stir up our patriotic spirit. And to help create that spirit we show on our cover this month a smiling drum majorette. With baton high, she leads the parade of loyal Mueller Record readers. This photograph was taken by the Harold M. Lambert Studios of Philadelphia. Sorry, boys, the studio did not give us her name or telephone number.

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Threading performed after strap bending, assuring no forging distortion or "burn". Threads and straps then heavily cadmium plated

LARGE CADMIUM PLATED NUTS!

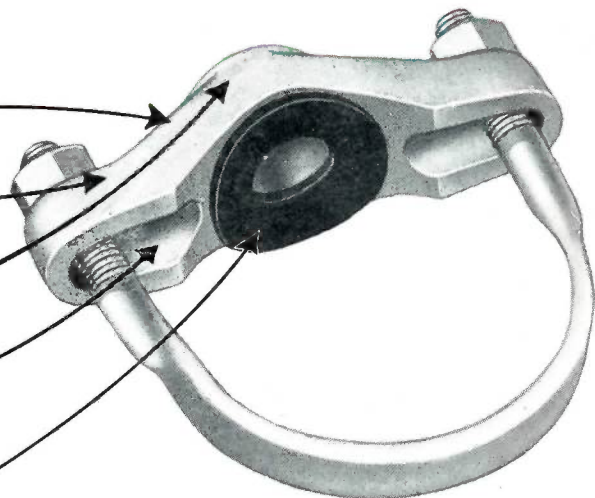
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Gives wider bearing surface—more friction—eliminates loosening of clamp that occurs with round straps

ACCURATE CURVATURES!

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HERE'S THE INSIDE STORY of the

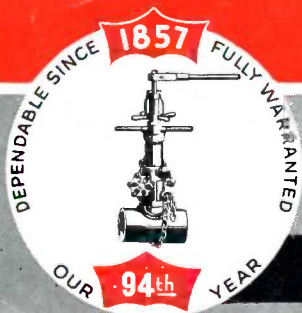
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The *outside* appearance of a MUELLER Fire Hydrant is the visible evidence of its sturdy and rugged construction, but it has many *inside* features that make it outstanding in performance and low maintenance costs.

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