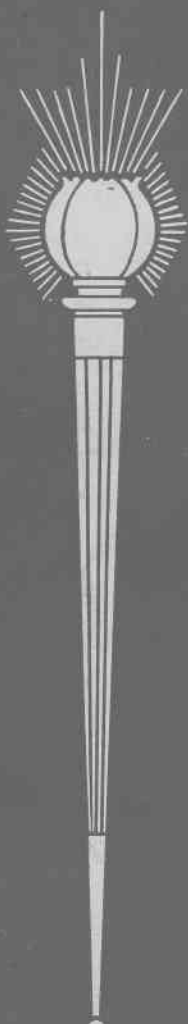
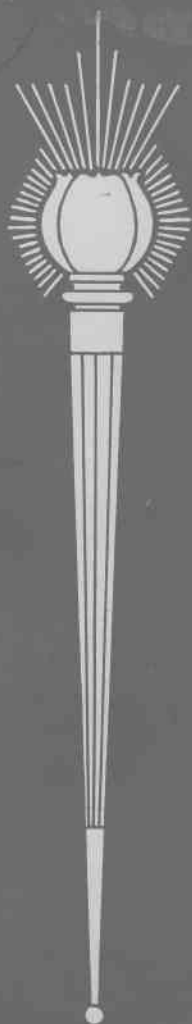


# GAS AND ELECTRIC NEWS



## TELL THE TRUTH

**I**N getting business  
always tell the  
truth. If conditions  
change tell the new truth.  
Only little minds are  
afraid of that  
inconsistency that means  
progress.

AUGUST, 1913

*Published monthly by the*  
**ROCHESTER RAILWAY AND LIGHT CO.**

ROCHESTER, N. Y.

*For the Information of Its Employees*

# GAS AND ELECTRIC NEWS

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Vol. 2

AUGUST, 1913

No. 4

## The Nature and Uses of Explosives

By PHILIP F. STEPHENS



The handling of high explosives can be done with safety when a reasonable amount of care is exercised and due regard given their properties. Familiarity

with explosives often breeds carelessness, resulting often in injury and death. According to data furnished by a well-known powder company, nearly 500,000 people are using dynamite daily in mines, on railroad and highway construction and on other work, too numerous to mention. An authentic record of the accidents resulting from dynamite in 1910 shows casualties of less than  $\frac{1}{8}$  of 1 per cent. Most of these were caused by not using ordinary care in thawing, charging, etc. In a report of the Inspector of Explosives of Great Britain, it is stated that for a certain period 81 accidents were caused by improperly thawing dynamite which resulted in the death of 68 men and the injury of 97. Accidents from other causes 194, causing the death of 52 men and the injury of 216. This shows great danger always present from improper thawing.

Before going into the subject of the handling of explosives, it will be of interest to give a brief discussion on their composition. An explosive is a substance, which under certain disturbing influences enters into a rapid chemical reaction, expansive gases being formed and great heat generated. The theory of action is more readily understood from the following: Coal, wood and similar substances are slowly transformed into gases by burning; water is also changed into a large volume of gas on being heated to temperatures above 212 F. In these last two cases the transformation into gas requires a short period of time, say two or three minutes for a small quantity. With explosives the resulting action is the same, but the change is instantaneous regardless of the quantity.

Explosive substances may be solids or liquids and they are classified as to the nature of the mixture, whether chemical or mechanical. Chemical mixtures are those whose constituents are united by a chemical reaction, and the explosion or instantaneous conversion into gas is produced when it is subjected to a heavy percussion. This initiatory detonation or explosion is usually

executed with fulminate of mercury. In mechanical mixtures the ingredients are usually solids and these are combined by a mechanical process. Detonation is by heat.

Explosives are also classified as high and low. The former can be detonated only by an intermediate agent as a blasting cap or an electric fuse; the action of the detonation is very rapid. Chemical mixtures belong to this class. Great strength and shattering power are some of their characteristics. With low explosives such as blasting powders and other mechanical mixtures, heat is required to bring about the reaction, this is slow when compared with high explosives.

As the oldest known explosives were mechanical mixtures the important members of this group will be discussed first.

**MIXTURES** containing nitrogen embodying oxygen are termed nitrates. These mixtures also contain carbon and sulphur. Gunpowders and blasting powders are the most important examples. The former contains 75 per cent potassium nitrate, 15 per cent carbon and 10 per cent sulphur; the latter 66 per cent potassium nitrate, 15 per cent carbon and 19 per cent sulphur. Sodium nitrate is very largely used in the manufacture of blasting powders on account of its cost being much less than potassium nitrate.

**CHLORATE MIXTURES**—Explosives containing potassium chlorate are considered rather unsafe because of spontaneous or premature reaction. The best known commercial product of this class is Rackarock. It contains 79 per cent potassium chlorate and 21 parts mononitro-benzene. These are freshly mixed before using.

**CHEMICAL COMPOUNDS**—Nitro explosive mixtures are hydrocarbons which have been treated with

nitric acid and when exposed to high temperatures they become very unstable.

Jovite is the best example of this group. It contains nitro-naphthalin, nitro-phenol and sodium nitrate. It is a free running powder, in appearance it is like corn meal. It does not freeze nor has it been found to deteriorate upon exposure to heat. It is water-proof; it has been placed in holes filled with water and exploded without a misfire. After having subjected jovite to the most rigid tests for safety the results show that it is the safest reliable explosive on the market. The gases resulting from its explosion do not cause one to suffer headaches nor other discomforts on inhaling them. When certain vegetable tissues, as cellulose, notably cotton, are treated with nitric acid the combination is a very high explosive. The stronger treatments produce guncotton and the weaker, pyroxylin.

Guncotton is made by soaking cotton or some other form of cellulose, in 25 per cent nitric acid and 75 per cent sulphuric acid for about 24 hours, after which the resulting product is thoroughly washed. For safety in handling and shipping, guncotton is in the first rank. It is exploded by percussion when confined and highly compressed.

When gelatin or glycerin, animal compounds are treated with concentrated nitric and sulphuric acids, the results are nitro-glycerin. In the pure liquid form it burns quietly, but when heated to 356 F. or when subjected to a powerful percussion it explodes, developing gases about 1300 times the original volume of the liquid. These gases in turn expand about 10,000 times the original volume due to the high temperatures generated.

When soluble guncotton is dissolved in nitro-glycerin a light, yellow jelly-like material is produced. It is known as blasting gelatin.

When frozen it becomes very sensitive to shocks. It is best adapted to work in tropical climates.

Dynamite is made by mixing nitro-glycerin with some absorbant as woodfibre, sawdust, woodmeal, kieselguhr (an earth of vegetable fossil remains, or an explosive base of the nitrate class) to make it safe to handle and prevent decomposition and premature explosion. The absorbant is more commonly known as "dope." To-day very few dynamites have an inert base, as kieselguhr, etc., the explosive "dope" takes its place, making it then more powerful and just as safe to handle. Other chemicals are also added as sulphur, potassium nitrate potassium carbonate, sodium nitrate, sodium carbonate, magnesium carbonate.

The strength of dynamite is rated by its percentage of nitro-glycerin, that is 20, 40, 60 and 75 per cent. The freezing temperature of dynamite ranges from 40 to 50 F. At present there are some dynamites in the experimental stage that do not freeze at a temperature above 5 F; and a blasting gelatin that may be set off at 15 F. It is usually made up in paper cartridges about 8 inches long and 1¼ inches in diameter and weighs about 0.6 lbs.

Dynamite is sold under various trade names. Some of the most important are: Atlas Powder, Carbonite, Daulin, Forcite, Giant Powder, Hercules Powder, Horsley Powder, Judson Powder, Nyalite, Red Cross Dynamite, Rendrock, Stonite, Vulcanite, etc.

DETONATORS, a safety fuse is made by spinning a jute yarn about a thread of tightly compressed powder. The yarn is then covered with a heavy coating of coal tar water-proofing compound. When there is one cover of waterproof yarn, this is known as single fuse; when there are two waterproof coverings, double fuse. Some fuses are

further protected by being wound with waterproof tape. For work under water a gutta percha covered fuse should be used.

CAPS OR EXPLODERS are made by a mixture of fulminate of mercury and potassium chlorate or potassium nitrate. A small quantity, depending on the strength of the detonator desired is placed in a small copper capsule. It is then sealed with collodion, or shellac and foil or paper. The remainder of the capsule is left open to receive the fuse.

FUSES are made the same as caps, but have the addition of two small insulated wires leading into the cap. The ends of the wires are bare, and are placed in the explosive material and are about ⅛-inch apart with a fine platinum wire connecting them. The sealing material covers the charge and the remainder of the capsule is filled with some filling material.

Blasting machines are used to fire the blast electrically. Batteries as a rule are very unsatisfactory, because they do not maintain a uniform strength under all conditions such as moisture, rough usage, etc. The two or three pole magneto blasting machine is now almost universally used. It is very reliable even under the worst conditions.

In the transportation of explosives by team or auto truck, the wagon or truck should be thoroughly swept out. The cases of explosive should be closely and carefully piled to prevent their shaking about. If the vehicle has no adequate cover, a canvas should be used to protect the cases from possible rain or sparks. Fuse, caps, electric fuses, blasting machines and metallic tools should never be transported with explosives, but always by themselves. A red flag not less than 4.5 feet long by 1.5 feet wide with the word "DANGER" in letters one foot high on a 6-foot staff should be placed on

the front of the wagon or truck. The driver should not smoke nor be under the slightest influence of liquor. He should take every precaution to prevent an accident. The best driver should always be selected for this work.

Explosives should be stored in a dry, well ventilated magazine. It should be located in some isolated spot and have the protection of high ground about it, if conditions will permit. Grass and weeds should be cut for a distance of 50 feet from all sides of magazines. For ordinary purposes a suitable magazine can be cheaply constructed by erecting a building using 8-inch studs in the walls; the boards on the outside and inside of walls to be 1-inch in thickness. This 8-inch space is then filled from floor level to eaves with loose sand. This acts as a partial bullet proofing. To make it positively bullet proof, erect two lines of 4-inch studs, 14 inches apart and board up as in building concrete forms. This will give a 12-inch space that is to be filled with sand. The exterior of the building and the roof are covered with heavy sheet metal for protection against rain and possible sparks. The windows for ventilation should be carefully protected with screens of fine mesh.

A magazine for small quantities of explosives as 200 or 300 pounds may be built of brick, stone, metal or wood covered with metal and of a size that will be convenient for handling the materials in storage. Magazines should always be locked

when explosives are not being placed in storage or being removed. Only those who are authorized to handle the explosives should be allowed to enter a magazine.

A sign with the words "Magazine-Explosives-Dangerous" should be kept conspicuously posted at all times.

When cases of explosives are opened the work must be done at least 50 feet from the magazine; and the tools used for doing this must be a wooden wedge and mallet. The contents of the case are immediately placed in storage if they are not to be used in blasting at that time.

In opening powder cans, iron or steel tools should not be used, they might strike sparks from the can and thereby, set off the powder. Brass, copper or wooden implements are preferable.

Blasting caps, electric fuses, safety fuse, lead wires and blasting machines are to be placed in a magazine for their express purpose, this to be constructed and maintained with the same care as those mentioned above. Dynamite when cold, partially frozen or frozen does not develop its greatest strength as an explosive, consequently, thawing is necessary. As frozen dynamite thaws, the molecules or minute particles of nitro-glycerin have a tendency to rub against each other; in rapid thawing this action becomes quite violent and an explosion is often the result. It follows therefore real slow thawing is the only and proper method.

To be continued.

### Matthew Harrigan

Matthew Harrigan, of the Line Department, was accidentally killed by electric shock on July 16th. Mr. Harrigan was very popular among his fellow workers, who regret his untimely end. His remains were removed to the family home at Cohoes, N. Y., where the funeral was held.

To his surviving widow and relatives we offer our sincere sympathy.



## Twenty-Six Years With Company

Assistant Superintendent of Electric Power, Mr. Charles Pratt, in a modest way known only to himself quietly observed his 26th anniversary with the Company last month. This event in the life of one of the most popular officials of our organization is too important for us to neglect, and so as best we could we have gleaned a few facts about Mr. Pratt's career without appealing to him in person for all the details.

Mr. Pratt began work in 1887 as an assistant in the installation of the first Edison system in this city. He then assisted in constructing the first underground system known as the "Edison tube." As a result of his constant study and application of the then new electrical art, he was placed in charge of the entire underground system.

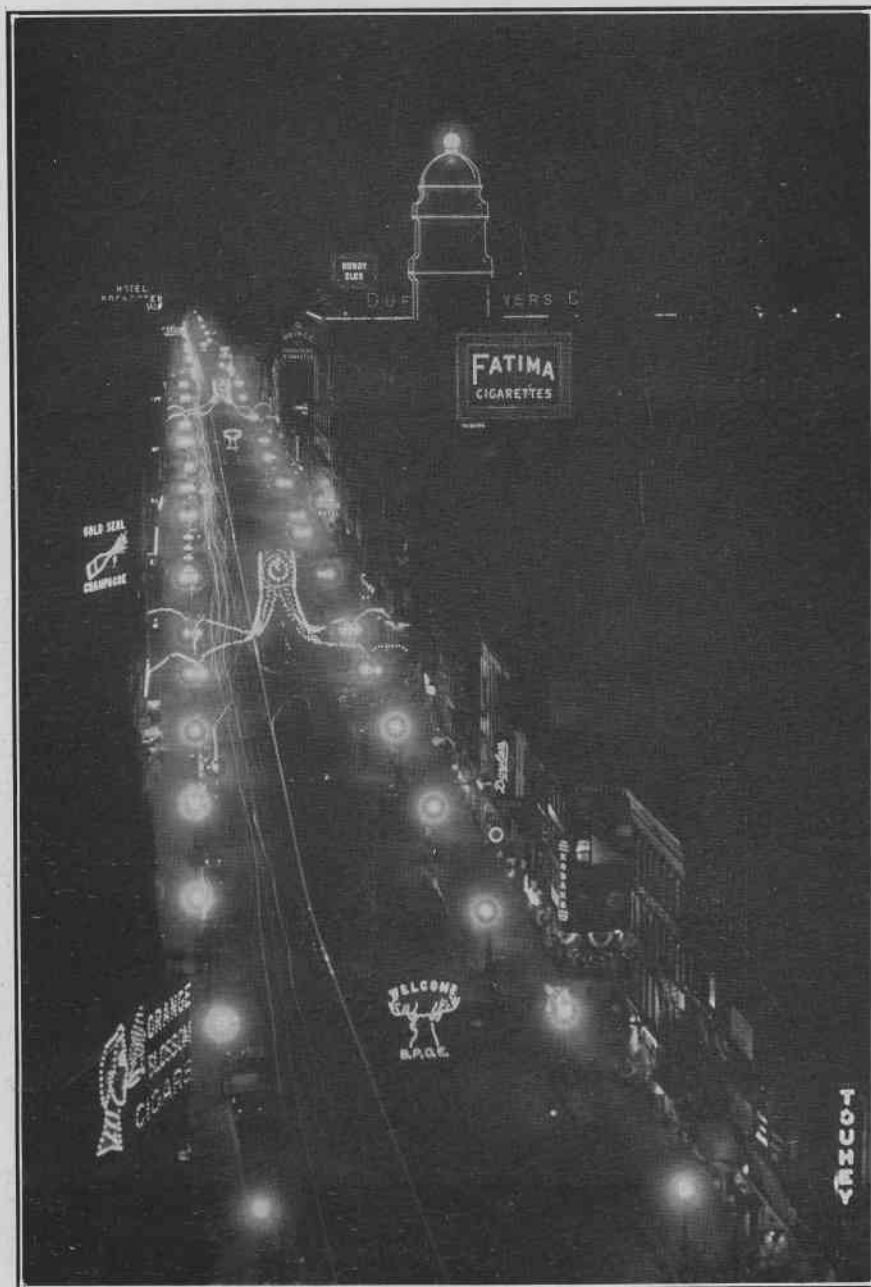
In those days the Company was small, and men like Mr. Pratt had

to have a broader knowledge of this work than to-day, and they had to be thoroughly versed in the work of every department.

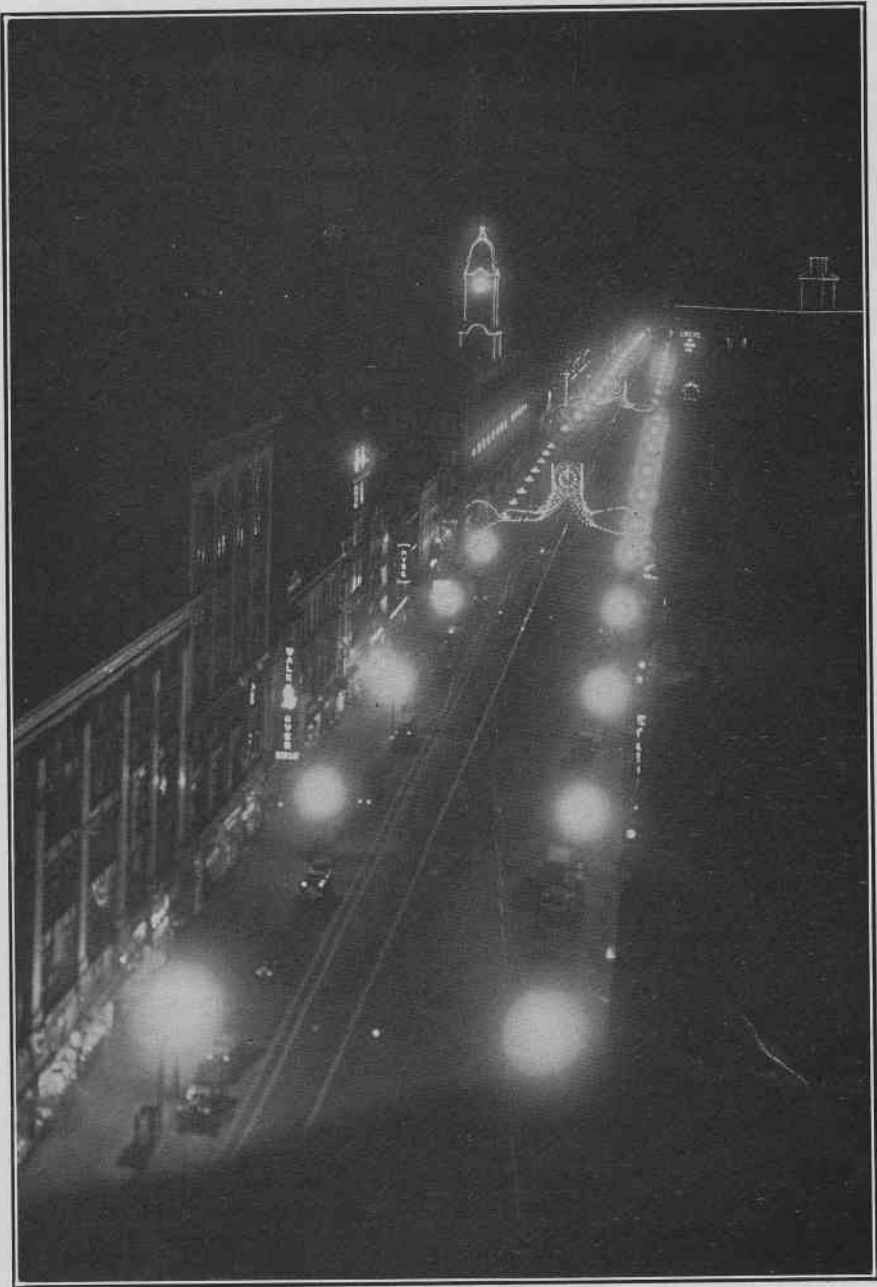
When Mr. Yawger succeeded Mr. Hutchings as superintendent in January, 1909, Mr. Pratt was promoted to the position formerly held by Mr. Yawger. In character, Mr. Pratt is one of the gentlest and most unassuming of men. He is genial, thoughtful, kind, an earnest conscientious worker, beloved by those above him and by the men under him.

Though he has not been in the best of health for the past year or two, his unfailing patience and sweetness of temper is a lesson to all who are physically well.

We wish "Charley" better health and many more years of usefulness among us.



Looking West on Main Street showing illuminations for Elks' convention. New magnetite lights are in foreground. Photographs were taken by Mr. Rockwood from the 11th floor of Chamber of Commerce Building.



Looking East on Main Street, which with its new magnetite lights is now one of the most beautifully illuminated business thoroughfares in the world.



## Our Industrial Engineering Department

By IVAR LUNDGAARD

(Continued from July Number)



According to the installation report issued by our auditing department, the Company has a connected commercial lighting load of 33,000 horse power; a municipal lighting load of 2,800 horse power; a motor load of 25,000 horse power and a little over 1,300 horse power in vehicle charging stations. In addition to this the Company is furnishing power to all the street cars used by the city.

The load factor resulting from such a variety of power uses is good, but it is evident that the high peak loads that pile up during a few minutes in the afternoon on dark winter days is primarily due to the lighting load. The heavy winter peak is responsible for a large share of the Company's plant investment, and on account of the short duration of this load, the revenue that the Company derives from it is comparatively small. There are certain kinds of loads that in the nature of things are off-peak and thereby help to improve the combined load factor. Such loads are, for instance, that of refrigerating plants which is essentially a summer load, and electric vehicles which are charged at night. The higher value to the Company, because of the lower cost of the off-peak load, is indicated on all our rate schedules by the fact that a material reduction is made for current sold outside of the peak load hours, which are from four to seven in the afternoon during the winter months.

The opportunity for acquiring such off-peak loads is necessarily limited, and the general motor load must of necessity be the main factor in maintaining and improving the

Company's load factor. To acquire power load in the face of competition with private plants is one of the principal duties of the Industrial Division of the Engineering Department.

The factory manager who is to choose between power supplied from a private plant, as against that supplied from our lines, demands a minute and careful analysis of his power situation, and it has taken years of plant testing, study and investigation to gain a thorough general knowledge of the subject. Every manufacturing plant is different. It has peculiarities pertaining to its particular line of manufacture, its location, its personnel, and many other things that make it impossible to formulate a standard prescription for the prevention and elimination of private power plants. Every new prospect demands special investigation, and new phases have to be continually taken into consideration. Some manufacturing plants require comparatively little heating, so that they have little use for exhaust steam from their steam plants. Others use all the exhaust steam that the steam engine is capable of furnishing and considerable live steam as well. Many plants have manufacturing waste that is valuable as fuel.

The private power plant must be considered as an investment upon which the investor has the right to earn a fair profit. This profit is the margin of cost between the private power plant operation and operation with purchased power, when all items of cost are considered on both sides of the balance sheet. In general, the plant owner insists upon a gross return on his investment of at least 15 per cent. so that if 15 per cent. of the private investment is

added to the annual cost of operation with central station power, the total represents the maximum annual cost that will justify investment in a private plant. The owner of a factory will also take into consideration that if money invested in some other department of his business will earn a greater return than money invested in a power plant, he should not invest money in a power plant.

The 15 per cent. mentioned above as a minimum gross return does not represent any profit, but in it is included interest on the money invested, insurance, taxes, depreciation, and a very small amount for obsolescence and the risk that the purchaser of the plant is taking. I shall not enter into detailed discussion here, but I hope in future issues to give examples of power plant analysis.

#### Rates

Mr. Deffenbaugh has for several years devoted the majority of his time to the study of rates in an endeavor to adapt the rate schedule as nearly as possible to the cost of delivery of power to consumer. The Company's new Three-Rate and Two-Rate Schedules are expressions of the results of his study, and these rate schedules are in accord with the findings of the advanced thinkers in the profession. In connection with the change-over of our consumers from the old rate schedules to the new, the commercial and the engineering departments have had to perform a considerable amount of work. That the change has resulted in general satisfaction is very gratifying.

These studies of costs and rates must necessarily be continued as long as the Company continues to be in business. Factors of cost are continually changing, particularly with the growth of the business, and in these days of public service regu-

lation by Commission, it is of the utmost importance that we are as nearly right as is humanly possible in such matters.

One of the functions of the engineering department is the testing out of new appliances which involve the use of gas or electricity. It is obvious that considerable caution is necessary in listening to the rosy tales of promoters of new world-beating inventions, but at the same time we cannot afford to maintain a skepticism that will exclude our customers and ourselves from deriving the benefit of the good things that are continually being brought on the market. The only safe course to pursue is to subject promising appliances to rigid tests, so that when we decide to sell or recommend to the public a certain piece of apparatus, we can do so in good faith. This work is, as a rule, assigned to the younger members of the department.

The Industrial Department offers to the people of Rochester a general engineering service that is becoming more popular every day. Our department has facilities in the way of instruments, and sources of information that exceeds those of any but the very largest consulting engineering offices of the country. The variety and wide scope of the work gives the men unusual opportunities to broaden their engineering knowledge. Through exchange of data among the individual members, and through department meetings, the men are all sharing in the aggregate experience of the department and the work done is a result of the accumulated experiences and knowledge of the organization, rather than the efforts of the individuals.

#### Co-operation from Other Departments

Our work would be hopeless were it not for the hearty co-operation of other departments of our Company.

## Two Beautiful Cars in the Elk's Floral Parade

Our Company's entries in the recent automobile floral parade reflect great credit upon Messrs. Boddy, Martin, Arnold and Garlinghouse, the men of Mr. Durfee's Department to whom the work of trimming the cars was entrusted. As accompanying illustrations prove, the decorations were extremely artistic and the workmanship faultless.

The cars received a splendid ovation from the people all along the line, as well as from the judges

themselves, and that fact is a source of much gratification to the management.

A word of praise is also due the careful work of Messrs. Davis, Neverett, Herring, Brown, Boddy, Connaughty and Ernisse who were in charge of Company's vehicles in the parade. Their work elicited much praise not only from Mr. Hotchings, but also from the marshall of the parade and other interested spectators.

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## Our Industrial Engineering Department—Continued

Through advertising we get in touch with the public through the papers. The daily ads open the way to many valuable negotiations, and their convincing arguments, short but to the point, are a vital factor in cementing the bond between our Company and the public; they create a predisposition that a good share of the burden when it comes to convincing a prospective customer that the proposition we have made him is the one he wants.

The Electric Meter Department is always ready to make tests and to help locate and eliminate trouble.

The Line Department is right on the job whenever distribution troubles arise. Charlie Miller and his men are always willing and able to take care of motor troubles, and to make motor installations in emergency cases.

As our Industrial Department stands between the public and the Company, there is hardly a department of the Company that we do not have to call upon for help at one time or another, and I deem it only fair to say that the men of our department are grateful for much generous co-operation accorded them at all times by all departments.

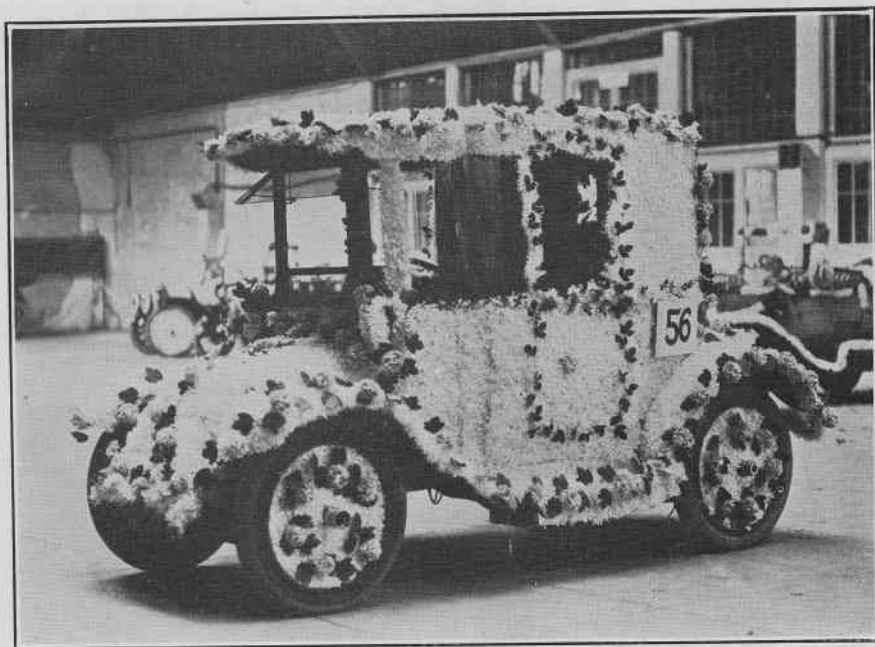
### A Prayer for True Workers

May I go joyfully to meet the labor of my day.

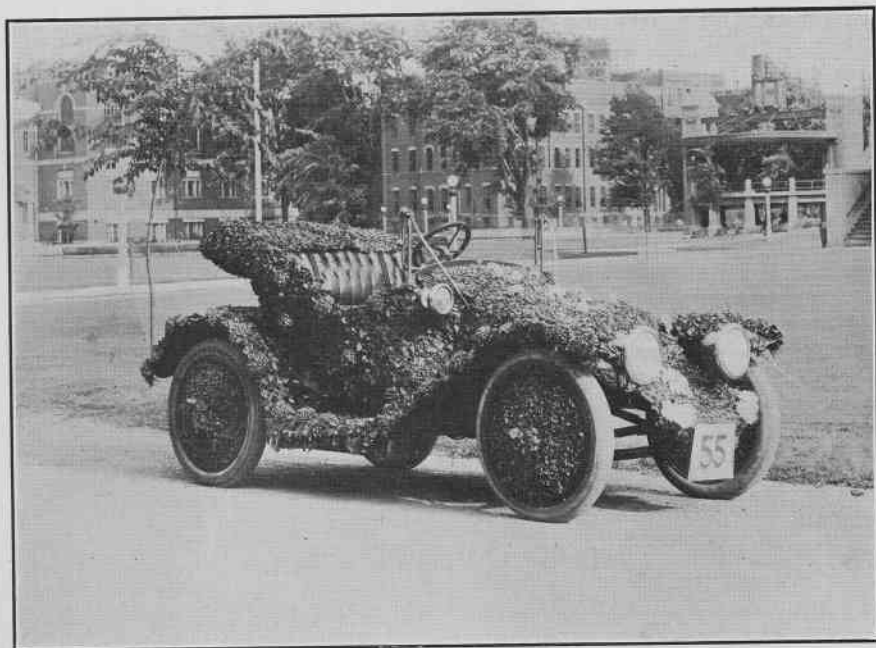
May it be permitted that I execute the work intrusted to me so that the world will be better for its doing.

May those about me be made happier by my presence, though it be but to the measure of a kindly smile or honest word of greeting.

And when the whistle sounds at eventide, may I go forth light hearted, not because my task is through, but rather because it has been done honestly and to the best of my ability.



Mr. Searle's car which was declared one of the most beautiful in the parade.



Mr. Yawger's car was also an object of much admiration.



# EDITORIAL

## THE LADDER OF SUCCESS

The advice of men who have made a big success in life has more than passing interest for those who are beginning a business career. Vice-President and General Manager Edward Reynolds, of the Postal Telegraph-Cable Company, who started life as a messenger boy at \$3 a week, recently gave the following twelve rules on how to successfully climb the business ladder of life.

### **WORK** intelligently.

A boy must develop a liking for work after he enters the business world, if he has not done so before. Be willing to submit to the discipline of modern business methods and by that discipline acquire a faculty for self-control if you ever hope to exercise authority over others.

### **THINK** and reason for yourself.

Anticipate the demands of your superiors. It is because of the fact that most men are willing to serve and not to lead that makes it possible for the one who has initiative and courage to act upon his impulse to rise above his fellows. It requires knowledge and experience to do creative work, and that is the only kind of work that commands recognition.

### **BECOME** master of your work.

Be able to see what is going on about you; study conditions that govern in your particular line of business; by observation and study prepare for the time when your own knowledge and experience will be of value to your concern.

### **C**ULTIVATE individuality.

Initiative and common sense, backed up by the moral courage to do the thing that should be done at the time, is more valuable now than ever. The call comes to those who have demonstrated their ability to do things.

### **H**AVE a definite end in view.

Aim for an ideal. A boy by losing himself for the time being in his work and by concentrating his mind on problems before him may deliver the results expected of him. If he has no vision at all except the pay envelope at the end of the month he won't travel very far on the road to success.

### **D**EVELOP character.

It is one of the greatest assets that a boy or a young man may possess, either in the business or social world. Without character, there cannot be and there should not be what we call success.

### **B**E enthusiastic.

More battles have been won by enthusiasm than by any other one thing.

### **S**HUN flattery.

The boy or young man who devotes his time and energies to the successful accomplishment of his plans is sometimes led to believe that flattery is an easier road to favor, but permanent success is rarely attained in that way. We may not like the candid friend, but we need him.

**R**EAD and study.

This will enable you to absorb more of the information that flows to you in business and make it possible to acquire the knowledge and ability to do the work assigned to you.

**R**EMEMBER, quality counts.

You will find a way to success in the business world to-day by paying more attention to the quality of the work turned out than the remuneration you receive for it. The higher quality of your work is more apt to win recognition and remuneration.

**R**ECOGNITION must follow merit.

A business concern that does not recognize merit is bound to fail sooner or later.

**H**AVE faith in sentiment.

It is my opinion that a business conducted without some sentiment in dealing with its staff is a business which is doomed to failure. A large business concern indifferent to the joys and sorrows of those in its employ will find that the employees will not manifest any more interest in the concern than the concern does in them.

**A Word of Appreciation**

In a recent case, where our Company was called upon to furnish temporary service to supply current for a fan in a sick-room, we had an opportunity of observing a squad of linemen at work.

We were mightily pleased to note that not only were all the safety requirements met to the letter, but the work was carefully planned with a view to causing the least possible annoyance to the sick person.

Messrs. McNeill, Cunningham, Higgins and McElligott are the men who did the work. Congratulations, boys. Your efforts are appreciated by the management as well as by the sick man, his relatives and your associates.

**Electricity and Growing Plants**

In England, for some time past, and now and then, in a limited way, in this country, the experiment has been attempted of facilitating the growth of crops by electricity; and that it has not been a distinct success is indicated by the fact that it has so far led to nothing practical.

This year the Agricultural Experimental Station at Cornell University is to co-operate in an undertaking which can not be expected to shed light on the problem of whether or not the theory of electrical stimulation of crops is worth following up, but which no doubt will prove that advantage can be conferred upon agriculture by electricity. The project is the subject of an article in the current issue of the Gas and Electric News by E. H. Fisher, who remarks at the outset that now there are not enough practical uses for electricity in agricultural districts to pay to run lines into them. Continuing he observes:

Our principal experiment is on the Baker farm, near Charlotte, a farm of more than one hundred acres devoted mostly to the raising of peaches and berries. The soil is a fine sand. We are installing on this farm an irrigation plant, which will be carried on in co-operation with Professor Fipping, of the department of soils at Cornell University. The crops to be irrigated are red raspberries, black raspberries, peaches and a small part of a small cherry orchard. The water will be pumped from a small pond, the dam for this being formed by reinforcing the roadway across the gully with earth, board sheeting and a facing of concrete. The stream which supplies the pond is being fed by springs and maintains a fairly good flow in dry weather.

Electricians as well as farmers will watch the outcome of this undertaking with the keenest interest.—Milwaukee Evening Wisconsin.

## GENERAL SAFETY

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Herman Russell, Chairman

John C. Parker

Thomas H. Yawger



**HELP  
US PREVENT  
ACCIDENTS**

J. W. Morphy, Adjuster

Frank Hellen

Victor T. Noonan, Secretary

## COMMITTEE

**Stricter Investigation of Accidents**

At a meeting of the General Safety Committee held Saturday, July 19th, at which Mr. Hutchings was present, the following recommendations and regulations pertaining to accidents were adopted:

1st—In future all serious accidents will be rigidly investigated by the General Safety Committee with a view of determining the REAL CAUSES of those accidents.

2nd—In all serious accidents the foremen and other employes who saw the accident will be requested to appear before the General Safety Committee with a view of determining the cause of such accident.

3rd—On Mr. Yawger's suggestion it was decided to hold meetings of the linemen from time to time with the view of discussing accidents in that particular department.

It was also decided to more effectively draw attention to certain accidents by putting a printed lesson on the Bulletin Boards, calling attention to how those accidents occurred—whether due to carelessness or neglect.

The object of above regulations is to get at the causes of the accidents—that's the whole thing in a nutshell. A description of the accident does not give the cause; therefore if we can locate THE CAUSE of each serious accident, we ought to be able to eliminate that particular kind of accident.

**New Accident Prevention Pictures**

Sometime in September or October Mr. Noonan will be around the various stations again for the purpose of securing new pictures on Accident Prevention work. The pictures which were taken last year attracted a great deal of attention throughout the country, in fact, so much so, that two sets of these pictures are being exhibited by the Aetna Life Insurance Company, one set by the Accident Prevention Committee of the National Association of Manufacturers in St. Louis, and we have had requests for other pictures from various magazines, including "The Electrical World." We have planned to do better this year, and would ask the foremen and other men who would like to co-operate with us to put on their thinking caps, and give us suggestions for good pictures, showing the right and wrong ways of working, carelessness, etc. We hope if our plans go right to have some moving pictures taken in certain departments.

## **Too Many Trifling Injuries**

Attention has been drawn on the Bulletin Boards last month to the fact that there have been many minor injuries lately, and we are inclined to think that there are too many. Most men are careful regarding serious dangers but when it comes to everyday work they are inclined to be a little careless. Now, we are just as anxious to eliminate such injuries as nails in the hand and foot, cuts, bruises, sprains, strains, etc. A little common sense, a little care, and a little thought will eliminate these minor accidents. There is no excuse for a good many of them, and we feel sure that, having made this little appeal to the men, in the next month we will see quite a reduction in minor injuries.

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## **The Real Causes**

A whole family was almost suffocated and a house destroyed by fire last month in New York City as a result of a man leaving a lighted pipe in his coat pocket before retiring to sleep.

A woman 65 years old was burned to death in Oregon, Mo., on May 7th, the cause being traced to a lighted pipe which her husband placed in his pocket as the old couple were driving to attend the wedding of their son.

The New York State Fire Marshall in a recent report points out that there were 293 fires throughout the state last year, which were caused directly by careless smoking. In one of these fires, a woman lost her life when the awning of her kitchen window caught fire from a lighted cigar thrown from an upper window.

Careful use of the cuspidor is the only preventative of such accidents—unless we put a ban on smoking altogether—and where is the man who wants to give up his pipe or cigar?

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## **New First Aid Cabinets**

The General Safety Committee has plans under consideration at the present time for installation of new metal First Aid cabinets in all the stations, gas works, and other departments. These new cabinets will be of the most modern design and we feel sure that foremen and men will be very proud of them. They will have every convenience and every practical remedy including splints, bandages, towels, wash-basins and other appliances. We hope to have something more to say about this next month.

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## **First Aid Books**

Sometime early in the fall General Safety Committee will issue a First Aid pamphlet, printed especially by this Company, for our own employees. It will be of such a size that it can be conveniently carried in the pocket, and will contain a simple, practical way of treating and taking care of the average injury.

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## **One Small Accident in Seven Days**

Just as we were going to press we received the accident report for week ending July 23rd, and noticed that there was only one small accident on that report. This is very gratifying indeed. It indicates co-operation all through the ranks.



## The Ten Commandments of Safety

By H. S. PASLEY, No. 4 Station

1. Thou shalt have no other thoughts but thy work.
2. Thou shalt take no unnecessary risks, nor try to show off, nor play practical jokes, for by thy carelessness thou may do injuries which will have effect unto the third and fourth generations to follow.
3. Thou shalt not swear, nor lose thy temper when things do not come just right.
4. Remember that thou art not the only one on the job, and that other lives are just as important as thine own.
5. Honor thy job and thyself that thy days may be long in employment.
6. Thou shalt not clean machinery while it is in motion.
7. Thou shalt not watch thy neighbors' work but attend to thine own.
8. Thou shalt not let the sleeves of thy shirt hang loose, nor the flaps of thy coat be unbuttoned, as they may get caught in the machinery.
9. Thou shalt not throw matches or greasy waste on the floor, nor scatter oil around the bearings, as a dirty worker is a clumsy worker, and a clumsy worker is a danger to his fellow workers.
10. Thou shalt not interfere with the switches, nor the dynamos, nor the cables, nor the engines, nor anything else thou art told is dangerous.

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### Brief Comments

Don't forget to hang warning flags from pipes and ladders on the rear ends of trucks.

We are just as anxious to eliminate the small accidents as well as the big ones. Help us reduce the number of trifling accidents. There's no excuse for so many of them.

Report every unsafe condition, no matter whether it is a tool, a ladder, a brake, a wire, a dark passage or stairway. Many eyes can prevent many accidents.

Unsafe practices on the part of employes cause three times as many injuries as unsafe conditions.

It does little good to have safe machines, tools and equipment if you don't have safe men to operate them.

Patrick Murphy, while passing down the street, was hit on the head by a brick which fell from a building in process of construction. One of the first things he did after being taken home and put to bed was to send for a lawyer.

A few days later he received word to call, as his lawyer had settled the case.

He called and received five crisp new \$100 bills.

"How much did you get?" he asked.

"Two thousand dollars," answered the lawyer.

"Two thousand, and you give me \$500? Say, who got hit by that brick, you or me?"

## How to Avoid Accidents

By DANIEL J. FRAWLEY, No. 3 Station

Heedfulness  
 Observation  
 Watchfulness  
 Tact  
 Open eyes  
 Attention  
 Vigilance  
 Open ears  
 Intelligence  
 Discretion  
 Alertness  
 Carefulness  
 Common sense  
 Instinct  
 Discernment  
 Education  
 Natural ability  
 Thoroughness  
 Self-control and sobriety.

## Riddles for the Picnic

For the girls who like to solve riddles, here's a few. We guarantee that these will kill time for you at Manitou on August 9th. Solve them and send us your answers.

1. When does a man look like a balloon?
2. Where does all the snuff go to?
3. Why is Hoddick's dog dressed warmer this summer than he was during the winter?
4. Why is an editor like a shoe-black?
5. Why is love like a potato?
6. What is the best way to make a coat last?
7. Why is a dog biting his own tail like a good housekeeper?
8. If the devil lost his tail where would he go to get another?
9. Why is a Supreme Court judge's nose like the middle of the earth?
10. What are the most unsocial things in the world?
11. Why are two girls kissing each other like a bible command?
12. How can you make a tall man short?



**"GETTING NEXT TO THE MEN."**

A group of interested men listening to a little heart-to-heart talk in safety at the Front Street yards. This was one of a series of meetings given in various departments and its to the credit of all the men that they showed a live interest at all the talks.

## WHO'S WHO AT STATION NO.3



BY SLIM

## All Ready for the Picnic

The eighth annual picnic of employees will be held next Saturday at Manitou. This coming event promises to be the most enjoyable ever held by our organization. In the language of the circus man, our eighth annual frolic will eclipse anything of the kind ever seen. In the long programme of laughable and instructive entertainment there is included a series of the most amazing and wonderful acrobatic acts, athletic stunts and marvellous feats of high diving, high flying and other thrilling events the like of which have never before been attempted in these parts. Preceding the opening performance there will be the usual parade through the downtown streets, and it will be bigger and longer than ever. The parade will start from the Clinton Avenue North grounds (front of the R. R. & L. offices) prompt at 8.30 a. m. Hebing's famous military band will be mounted on the first big yellow car, after which will come all the other wonderful galaxy of cars with their hundreds of entertainers, animal trainers, acrobats, clowns, high divers and bird men.

Ours is the first circus aggregation, which we know of, where every man, woman and child at the grounds will not only be entertained but furnished also with food and drink in most generous style. Away out in a country farm yard a thousand plump chickens are awaiting the call to the big dinner tables at Manitou August 9th, while on Lake Ontario a hundred expert fishermen and divers are searching the deep

for the juicy, tender whitefish that will tickle the palates of a thousand hungry picnickers. Yes, sirree! Saturday August 9th will be the biggest merriest day of fun and frolic ever seen at good old Manitou.

Get your tickets from Paymaster Gosnell. They will cost you the small sum of one hundred and twenty-five cents each and for every cent you will get more than 5 cents in return. For the benefit of those who have not read our regular newspaper ads telling of this big day's fun, we want to say that the high divers, flying men and acrobats have been imported from Europe, Japan and Batavia. They are the only performers of their kind in the world. They are exclusive high priced entertainers, who will make your hair (if you have any) grow curly with excitement. Go to Manitou next Saturday and be convinced.

The general committee in charge of the picnic is as follows: Chairman, Vincent Hoddick, George Ernst, Thomas Kewin and W. T. Nolan secretary. The following are the chairmen of the other committees: Entertainment, Ivar Lundyaard; sports, Walter Drew; refreshments, J. B. Eaton; transportation and tickets, Messrs. Morphy and Christie; music, Messrs. Downs and Cox; badges, printing and programmes, Victor T. Noonan; weather, Old King Sol; jollying, Frank Hellen; trapeze and acrobatic stunts, Pat O'Neill; high flying and diving, Thomas H. Yawger; moonlight effects, Messrs. Durfee and Consler; fireworks, Joseph P. MacSweeney.

The captains of industry to-day are those who as employees were content to merge their personal success in that of the business that employed them.



Don't forget to attend the picnic.

More push than ambition is required to operate a wheelbarrow.

If you must kick—throw your whole sole into it.

Life is a menu in which some people never get beyond the soup.

The man who is his own worst enemy is always willing to forgive and forget.

Tell a girl she is the apple of your eye, and she will probably have her eye peeled for you.

There may be plenty of room at the top, but a man must be pretty well balanced to stay there.

The things that come to those who wait are generally pretty well worn out.

The world's greatest acrobats, high divers and birdmen will give thrilling exhibitions at Manitou, August 9th.

A man may be said to have horse sense when he refuses to mortgage his home to buy an automobile.

Before a wise young man attempts to paddle his own canoe he learns to swim.

The popularity of chicken pie may account for the high price of veal.

Not every man has the face to raise whiskers.

A good way to discover that you don't understand a woman is to marry her.

One way to start trouble is to try to convince a coal man of the error of his weigh.

It sometimes happens that the girl with the dreamy eyes is wide awake and on the job.

The three degrees in medical treatment—positive, ill; comparative, pill; superlative, bill.

"I have," said Mrs. Malaprop, "a beautiful car, with a cymbeline body, dispatchable and denounceable rims, epileptic springs, electric starter, infernal expanding brakes, autocratic wind shield, black untrammelled headlights, interval power plant, flash jubilation, three-point indention, three speeds horrid and one perverse, amateur on the dashboard, aggravated ebony rim on the steering wheel, copellerator, throttle peddler, sanitary transsition, jump-spark intuition, jimpson bearings, a set o' lean gas primers and all other excessories."

Agent—I am selling something to prevent roosters crowing at two in the morning.

His Friend—Marvelous! What is it?

Agent—A recipe for chicken soup.

# ELECTRIC DEPARTMENT



A report on new electric installations last month show a surprisingly large increase in Mazda lighting for the year just ended, the total number of Mazda lights in Rochester being 2,124. Two years ago there were less than 25 of the Mazda type of lamp in use in the city, and now, in addition to having more than 2,000 of that style of illuminators, Rochester also has 4,235 arc lamps.

The statistics show a decrease of three arc lamps in June, but it is expected that when the July report is completed it will show a large increase in arc lighting, due to the installations in Main Street. June shows an increase of 5,000 incandescent lamps, which have been installed for commercial and residential lighting. In the same period there was an increase of sixteen motors, ranging in size from one-half to 75 horse power. A number of other increases in charging stations were reported, making a total connected load of 46,592 kilowatts.

Less than half of the connected load is in use at one time in the summer. The increase in the use of electric power and lighting is extremely gratifying, and expectations are that it will continue during the year. In preparation for the heavy load in the fall, construction work and the installation of new apparatus is being rushed with all possible speed. Plant construction work is going on at stations 2, 3 and 6, and outside construction work in

transmission lines and underground conduits is being carried on in all parts of the city. Our Company is spending a much larger sum of money than usual this year in improvements, and the total expenditure at the close of the year for both gas and electrical departments alone is expected to total at least \$1,500,000.

One of the ground-men from the Line Department at East Rochester had a remarkable escape from being killed by electric shock Sunday, June 12th. Owing to the high wind on that day the linemen had considerable trouble with the wires, and Superintendent Royal Parkinson and his men went on that morning to repair some trouble near the New York Central Station. A neutral wire became broken and was tossed the wind across a 4,400-volt power cable, the loose end falling for a considerable length on the concrete roadway. In spite of repeated warnings the groundman, who was a little foolish that morning, persisted in approaching the wire and finally lifted it in his hand. All the linemen expected to see him immediately electrocuted, but nothing of the kind happened, and he escaped with scarcely a shock. Mr. Parkinson says that the attraction to the ground must have been very powerful, and that this is the only way he can explain how the groundman escaped. The man was promptly discharged for his foolishness and bravado.

## Getting Gas Turned On in France

France is at once the paradise and inferno of beaurocracy, writes Arnold Bennett, in the January issue of *The Metropolitan Magazine*. For example, he continues, I wanted the gas turned on. A simple affair! Drop a postcard to the company telling the company to come and turn it on. Not at all! I was told that it would be better to call upon the company, so I called.

"What do you desire, monsieur?"

"I am the new tenant of a flat and I want the gas turned on."

"Ah! You are the new tenant of a flat and you want the gas turned on. Monsieur Chose, here is the new tenant of a flat and he wants the gas turned on. Where should he be let to?"

About a quarter of an hour of this, and then at last I am led by a municipal employe sure of his job and of his pension, to the far-distant room of the higher employe appointed by the city of Paris to deal with such as me. This room is furnished somewhat like that of a solicitor's managing clerk.

"Good morning, sir."

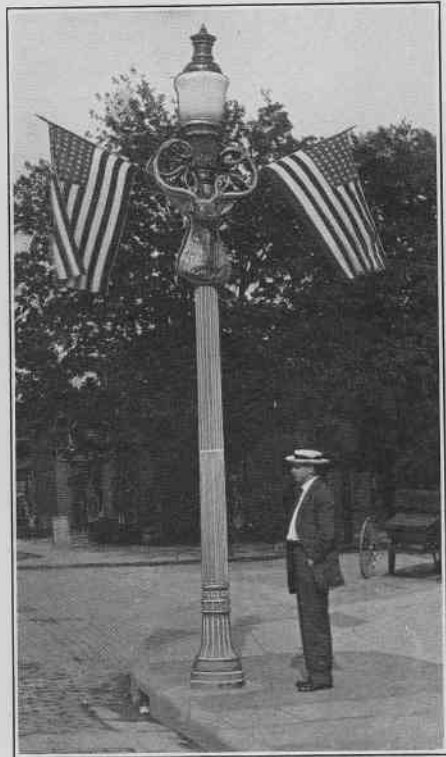
"Good morning, sir."

"It appears, sir—Monsieur Benny, fourth floor, number 4, Rue de Calais, sixth arrondissement, is it not?—That you want the gas turned on. Will you put yourself to the trouble of sitting down, Monsieur Benny?"

I sit down. He sits down.

"Ah! So you want the gas turned on. Let us see, let us see. \* \* \*

Hundreds of such applications must be made every day. But the attitude of this ceremonious official might be put into words thus: "A strange and interesting application of yours, to have the gas turned on. Very remarkable! It attracts me! The case must be examined with the care and the respect which it deserves."



Type of ornamental pole for new magnetite lamps in Main Street showing decorations for Elks' convention. The young man is Mr. Flannery, of the Draughting Department.

## New N. E. L. A. Officers

The following new officers of Company Section, N. E. L. A. were chosen at the annual election held at the general offices June 10th: President, F. W. Fisher; Vice-President, J. E. Powell; Secretary, Ed. Gosnell; Directors, Pat. O'Neill and J. P. Hoftenkamp.

A unanimous vote of thanks was extended to President Hoftenkamp and the retiring board of officers. Meetings will be resumed in September.

Every mother dreams that her son may be President some day, but she would be awfully surprised if her dream were to come true.



We are glad to welcome among us this month, Miss Ruth Lerner, who is now stenographer in the Engineering Department. Miss Lerner succeeds Miss Florence Meyer, who has resigned to go to Buffalo. Miss Meyer during her stay in the Engineering Department made many friends throughout the building, and we regret her departure.

We understand that Miss Dorothy Brundage of the Engineering Department is to be married next month. Dorothy leaves with the good wishes of all who know her. We wish her a very happy future.

Just as we go to press we are informed that William Beaton, of the Underground Department, celebrated his twentieth anniversary with the Company on August 1st. Congratulations, William. If some of your friends will send us your photograph we will surely publish it next month.

Fred Clabby went down Main Street the other afternoon unconscious that there was a big ostrich plume sticking up from the band of his new straw hat. All the girls in Main Street turned and looked after Fred, who seeing he was attracting much attention, looked in a window and saw there the latest style in men's headwear. Since then Fred is asking himself "Am I a chicken?"

Pa Dowd was end-man in the Minstrel Show at the Aldermen's picnic at Cobourg last month. Pa told us a lot of funny things that occurred on the boat. He says he had such a good time he will surely go again next year.

Homer McKay of the Commercial Department was on his annual furlough last month.

S. J. Goldberg is now a member of the soliciting staff.

During the Elks' Convention, George Donie was walking down Main Street when he was approached by two tall men. One of them hit George a slap on the shoulder and grabbing his hand said:

"Hello Bill, where have we seen you before?" George looked up in surprise and said:

"You don't know me, I never saw you anywhere."

The big man replied "Oh yes. I guess you are from our town. Come on and walk down the street until we talk it over." Just then George recognized Detective Archie Sharp, and he said "Hello Sharp, don't you recognize me?" Then Sharp admitted they had made a mistake and humbly apologizing the detectives took George into a cigar store for a treat to sooth his frightened feelings.

A. S. McDowell of the engineering department is an enthusiastic member of Troop H, 1st Cavalry, N. G. N. Y. The troop rode to Geneseo last month, where the boys were the guests of Major Austin Wadsworth, who entertained them with a gymkhana contest on the farm. Corporal McDowell took part in a lemon slicing contest and carried off the first prize, a silver loving cup. Corporal "Andy" did the stunt with a sabre while riding at full gallop.

Miss Mary Nelligan has returned from a pleasant vacation in Boston. She reports "Boston Beans are still good eating."

Freddie Klein, who has been indisposed, is now able to be around again with his beaming smile.



Pa Almstead says he had a great time fishing down Hudson River way. Pa says he caught one "s-o-l-o-n-g," and that his arms are not yet back in place after that big pull. What we would like to know is, what kind of bait did John use?

Bert Yeomans took Ye Editor out fishing in Irondequoit Bay one day last month. Bert and the wise man fished and fished and fished, and finally the Editorial hook pulled in a snapping turtle.

A fine healthy eleven-pound baby girl arrived at the home of Engineer J. E. Powell Saturday, July 19th. The doctor said it was the biggest Gas and Electric baby for 1913! Congratulations to the happy parents.

Messrs. Jennings, Switzer and Gosnell of Mr. Nolan's office have returned from their vacation.

Amelia Herald won an electric iron at the K. of C. picnic July 23th, Amelia being the winner in a time race. Keep that iron Amelia! Some day you'll find it useful.

Messrs. Yawger and Nolan received post cards from Mr. Searle, who reports that he has been enjoying himself among the dizzy heights of the Alps.

Charles Graham of the Arc Lamp Department welcomed an eight-pound baby boy at his home July 4th. Charley had two good reasons that day for shooting off fire-crackers.

Miss Julia Gerling of the Meter Department spent her vacation in Batavia and Dansville.

Miss Florence Schueler of the Meter Department has returned from "The Blue Ridge Mountains of Virginia," where she spent two weeks.

Messrs. Pierce, Shaffer, Wirley and Woodhead, accompanied by Chaperone Carl Johnson, voyaged to Detroit by steamer July 4th.

Miss Lilah Smith of the Electric Meter Department took a trip to Detroit a few weeks ago. She came back looking much rested.

## Honor to the Gas Man

In Chinese visiting etiquette the rank of the caller is denoted by the size of his card. Thus the visiting card of a high mandarin would be an immense roll of paper, neatly tied up.

A gentleman who has traveled in China brought home a Chinese servant, and his wife soon after held a reception. John Chinaman attended the door, and received with great disgust the small pasteboards of the visitors. Evidently with an opinion of his own of the low condition of his mistress' friends, he pitched the cards into a basket, and with scant ceremony showed their owners into the drawing room.

But presently the gas man called with a bill—a big piece of cream-colored paper. The "card" satisfied John. With deep reverence he received it. With low salaams he ushered the bearer not only into the drawing room, but, with profound bowings, to the dismay of the gas man and horror of the hostess, right up to the center of the room, where that lady was receiving her distinguished guests; and then John, with another humble reverence, meekly retired, doubtless supposing that the owner of that card was a person of very high distinction.