



# Public Utilities



## MANY IMPROVEMENTS IN GAS

Year by Year Better Ways Are Found for Adapting It to Use.

## BETTER BURNERS HELP MOST

Omaha Plant Grows to Suit the Growing Needs of the City—Many Men Are Employed All Year Around.

All of man's comforts come from his ability to extract from the earth and from the materials of the earth the special products which he needs. One of the more natural elements for man to make use of is the illuminating gas, a product easily obtained and useful both as a fuel and for illumination. But, like other natural products, gas cannot be got by each man for himself. It takes a special effort to manufacture it, to purify it and prepare it for use, and finally to bring to a man's house where it will be of immediate service. This is the sort of thing that organized capital, the public service corporation can

do. It is for doing this sort of thing that the public service companies are given privileges and franchises and on this basis they make their profits—the return of their ventures. When gas was first introduced as an illuminating material, the only way of burning it known was the fish-tail or simple burner, which allowed a certain quantity of gas to escape and burned it free in the air. This sort of a burner consumed more than eleven feet of gas an hour, and the service which it gave was only a small per cent of the maximum lighting efficiency of the gas. The first improvement was the Argand lamp, which helped a little, but even with this new device, the quantity of gas consumed was very large, for a very small amount of light. The first real advance in gas burners was made in the year 1878, in the Welsbach burner. This invention, with its incandescent, white flaming mantle, immediately made a great change in the gas industry. Its usefulness and the great addition it made to a lamp's burning efficiency were evident to the consumers at once. The new lamp used up about three feet an hour, and it gave a soft light of at least 100 per cent more brilliant than the ordinary fish-tail.

**Cuts Volume at First.**  
The introduction of these lamps was at

first almost an adverse blow to the gas industry. They burned so much less in quantity that for a time the gas companies sold less than they had been selling. It was not until their efficiency began to acquaint the people with possibilities of lighting that they had not thought of before, that the volume of trade was restored. The final result of the improvement was just what always happens when a public service company puts in an improvement. The first expensive step is paid for many times over in the later addition to patronage. When consumers saw the cheapness and the availability of these new lamps they were put to everywhere and the gas industry continued to grow. It is not by any means illumination alone that makes gas so useful. It is used as a fuel in thousands of homes and factories. The old fashioned coal range has been replaced by the modern gas range, which does the cooking more quickly and cheaply and saves the housewife work, worry and dirt. The boy of the household has welcomed its introduction for it saves him the old chore of carrying coal and fact has made the coal hod no longer a necessary household implement. And it is not only the gas range, but the gas iron, the gas conveniences of every sort that are adding to the comfort of homes. In industry the use of gas has become a recognized factor. In newspaper offices it is used in the composing and electrotyping rooms to keep molten the lead that is used in up-to-date printing. In the big wholesale grocery houses it is used for coffee roasters and such machinery. One of the largest wholesale grocery companies in the west that has its main offices and factories in Omaha uses 5,000,000 feet of gas a year for its coffee roasters. **Gas Supplants Coal.** Although gas is used only to a very small extent to replace fuel for generating power it has very largely supplanted coal in furnishing fuel for machines that require heat directly. The gas company in Omaha has been one of the most influential factors in the city's development. Omaha has grown in such a way that companies have had to assume heavy burdens in order to give anything like complete service. For a long time the progress of the city was slow and timid. It did not seem to have even the ordinary vitality of western towns. Then came a sudden burst of energy and the town began to expand. Speculation and forced real estate booming took possession of everybody's mind and the true business good of the town was entirely forgotten. Without the slightest regard for the possibilities of future collapse or the disaster that was certain to follow Omaha went ahead to make a big city of herself. The gas company, as well as some other public service corporations, was called upon to help. When some speculator would choose a spot in the woods upon which to locate a new city addition he would swing every possible influence to get a gas main extended out to him. Then, as things changed rapidly, his tenants or his buyers might be gone from that part of the city by the time the gas was ready for them. So when the crash came and the town found itself spread over four or five times as much territory as it could really take care of, the gas mains that the company had extended were absolutely useless. But since the exposition year the growth of the city and the growth of industry in general has been steady and substantial. The unused mains of the gas company have been gradually drawn upon by the ever growing suburbs and the open spaces in the city's territory are being filled with homes. **Many Street Lamps.** The public as a whole gets the benefit of street lamps as well as house lighting and heating from gas. When the gas lamps were first installed in the streets they were fish-tail burners, but since the introduction of Welsbach's they have been used altogether. There are now 1,235 such lights in the streets with a candle power per light of 22. The street lamps are not as powerful or useful as electric arcs, but a special sort of gas arc called a Humphrey light is used in offices and gives a more powerful illumination than electric lamps. There were 2,895 of these and similar Welsbach arcs in use last year. The gas mains of the Omaha company, if put end to end, would reach half way to Chicago, and ticking away at regular intervals along their ramifying length are 24,123 meters. To the consumer the gas meter is the embodiment and incarnation of all the diabolical schemes ever invented to beat him out of his money. Perhaps there is a psychological reason why he hates the meter, since it is a machine and is perfectly impassive and unkind by all the abuse it gets, but the fact of the matter is that the meter is almost infallible. The experiments of the gas commissioner's office show that most meters vary about 2 per cent from exact measurement. It is impossible to make them any better than that and more than that much they very seldom go wrong. They will wear out in time, but the wearing out results altogether in the favor of the consumer. They are constructed of leather diaphragms and as the leather wears out they let more and more gas through without registering it. Many a consumer sees his gas bill going down rapidly until it stops altogether. Scarcely ever does he say a word about it, although he knows that he is burning as much gas as ever, but if it is ever a dollar more than he thinks it ought to be he immediately rates a complaint and wants his meter tested. **How Gas Is Made.** Omaha gas is made from the combustion of coke and crude oil by what is known as the Lowe process of manufacture. The main factory, with its generating plant, its purifying tanks and its enormous storage tanks is at Twentieth and Center streets. At night the factory is a very picturesque and interesting sight. As the flames are taken off of the burning oil and coke they are allowed to shoot up into the air and at regular intervals at the gas plant the whole sky is lit up with a miniature pillar of fire. The storage tanks number three and the biggest one will hold 1,300,000 cubic feet of gas. The company maintains other tanks at Eleventh and Jones streets. **Persistent Advertising is the Road to Big Returns.**

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