



**NATIONAL**

# Tube Works

**Wrought-Iron Pipe for Gas,  
Steam and Water.**

Boiler Tubes, Cast and Malleable Iron, Flanges (black and painted), Valves, Stop Cocks, Engine Trimming, Steam Gauges, Pipe Fittings, Pipe Cutters, Vices, Screw Plates and Bolt Wrenches, Steam Traps, Pumps, Kitchen Sinks, Hose Belting, Rabbit Metal, Solder, White and Colored Wiping Waste, and all other Supplies used in construction.



with Gas, Steam and Water. Nitrogen and Oxygen is a Specialty. Steam Heating Apparatus for Public Buildings, Stores, Rooms, Mills, Shops, Factories, Laundries, Lumber Dry Houses, etc. Cut and Thread to order and Wrought-iron pipes from 1/4 inch to 12 inches diameter.

**KNIGHT & JILLSON,**  
121 to 123  
S. PENNSYLVANIA ST.

ery reason to believe that, given this greater power than steam, higher speed can be produced.

"How would it be used—stored or made in transit?"

"It seems to me quite feasible to make it in transit but only on steamers and trains, but also in flying machines."

"You believe that it brings nearer the day of aerial navigation?"

"Certainly. There is no other agency which, with such small weight and bulk, can produce such motive power as liquid air."

**TO CURE CANCER.**

"To what extent has it been used in surgery?"

"Thus far cancer has been treated with it, and the most gratifying results have been obtained. It is too early to say just what its value is. I do know that its application to cancer has stopped the spread of the disease, and in one case the wound has contracted to a very small one. In another case, after a number of applications to a cancer on the breast of a woman, the cancer fell out into the operator's hand. A number of cases of cancer have been under treatment, and in all which were in progress by the free but vain application of the knife, it has arrested the cancerous growth. It has, besides, a marked effect in removing the cancerous growth from the surface of the patient suffering from cancer of the nose said

[illegible]

and destroy the bacilli of tuberculosis. In fact, the physicians have succeeded in applying to the body where I thought it could not be applied, and, therefore, it seems a distinct probability that the germs, wherever they may be in the human body, can be reached and killed.

"As for its use for refrigerating purposes, the fact that it is a refrigerator is obvious. Ice can be made with it; it can take the place of ice in refrigerators; it will be useful in packing houses, in markets, in hospitals, and in all cases in summer months."

**AN EXPLOSIVE.**

"As a substance capable of being made into an explosive of tremendous power, you have the testimony of a greater expert on that subject than I am."

He referred to Hudson Maxim, the brother

er of Hiram Maxim, who had been present in the laboratory a few days before, drawn out by reports which he had heard of the possibility of liquid air as an explosive. Mr. Maxim had been told that a small quantity of cotton waste saturated with liquid air had been placed in a small iron pipe, which had then been encased in a larger pipe, as a protection from the possible effects of the explosion, and that by means of a long fuse the explosion could be delayed until the men had been shown the fragments of the inner pipe and two great holes which had been blown through the outer one. Mr. Maxim, however, had been told that the cotton waste was to be used, and that he was to know whether the ends of the pipes had been closed. The merest palm-full of waste

he was told, had been left open.

"There is no explosive in use," Mr. Maxim declared energetically, "which, in such small quantity and in such a tight confinement could have produced anything like this effect." His interest was so much aroused that he at once made an appointment for an interview with a business man, and on the day of the explosion he was in the city.

On the day of the explosion, Mr. Maxim had been thinking of the explosion, and the question arose in his mind, whether the volatility of liquid air was not prohibitive of its commercial use upon a large scale. "Do you not know," he asked, "that the volatility of liquid air would be directly in the way of its use?"

"Do not regard it as at all a serious impediment," he said, "because the volatility of liquid air would be directly in the way of its use, and it would be directly in the way of its use."

ITS CHAPINESS

Mr. Tripler said that he was not yet granted the rights under his patents, but he had secured a few little things. His inventive busbushes were a source of application from all parts of the world, and he was not sufficiently worked out the various applications, or fully enough organized, to introduce it on its business side, to introduce it at once into industry on a large scale. As to the cost of liquid air, he said that even if steam were used to make it, it could be produced more cheaply than now for his steam plant was small, and was operated without special effort at economy, and was yet it kept the air for twenty cents a gallon.

Mr. W. C. Peckham, of Adelphi Institute, Brooklyn, from whose pen an article on liquid air will appear in the April Century

tic American. In the article you have just read, I have given the description of the plant and process of Mr. Tripper:

"The main elements of a triple-air compressor, a cooler and a liquefier. The compressor is of the ordinary form, having three pumps upon one piston shaft working in series. The first pump raises the air to a pressure; the second raises this to 75 pounds, while the third brings the air under a compression of 2,000 pounds per square inch.

"The air is then cooled by passing it through jacketed pipes where it is cooled by city water. For this work about forty horsepower is employed. After the third compression the air flows through a separator which disposes of some of its impurities, and it passes on to the liquefier. It is here that the apparatus of Mr. Tripper makes its appearance. This is the real invention. By means of the peculiarly constructed valve

whose details are not made public, a portion of the gas is cooled by the water flowing into a tube surrounding the tube through which the remaining air is flowing. This expanded air absorbs a large amount of heat from the water, and the water in the inner tube is cooled. The contents of the inner tube are thus cooled. In this way the air is brought below the temperature at which liquefaction occurs. The water is very much reduced, so that, upon opening the valve at the bottom of the apparatus, a stream of oil and liquid air is received, flowing from the bottom of the inner tube. The water from our ordinary city service pipes. Thus the liquefaction of the air is accomplished by the "self-refrigeration" of the air, and the cooling of a portion of the compressed and cooled air, without employing any other substance to bring about this result.

The process is described in detail in the process employed by Wroblewski and Olszewski.

**Above the Danger Line.**  
CINCINNATI, O., March 31.—The Ohio river is a foot and a half above the danger line—its water level is 15 feet above the low water mark. The river front is so swollen as the lower parts of other cities along the Ohio valley, are submerged, but the upper river is falling and the flood will be of short duration.

**TO CURE A COLD IN ONE DAY**  
Take Laxative Bromo Quinine Tablets. All druggists refund the money if it fails to cure. 25c.  
The genuine has L. B. Q. on each tablet.