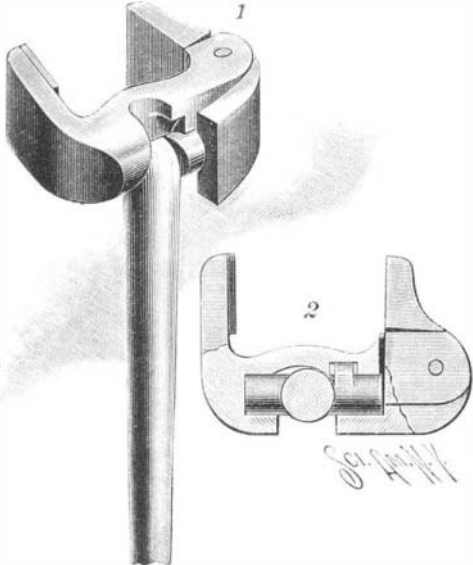


## AN IMPROVED WRENCH.

This wrench, shown in perspective in Fig. 1 and in section in Fig. 2, has been patented by Mr. Frederick S. Seymour, of Lake Geneva, Wis. (P. O. box 161), the invention being an improvement on a former patented invention of the same inventor. The wrench has a fixed and a movable jaw, the fixed jaw having on its inner clamping surface a pad of leather or similar material, and the other extremity of this member having upper and lower knuckles forming a recess in which is pivoted the movable jaw. The back member of the



SEYMOUR'S WRENCH.

fixed jaw has also at one side a socket and at its other side a recess adapted to receive the T-head of the wrench handle, one branch of the head having on one face a cam, and the rear member of the movable jaw preventing the head from disengaging with the body of the wrench. When the head of the handle is in normal position, the cam will be opposite a recess in the body of the wrench, and the jaws will be parallel, as shown in Fig. 2, but when the handle is turned to the position shown in Fig. 1, the cam engages the rear member of the pivoted jaw, and the jaws are thus carried to positive engagement with the nut or other article to be clamped.

## Lime Juice for Scurvy.

Probably few persons outside the industries actually concerned are aware that under the provisions of the British lime juice act the Board of Trade are empowered to compel the ships' captains to serve out to their crew a fluid ounce of lime juice per day, and to hold the masters responsible for the actual swallowing of the dose by the men. Any case of recalcitrancy on the part of one of the crew has to be entered into the official log book, and in case these precautions are neglected the master is liable to a heavy penalty. Thanks to the provisions of the act, scurvy has been almost stamped out.

## Deep Sea Fish.

Dr. Hickson, in his new book, "The Fauna of the Deep Sea," points out in a very vivid manner an extraordinary danger to which the deep sea fish are liable. At the great depths at which they live the pressure is enormous—about two and a half tons on the square inch at a depth of two thousand five hundred fathoms. It sometimes happens that in the excitement of chasing a prospective meal the unwary fish rises too high above his usual sphere of life, when the gases in the swimming bladder expand, and he

is driven by his increasing buoyancy rapidly to the surface. If he has not gone too far when consciousness of his danger grows greater than his eagerness for prey, the muscles of the body may be able to counteract this, but above this limit he will continue to float upward, the swimming bladder getting more and more inflated as the unfortunate creature rises. Death by internal rupture results during this upward fall, and thus it happens that deep sea fish are at times found dead and floating on the surface of the ocean, having tumbled up from the abyss.

## THE BALTIMORE TRACTION COMPANY.

Of the seventy-five miles of track now included in the system of this company, thirty-five miles are operated by electricity, fifteen miles by cable, and twenty-five miles by horses.

The Druid Hill Avenue cable line, which has been in operation since May 23, 1891, was virtually the beginning of rapid transit in Baltimore. The Gilmore Street cable line, which runs west from the center of the city and then north to Druid Hill Park, is built upon the same general plan as the first line, with some changes in the driving machinery. The strictly unique feature of the Gilmore Street line is its power house, the Epworth power station, as it is called from the fact that the machinery is installed in what was formerly the Epworth Methodist Church, at the corner of Gilmore and Mosher Streets. Francis H. Hambleton is the chief engineer of the Traction Company.

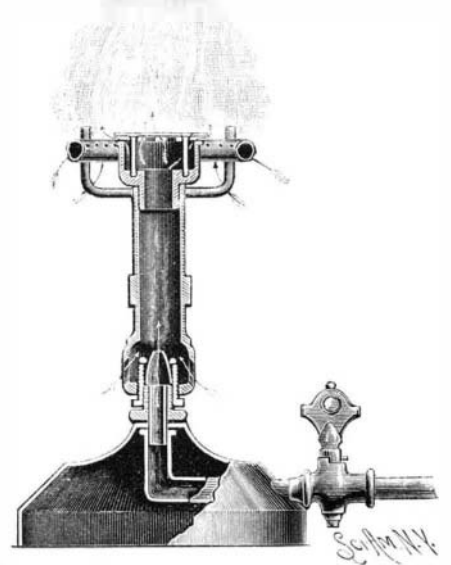
The engine room is 79×58 feet, the tension room is 51×72 feet, the boiler room is 41×104 feet, and the coal room is 41×47 feet. The machinery consists of two plain Corliss engines, 36×60 inches, built by the Corliss Steam Engine Company, of Providence, R. I., and driving gear for two ropes, built by the Robert Poole & Son Company.

The two cables, 10,000 and 22,000 feet in length, are driven at the same speed—eleven and a half miles—but each has its independent driving gear. A rope drive of twelve ropes is used, the driving pulleys being ten feet in diameter and the driven wheels twenty-four feet. In this rope drive Mr. Hambleton has introduced a device for equalizing the strain on the cables. Instead of driving the two twenty-four foot pulleys of each set of gears from a single ten foot pulley on the main engine shaft, the driving pulley is split and provided with a compensating gear on the order of the Whitton gear for cable drums. With this compensating gear on the rope drive, and the Walker differential cable drums, a complete equalization of the power is assured. The cable drums are thirteen feet six inches in diameter. The tension device, which was designed by the engineers of the company and the builders, the Robert Poole & Son Company, consists of the usual traveling carriage and weights rising and falling in a fifteen foot pit. The tail rope of the carriage passes over a fixed sheave at the extreme end of the run, through a sheave on the weight, and up again to a geared drum, by which any abnormal variations in the tension or length of the cable can be met. By this ar-

angement the entire length of the run is utilized and the somewhat limited space is used to the best advantage. This plant has capacity in excess of its present requirements, but it was designed with a view to future needs and possible extensions of the line. We are indebted to the *Street Railway Journal* for our engraving and the foregoing particulars.

## A HEATING GAS BURNER.

This is a burner of the Bunsen type, but just outside of and surrounding the flame is held a metal tube



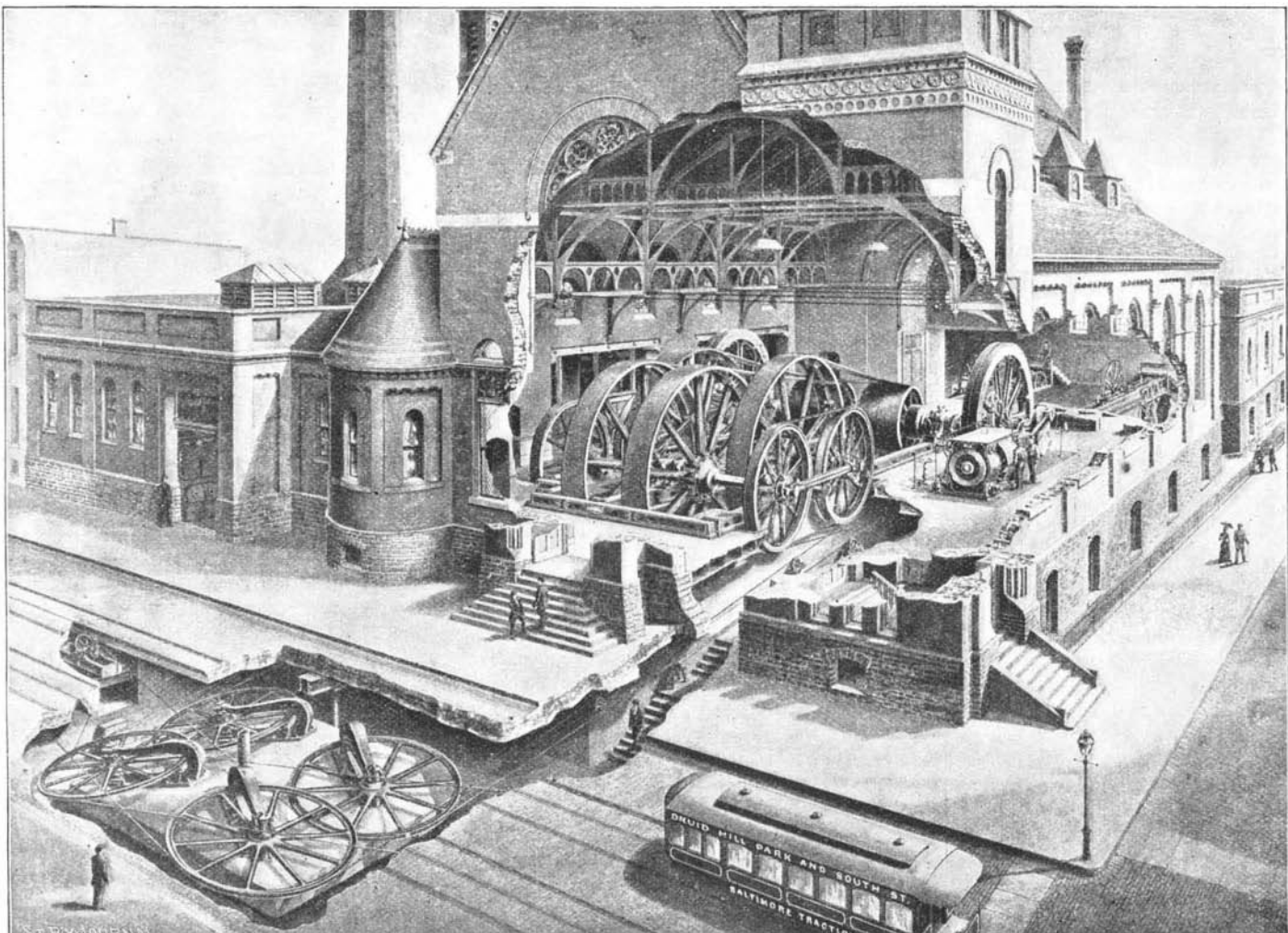
WILLIAMSON &amp; BUZBY'S HEATING GAS BURNER.

with air-receiving openings on its under surface, and air-discharging apertures in its upper portion, impinged by the flame, thus effecting more perfect combustion and producing an intense heat. The improvement has been patented by Messrs. John R. Williams and Isaac W. Buzby, of Seattle, Washington. On the gas supply tube, fitted in a suitable base, is a conical nozzle, surrounded by the chambered lower end of a mixing tube, near the bottom of which are air apertures, while in its upper end is inserted the threaded portion of the burner. The latter consists of a casting, with lateral apertures through which the gas issues, and with lugs at short intervals, the top of the casting being closed by a disk which rests upon the lugs and is secured in place by screws. The surrounding air supply tube is supported by right-angled rods, and is preferably of oval section, although it may be circular or triangular in section, and its lower air-receiving openings are larger than the discharge apertures. The flame, impinging upon this hollow ring or tube, raises it to a high temperature, and correspondingly heats the air discharged therefrom to mingle with the gas of the flame.

## Quadruple Birth.

A recent number of *La Ilustracion de Cuba* states that on the 27th of February last, Madam Buenviaje Carillo, wife of District Attorney Don Luciano Jimenez, of Remedios, gave birth to four robust children. All doing well at last accounts; the little ones soon to be baptized.

SHOES are now made of *lece*—the thick guipure description. They are very dainty and yet strong. Good leather shoes and boots are to be had ventilated in such a manner as not to expose the foot to wet or damp. This is an excellent move, as thick leather is apt to heat the foot unduly, causing great discomfort to the wearer.



GILMORE STREET CABLE POWER STATION—BALTIMORE TRACTION COMPANY.