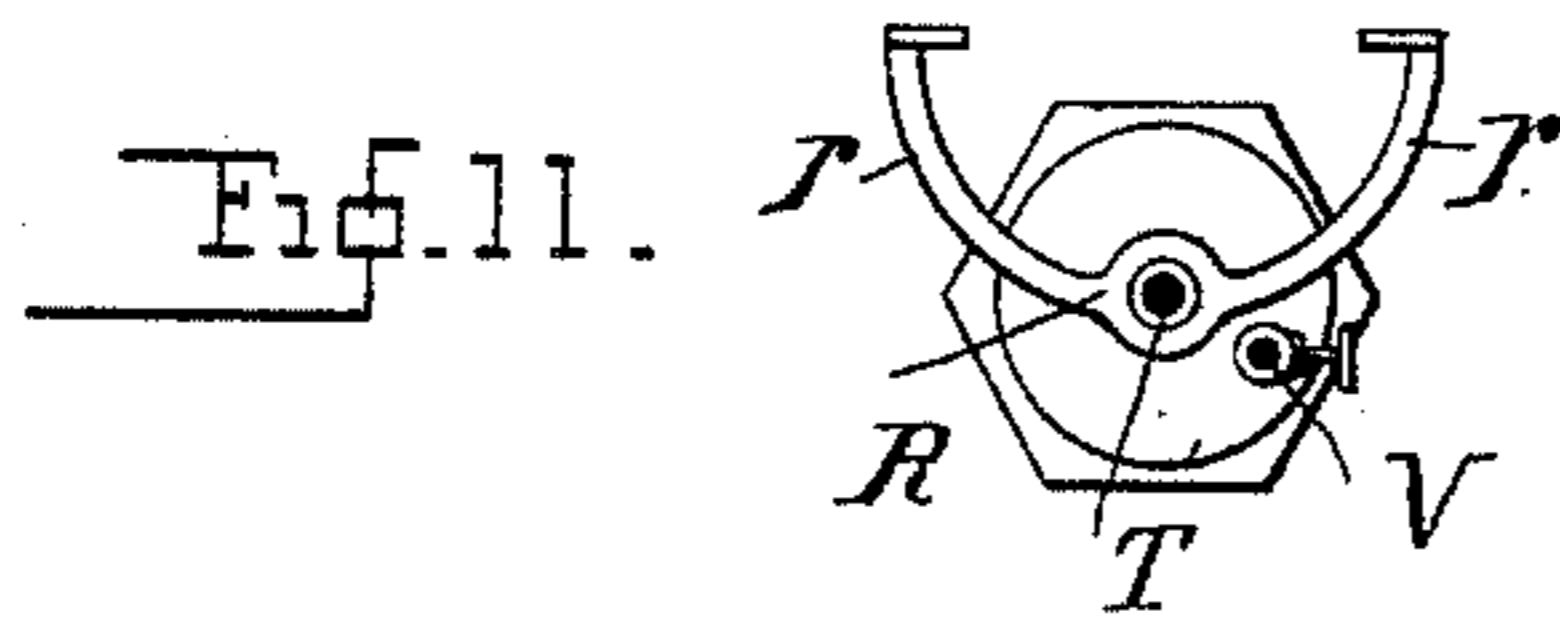
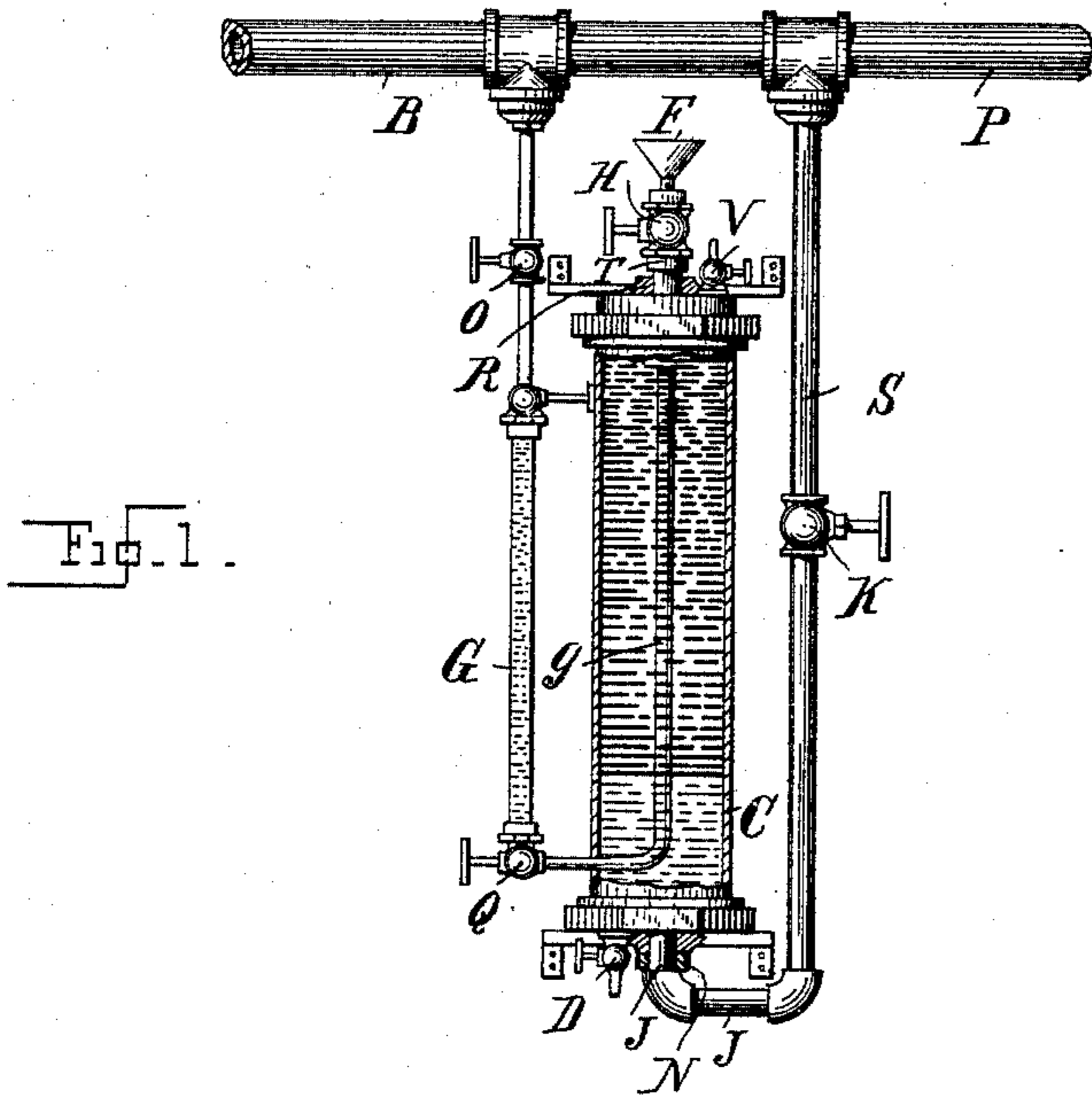


(No Model.)

O. A. ENHOLM.
BOILER OIL INJECTOR.

No. 485,920.

Patented Nov. 8, 1892.



Witnesses
Wm. A. Courtland
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att'y

UNITED STATES PATENT OFFICE.

OSCAR A. ENHOLM, OF NEW YORK, N. Y., ASSIGNOR TO FRANK H. CORNELL,
OF SAME PLACE.

BOILER OIL-INJECTOR.

SPECIFICATION forming part of Letters Patent No. 485,920, dated November 8, 1892.

Application filed July 23, 1892. Serial No. 441,027. (No model.)

To all whom it may concern:

Be it known that I, OSCAR A. ENHOLM, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and Improved Boiler Oil-Injector, of which the following is a specification.

My invention relates to an apparatus for supplying oil to a boiler in a finely-divided state or in drops, and is fed to the boiler by means of the pressure in the water-supply pipe.

My invention consists in the application of this principle in convenient apparatus and to specific details hereinafter referred to, and particularly pointed out in the claim.

Referring to the accompanying drawings, which form a part of this specification, Figure I therein shown illustrates a side elevation of my improved apparatus, and Fig. II a plan view.

In the drawings, P is a water-supply pipe—that is to say, a pipe which receives the water from the source of supply and introduces it to the boiler. The inner end of this pipe I term the “boiler-pipe” B for convenience of illustration and description. The latter is a pipe which enters directly into the boiler. Mounted upon this pipe is my improved apparatus. It consists, essentially, of a downwardly-extending supplementary pipe S, provided with a stop-cock K and a double elbow-joint J J. The pipe J enters a chamber C at its lower end, the said chamber consisting, preferably, of a vertically-arranged cylinder, parallel with which is arranged a vertical glass tube G. The glass tube G enters at its upper end into the boiler-pipe B and at its lower end extends into the chamber C. A prolongation of said tube is shown at g, and it consists of a vertical standing tube extending centrally upward from near the bottom of the chamber C to near the top thereof. At O, I show a regulating-cock for regulating the flow of oil, as hereinafter described. At Q, I show another cock. At the top of the cylinder-chamber C, I provide a tube T, having a funnel F and a cock H.

The method of operating the apparatus is as follows: The cock H being opened, oil of any desired kind is poured into the funnel F and fills the chamber C. After said chamber

has been filled or nearly filled the cock H is closed. While the filling operation is going on, the vent-cock V is opened to permit the escape of air. When the cocks H and V are both closed, the cock K, leading from the water-pipe P to the bottom of the chamber, is opened. This will cause a flow of the water, which is of course under pressure, through the pipe S and pipe J J into the bottom of the chamber C and beneath the oil contained in said chamber. The water being under pressure, as aforesaid, will lift the body of the oil upwardly and cause it to discharge into the standing pipe g. Upon opening the cocks O and Q the oil will be forced into the pipe G and thence upwardly into the boiler-pipe B. By means of the cock Q, I can regulate the flow of the oil and permit it to feed into the boiler by pipe B drop by drop or in large quantities, if desired, and can reduce it to the lowest possible minimum. At D, I show a drip-cock.

It will be seen from the above that the oil can be fed into the boiler with great nicety, and it will also be seen that by means of this apparatus I can overcome the objections heretofore obtaining in respect to introducing oil into the boiler interiors. Formerly such oil has been introduced in too large a quantity at a time, thereby causing foaming of the water in the boiler and a general waste of the oil without accomplishing the desired result effectively.

At R, I show a bracket provided with arms r r at the top and bottom thereof. These arms are adapted to support the instrument and are attached to the instrument at the bottom and top of the chamber C, as shown, so as to give the whole instrument a swiveling and swinging action in the bracket-frame R. By means of this the position of the apparatus can be reversed and by turning half-way around can be made right or left handed, according to the direction and position of the water-pipes P and B.

At N, I show a jam-nut for tightening the injector when placed in position.

I am aware that it is not new to supply a purge to the feed-water of boilers by gravity, and that it has been proposed to provide a suitable purge-reservoir above the feed-water

pipe and connected therewith by suitable passages, so that the heavy purge which is placed in the reservoir will gradually feed into the feed-water pipe by gravity and draw
5 a sufficient quantity of the water up into the reservoir to take the place of the oil; but I do not claim any such arrangement.

My improved device consists of a suitable reservoir supported below the feed-water pipe
10 and connected thereto by a pair of depending pipes in such a manner that a light oil or boiler purge will be automatically fed to the feed-water pipe by the pressure of the water therein.

15 Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

In a boiler oil-injector, the combination of the feed-water pipe P, the by-pass S, depend-

ing from the pipe P, the chamber or reservoir 20 C, connected at its lower end to the by-pass S, the oil-pipe G, depending from the feed-water pipe P and also connected to the chamber C at its lower end, the standing tube g, forming a continuation of the oil-tube G and 25 extending upwardly within the chamber C nearly to the top thereof, and a cock K in the by-pass S for controlling the supply of water to the chamber C, whereby the supply of oil to the feed-water is automatically regulated 30 by the flow of water into the chamber C, which is caused by the pressure in the feed-water pipe, substantially as set forth.

OSCAR A. ENHOLM.

Witnesses:

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