W. MAJOR

APPARATUS FOR SUPPLYING HYDROCARBON OIL TO WATER UNDER PRESSURE.

No. 190,603. Patented May 8, 1877.

Fig. 1.

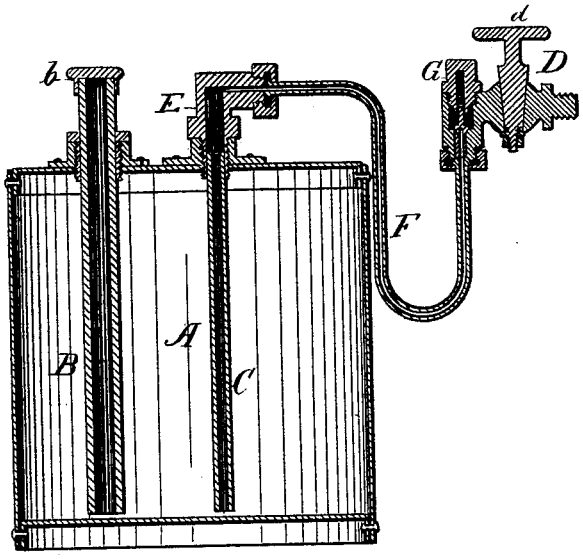
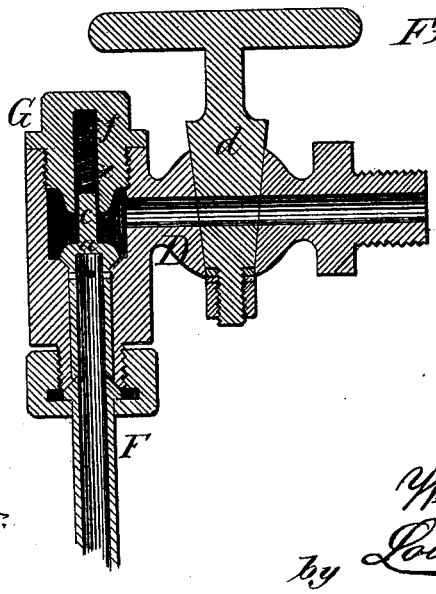


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM MAJOR, OF COPENHAGEN, DENMARK.

IMPROVEMENT IN APPARATUS FOR SUPPLYING HYDROCARBON OIL TO WATER UNDER PRESSURE.

Specification forming part of Letters Patent No. **190,603**, dated May 8, 1877; application filed April 7, 1877.

To all whom it may concern:

Be it known that I, WILLIAM MAJOR, engineer in the Royal Danish Navy, of Copenhagen, Kingdom of Denmark, have invented certain new and useful Improvements in the Application of Petroleum or other Hydrocarbon Oils to Steam-Boilers and other Vessels and an Apparatus therefor; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification—

My invention relates to the construction of an apparatus for supplying petroleum (kerosene) or other hydrocarbon oils to water under pressure for the purpose of purifying the same for steam-boiler and manufacturing purposes; and it consists in the construction and arrangement of parts, which I shall now proceed more fully to describe with reference to the drawing, in which—

Figure 1 is a sectional view of the storing-tank, with feeding-faucet; and Fig. 2 is a similar view, on an enlarged scale, of the feeding-faucet detached.

Similar letters of reference indicate corresponding parts.

A is the tank in which the oil is stored. This, which may be of any suitable size and shape, may, if the oil is to be supplied to a steam-boiler together with the feed-water, be placed in the engine-room, or in any place convenient thereto. It has a filling-tube, B, extending nearly to the bottom thereof, and provided with a tightly-fitting screw-cover, *b*. C is the pipe through which the oil is drawn. This also extends nearly to the bottom of tank A, as shown. It is connected by a suitable coupling, E, with the conduit-pipe F, having at the end the feeding-faucet D. This, the detailed construction of which will be readily understood by reference to Fig. 2 of the drawing, has a stop-cock, *d*, by which the supply of oil may at any time be cut off. The supply of oil, when permitted to flow, is regulated by a valve, *a*, having a stem, *c*, which fits in a recess, *e*, of the screw-threaded cap or cover G, of faucet D. In recess *e*, above the stem *c*, I place a coiled spring, *f*, which serves to press the valve against its seat, as shown.

When my improved apparatus is used for feeding the hydrocarbon oil with the feed-water direct into a steam-boiler, the feeding-faucet may be connected by a suitable pipe with the suction-pipe of the feed-water apparatus; or it may be attached directly to the valve-box of the feed-pump or injector, this last method being preferable. When the feed-pump or injector is operated the suction will raise the valve *a*, thus causing the oil to flow with the water, the proportional quantity being easily regulated by raising or lowering the cap G, which may, if desirable, be provided with a graded indicator. By turning the cock *d* the supply of oil may, at any time, be entirely cut off.

By supplying the feed-water with hydrocarbon oil in the manner described all such mineral, vegetable, or other impurities as are contained therein are filtered therefrom, and precipitated to the bottom of the boiler, from which they may afterward be blown off, in the usual manner. Incrustations or priming of steam-boilers are thus obviated, and the danger of explosion or of destruction of the interior parts of the boiler is thus lessened, or completely obviated.

It is obvious that, instead of feeding the oil from my improved apparatus direct to the steam-boiler, it may be forced or fed into a storing-tank, in which the water is kept under heat and pressure, the result being the same. The water thus purified may be used advantageously for bleaching, drying, and various other manufacturing and industrial purposes, as well as for steam-boilers.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The feeding-faucet D, having stop-cock *d*, valve *a*, having stem *c*, and screw-threaded cap or cover G, having recess *e* and coiled spring *f*, substantially as and for the purpose shown and specified.

2. The combination of the tank A, having filling-pipe B and draw-off pipe C, with the feeding-faucet D, herein described, substantially as and for the purpose set forth.

3. The apparatus herein described for supplying petroleum or other hydrocarbon oil to water while under heat and pressure for purification purposes, consisting of the storing-tank A and feeding-faucet D, both constructed and arranged to operate substantially as herein described, for the purposes shown and specified.

In testimony that I claim the foregoing as my own I have here affixed my signature in presence of two witnesses.

WILLIAM MAJOR,
Engineer Danish Navy.

Witnesses:
CARL HECKSHEN,
CARL KJAR.