

(No Model.)

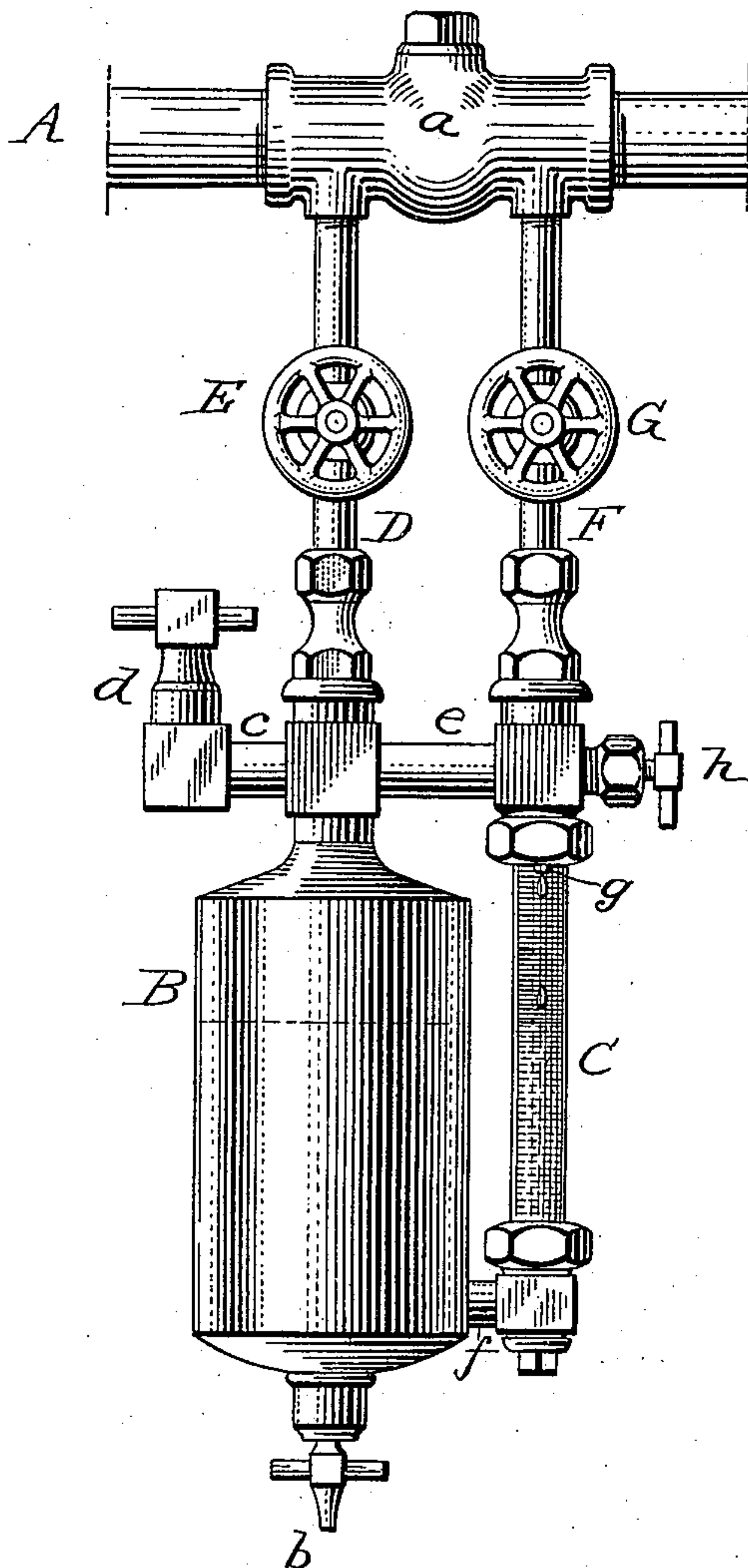
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G. C. MORRIS.
FEEDER FOR INCRUSTATION PREVENTIVES.

No. 564,212.

Patented July 21, 1896.

Fig. 1.



Witnesses
W. B. Burdine.
D. E. Burdine

Inventor:
George C. Morris,
by Dodge & Sons,
Attorneys.

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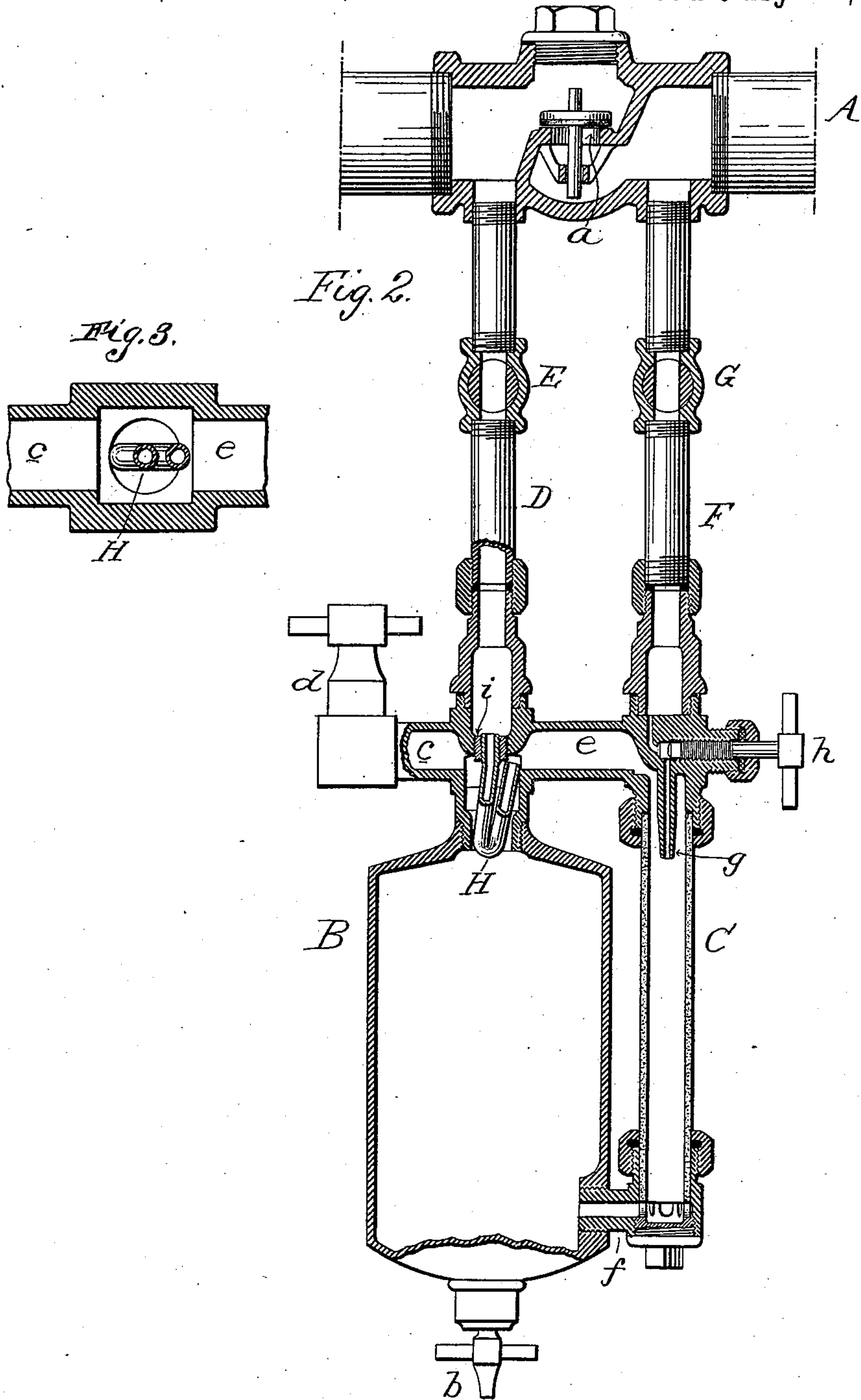
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L. C. Burdine
D. C. Burdine.

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by Dodge & Sons,
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE C. MORRIS, OF DETROIT, MICHIGAN, ASSIGNOR TO THE MICHIGAN LUBRICATOR COMPANY, OF SAME PLACE.

FEEDER FOR INCRUSTATION PREVENTIVES.

SPECIFICATION forming part of Letters Patent No. 564,212, dated July 21, 1896.

Application filed April 20, 1896. Serial No. 588,350. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. MORRIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Feeders for Incrustation Preventives, of which the following is a specification.

My invention relates to the prevention of the incrustation of boilers by the use of kerosene-oil or other suitable dissolvent; and it consists in a novel construction of devices for feeding the dissolvent or incrustation preventive into the boiler.

In the drawings, Figure 1 is a face view of my improved device; Fig. 2, a sectional view of the same, and Fig. 3 a sectional view showing details of construction.

A indicates the feed-water pipe of the boiler, and *a* a check-valve therein.

B indicates an oil-reservoir, having a drain-valve *b* at the lower end and a filling-tube *c* at the upper end, the said filling-tube being provided with a removable plug *d*, by which the tube is closed after filling the reservoir with the oil or other incrustation preventive. This reservoir B is connected at the top by means of a pipe or passage *e* with the upper end of the glass tube C, and at the bottom by means of a pipe or passage *f* with the lower end of the said glass tube. Extending from the top of the reservoir is a pipe D, provided with a valve E and connected with the feed-water pipe A at the boiler side of the check-valve. A similar pipe F, provided with a valve G, extends from the top of the glass tube C and is connected with the feed-water pipe A at the pump side (or injector side) of the check-valve, the said pipes D and F thus straddling the check-valve. At the lower end of the pipe F is a dropper *g*, provided with a valve *h*, by means of which the feed is regulated and controlled. At the lower end of the pipe D and fitting within the upper end or outlet of the reservoir is a trap H. Said trap is preferably formed by bending to form a piece of small tubing, the uppermost end of which is threaded and screwed into an internally and externally threaded washer *i*, said washer being secured in the lower end of the pipe D. This is the construction actually

employed, but I do not wish to restrict myself to exact details.

The operation of the device is as follows: The valves E and G are first closed and the reservoir B and tube C are emptied. Plug *d* is then removed and the reservoir and the tube are filled with oil, which rises to the same level in both. Plug *d* is now replaced and the valves E and G opened, the inflowing water entering through pipe F being regulated by the valve *h*. The trap H will prevent the oil from passing out of the reservoir faster than water is admitted through the pipe F and valve *h*. Were it not for this trap the water would enter the reservoir directly from the pipe D and displace the oil.

As the water-inlet is on the pump side or injector side of the check-valve, the pressure being slightly greater on that side, a circulation is obtained toward the delivery-pipe D. Consequently the water-drop, as permitted by valve *h*, enters the oil in the glass sight-feed tube C in the form of a visible drop and, descending to the bottom, displaces a corresponding quantity of oil, which escapes through trap H and pipe E into the feed-water on its way to the boiler.

As the reservoir is connected at top and bottom with the sight-feed tube, the water delivered into the latter will be distributed into said tube and the reservoir and will occupy the same level in both. Consequently, as the oil floats upon the water, the oil will occupy the same level in the reservoir and the tube, and the attendant is thereby enabled to see at a glance not only whether the device is feeding properly, but also the amount of oil remaining in the reservoir, the single sight-feed tube performing the double function of a sight-feed and a gage-glass and avoiding the necessity of using a separate gage-glass.

Having thus described my invention, what I claim is—

1. In combination with a reservoir and a sight-feed tube connected at their ends; a water-supply pipe; and an oil-discharge pipe distinct from the water-supply pipe and adapted to be independently connected with the feed-water pipe.

2. In combination with a feed-water pipe

provided with a check-valve; a reservoir and a sight-feed tube connected with each other at opposite ends; a water-supply pipe on the pump side of the valve; and an oil-discharge
5 pipe on the boiler side of said valve.

3. In combination with reservoir B and sight-feed tube C; pipes *e* and *f* connecting the reservoir and tube at top and bottom; supply-pipe F to deliver water into the tube;
10 oil-discharge pipe E extending from the top of the reservoir; and a filling-tube *c* provided with a plug *d*.

4. In combination with feed-water pipe A provided with check-valve *a*; a reservoir B
15 and a sight-tube C connected at top and bottom; a filling-tube *c* provided with plug *d*; the valved water-supply pipe F; and the valved oil-discharge pipe D.

5. In a device for supplying an incrustation

preventive to boilers; the combination with 20 suitable water-supply and oil-discharge pipes; of a reservoir and a sight-feed glass connected at top and bottom; whereby a circulation through the glass and reservoir is obtained, and whereby also the glass is adapted to serve 25 both as a sight-feed and also as a gage-glass.

6. In combination with feed-water pipe A provided with a check-valve *a*; a reservoir B and a sight-tube C connected at top and bottom; a water-supply pipe F; an oil-discharge
30 pipe; and a trap located at the lower end of the discharge-pipe.

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE C. MORRIS.

Witnesses:

D. F. GLIDDEN,

C. S. CRAWFORD.