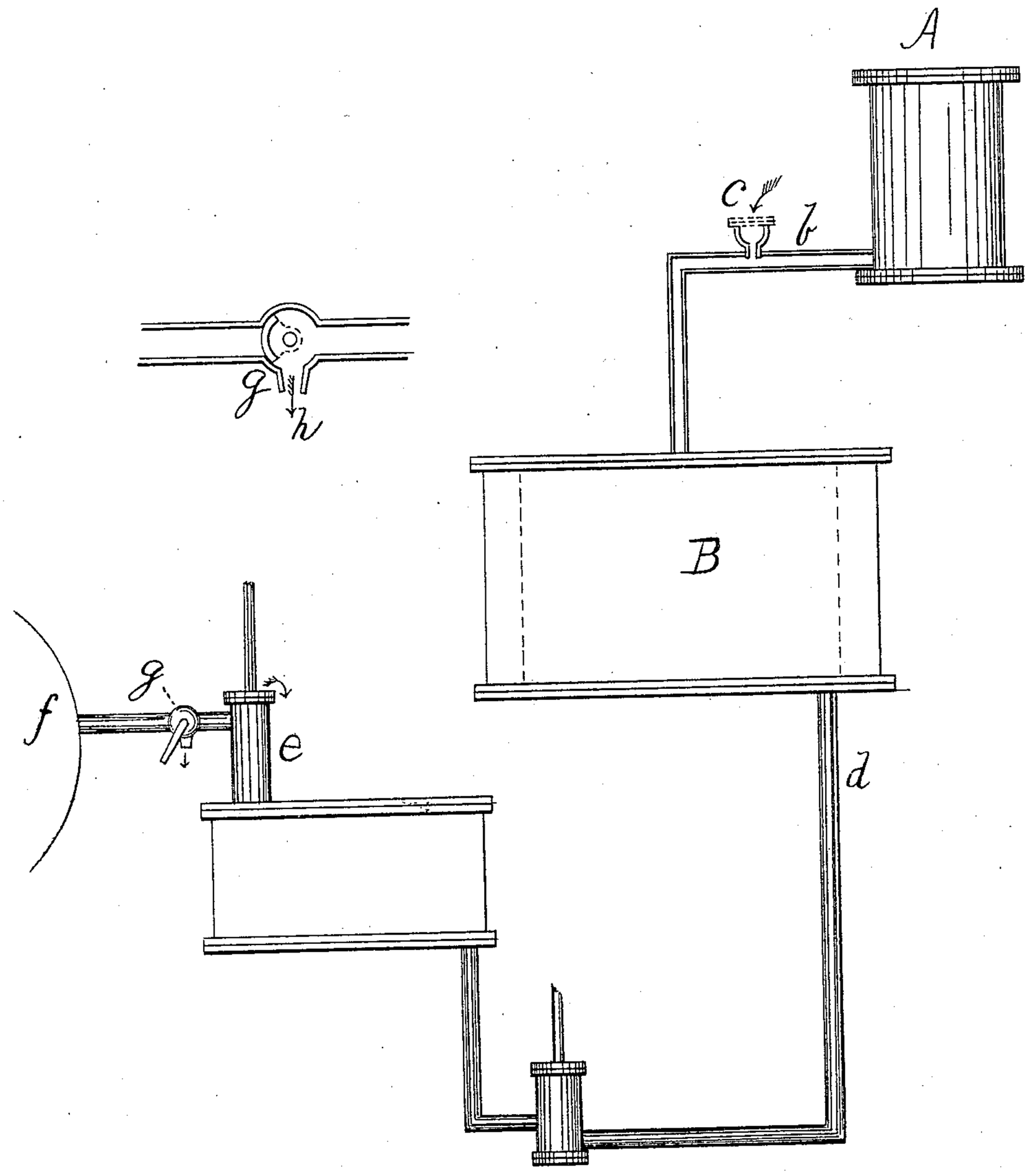
H. C. BUCKNAM.

Devices for Cleaning Surface Condensers.

No. 142,766. Patented September 16, 1873.



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HENRY C. BUCKNAM, OF BUCKSPORT, ASSIGNOR TO JOSEPH P. BASS, OF BANGOR, MAINE.

IMPROVEMENT IN DEVICES FOR CLEANING SURFACE-CONDENSERS.

Specification forming part of Letters Patent No. **142,766**, dated September 16, 1873; application filed January 17, 1873.

To all whom it may concern:

Be it known that I, HENRY C. BUCKNAM, of Bucksport, in the county of Hancock and State of Maine, have invented certain new and useful Improvements in Device for Cleaning Surface-Condensers; and I do hereby declare that the following is a full, clear, and exact description thereof, that 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, in which is shown a side elevation of my device.

As surface-condensers, so called, are now made, all of the oil from the cylinder of the engine, together with the wearings of the iron, are carried by the exhaust steam into the condenser and collect upon the pipes impairing their usefulness and rendering it necessary to remove them frequently for cleaning. This accumulation of hardened grease and dirt can be removed from the pipes of the condenser by the use of alkalies, and some other substances, such as kerosene, turpentine, &c., which are capable of dissolving it, but the only access to the condenser being through the cylinder, which would be injured by passing these substances through it, they cannot be applied. The object of my invention is to provide a means of removing this dirt and grease from the condenser-pipes, which, while it will be perfectly effective in its operation, can be applied at any time without even stopping the engine.

Referring to the drawing will show the nature of my invention.

A shows the cylinder of the engine; *b*, the exhaust-pipe leading to the condenser *z*, having therein an opening, *c*, into which the turpentine, petroleum, or other substances, are introduced. The vacuum produced in the condenser by the condensation of the steam sucks the liquid down and through the pipe *b* to the condenser, heating it by the exhaust steam. It operates immediately upon the caked grease surrounding the pipes, cleaning them thoroughly, and depositing the sediment in the lower part of the condenser, whence it is carried, together with the water from the condensed steam, through a second pipe, *d*, connecting with the feed-pump *e*, which feeds the water to the boiler *f*. To prevent the entrance into the boiler of this water when charged with the cleanings of the condenser, stop the pipe *d* between the pump and boiler and insert a faucet, *g*, by which the pipe *d* may be closed and a passage opened out of it for the escape of the water at the same time. (See detail.) The same effect is produced by removing the bonnet or cover of the feed-pump, allowing the water to flow over the top of it, the pressure of the steam in the boiler preventing its passage through the pipe *d* thereto when another means of escape is opened.

When, from use, the pipes of the condenser become coated, the engineer has merely to open the orifice *c* in the exhaust-pipe and pour in the solvent. He then removes the bonnet of the pump, as specified above, or, if a faucet be used, turns it so as to close the pipe *d* and open the escape *h*. The solvent removes the caked dirt, and the pump or faucet discharges the water loaded with the sediment. A few minutes suffice to clean it thoroughly, when the hole *c* may be closed, and also the pump or faucet. During this time the action of the engine has been uninterrupted, assisting, in fact, in the cleaning.

I consider that product of petroleum known as macca or black oil as an excellent solvent. One or two quarts suffice in most cases to clean the pipes.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The within-described method of cleaning surface-condensers, to wit, by introducing and passing through said condenser, with the exhaust steam, a grease solvent, operating as herein specified.

2. The combination of the opening *c* in the exhaust-pipe of an engine with a condenser, B, and a faucet, *g*, for removing the sediment before it reaches the boiler, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of January, 1873.

HENRY C. BUCKNAM.

Witnesses:
W. E. BROWN,
WM. FRANKLIN SEAVEY.