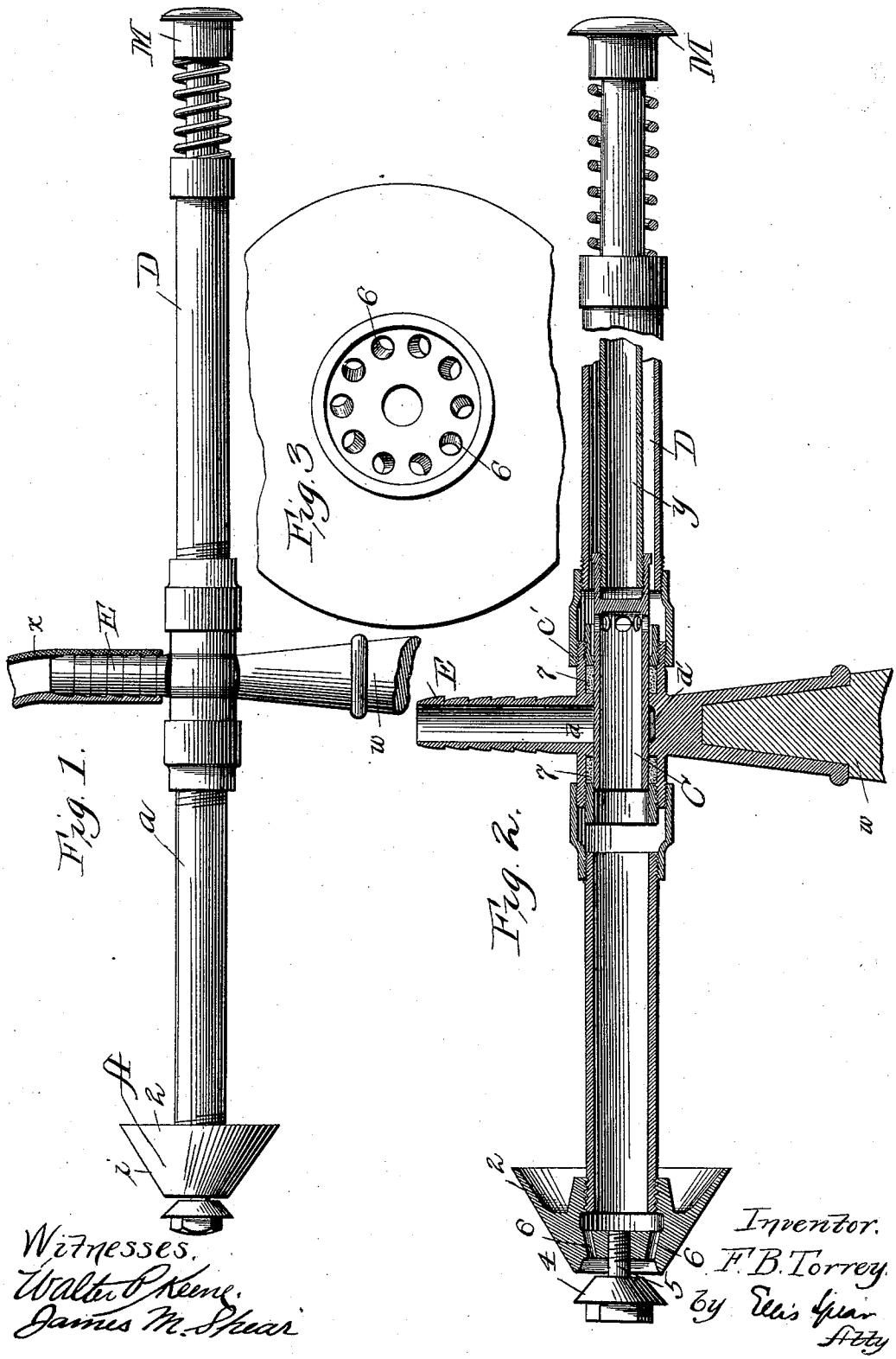
(No Model.)

F. B. TORREY.

BOILER FLUE CLEANER.

No. 414,827. Patented Nov. 12, 1889.



N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

FRANCIS B. TORREY, OF BATH, MAINE.

BOILER-FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 414,827, dated November 12, 1889.

Application filed February 18, 1889. Serial No. 300,311. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS B. TORREY, of Bath, in the county of Sagadahoc and State of Maine, have invented a new and useful Improvement in Boiler-Flue Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention belongs to that class of boiler-flue cleaners by which steam is injected into the said flues, the admission of the steam being controlled by a valve, which in turn is controlled by the operator; and the invention consists in the form and arrangement of the said valve, with means for operating it, and in details of construction hereinafter described.

In the drawings, Figure 1 is a side elevation of the device, and Fig. 2 is a longitudinal section through the same. Fig. 3 is a plan view of the head with the cone 4 removed.

The head A, adapted for insertion within the tube to be cleaned, is screwed upon the end of the pipe *a*, through which the steam passes. Its contact-face *i* is cone-shaped, and rearwardly-extending flanges are provided at 2, by which the head is adapted to different sizes of flues, so that when put in place it will extend partially into the same and have a positive bearing on the tube-edge to make a tight fit. The face of the head is slightly dished, and in front of this a cone 4 is located, being held by its shank 5, screwed into the head. The openings 6 through the head are inclined, in order that the steam issuing therefrom will be given a spiral course, to better act upon all portions of the flue. The valve for controlling the admission of steam is arranged entirely independent of the head and at a point in the pipe *a* in rear of said head, so that there is no liability of grit or dirt getting between the valve and its seat and thus injuring the parts and causing leakage. This valve C is of elongated tubular form, and is arranged to slide longitudinally through the coupling C′, which connects the steam-conduit pipe with the hollow handle D. The coupling is formed with a nipple E, which communicates with the interior of the coupling through a port *d*. The valve slides across this opening, and is provided with openings through its periphery, and when the valve is moved longitudinally to bring these openings to register with the port *d* the steam passes into the tubular valve and out through its open end into the steam-conduit pipe and thence to the flue, it being directed spirally and spread by the openings in the head and the small cone, respectively. The coupling at its center and opposite the port is formed with a circumferential groove *d′*, and when the valve-openings register with the port the steam is free to enter the peripheral openings at all points. The valve-seat is provided with packings 7 on either side of the inlet-port, and for holding these in place threaded sleeves are employed, which are screwed into the coupling-ends to bear against said packing. It will be seen from this form of valve and the manner of arranging it that it is perfectly steam-tight and may be easily operated, there being no liability of grit or dirt affecting it in any way. Steam is conveyed to the device through the flexible pipe *x*, connected with the nipple. For operating the valve a rod *y* is used, which is screwed into the valve-head and extends through the hollow handle projecting therefrom at the front. A handle-piece M is screwed on this end, and between this handle-piece and the end of the hollow handle a spiral spring is arranged, which presses the rod outwardly and keeps the valve in normal position—that is, with the peripheral openings out of line with the inlet-port—the outward movement of the valve being limited by contact with the coupling.

The operation of the device will be apparent. The head is placed to the flue to be cleaned, and the spring-handle is then pressed inwardly, thus sliding the valve and admitting steam through the port and valve to the flues to be cleaned.

The central coupling has a hollow extension adapted to receive a wooden handle *w*.

I claim as my invention—

1. In combination, the head, the conduit-pipe leading thereto, the elongated valve arranged to move longitudinally on its seat, and a rod extending to the front for operating said valve, the said rod being under spring-tension, substantially as described.

2. In combination, the head, the conduit-pipe, the sliding valve arranged to move longitudinally on its seat, a rod under spring-ten-

sion for operating the valve, and an inlet-port opening against the side of the valve, substantially as described.

3. In combination, the head, the conduit-pipe, the elongated tubular valve arranged to slide longitudinally and provided with an opening, means for operating the valve, and an inlet-port opening against the valve side, substantially as described.

4. In combination, the head, the conduit-pipe, the tubular sliding valve, the valve-seat with the inlet-port opening against the valve, a packing-ring on each side of said port bearing against the periphery of the valve, and the screw-sleeves bearing upon said packing-ring, substantially as described.

5. In combination, the head, the conduit-pipe, the hollow handle, the coupling between the two, the valve-seat and valve within said coupling, the inlet-nipple formed thereon, the operating-rod for the valve, extending to the rear, and the spring for controlling said rod, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANCIS B. TORREY.

Witnesses:
F. L. MIDDLETON,
G. W. BALLOCH.