(No Model.)

N. M. STEBBINS.

VALVE.

No. 313,549. Patented Mar. 10, 1885.

Fig. 1

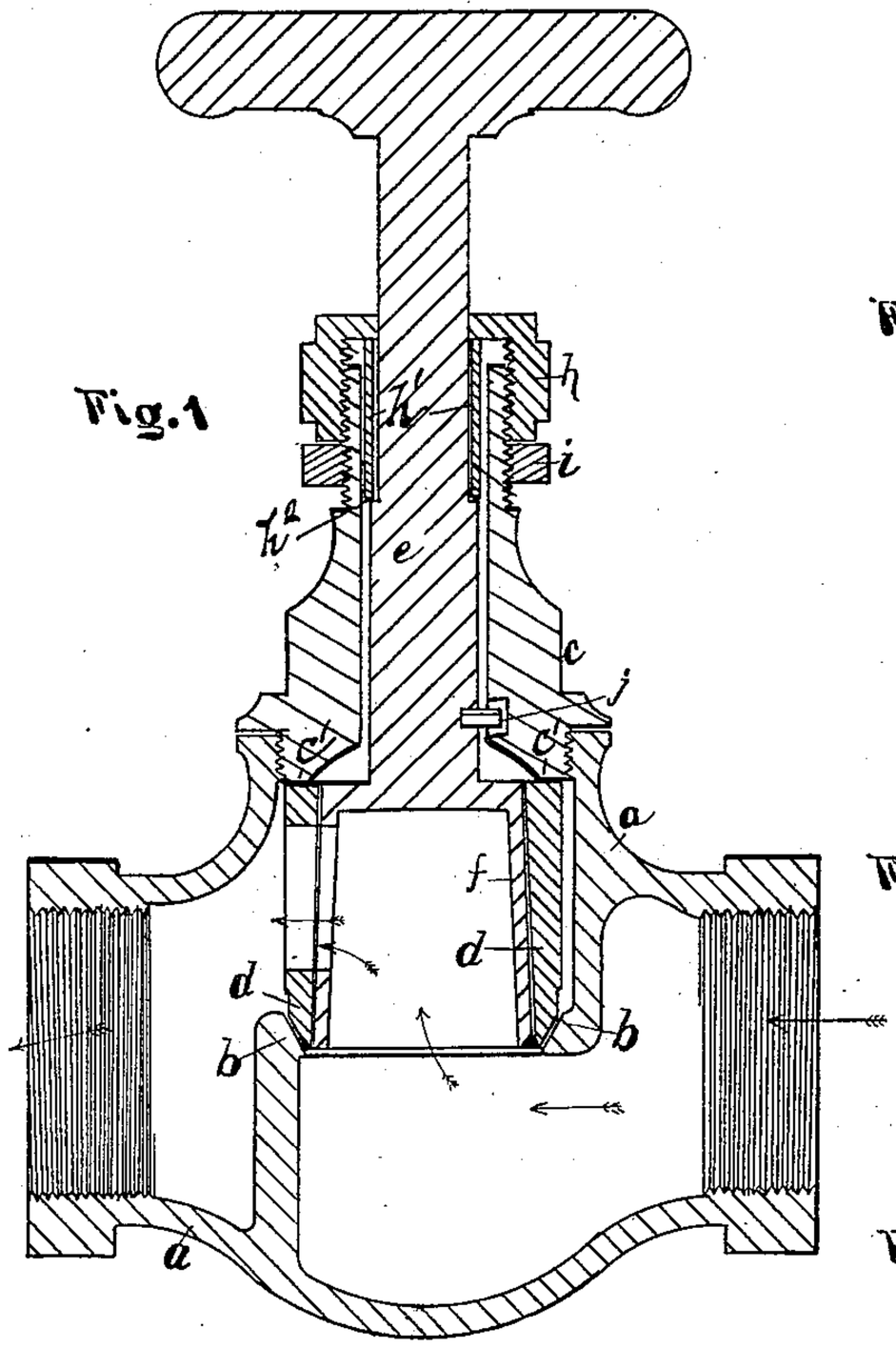


Fig. 2

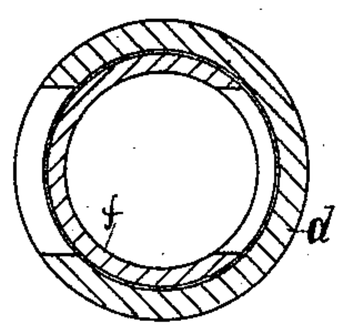


Fig. 3

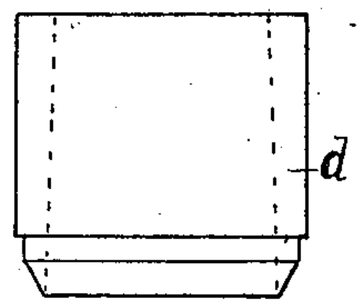
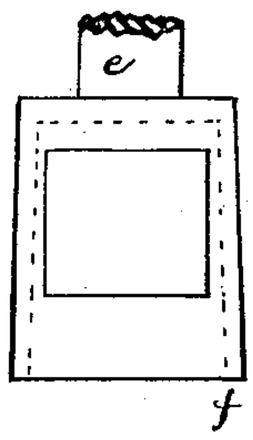


Fig. 4



WITNESSES

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NATHAN M. STEBBINS, OF WALES, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ELIJAH SHAW, OF SAME PLACE.

VALVE.

SPECIFICATION forming part of Letters Patent No. 313,549, dated March 10, 1885.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, NATHAN M. STEBBINS, of Wales, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Steam-Valves, of which the following is a specification, reference being had to the accompanying drawings.

The objects of my invention are to provide a valve of simple and cheap construction wherein no packing-rings are required, and wherein the steam does not come in contact with the valve seat or face, and one in which, if the working parts become defective, they may be changed and the old shell retained. My object is further to produce a device which shall be free from the objections heretofore existing. I accomplish these objects by the construction herein shown.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a sectional view of a valve embodying my invention. Fig. 2 is a sectional view of the lower half of the cap *f* and ring *d*. Fig. 3 is a side view of the ring *d*, and Fig. 4 is a side view of the cap *f* and a portion of the stem.

The shell A is of the usual construction, the faces of the part *b* being ground to fit the beveled lower portion of the ring or part *d*, which is held in position by the screw-cap *c*, whose lower portion, *c'*, bears against the ring *d* and forces it downward. The surfaces of the cap *c* and ring *d* which are in contact are ground or otherwise fitted to prevent the passage of steam to the opening through which the stem *e* passes, thus doing away with the usual packing-ring and packing. The inner shell, cup, or part, *f*, fits tightly within the ring *d*, and both are provided with an opening for the passage of steam. The stem is permanently secured to the cup *f*, and is provided with the ordinary hand-wheel. The steam, moving in the direction indicated by the arrows, passes into the cup *f* from below, and out through the opening in its side. I make the cup *f* tapering or cone-shaped on the outside, and the ring *d* of a like interior shape. The pressure therefore continually forces the surfaces in contact more closely together, and prevents leakage, which might otherwise occur. The letter *h* represents a screw-cap having interior screw-threads on the upper part of the locking-cap *c*, and formed or provided with an interior depending sleeve, *h'*, the free or lower end of which sets on a shoulder, h^2, formed on the valve-stem, the object being to provide means for adjusting the position of the valve in the valve-seat *d*, and as additional means for adjusting the parts and maintaining such adjustment in a fixed position a check-nut, *i*, is fitted to the screw-threaded neck of the locking-cap *c*, which check-nut also serves as a seat for the nut *h*. It is evident that the interior interposed sleeve, *h'*, may be dispensed with, and the purpose effected by having the shoulder on the valve-stem set against the inner face of the cap. The nuts *h* and *i* are threaded, as shown, and screw upon the screw-cap. The valve is closed by turning the hand-wheel until the opening in the cup *f* is carried beyond the opening in the ring *d*. A pin, *j*, projecting from the stem and entering a recess in the cap *c*, operates as a stop, and allows the stem to be turned one-half a revolution. The position of the parts when the valve is closed is shown in Fig. 2, while Fig. 1 shows the position when open.

As the operative part or parts under wear are entirely separate from the shell *a*, it will readily be seen that when these parts become defective they may easily be removed and others substituted without interfering with the shell *a*, and that the working parts of my device may be readily applied to the old shell, the only change required being to grind or otherwise fit the part *b* (heretofore used as a valve-seat) to the beveled edge of the ring *d*.

Having therefore described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The valve-box *a*, formed with the diaphragm *b*, having the upper inner edge beveled, the removable circular hollow valve-seat *d*, having its lower outer edge beveled to fit the bevel on the diaphragm, and the walls of its vertical orifice inclined from bottom to top inwardly, and a steam-port in its side, the screw-threaded cap *c*, to lock the valve-seat in position, and vertically cored to receive the valve-stem, the valve *f*, fitted to the inclined valve-seat, and having the shouldered stem passed through the locking-cap, and the screw-cap *h*, fitted to the upper end of the locking-

cap *c*, all combined substantially as described, and for the purpose set forth.

2. The valve-box *a*, formed with the diaphragm *b*, having its upper inner edge beveled, the removable circular hollow valve-seat *d*, having its lower outer edge beveled to fit the bevel on the diaphragm, and its inner walls inclined from bottom to top inwardly, and a steam-port in its side, the screw-threaded cap *c*, to lock the valve-seat in position, and vertically cored to receive the valve-stem, and having a turn-stop slot formed in the inner surface, and the valve *f*, formed to fit the inclined valve-seat, and having a shouldered stem passed through the locking-cap, and provided with a projecting stud, *j*, to limit the movement of the valve, and an adjustable cap, *h*, formed with a depending sleeve, all combined substantially as described, and for the purpose set forth.

NATHAN M. STEBBINS.

Witnesses:

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A. A. HUBBARD.