

(No Model.)

C. W. TREMAIN.
STEAM ORE STAMP.

No. 436,027.

Patented Sept. 9, 1890.

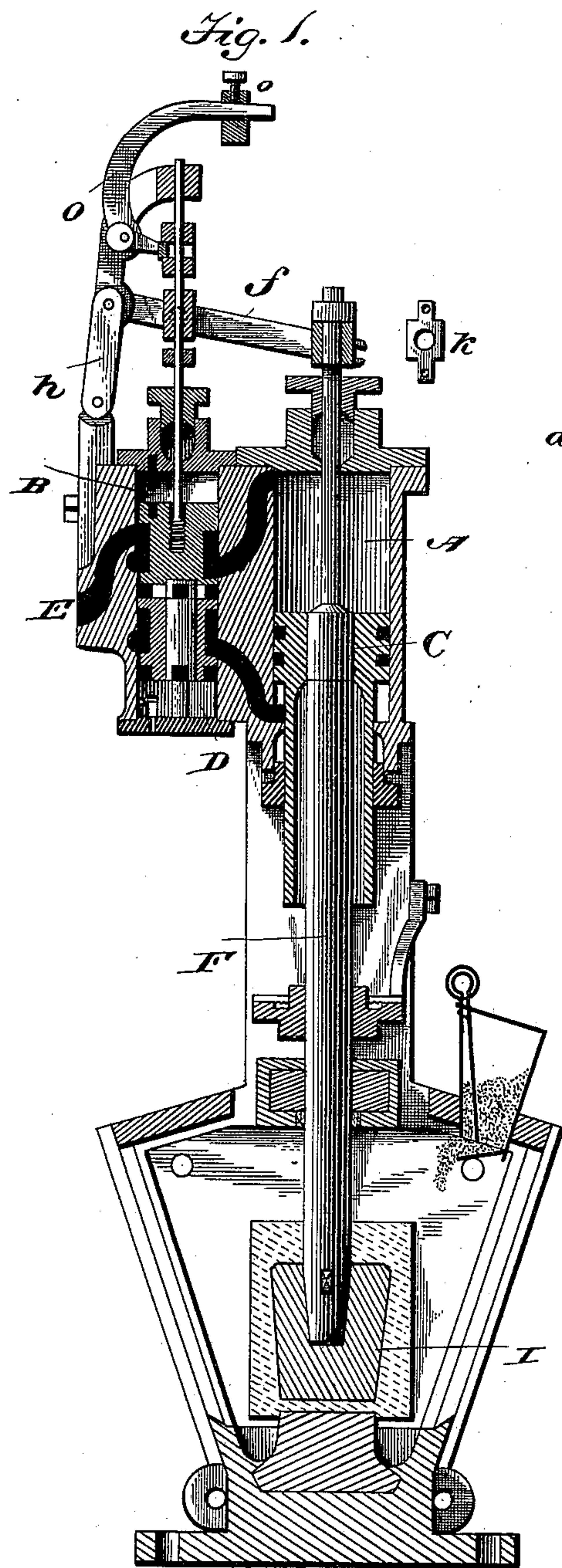
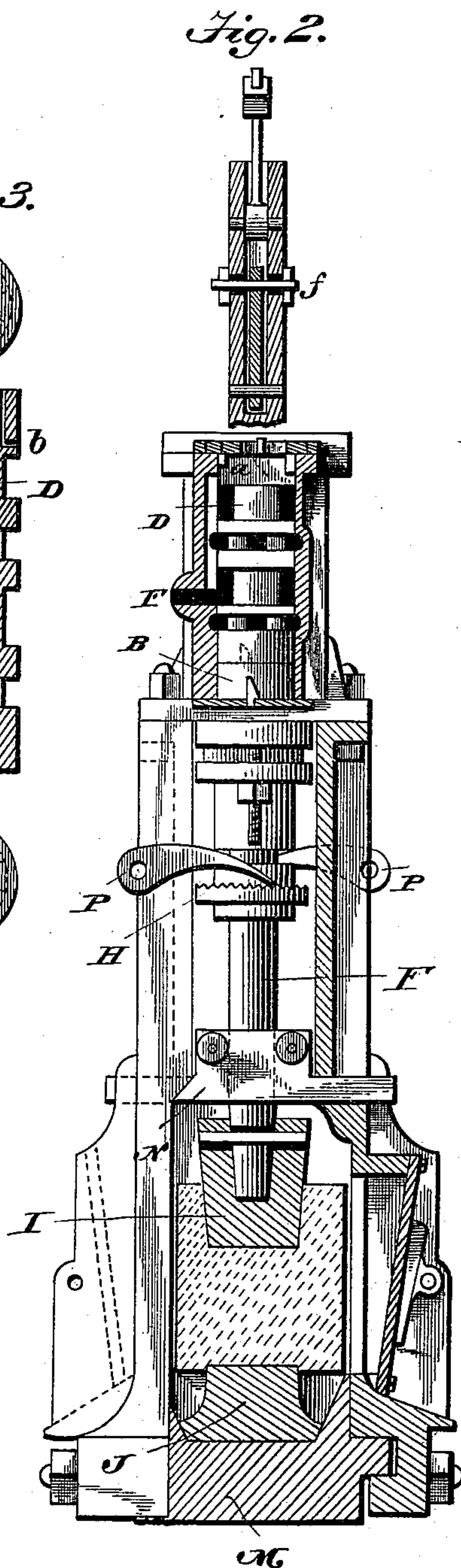
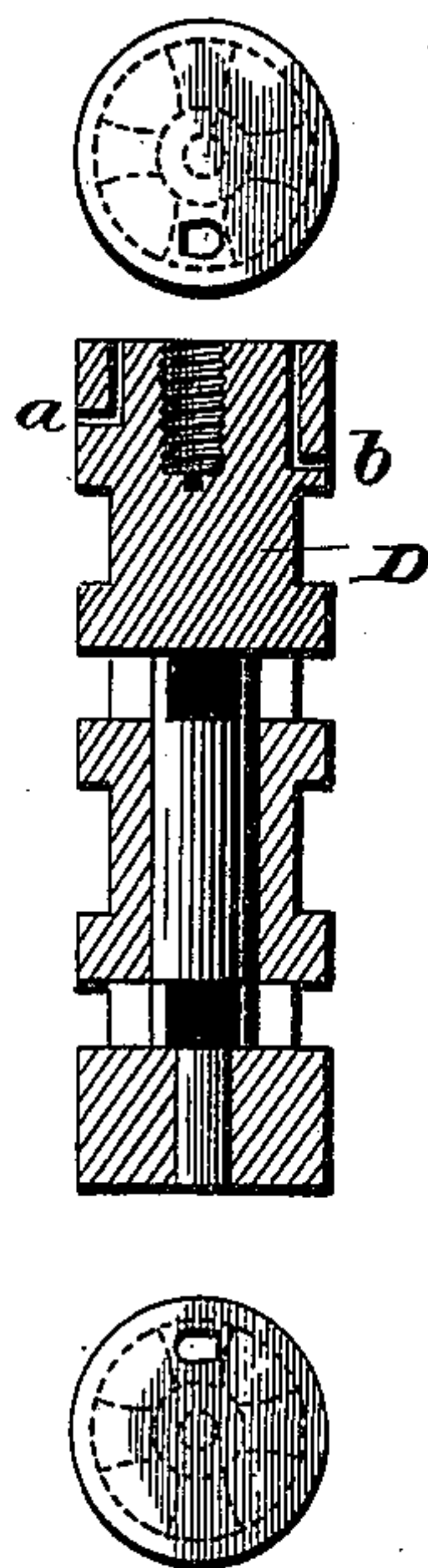


Fig. 3.



WITNESSES

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CHARLES W. TREMAIN, OF PORTLAND, OREGON.

STEAM ORE-STAMP.

SPECIFICATION forming part of Letters Patent No. 436,027, dated September 9, 1890.

Application filed July 30, 1889. Serial No. 319,222. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. TREMAIN, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Steam Ore-Stamps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its object the erection of a light and cheap ore-stamp, and is one of a series of machines that have been designed more especially for the prospective mining plant and by the aid of which many mines may be developed without the assistance of the capitalist. The stamp is built in sections for easy transportation on mule-back; and it consists in the peculiar arrangement of a steam-cylinder and valve movement, described as follows.

Figure 1 is a side elevation, partly in section. Fig. 2 is a front elevation showing the steam-chest in section and the plug-valve in the opposite position from that in Fig. 1. Fig. 3 is an end and sectional view of the plug-valve.

In the drawings, A represents a steam-cylinder with a round steam-chest B, and the valve D in the position for the upstroke of the piston C with the stem F and shoe I, Fig. 1. Steam is now admitted at F, Fig. 2, (the valve being in the position of that in Fig. 1,) passes freely to the under side of the piston C, which owing to the sleeve or trunk has only half the area of the upper side. On the arrival of the piston C at the top of the cylinder the plug-valve D, by the aid of the lever *f* and the steam-opening shown at *a*, Fig. 3, is now in the position to admit the steam from the under side of C, to pass freely through the hollow plug D to the upper side of the piston, and combined with the weight in descending, a heavy blow is delivered on the die, and is regulated by the steam-pressure. The valve is moved to the position in Fig. 1 partly by the lever and collar on the

stem, but finally by the continued action of the bent lever and weight O O, which are particularly designed to move the valve whether the piston completes its stroke or not. The valve is now in the position shown in Fig. 1. The momentum of the weight O on the bent lever O has completed the stroke of the plug-valve and the exhaust of the steam from the upper end of the cylinder is free at E, Fig. 1, after doing double duty of lifting the stamp and striking the blow.

At H, Fig. 2, is a ratchet-hub secured to the stamp-shaft on the upstroke of the piston and shaft. This ratchet-hub engages with two pawls, which cause a slight rotary movement to the piston and shoe, preventing unequal wear.

At N, Fig. 2, a guide-box is provided with hard-wood-blocks. These are adjustable and prevent undue vibration. The shoe and die, as usual, are removable.

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

1. The herein-described steam ore-stamp, consisting of a valve-case, valve, and cylinder, a piston in the cylinder having a stem, a shoe connected to said stem, the jointed connection between the valve-stem and piston-rod, the ratchet-wheel or hub on the stem, and the pawls for engaging said ratchet, substantially as described.

2. In a steam ore-stamp, the combination of a frame, a valve-case, valve, and cylinder, a piston in said cylinder having a stem, a shoe and die, the jointed connection between the piston-rod and valve-stem, the weight, and the ratchet and pawls, all arranged and operating in the manner described.

In testimony whereof I affix my signature, in presence of two witnesses, this 17th day of July, 1889.

CHARLES W. TREMAIN.

Witnesses:

A. OHLTHOFF,
WM. E. POPE.