T. Mahoney,

Steam Slide Valve.

No. 30,827. Patented Dec. 4, 1860.

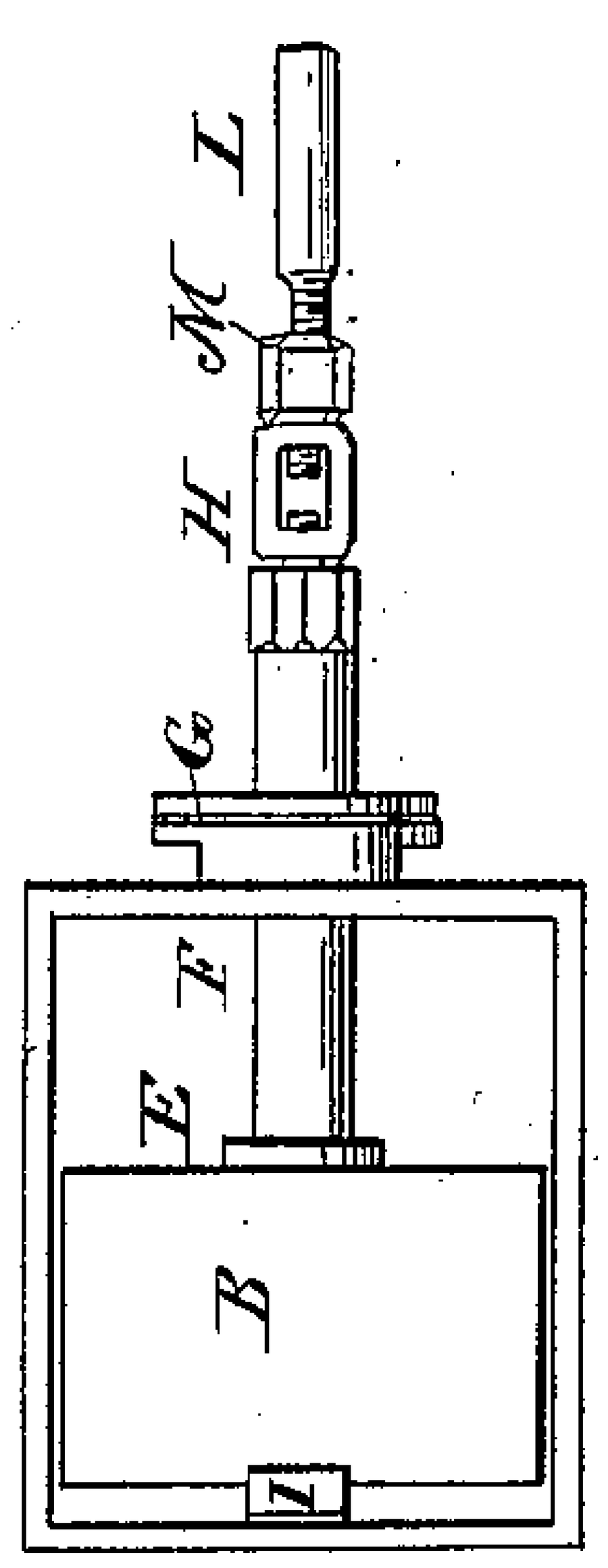

Fig. 1.

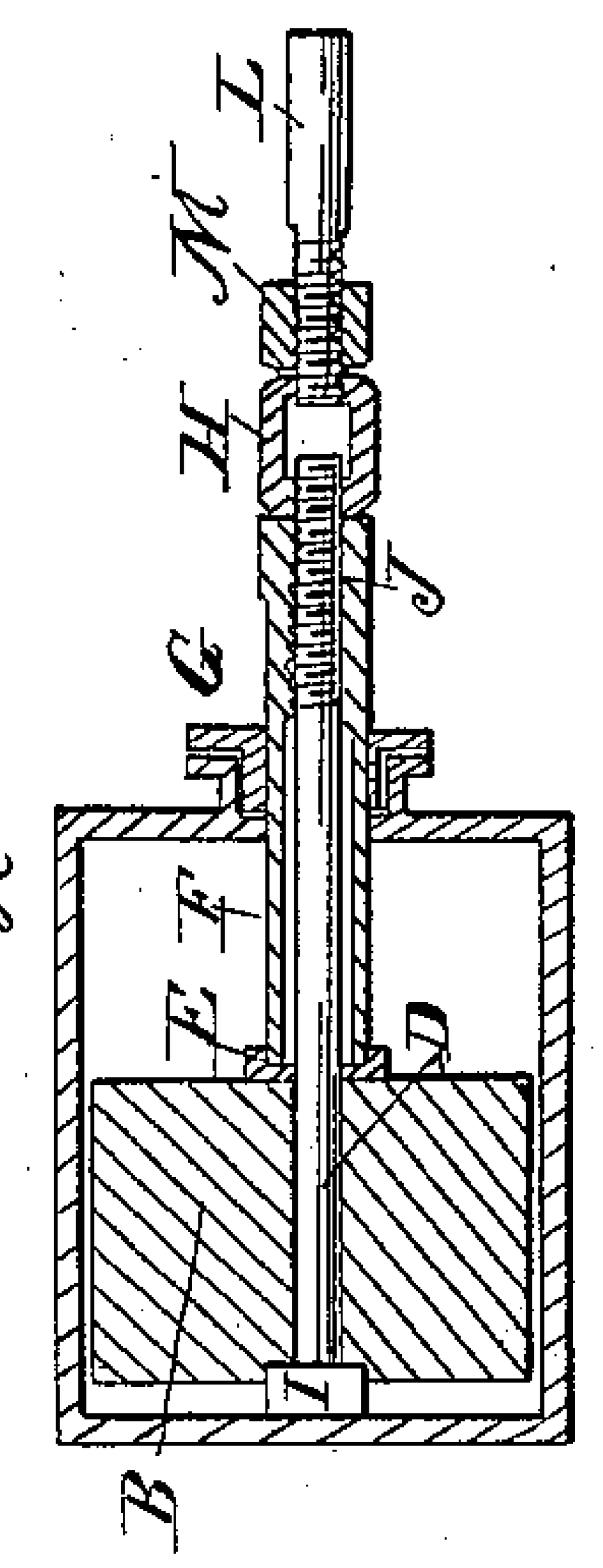

Fig. 2.

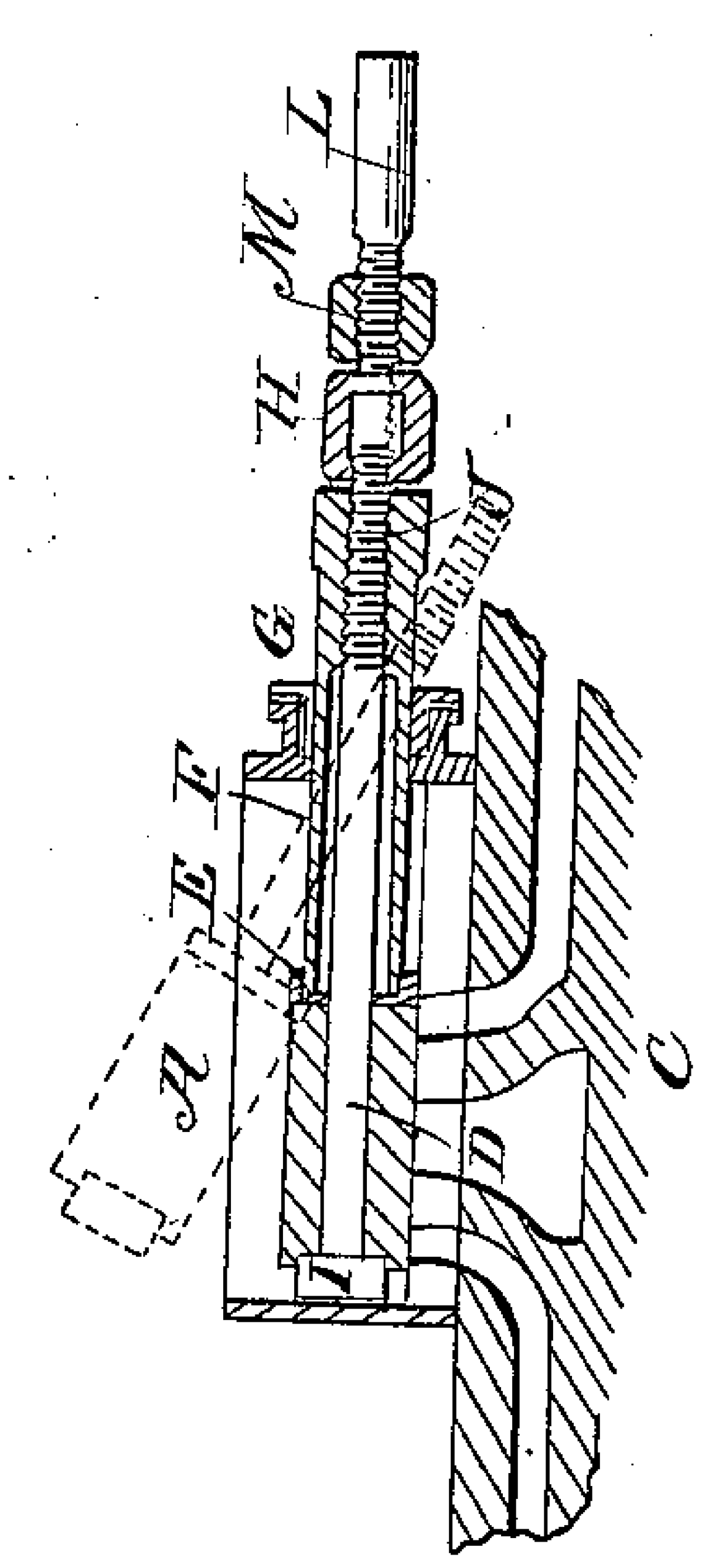

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS MAHONEY, OF KNOXVILLE, TENNESSEE.

SLIDE-VALVE.

Specification of Letters Patent No. 30,827, dated December 4, 1860.

To all whom it may concern:

Be it known that I, THOMAS MAHONEY, of Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Adjusting Slide-Valves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, is a plan. Fig. 2, a horizontal section, and Fig. 3, a vertical section of the device.

Similar letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists in a partially screw threaded valve rod, partially screw threaded tube and clamp nut, in combination with the steam chest and sliding valve of a steam engine, for the purpose to be described.

To enable others, skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

A, represents the steam chest of the cylinder C, of a steam engine, the top plate of the steam chest being taken off.

B, is the sliding valve, D, the valve rod, and G, the stuffing box through which the valve rod works. The valve rod is secured to the valve from the outside of the steam chest by means hereinafter to be described.

The usual way of fastening the valve rod and valve together by means of a nut screwing on the valve rod inside of the steam chest, presents various objectionable features. It is very inconvenient to unscrew such nuts by introducing and operating a wrench in the narrow space inside of the steam chest. The nuts exposed to the moisture resulting from the partial condensation of steam in the steam chest, soon get rusty, whereby the difficulty of unscrewing or tightening them whenever such becomes necessary, is considerably increased; and finally whenever the valve rod works loose, the top plate of the steam chest must be taken off to get at the nut. These objections are entirely overcome by the arrangement which forms the subject of my present application for Letters Patent.

The valve rod D, has a head I, at its rear end, resting against the rear face of valve B, and is screw threaded at its outer end, as seen at J. A tube F, the outer end of which is screw threaded on its inside, as is also seen at J, is slipped over the valve rod and screwed on the end of the latter. This tube F, can be screwed up from the outside of the steam chest until the inner end of the tube fits into the circular flange projecting from a washer E, which is slipped over the valve rod and rests against the side face of the valve B. By this means, the tube is adjusted exactly concentric with the valve rod. This tube works through the stuffing box G, of the steam chest. The tube when screwed up tight is secured in such position by a clamp screw H, screwed on the outer end of the valve rod. Another advantage resulting from the larger diameter of the hollow part of the stuffing box—this diameter corresponding to the outer diameter of the tube F—consists in the fact that when the valve rod and valve are to be placed in the steam chest, the valve can be placed in an inclined position and valve rod be inserted through it, and the stuffing box, as represented in red in Fig. 3, which cannot be done in the usual steam chest where the inner diameter of the stuffing box is equal to the diameter of the valve rod. The valve can then be placed in a horizontal position and the tube F, can then be introduced from the outside through the stuffing box, and screwed on the end of the valve rod so as to secure valve and valve rod together, as already described.

H, is a double nut, so that the section L, of the valve rod may be screwed into nut H, opposite to the end of the section D, of the same. By this means, the length of the valve rod may be properly adjusted and the section L, be secured by a clamp nut M.

I am aware that it is not new to construct a valve rod in separate parts, connected by a coupling nut, but know of no previous instance in which a valve has been clamped upon its rod by means of a screw threaded sleeve or elongated nut passing through the stuffing box to the exterior of the valve chest.

What I claim as new and desire to secure by Letters Patent; is—

The screw threaded sleeve or elongated nut F, operating in connection with the valve B, valve rod D, and stuffing box G, substantially as and for the purpose set forth.

The above specification of my improvement in adjusting slide valves, signed by me this 6th day of October, 1860.

THOS. MAHONEY.

Witnesses:

GOODWIN Y. ATLEE,

ROBT. W. FENWICK.