

(No Model.)

L. P. LEWIS & E. M. SCOTT.

BOLT HEADING MACHINE.

No. 311,164.

Patented Jan. 20, 1885.

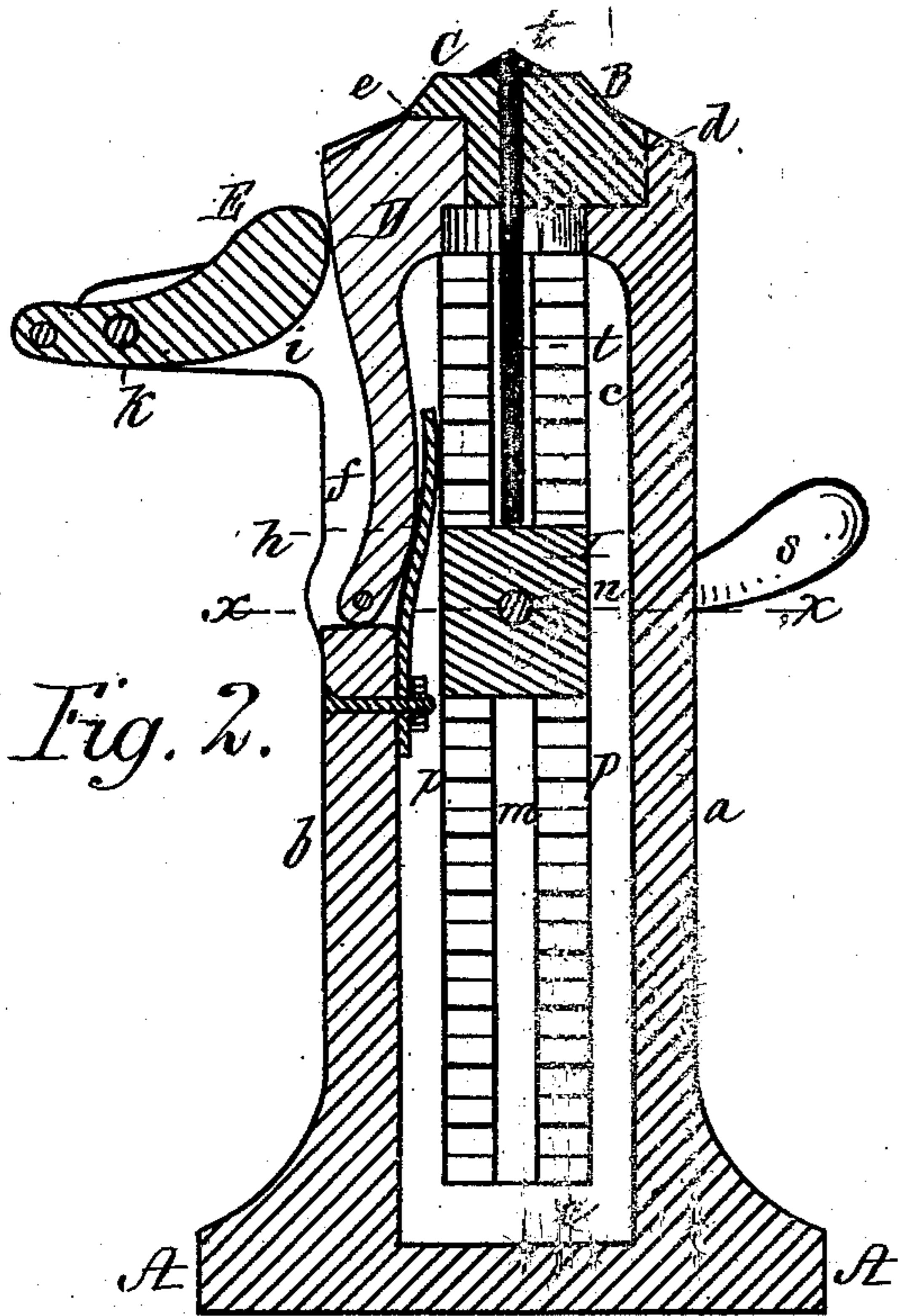


Fig. 2.

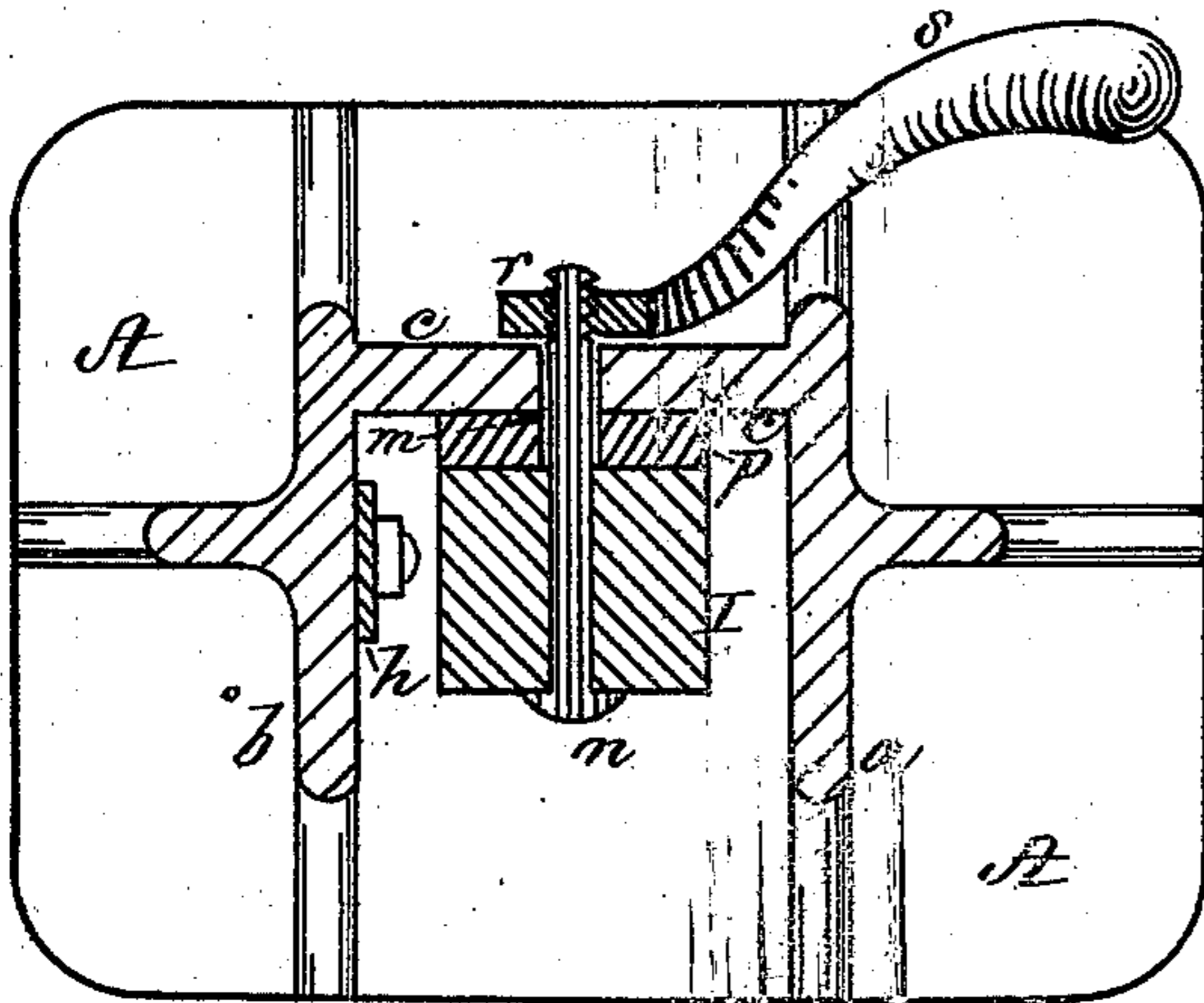
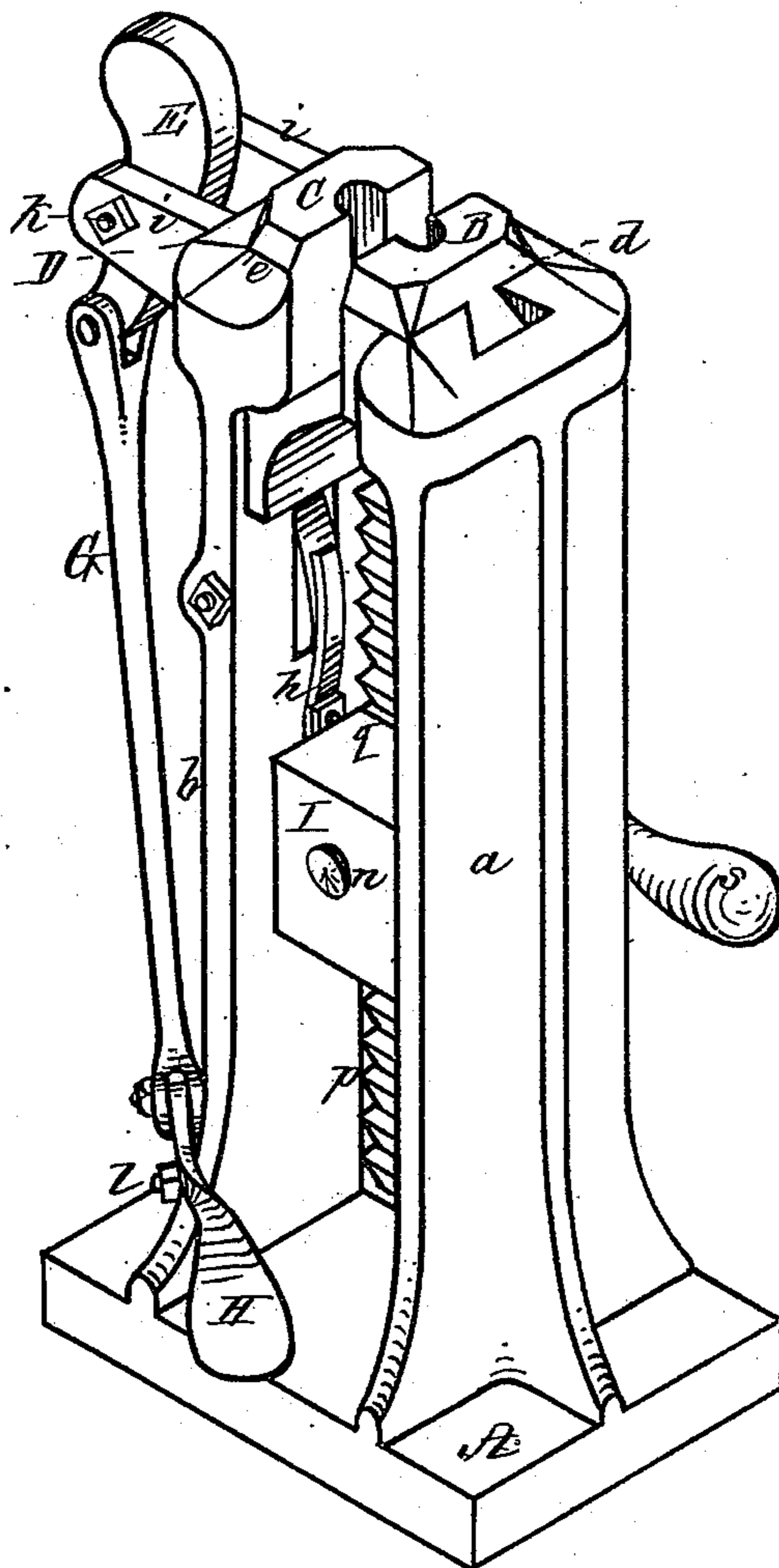


Fig. 3.

Witnesses:  
E. J. Stearns.  
Wm. Watriss

Fig. 1.



Inventors,  
Lyman P. Lewis,  
Edwin M. Scott,  
per Norman W. Stearns,  
Atty

# UNITED STATES PATENT OFFICE.

LYMAN P. LEWIS, OF CHARLESTOWN, AND EDWIN M. SCOTT, OF EVERETT,  
MASSACHUSETTS.

## BOLT-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 311,164, dated January 20, 1885.

Application filed February 9, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, LYMAN P. LEWIS, of Charlestown, and EDWIN M. SCOTT, of Everett, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Bolt-Heading Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a bolt-heading machine constructed in accordance with our invention. Fig. 2 is a vertical section through the center of the same, with the dies closed and the finished bolt located therein. Fig. 3 is a horizontal section taken in the direction of the line *xx* of Fig. 2.

Our invention relates to that class of bolt-heading machines in which the grasping-dies are located at the top of a vertical or upright frame; and our invention consists in a machine of the class described, having a movable die located in an arm pivoted near the top of one of the standards of the frame-work, and brought into contact with the stationary die by the wedging action of a cam-shape lever located at or near the horizontal level of the center of the gripping-dies, said cam-lever being brought forcibly against the back of said pivoted arm by the pressure of the foot on a treadle, whereby a solid unyielding abutment is provided for the movable die at the time the blow is given to form the head of the bolt, a spring being employed for pressing said arm outwardly and separating the movable die from the stationary die when the bolt is to be entered within or removed from the dies.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A represents the base of our improved machine; *a b*, two standards rising therefrom, the rear of the standards being united and the space between them closed by a vertical wall, *c*, while the space at their front is left open from top to bottom.

Within a recess, *d*, at the top of the right standard, *a*, is located a stationary die, B, held in place therein by a dovetail tenon.

Similar in form to the die B is a movable die,

C, located in a recess, *e*, in the top of an arm, D, pivoted at its lower end within a vertical opening, *f*, formed in the top of the side of the left standard, *b*, said arm being pressed outwardly by a stiff spring, *h*, the movable die C and its supporting-arm D in their normal position being represented in Fig. 1.

Within the space between a pair of studs, *i*, projecting horizontally from the side of the left standard, *b*, is pivoted at *k* a cam-shape lever, E, to the outer end of which is secured the upper end of a connecting-rod, G, to the lower end of which is secured the outer end of a treadle, H, pivoted at *l* to the lower end of the left standard, *b*.

*m* is a vertical slot, formed at the center of and passing through the vertical wall *c*, said slot being for the passage of the outer end of a bolt, *n*, which passes horizontally through a heavy rectangular block, I, the inner surface of the wall at each side of the slot having a rack or toothed projections, *p*, formed thereon, and the contiguous surface of the block being provided with similar teeth, *q*, to engage therewith. The outer end of the horizontal bolt *n* is screw-threaded, and turning thereover is a screw-nut, *r*, having an arm, *s*, projecting therefrom, which serves as a handle, by which means the rectangular block, when adjusted to the desired height, may be firmly clamped in an immovable position. This block serves as an unyielding support or anvil for the lower end of the cylindrical rod, from which the bolt *t* is to be formed.

Operation: The cylindrical bolt-rod is taken by the operator and entered in a vertical position between the dies through the open space leading thereto between the standards *a b* in front of the machine, the lower end of the rod resting on the bearing-block I, which, when adjusted for the length of the bolt desired, is clamped securely, as described. The operator now depresses the treadle with his left foot, which elevates the outer end of the lever E, and brings down its inner cam-shape end forcibly against the outside of the top of the pivoted arm D, in which the movable die C is located, the two inner contiguous faces of the dies being immovably held thereby in a position around the rod, (see Fig. 2,) simultaneous with which the operator upsets the head of the rod

(to form the bolt-head) by blows with his sledge or hammer. The dies are capable of being removed, and others with different-sized semi-circular openings may be substituted therefor, in order to accommodate bolts of different diameters, the length of bolt being regulated by the adjustable block I. In case the bolt is longer than the height of the machine, the lower end of the bolt may extend down through an opening in the base of the machine, and, if necessary, through the floor on which it rests. From the foregoing construction it will be seen that the entrance of the bolt or bolt-rod within the dies and its removal therefrom may be accomplished with extreme facility by the vertical opening in the front of the machine, between the standards *a b*, the inconvenience of entering the bolt or bolt-rod between the dies and removing it therefrom by the top incident to this class of bolt-heading machines as commonly constructed being thereby avoided.

We claim—

A stationary die located in the top of the standard *a*, a movable die in an arm or jaw, D, pivoted to the standard *b*, and pressed outwardly by a spring, *h*, a cam-lever, E, also pivoted to the standard *b* at the back of the arm or jaw D, and a treadle, H, connected with the cam-lever E, for moving said arm or jaw D inwardly, the parts being combined, constructed, and arranged substantially as described.

Witness our hands this 5th day of February, 1884.

LYMAN P. LEWIS.  
EDWIN M. SCOTT.

In presence of—

N. W. STEARNS,  
JAS. W. CHAPMAN.