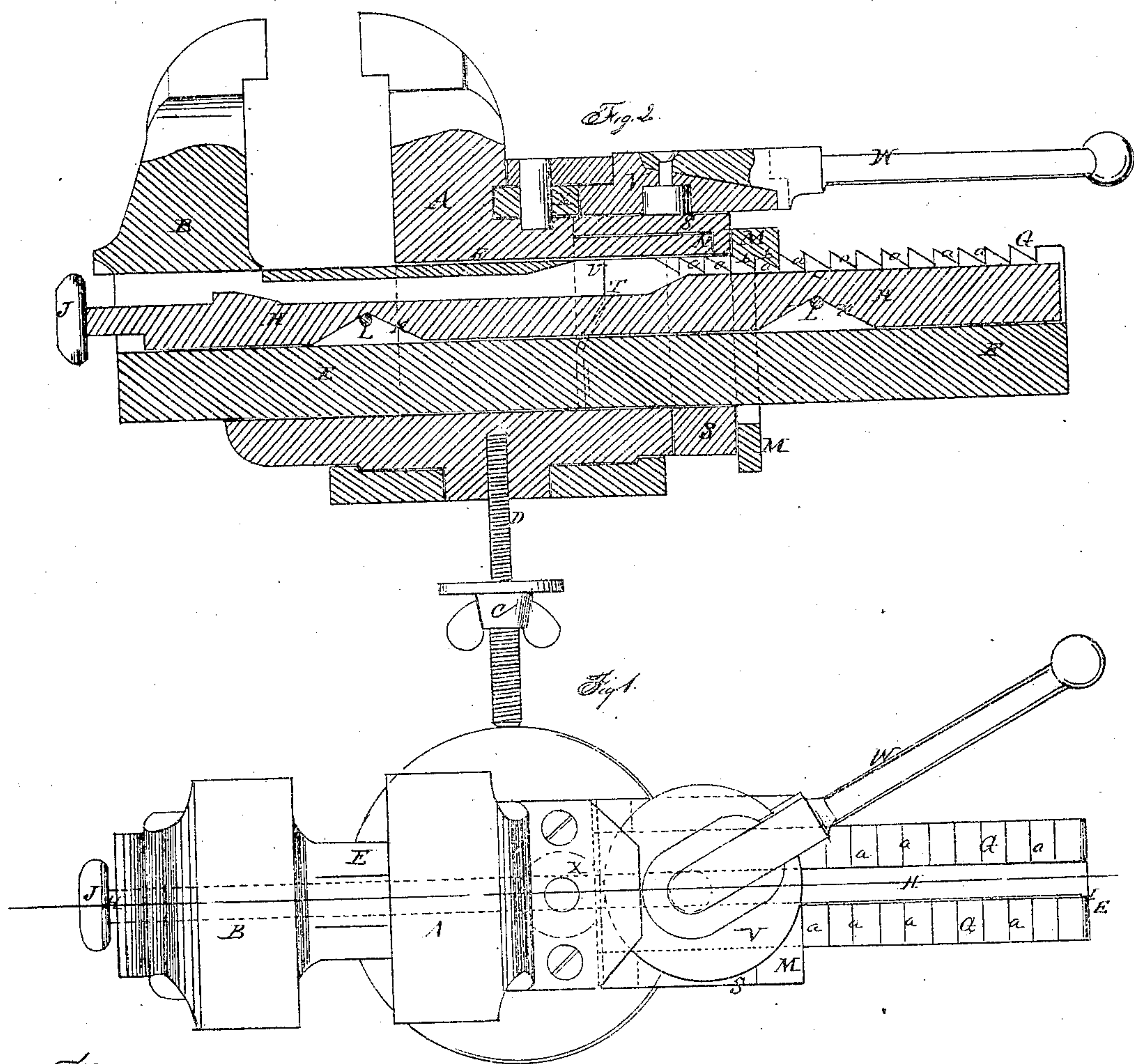


*S. S. Barnaby,
Vise.*

Vise.

Nº 73.944.

Patented Feb. 4, 1868.



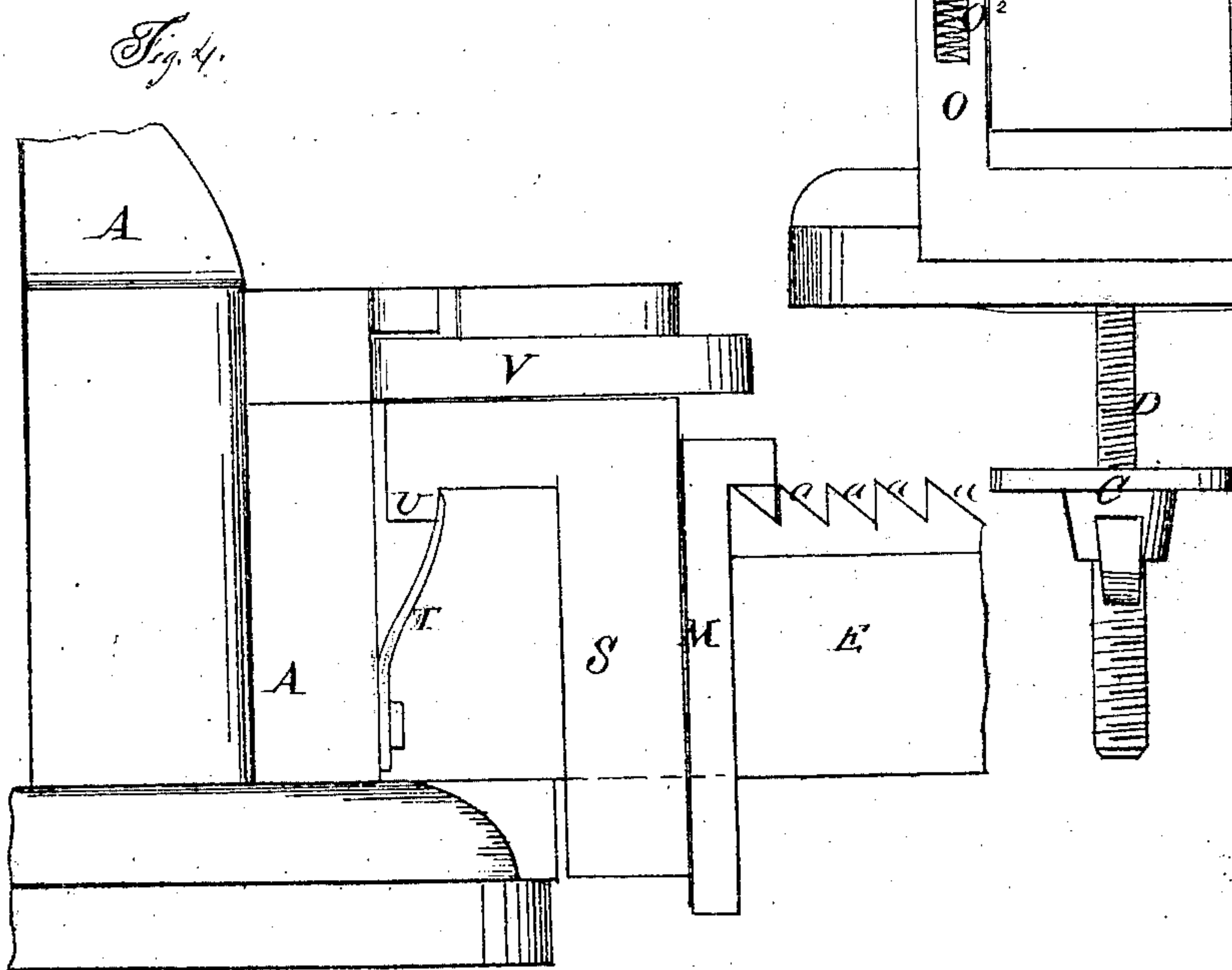
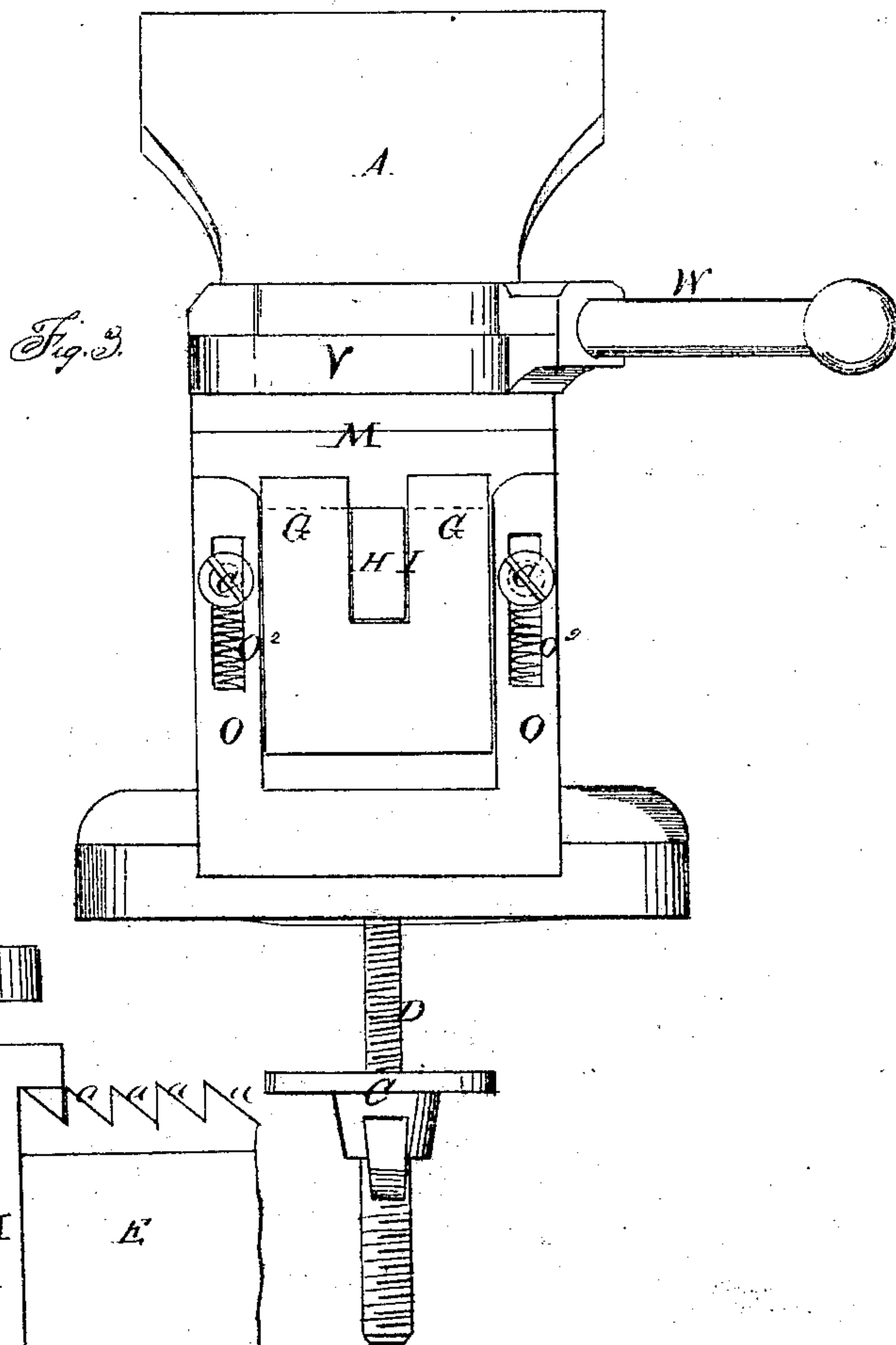
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SAMUEL S. BARNABY, OF MACON, GEORGIA.

Letters Patent No. 73,944, dated February 4, 1868; antedated November 23, 1867.

IMPROVED VISE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL S. BARNABY, of Macon, in the county of Bibb, and State of Georgia, have invented a new and improved Vise; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

The object sought to be obtained by the present invention is to produce a vise, which will be of such a construction as to obviate the great inconvenience and loss of time now unavoidable with the use of all vises heretofore invented and patented. In the accompanying plate of drawings, my improved vise is illustrated—

Figure 1 being a plan or top of a vise made according to the present invention.

Figure 2, a central longitudinal vertical section, taken in the plane of the line $x x$, fig. 1.

Figure 3, an elevation of the rear or inner end of the vise, and

Figure 4 a side elevation of the rear or inner jaw or portion of the vise.

Similar letters of reference indicate like parts.

A and B respectively represent the two jaws of the vise, one, A, of which jaws is stationary or fixed in position by being secured through a thumb-nut, C, upon the screw-shaft D, to the bench or table on which the vise is to be hung or placed for use. The other jaw, B, by its square-shaped shank or bar E passing through a corresponding-shaped hole, F, formed in the lower portion of the jaw A, is arranged so as to be moved away from or toward the fixed jaw either more or less, according to the size of the article which it is desired to hold in and between the two jaws of the vise while being worked or operated upon, the construction and arrangement of the various parts of the vise, whereby its jaw B can be moved, being as follows: The shank or bar E of the jaw B, from one end to the other, through the said jaw, is grooved in the direction of its length, and upon its upper side, leaving side flanges or lips, G, each of which, from the outer end of the shank toward the jaw B, and for a portion of the length of the said shank, is provided with a series of similar ratchet-teeth, a , equal in size and shape, and at corresponding points, and equal distances apart. H, a bar or rod, placed within the groove I of the jaw-shank E, along which it extends from one end to the other of the same, projecting from the front side of the movable jaw B, where it is provided with a knob or handle, J, for convenience in sliding or moving it within the groove of the said jaw-shank. The under or lower edge of the bar H is notched or cut out in an angular shape at two points, K, of its length, by which notched or cut-out portions the said bar H rests upon cross-pins L, fixed in the shank-groove I, one pin to each notch, by means of which the bar, as it is drawn through the said grooved jaw-shank E, either in one or the other direction, (that is, either in or out,) is made to rise upward, or lift at the same time that it is moved forward or backward within the shank, as is obvious without any further explanation, the object of which will be hereinafter stated. M is a pawl, which is made of a rectangular shape, and in the form of a frame, suitable for fitting around and about the jaw-shank E, over which it is placed, at the inner or rear end, N, of the stationary jaw A, this pawl being provided with teeth, b , corresponding in shape and size to those of the jaw-shank, so as to fit and mesh into the same, and being arranged by a slot formed in each of its side pieces or bars, O, upon fixed-headed pins or studs, c , of the jaw A, or of some part connected therewith, so as to move up and down in a vertical plane, with a sufficient length of movement or play to allow its teeth to be disengaged from the jaw-shank E. O^2 , spiral springs, suitably connected with the pawl M to hold it engaged with the shank-teeth a , and to bring it into connection with the same, when the force by which it is raised or disconnected therefrom has been removed.

From the above description, it is plain to be seen that if the bar or rod H, by its knob J, be drawn outward sufficiently to raise the pawl M from the teeth of the jaw-shank E, by then continuing to draw it in the same direction, the jaw B and its shank will be carried along with it away from the stationary jaw A, whereby the jaws of the vise are opened from each other, either more or less, as the case may be, when, by pushing back the bar H sufficiently to release it from the pawl M, the movable jaw will be there secured by the interlocking of the pawl with its ratchet-shank, through the action of the springs connected with the said pawl, as has been hereinbefore described. To close the jaws of the vise, the bar H is pushed inward sufficient to raise the pawl from the ratchet-shank, after which, by continuing to so move it, the movable jaw can be carried along in common with

it toward the fixed or stationary jaw, and thus either more or less closed, according as may be desired, the jaw B always being held at whatever position it may be brought or adjusted by the meshing of the pawl M with the teeth of the ratchet-shank of such jaw, as is apparent without any further explanation.

In the opening or closing of the jaws of the vise, as above explained, it is plain to be seen that the adjustment of the jaws is necessarily limited to the width or space between each tooth of the series of teeth formed along the shank of the movable jaw, which, in many instances, would operate seriously against the general utility and practicability of the vise, as its use would be limited to only certain sizes of articles; but to obviate this, I have arranged, in connection with the vise, an eccentric lever, in such a manner that, after the movable jaw has been once set, by means of the pawl M, it can be still further adjusted, as will be now described.

S, a rectangular or square-shaped sleeve or collar, placed upon the jaw shank-bar E, at the rear or inner end of the fixed jaw, between such end of the fixed jaw and the pawl M, the said pawl M being secured to it in the manner as has been hereinbefore particularly described. This sleeve, S, is arranged to slide upon the shank-bar, and at its inner end, contiguous with the jaw, it is connected therewith through bent springs T, that at one end are secured to the stationary jaw A, and at their other or loose ends bear against the lugs U of the sleeve. To the upper side of the sleeve S is hung an eccentric, V, provided with a handle, W, for convenience in turning it, which eccentric, by its periphery or edge, bears against the stationary jaw A of the vise, through a friction-roller, X, hung at a suitable point of it therefor.

From the above, it is plainly apparent that if the eccentric V, by its handle, be turned either toward the right or left, it will, by acting against the stationary jaw A of the vise, move or slide the sleeve S away therefrom, or allow it to be drawn toward it, as the case may be, by the action of the bent springs T; and, as such sleeve has the pawl M hung or secured to it, it consequently will carry along with it the jaw-shank or bar E with which the said pawl is engaged, thereby opening or closing the jaws of the vise, either more or less, and in direct proportion to the movement of the sleeve, as above explained, and in a manner entirely independent of the adjustment of the jaws by the pawl M and the ratchet-teeth of the jaw-shank E.

Among the many advantages secured by my improved vise, may be here mentioned as the most important, that, First, it is simple in construction and arrangement, and not liable to get out of order.

Second, it can be made as strong as may be desired.

Third, it requires no screw, therefore dispensing with the large and cumbersome screw-head and lever in front of all other vises now in use, which relieves the workman of a heretofore great annoyance.

Fourth, it is adapted to any and all mechanical work.

Fifth, it has immense power.

Sixth, its jaws must be always parallel.

Seventh, for use by wheelwrights, it is superior to all other vises, as it allows the free use of the drawing-knife in front; and,

Eighth, its parts are all easy of access, for taking the vise to pieces or putting it together, if it may be desired to repair any parts or portions of the same, or to substitute new ones for such parts.

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

1. The combination of the sliding bar H, ratchet-jaw shank or bar E, and pawl M, when arranged together substantially in the manner, and so as to operate as and for the purpose described.
2. The combination, with the eccentric V and sliding sleeve S, of the pawl M, arranged together and connected with the jaw-shank or bar E, substantially as and for the purpose set forth.
3. An improved vise, constructed and arranged in its several parts substantially as described, and so as to be operated as specified.

SAMUEL S. BARNABY.

Witnesses:

S. E. THEWS,

W. B. JOHNSTON, Jr.