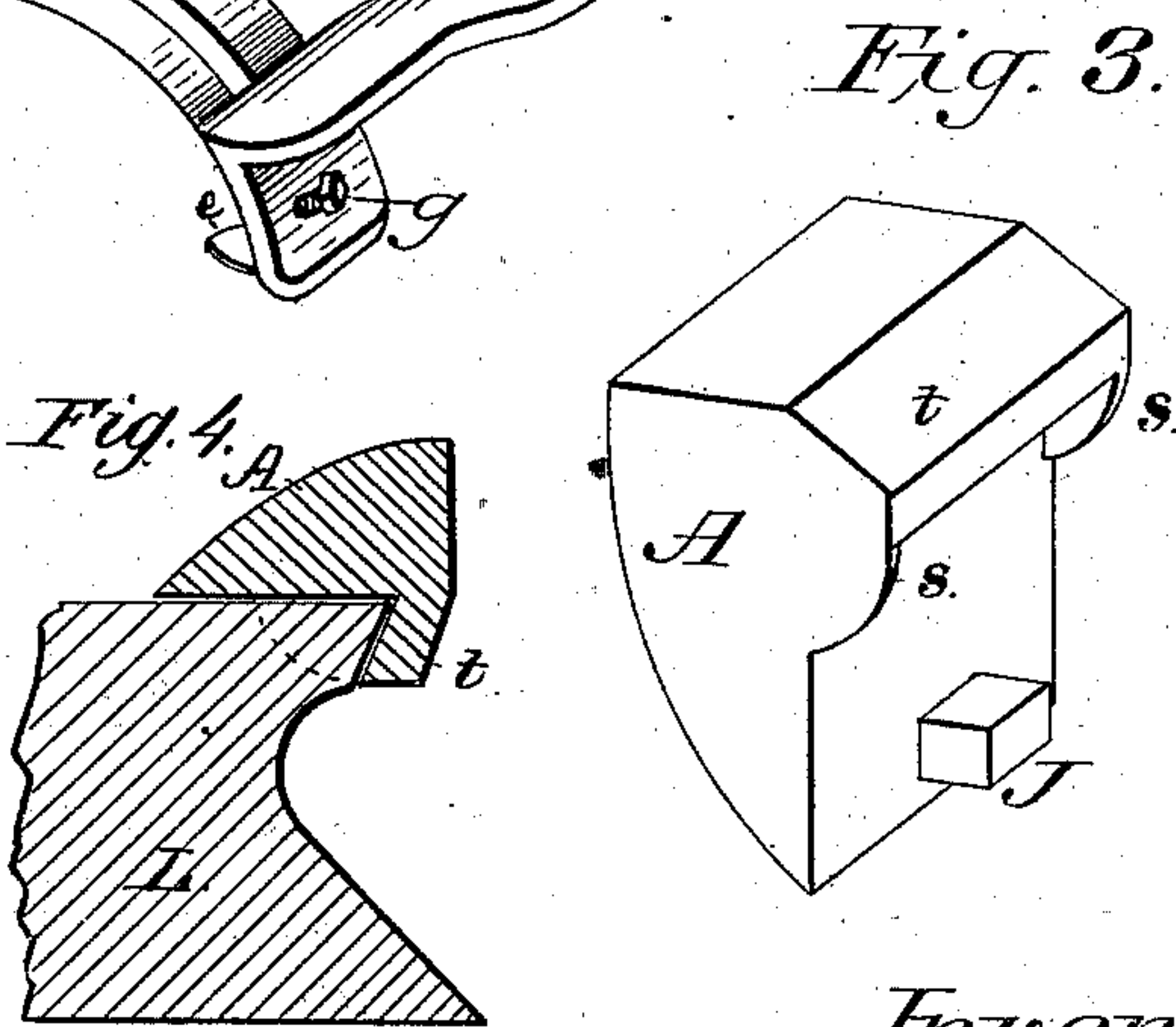
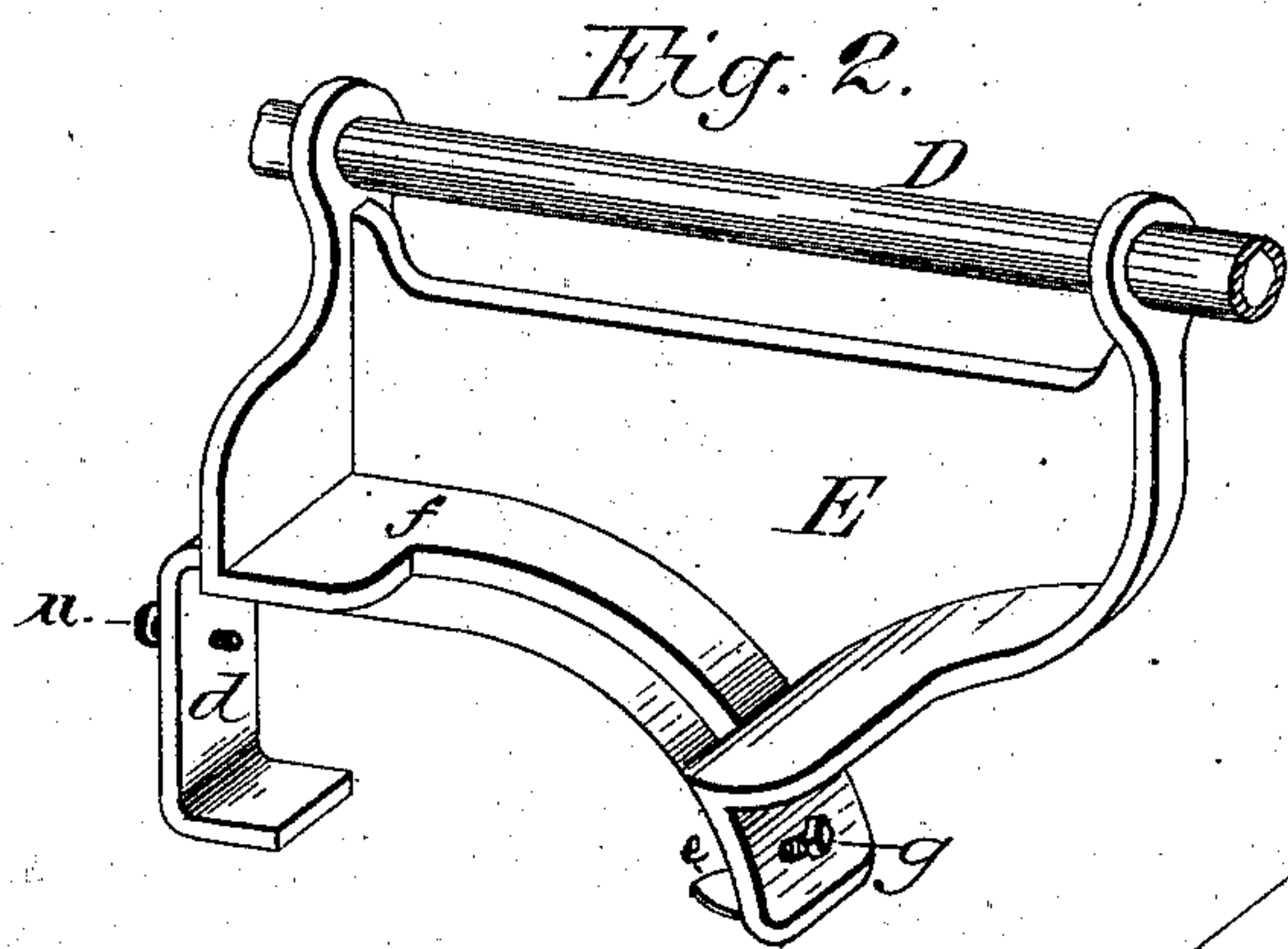
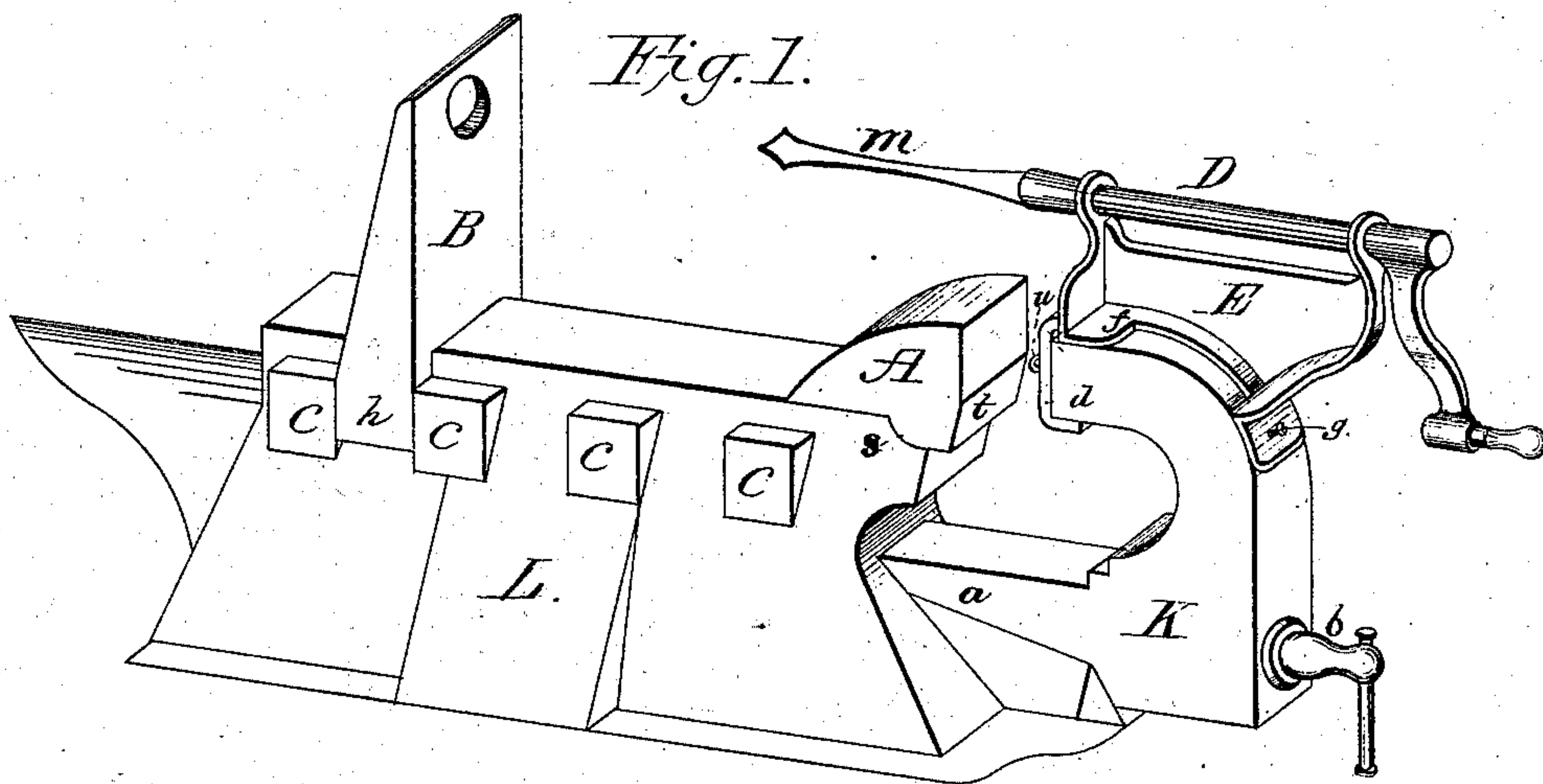


(No Model.)

J. L. WARE & W. S. FLEMING.
Combined Anvil, Vise and Drill.

No. 239,686.

Patented April 5, 1881.



Witnesses:
J. L. Ware
E. J. Bertrand

Inventor:
Joseph L. Ware
W. Scott Fleming

UNITED STATES PATENT OFFICE.

JOSEPH L. WARE AND W. SCOTT FLEMING, OF PINE ISLAND, MINNESOTA.

COMBINED ANVIL, VISE, AND DRILL.

SPECIFICATION forming part of Letters Patent No. 239,686, dated April 5, 1881.

Application filed July 17, 1880. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH L. WARE and W. S. FLEMING, of Pine Island, in the county of Goodhue and State of Minnesota, have invented a new and useful Improvement in Anvils and Attachments therefor; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of an anvil constructed according to our invention, and provided with our vise and drill attachments. Fig. 2 is a perspective view of the drill-head detached. Fig. 3 is a perspective view of the detachable vise-jaw. Fig. 4 is a detail sectional view.

The object of our invention is to adapt an anvil for attachment and use therewith of the parts constituting a drill and vise without materially impairing its usefulness as an anvil proper.

The construction and combination of parts are as follows:

Upon the quarter of the anvil L, or the end thereof which is farthest from the horn, a removable vise-jaw, A, is held in place while in use by means of wings or flanges *s* and *t*. Said wings *s* embrace the lateral sides of the corners of the anvil, and the flange *t* overhangs and fits snugly against the beveled end of the anvil, Fig. 4. The jaw A is also provided with a dowel-pin, J, which enters the hardy-hole (not shown) in the face of the anvil. Such dowel-pin assists the flanges *s* and *t*, although but slightly, in holding the jaw A firmly in place.

The drill-head E, carrying rotatable mandrel D, provided with boring-point *m*, is attached to an adjustable vise-jaw, K, which rises to the same height as the aforesaid jaw A, and is formed solid with a bar, *a*, that slides lengthwise through the body of the anvil L, being adjusted as required by means of a screw, *b*, Fig. 1. The drill-head E is held firmly in place by the flange *d*, claw *e*, and clamp-screw *u*. The curved base *f* of the drill-head E fits closely on the jaw K, and the claw *e* enters a cavity in the same, while the screw *u*, which passes through the arm *d*, serves to draw and hold the drill-head firmly in place, so that it can have no lateral or vertical move-

ment. The screw *g* assists in such clamping action, but is not indispensable. On each side of the anvil L, a short distance below the face, is a row of lugs, *c*, which are separated a sufficient distance to receive the legs *h* of the upright drill-jaw B between them. Said jaw B may be adjusted toward or from the drill-head E by adjusting it between different pairs of lugs *c*, as will be readily understood, and it subserves the usual purpose of holding or supporting pieces or articles while being drilled.

It is obvious that to use the anvil the upright jaw B, movable jaw A, and drill-head E must be removed, which leaves the face of the anvil with hardy and punch holes, &c., available for use.

To use the vise A K, remove the drill-head E, and to use the vise for large or broad work remove the movable jaw A and allow the upright jaw B to serve in its place, which the projection of the jaw K above the surface of the anvil permits.

To use the drill-head E, place it in position shown in Fig. 1; remove the jaw A; then, by crowding the jaw K forward in the usual manner and turning crank attached to the mandrel D, into which the bit *m* is inserted, the work is performed.

What we claim, and desire to secure by Letters Patent, is—

1. The anvil L, having lugs *c c c c*, removable jaw A, and upright jaw B, in combination with outer jaw, K, substantially as specified.

2. The drill-head E, having boring-mandrel D *m*, in combination with the closing-jaw K, to which it is attached, and the anvil L, having lugs *c c*, and upright detachable jaw B, substantially as shown and described.

3. The combination, with the anvil L, provided with lugs *c c*, located as specified, of the upright detachable jaw B, which is adapted for use, as shown and described.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JOSEPH L. WARE.
W. SCOTT FLEMING.

Witnesses:

S. E. WARE,
E. J. BERTRAND,