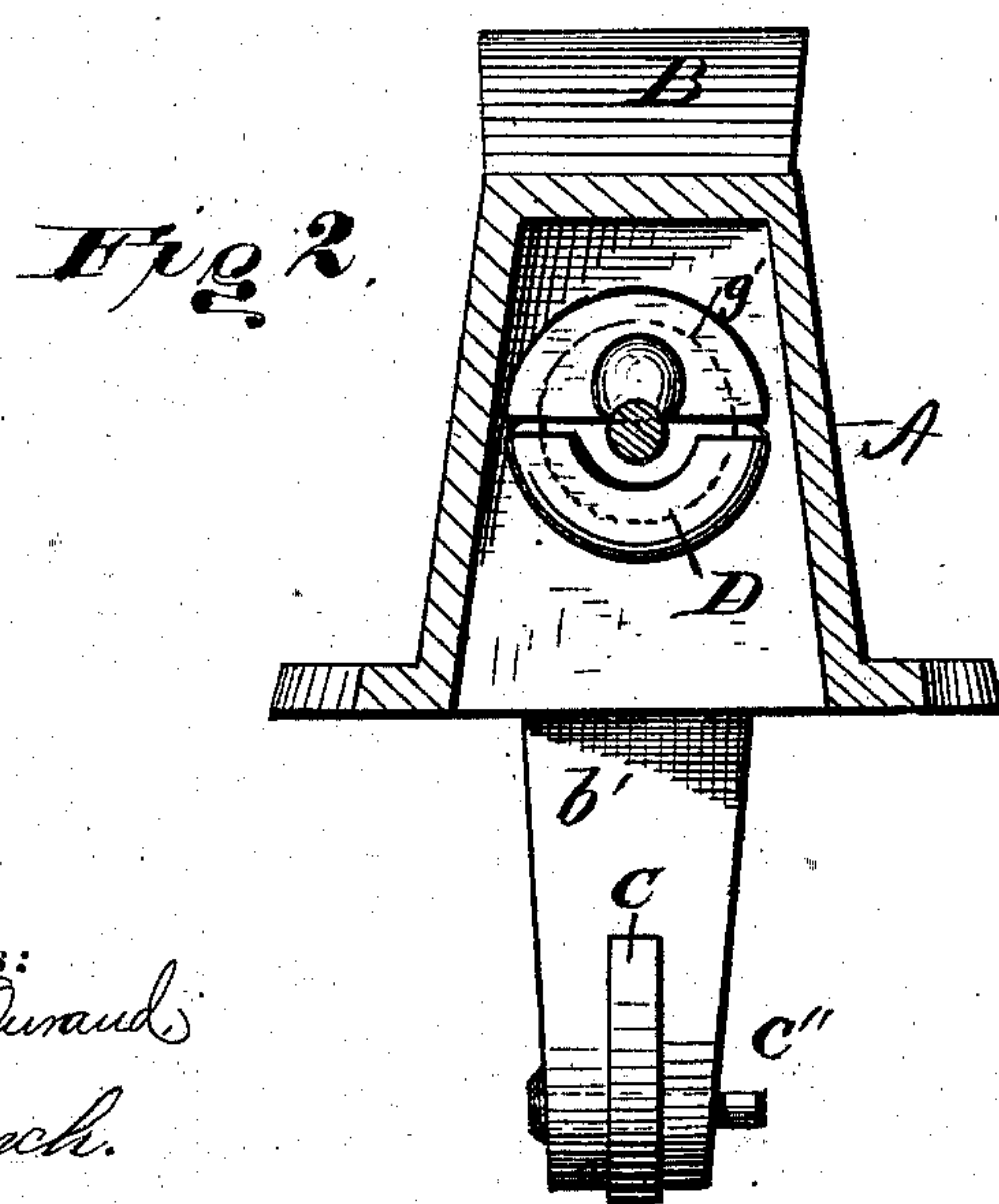
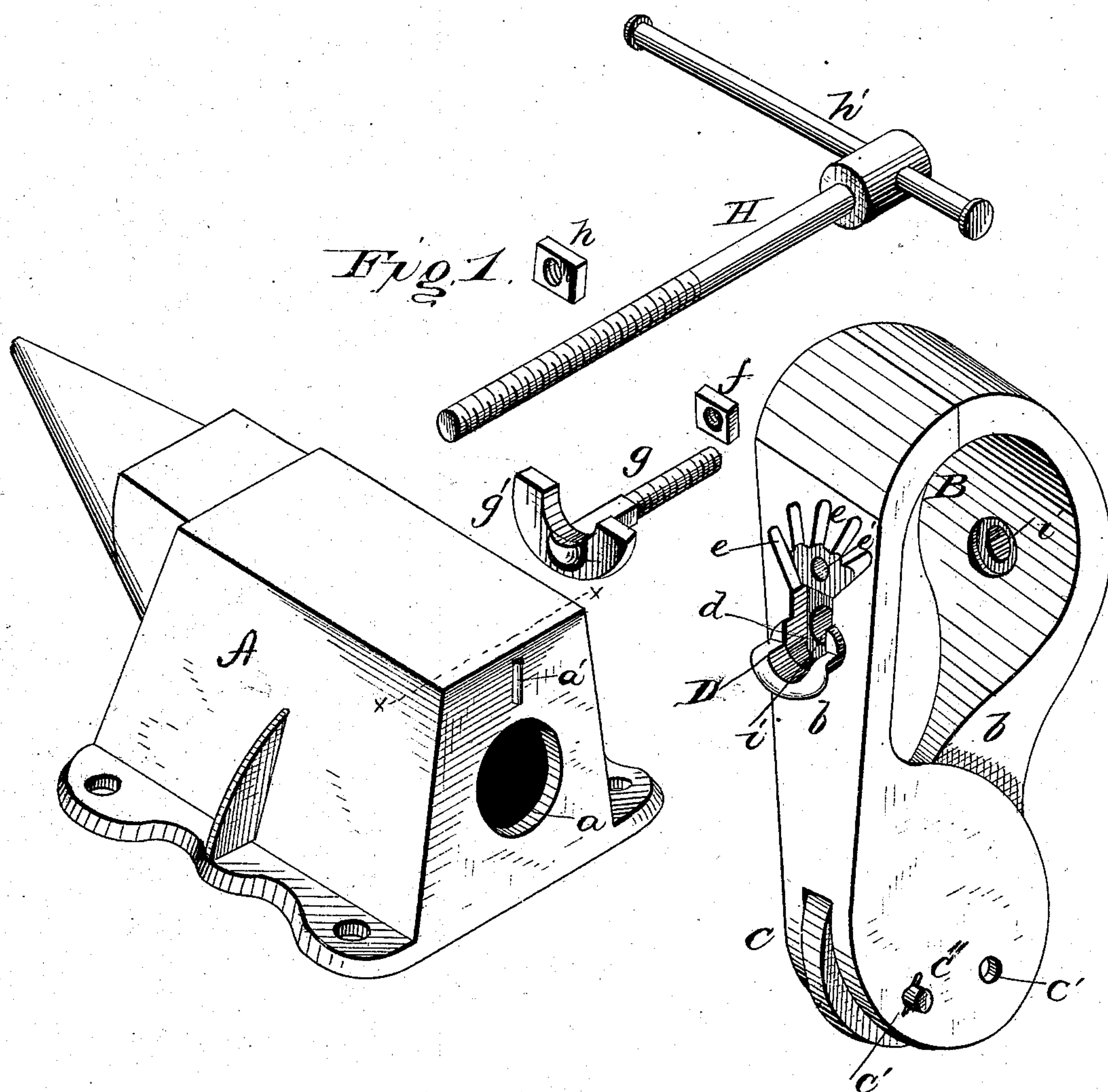


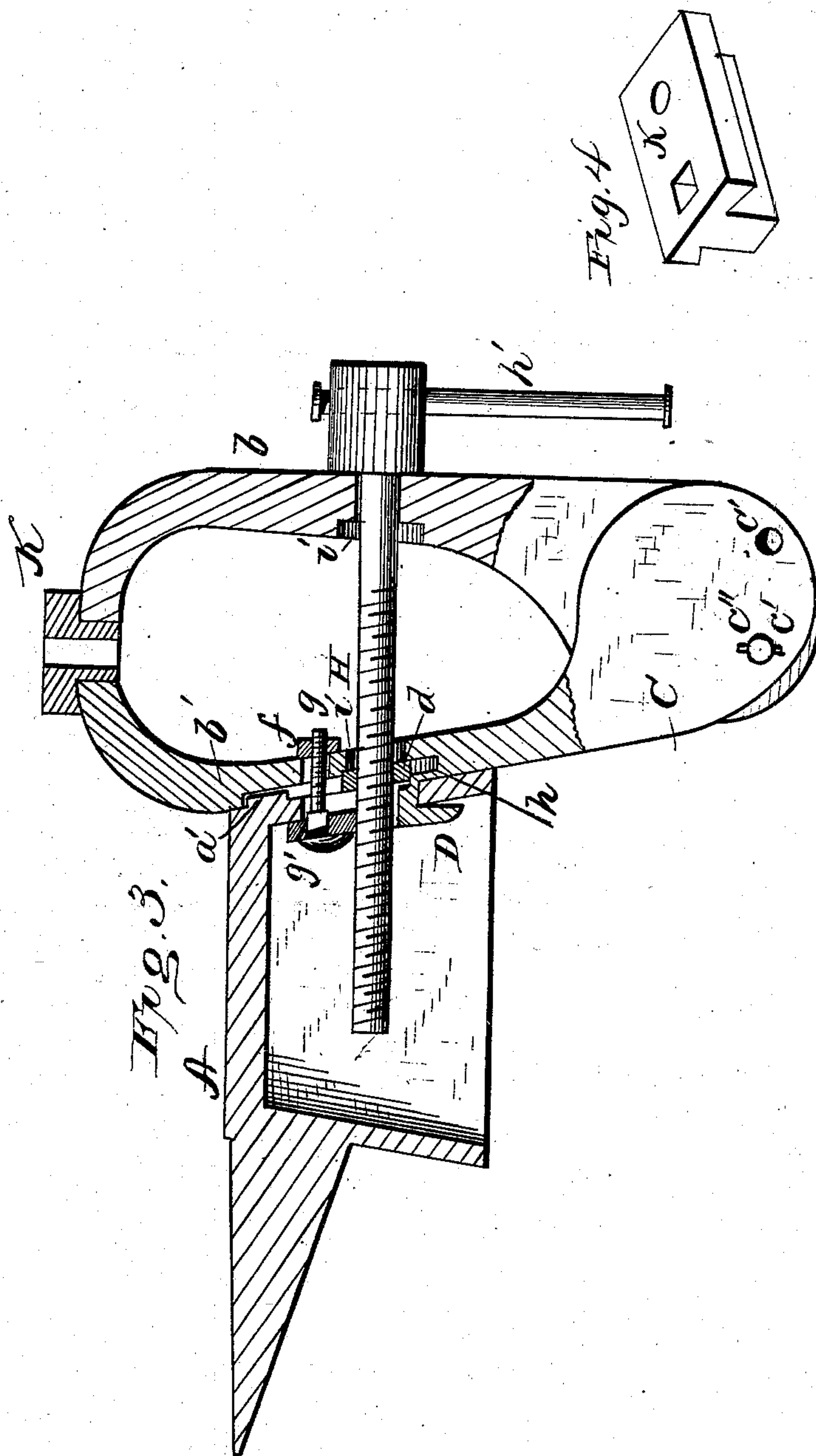
E. E. LEACH.
Combined Anvil and Vise.
No. 237,296. Patented Feb. 1, 1881.



Witnesses:
Frank L. Omand,
Robert Lynch.

Inventor:
Edwin E. Leach.
by L. Deane,
Atty.

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UNITED STATES PATENT OFFICE.

EDWIN E. LEACH, OF CEDAR RAPIDS, IOWA.

COMBINED ANVIL AND VISE.

SPECIFICATION forming part of Letters Patent No. 237,296, dated February 1, 1881.

Application filed February 19, 1880.

To all whom it may concern:

Be it known that I, EDWIN E. LEACH, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Combined Anvil and Vise; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of this invention, showing the anvil and jaws detached. Fig. 2 is a front elevation on line *x x* of Fig. 1. Fig. 3 is a vertical central section of the entire device.

This invention relates to improvements in that class of devices known as "combined anvils and vises;" and the novelty consists in the general construction and combination of the several parts, all as will hereinafter be more fully and in detail set out and explained.

In the drawings, A denotes the anvil; *a*, the larger circular or rounded hole in its rear wall; *a'*, a corrugation or rib on the outside of the rear wall.

B is the vise, composed of the front jaw, *b*, and the rear jaw, *b'*. The rear jaw, *b'*, is bifurcated at *c* in its lower end, which is broadened to about the width of the top of the two jaws on a line at right angles with the throat, but in the other direction is very much thinner than the top of the jaw, and the jaw *b* is hinged to jaw *b'*, which is sufficiently thinner at its lower end than at the lower end of *b'* to fit into *c'*, by securing its lower end in the said bifurcation by bolt or pin *c''*, which passes through one of the set of holes, *c'*, in both of said jaws. The point of this hinging can be varied at will by merely moving the bolt *c''* to the one or other of these holes, of which there may be any desired number. By this method of hinging the jaw *b* will be substantially hinged out of center of gravity, and so adapted to easily and automatically fall away from *b'* when the screw is removed. On the rear jaw, *b'*, is a curved projecting lip, D, which, where the vise is placed in position on the an-

vil, fits into the hole *a* of the anvil, and, since its depending rim engages on the edge of the hole, forms the joint on which the vise may have, when desired, some movement forward or backward, according as it may be necessary to incline the top of the vise to the right or left. The said jaw *b'* has also indentations or corrugations *e* on its face toward the anvil, into one of which the rib *a'* will fit when the anvil and vise are firmly bolted together, and these will help stay the said parts, so that there shall be little or no lateral movement. At the point near where lip D springs from the jaw *b'* is a square socket, *d*, for the nut *h*, and above this is the hole *e'*, in which the threaded end of the bolt *g*, which passes through the hole *a*, is held by the nut *f* while the semicircular head *g'* of the bolt *g* binds against the inner face of the shell of the anvil.

The screw H, by which the vise-jaws are closed, passes through holes *i* in the front and rear jaw, and is worked in the nut *h*, which, as aforesaid, is placed in the socket *d* in the rear jaw, and its inner end will pass through hole *a* into the hollow shell. This screw has the usual lever *h'*.

The detachable bolt-header or "hardy" K, Fig. 4, is adapted, by means of its shoulders, which conform to the shape of the vise-top, to be fitted between and firmly held by the screwed up jaws of the vise. This piece is suitably provided with holes for the insertion of the bolts or other article to be operated upon.

It will be noted that when the vise is fixed vertically its top is considerably above the upper plane of the anvil, and this arrangement is of special value in the practical use of the device, while in many instances, when a flush top is wanted for the anvil, the vise can be readily turned away.

In many classes of work, as with jewelers, it may be desirable to place the vise at an incline, and the provision I have now made for this is designed to fix the anvil in any desired position. Indeed, it can be turned nearly wholly about, if desired, and howsoever turned about the fastening is always the same and always secure.

The peculiar method of jointing the jaws will afford free space to allow the workman to

pass down an end of the bolt, or any other article he is engaged on, below the jaws, and in a perpendicular position, if necessary. This is a great advantage over the class of hinged
5 vises where the hinge is substantially as wide as the throat of the vise.

By the peculiar method of hinging no spring will be needed to throw the jaws apart on the withdrawal of the screw, since the front jaw
10 is practically counterbalanced, so that it will readily, in any such instance, fall away from the rear jaw. Likewise, the width of the throat can, by means of the holes in the ends of the jaws, be increased to any desired width.

15 The hardy or bolt-header now used with this anvil is of large importance, as in a simple and most serviceable way it supplies a long-felt want in this class of devices.

In this device is furnished a neat, compact,
20 strong, and useful article.

In this case no claim is made to the hardy. This will be made the subject of another application, if such claim is desired.

Having thus described my invention, what
25 I consider new, and desire to secure by Letters Patent, is—

1. In combination with the anvil A, having a hole, *a*, in its rear wall, the vise B, having on its rear jaw, *b'*, a curved lip, D, substan-
30 tially as and for the purposes set forth.

2. In combination with the anvil A, having a hole, *a*, in its rear wall, and a rib or projection, *a'*, on the said wall, the vise B, having curved

lip D and indentations *e*, substantially as and for the purposes set forth. 35

3. The anvil A, having hole *a* and rib *a'*, secured to vise B, having in its rear-jaw lip D, indentations *e* and hole *e'*, by means of bolt *g g'* and nut *f*, substantially in the manner set forth. 40

4. The vise *b b'*, hinged as described, provided with holes *i*, and having lip D on, and socket *d* in, its rear jaw, and combined with screw H and its lever *h'* and nut *h*, substan-
45 tially as and for the purposes set forth.

5. A combined anvil and vise consisting, essentially, of an anvil having a hole, *a*, in its wall, and of a vise having adjustable pivoted jaws and means for opening and closing them, the rear jaw having a curved lip or projection, D, and the front jaw being adjustably pivoted to gravitate outwardly, substantially as and for the purposes set forth. 50

6. The combined anvil and vise herein described, consisting of the jaws *b* and *b'*, constructed and united, substantially as described, and combined with the anvil A, substantially in the manner and for the purposes set forth. 55

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN E. LEACH.

Witnesses:

S. E. LEACH,
M. A. SMITH.