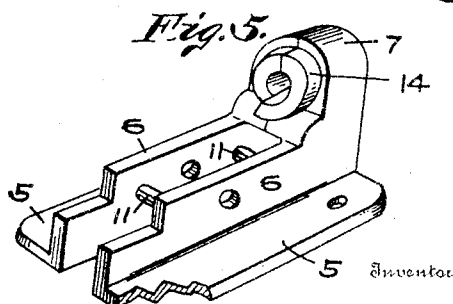
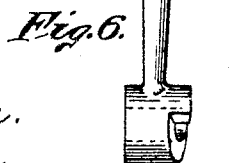
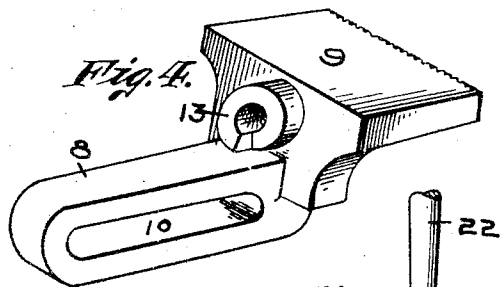
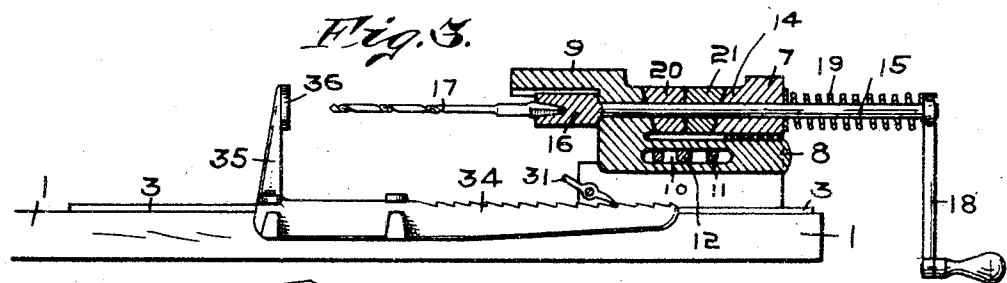
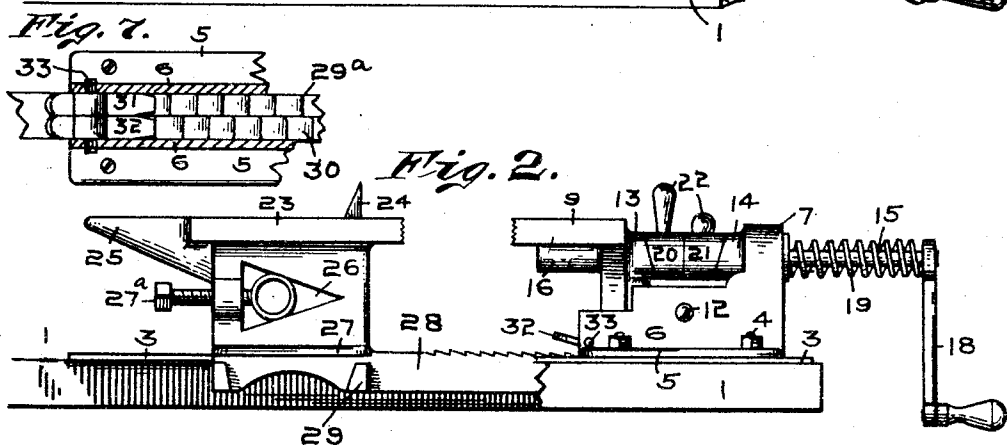
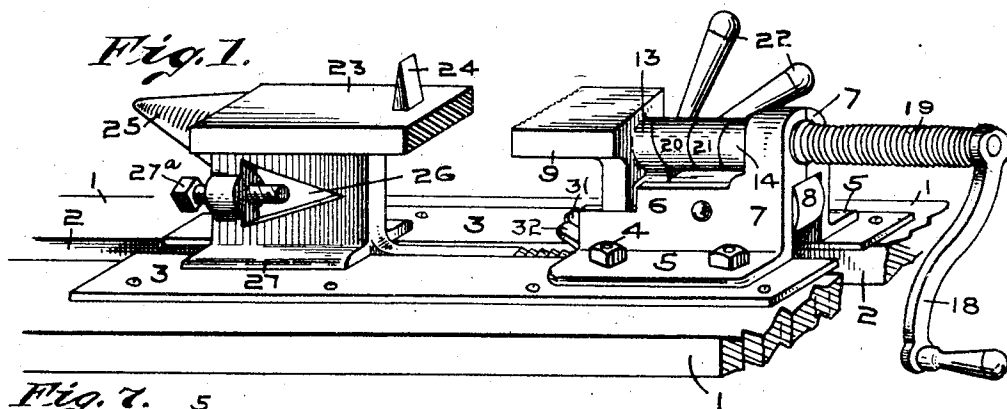


No. 779,511.

PATENTED JAN. 10, 1905.

J. WEATHERS.
COMBINATION ANVIL, VISE, AND DRILL.

APPLICATION FILED AUG. 1, 1904.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES WEATHERS, OF INDIANAPOLIS, INDIANA.

COMBINATION ANVIL, VISE, AND DRILL.

SPECIFICATION forming part of Letters Patent No. 779,511, dated January 10, 1905.

Application filed August 1, 1904. Serial No. 219,079.

To all whom it may concern:

Be it known that I, JAMES WEATHERS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in a Combination Anvil, Vise, and Drill, of which the following is a specification.

This invention relates to improvements in a tool combining an anvil, vise, drill, and pipe-cutter; and the object is to provide a practical mechanism that will be inexpensive to construct, easy to operate, durable, and effective for the purposes intended.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention assembled to operate as an anvil and vise; Fig. 2, a side elevation of same with the bench broken away in part to show the construction of the base of the anvil; Fig. 3, a longitudinal section of the tool assembled as a drill; Fig. 4, a detail in perspective of one of the jaws of the vise; Fig. 5, a detail in perspective of the guide or holder for the jaw of the vise shown in Fig. 4; Fig. 6, a detail in side elevation of one of the cams for moving the jaw of the vise, and Fig. 7 a detail in plan view and horizontal section of the base of the vise and ratchets for holding a given adjustment of one of the jaws.

Like characters of reference indicate like parts throughout the several views of the drawings.

1 is a bench or table having the longitudinal slot 2, with metal plates 3 secured to the top of the table and projecting out over the slot a short distance from each side of the latter to engage and hold in place one of the sliding members of the vise. Fastened by means of the bolts 4 to the plates 1 is the base 5, having the parallel vertical plates 6 6, which merge into the end post 7, and located between the plates 6 6 is the base 8 of the movable jaw 9. This base has the longitudinal slot 10, into which take the lugs 11 11 from plates 6 6 and through which passes the bolt 12, which fastens the plates 6 6 together and helps to unite the parts of the vertically-divided two-part post 7. The latter is in two parts, so that the

hole for a drill-shaft may be cast, and also for convenience in assembling the base 8 between the lugged plates 6 6. The jaw 9 has the rearwardly-projected lug 13, and the post 7 has the inwardly-projected lug or boss 14, both of said lugs or bosses 13 and 14 having their adjacent faces cam-shaped, as clearly shown in the drawings. Both of said bosses are perforated to receive the drill-shaft 15, which is mounted therein in the manner as shown. This shaft has the head 16 to act as a stop and prevent the drawing of the shaft entirely through the jaw 9, and the head has a socket to receive a drill 17, which is removably secured therein. The other or outer end of the shaft has the crank 18, and mounted on the shaft between the crank and the post 7 is the spiral spring 19, which has a tendency to draw the jaw 9 normally toward the post 7. Mounted on the shaft 15, between the cam-faces of the bosses 13 and 14, are the two sleeves 20 and 21, having mating faces, which are at right angles to the axis of shaft 15, and cam-faces at their opposite ends to operate against the cam-faces of the bosses 13 and 14. The two sleeves 20 and 21 are each provided with levers 22 22, placed so that when the levers are in their lowest positions at the back of the device the distance between the jaw 9 and post 7 will be at the minimum. By raising one of said levers its cam-sleeve will be rotated, thereby correspondingly increasing the distance between the said jaw and post, and as the post is stationary the increase in distance will move the jaw away from the post. Both levers will be raised in their order, if needed, to give the jaw the required movement, and while only two cams and levers are shown it is obvious that additional ones may be employed with a resulting additional movement of the jaw.

The opposite jaw of the vise will be in the form of an anvil comprising the table 23, having a hole for the hardy 24 and having the horn 25. The middle web of the anvil has the triangular opening 26, which with the set-screw 27 entering it from the edge of the web under the horn forms a pipe-holder, as shown. The lower portion of the web has the lateral base-flanges 27, below which is the bar 28, with lugs 29 adjacent to said flanges to receive the

plates 3 between them, whereby the anvil is retained and guided. The bar 28 has the double row of top ratchet-teeth 29^a and 30 in staggered arrangement, as shown in Fig. 7, and these teeth are engaged by the gravity-pawls 31 and 32, which are supported on pin 33 between the plates 6 6. The pawls have finger extensions by which they are raised out of engagement with the ratchet-teeth by a downward pressure thereon, thereby leaving the bar and its connected parts free to be adjusted in the slot 2 of the bench.

When it is desired to utilize the drill, the anvil and vise jaw, as above described, is moved and a jaw, as shown in Fig. 3, for drilling purposes is substituted. This has the horizontal rack-bar 34, similar to the bar 28, and it has the standard 35, which terminates with the bearing-plate 36 in alinement with the point of the drill.

In operating my device, the standard with its bearing-plate, if the drill is used, or the anvil-jaw of the vise, if the tool is used as a vise, is set up as close as possible against the work by means of the pawls and ratchet-bar, and then the feed of the drill or the clamping of the vise is finished by bringing the cam-levers into service.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. In a combined tool of the kind specified, a slotted bench or table, marginal plates placed longitudinally of the slots and projecting into the latter, a stationary base-plate having parallel vertical plates terminating in an outer end post, said post having a perforated lug with an inner cam-face, a jaw having a longitudinally-slotted base, said base sliding between the said parallel vertical plates, said plates having transverse members entering the slot of said base and said jaw having a boss

with a cam-face, a shaft passing through both bosses having a tool-holding head at its inner end and a crank at its outer end, a spring between the crank and the post, a plurality of cam-levers mounted on said shaft between the cam-bosses, an opposite vise-jaw having means to engage said bench-plates and having a rack-bar passing between the vertical plates of the first vise member and pawls mounted on said parallel vertical plates to engage the teeth of the rack-bar.

2. In a combined anvil vise and drill, a slotted bench or table, a base-plate bolted to the bench having parallel vertical plates terminating in a two-part vertically-divided post, said plates having lateral inwardly-projected lugs and said post parts having a half-lug which together form a lug with a cam-shaped face, a movable jaw having a base held between said vertical plates, said base having a horizontal longitudinal slot into which the lugs of said plates take, a bolt connecting the two plates and passing through said slot, said movable jaw having a lug with a cam-face, a shaft passing through the lugs of the post and jaw, said shaft having a tool-holding head at its inner end and a crank on its outer end, a spring between the post and crank, cam-levers mounted on the shaft between the cam-shaped lugs, a second vise-jaw mounted in the slot of the bench, said second jaw having a rack-bar extension with a double row of staggered teeth and a pair of pawls mounted on said parallel vertical plates held in stationary position to engage the teeth of the rack-bar.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 23d day of July, A. D. 1904.

JAMES WEATHERS. [L. s.]

Witnesses:

JOSEPH A. MINTURN,
F. W. WOERNER.