

J. W. MORRISON.
COMBINATION TOOL.
APPLICATION FILED NOV. 26, 1909.

1,001,425.

Patented Aug. 22, 1911.

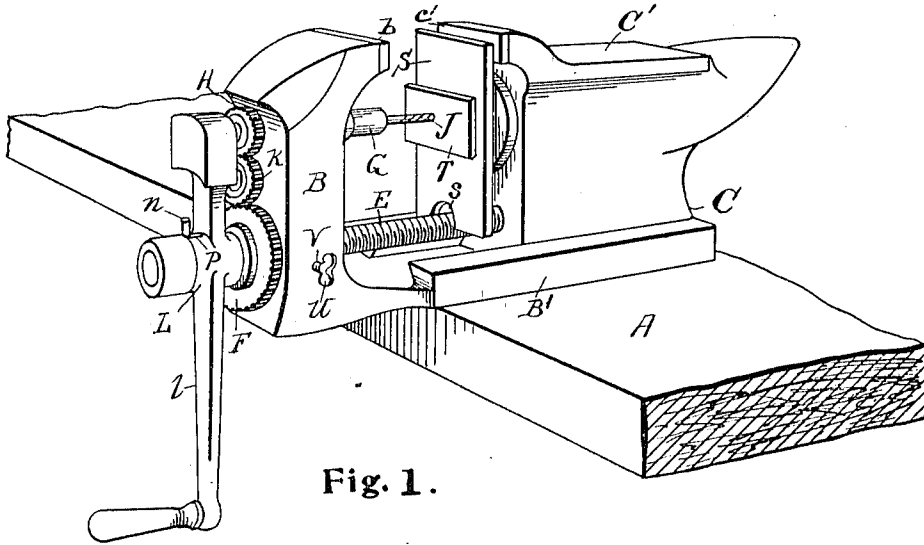


Fig. 1.

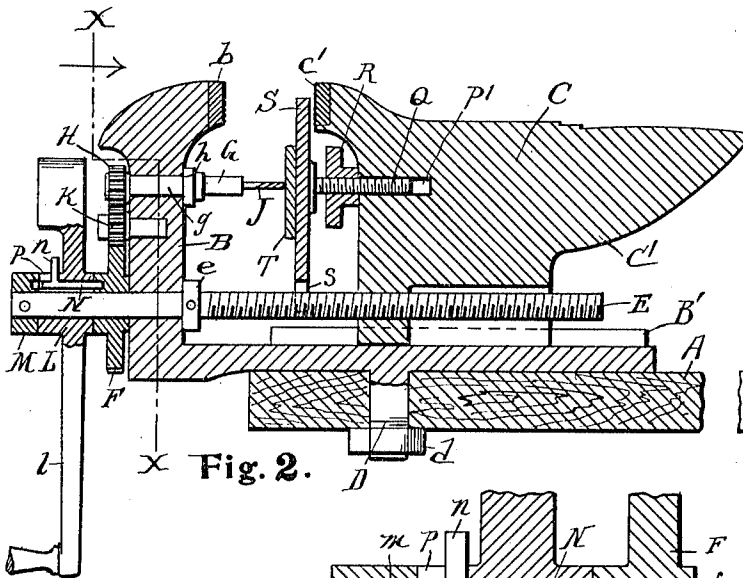


Fig. 2.

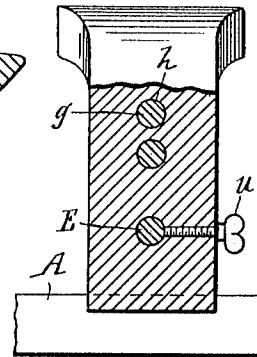
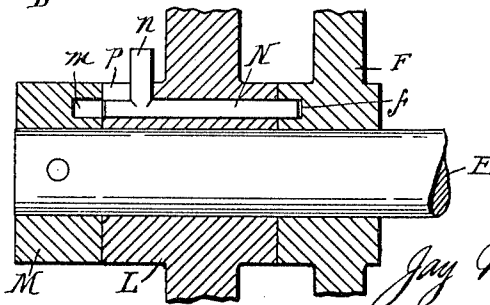


Fig. 3.

Fig. 4.



Witnesses

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COMBINATION-TOOL.

1,001,425.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed November 26, 1909. Serial No. 529,921.

To all whom it may concern:

Be it known that I, JAY W. MORRISON, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Combination-Tools, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to combination tools, and consists in certain improvements therein whereby the various changes therein may be readily and effectively made. These improvements are hereinafter fully described and are specified in the claims.

In the drawings: Figure 1, represents a perspective view of a combined anvil, vise and drill press embodying my invention. Fig. 2, is a vertical longitudinal section thereof. Fig. 3, is a cross section on the line $x-x$ of Fig. 2. Fig. 4, is an enlarged vertical longitudinal section of a portion of Fig. 2.

Similar letters refer to similar parts.

In the drawings, A is a base upon which the base portion B' of one part B, of a vise is rotatably supported; the lower part B' of the jaw B, extends under a movable part C, consisting of preferably an anvil C' and the opposite vise jaw c' and thus forms a sliding rest for the part C, and, as shown in Fig. 2, is preferably revolvably supported upon the base A, it being enabled to turn about a pivot pin D, and readily held in any position by the jam-nut d. The vise has meeting faces b, c', of the usual form, and is operated by means of the screw E, working in the usual manner in a nut or threaded portion in the bottom of the anvil and movable jaw portion, and being held in the fixed part B by a collar e, firmly attached to the screw, and by the spur gear wheel F, thus two side bearings are formed on the screw when rotatably located in the jaw B; this jaw being fixed in position as already stated, compels the part C', carrying the meeting face c', to slide in the ways upon the part B', thus it will be noted that in this construction it is the part C, which reciprocates rather than the block B.

A jaw or chuck G, forms the continuation of a spindle g, which passes through a perforation or bearing in the upper part of the

block or jaw B, and is rotatably held therein by a pinion H, on one end and a collar h upon the other end. This chuck may carry drills of various sizes, one of which is shown at J. Between the spur wheel F, and the spur wheel H, is an idler wheel K, which revolves upon a spindle or bearing firmly attached to the block B; as these three wheels are in engagement as shown in Fig. 1, it is obvious that the revolution of the wheel F, would also compel the wheel H, to revolve and as the wheel F, may be made the larger, the wheel H, would revolve faster than wheel F.

A hub L, carrying an arm and a handle Z, is carried by the outer end of the screw E, and ordinarily unless fixed to the screw E, by means hereinafter described, will revolve without revolving the screw. The hub L, is adjacent to the wheel F, and is also held in position upon the screw E, by a collar M. In order to enable the hub L, carrying the handle Z, to be alternately connected with the screw E, or with the spur wheel F, I have provided the following mechanism: A small recess or perforation is cut in the hub of the spur wheel F, at f; a corresponding recess or perforation is cut in the collar M, at m; a corresponding perforation extends through the hub L. A pin corresponding in size to said perforation and fitting loosely therein and having a length somewhat longer than the thickness of the hub L, is shown in Fig. 4, at N. This pin carries a small knob or projection n, which projects out from the hub L, through a slot p, and by means of this projection n, the pin N, may be moved longitudinally so that it may optionally engage the hub of the spur wheel F, or the collar M; thus when disengaged from the spur wheel, the rotation of the handle Z will drive the screw E, and actuate the vise; on the other hand, when the pin N, is longitudinally moved so as to engage the hub of the spur wheel F, but is disengaged from the collar M, the rotation of the handle Z, has no effect in regard to moving the screw E, but will rotate through the idler K, the drill chuck G.

The vise screw E is usually cut too coarse to be an efficient feed for a screw press, and I have devised with special detachable means for holding material to be bored or drilled means to feed it to the drill. These means are more specially shown in Fig. 2.

In the anvil block C, there is a hole P', into which a screw bolt Q, of proper pitch is inserted; this is fixed to a large plate S, and carries a preferably milled nut R, which
 5 bears against the block C', the lower end of the bearing plate at s, is recessed to engage or set over the screw E; this prevents the plate S and nut R from turning under the action of the drill. The plate S, forms a
 10 table against which or upon which a piece to be drilled, as represented at T, may be held in any convenient manner, as by clamps, or otherwise; the milled nut R, on the screw E may be turned gradually as the
 15 drill is rotated, thereby feeding the work up to the drill as required.

In case the screw E, should be disposed to turn and thereby disarrange the feed, a set screw U which may be run into or out
 20 of the block B, at V, may be brought to bear against the side of the screw E, which is journaled in the block B, and thus prevent its rotation while the drill is being operated.

Having thus described my invention, what
 25 I desire to claim is:

1. The combination of a fixed part B, a movable part C, a screw revolubly engaging the fixed part, a thread in the movable part,
 30 a handle carried by said screw, a spur wheel also carried by said screw and revoluble thereon, a collar fixed to said screw and revoluble therewith and means whereby said handle may be alternately engaged with said
 35 collar to turn said screw or with said spur wheel to turn said spur wheel and be disengaged from said screw, substantially as described.

2. The combination of a fixed part B, a movable part C, a screw revolubly engaging the fixed part, a thread in the movable part,
 40 a handle carried by said screw, a spur wheel

also carried by said screw and revoluble thereon, a collar fixed to said screw and revoluble therewith and means whereby said
 45 handle may be alternately engaged with said collar to turn said screw or with said spur wheel to turn said spur wheel and be disengaged from said screw, a shaft and chuck carried by said fixed part and gearing whereby said spur wheel operates said shaft
 50 and chuck, substantially as described.

3. The combination of a fixed part B, a movable part C, a screw revolubly engaging the fixed part, a thread in the movable part,
 55 a handle carried by said screw, a spur wheel also carried by said screw and revoluble thereon, a collar fixed to said screw and revoluble therewith and means whereby said handle may be alternately engaged with said
 60 collar to turn said screw or with said spur wheel to turn said spur wheel and be disengaged from said screw, a shaft and chuck carried by said fixed part and gearing whereby said spur wheel operates said shaft
 65 and chuck, a plate or follower carried by said movable part C, and means thereon for feeding the same toward said fixed part, substantially as described.

4. In a combination tool, the combination
 70 of a fixed jaw, a movable jaw slidably engaging the fixed jaw in a bearing attached thereto or formed thereon, means attached to one jaw for revolving a drill, and means attached to the opposite jaw for carrying
 75 and feeding the work to be operated upon up to the drill, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

JAY W. MORRISON.

Witnesses:

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