C. E. SHIELDS.

COMBINATION VISE AND DRILL.

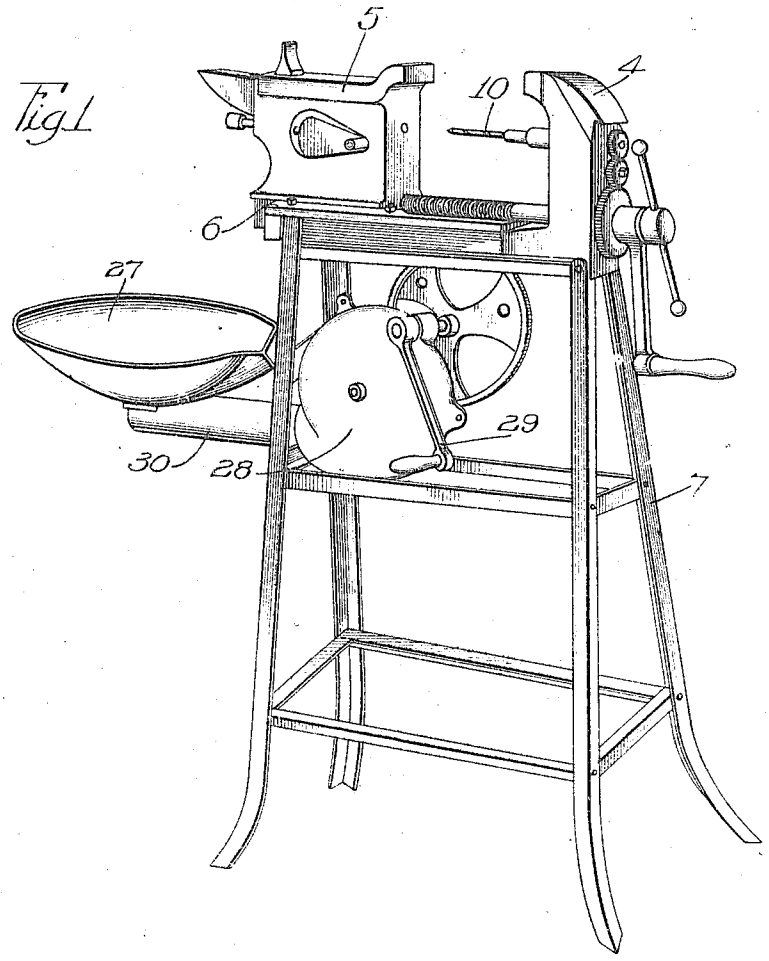
APPLICATION FILED SEPT. 17, 1917.

1,266,724.

Patented May 21, 1918.

2 SHEETS—SHEET 1.

Fig 1.



Witness:
Maurice Goldberger

Inventor:
Carle E. Shields,
by: Charles E. Bulkley, Atty's.

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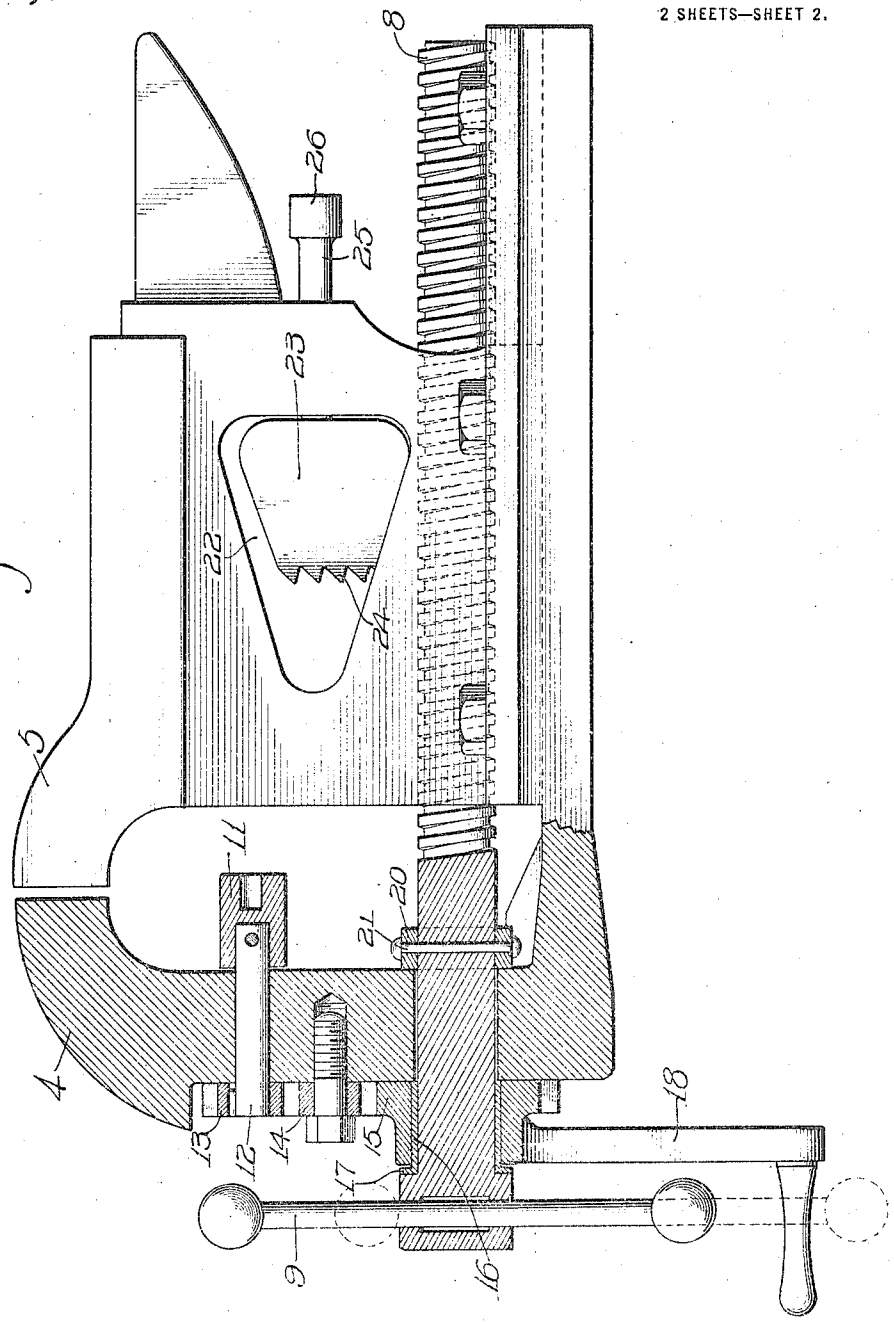
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2 SHEETS—SHEET 2.

Fig 2.



Witness:
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UNITED STATES PATENT OFFICE.

CARL E. SHIELDS, OF ROCK ISLAND, ILLINOIS.

COMBINATION VISE AND DRILL.

1,266,724. Specification of Letters Patent. Patented May 21, 1918.

Application filed September 17, 1917. Serial No. 191,695.

To all whom it may concern:

Be it known that I, CARL E. SHIELDS, a citizen of the United States of America, and resident of Rock Island, Rock Island county, Illinois, have invented a certain new and useful Improvement in Combination Vises and Drills, of which the following is a specification.

My invention relates to an improved combination vise and drill, and has for its object an improved arrangement of parts whereby the vise and drill may be independently operated, and whereby a more efficient construction is obtained than in previous forms of combination tools of this character.

Further objects of my invention are the provision of a combined structure which can be employed for various purposes and uses of an allied nature, all of which will be more clearly understood by reference to the accompanying drawings, in which I have illustrated one embodiment of my invention.

Figure 1 is a perspective view of a combined vise and drill embodying the features of my invention.

Fig. 2 is an enlarged detail of a portion of the vise and drill shown partly in section, to more clearly indicate certain features of construction.

As shown in the drawings, I have illustrated a vise consisting of a stationary jaw 4 and a movable jaw and anvil 5 mounted on a suitable track 6 carried by a supporting frame 7. The movement of the movable jaw and anvil 5 is accomplished by means of the threaded rod 8 which passes through the base of this jaw and has threaded engagement therewith, the end of this rod passing through a circular hole in the stationary jaw 4. This rod is provided with an enlarged end through which passes the usual operating rod or handle 9.

The drill 10 is mounted in a suitable socket or holder 11 carried by the spindle 12 which passes through the upper portion of the stationary jaw 4. Mounted on the end of this spindle is a pinion 13 which meshes with the idler pinion 14, which in turn meshes with a gear 15 loosely mounted on the end of the rod 8 between the enlarged end thereof and the stationary jaw. Secured to the hub of the gear 15 is an operating arm 18, provided with a handle 19, by means of which the chain of gears and the drill may be rotated. Between the gear 15 and the rod 8 there is mounted a sleeve 16 having a flanged end 17 which forms a collar lying between the end of the rod 8 and the hub of the gear 15. This sleeve is constructed slightly longer than the hub of this gear 15, and in this manner prevents the end of the rod 8 from jamming against the hub 15 when the vise is being adjusted, and thus permits free operation of the drill at all times. It will be noticed that the chain of gears tend to speed up the operation of the drill so that a slow movement of the operating handle will produce more rapid rotation of the drill. Mounted on the rod 8, inside of the stationary jaw 10, there is a collar 20 secured to the rod by a pin 21. With this construction, when the rod is rotated in one direction, the movable jaw 5 is drawn toward the stationary jaw 4, and during this movement the sleeve 16 and collar 17 prevent the enlarged end of the rod 8 from jamming against the hub of the gear 15, and, therefore, this gear is kept free to rotate the drill. When the rod 8 is rotated in the opposite direction, the collar 20 prevents longitudinal movement of this rod, and thus the movable jaw is caused to move away from the stationary jaw.

The stationary jaw is provided with a triangular opening 22 having rounded corners, and in this opening there is located a suitable jaw 23 having a serrated edge 24 forming a part of a pipe vise or holder. This jaw is operated by means of a threaded rod 25 having an enlarged head 26, to which a suitable operating tool can be connected. The pipe, or other cylindrical article which it is desired to grip or hold in this implement, is clamped between the serrated edge of the jaw 23 and the inner rounded corner of the opening 22, as indicated in Fig. 1.

Mounted on the stand below the vise, and in suitable operative relation therewith, there is a forge pan 27 and a suitable fan 28. This pan is operated by means of the crank 29, which is geared to the shaft of the fan, which fan produces a suitable blast through the tube 30 and through the bottom of the forge pan.

It will thus be seen that I have devised a very efficient construction, in which I have combined in a single structure a number of useful coördinate or allied elements. Furthermore, it will be seen that in my construction the drill is always free to be operated at any position of the vise, and by having the operating handles for the drill and for the

movable jaw operated about the same axes, a more rigid and efficient construction is obtained, and by having these two handles independent of each other I am enabled to operate the vise independently of the drill, or the drill independent of the vise. Furthermore, while drilling, the movable jaw may be used as a feed table, which can be advanced by the operation of the handle 9 while the drill is being operated by means of the operating handle 18.

While I have illustrated and described one particular embodiment of my invention, it will be understood that I do not wish to be limited to the structure shown and described and that various changes and modifications will readily suggest themselves to those skilled in the art without departing from the spirit and intent of my invention.

What I claim as my invention is:

1. A combined implement consisting of a vise having a stationary and a movable jaw, a threaded rod adapted by its rotation to adjust the movable jaw with respect to the stationary jaw, a drill rotatably mounted in the stationary jaw, an operating handle for said drill mounted on said threaded rod, and a sleeve mounted between said operating handle and rod to prevent said rod jamming against said handle.

2. A combination implement comprising a vise having stationary and movable jaws, a threaded rod passing through said jaws for adjusting one with respect to the other, a drill rotatably mounted in said stationary jaw, an operating handle loosely mounted on said rod, a chain of step-up gears between said operating handle and said drill, and a sleeve mounted between said operating handle and rod to prevent said rod jamming against said handle.

3. A combination implement comprising a vise having stationary and movable jaws, a threaded rod passing through said jaws for adjusting one with respect to the other, an operating handle for rotating said rod, a drill rotatably mounted in said stationary jaw, a second independently operating handle loosely mounted on said rod, a chain of step-up gears between said second handle and said drill, and a sleeve mounted between said second handle and rod to prevent said rod jamming against said handle.

Signed by me at Chicago, Cook county, Illinois, this 4th day of Sept., 1917.

CARL E. SHIELDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C.