

I. E. STUMP.
RATCHET SCREW DRIVER.

(Application filed July 22, 1901.)

(No Model.)

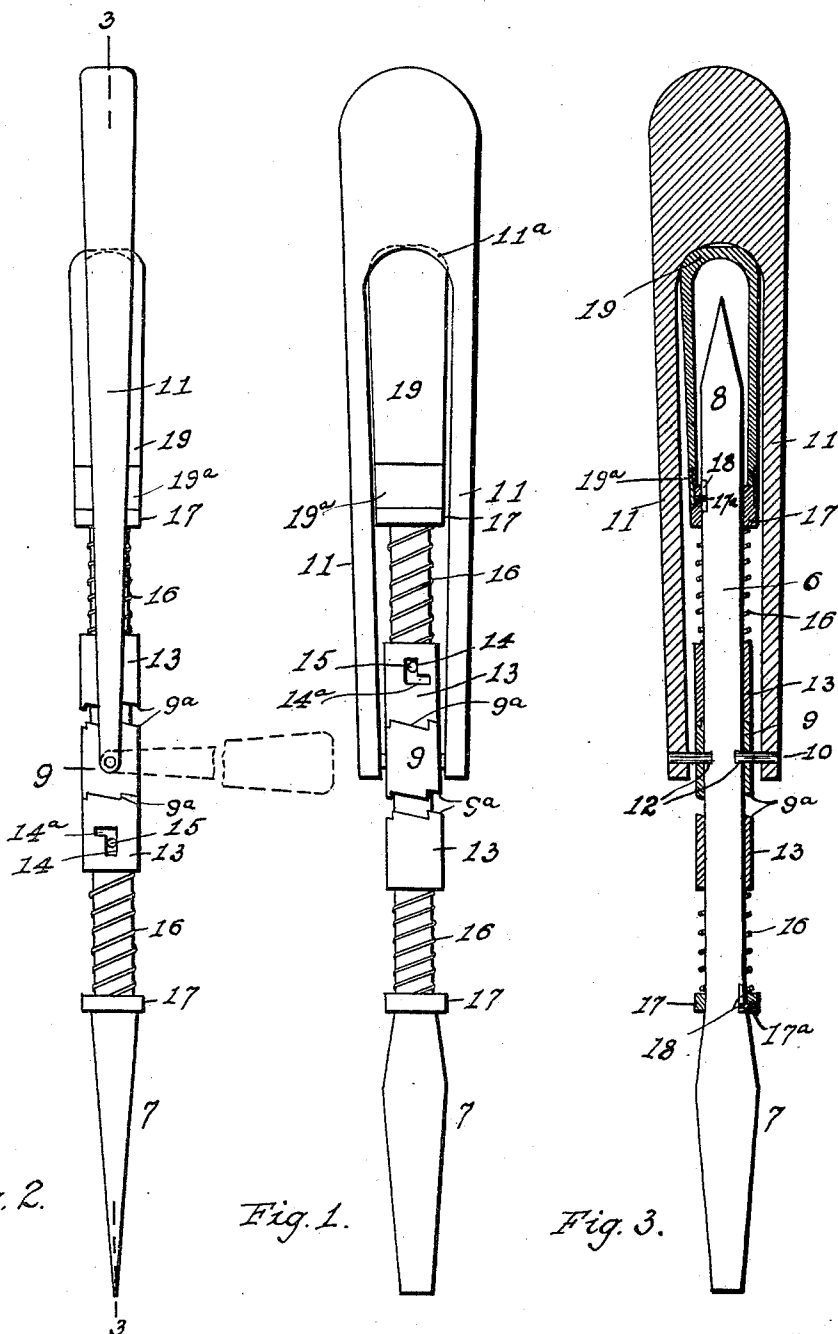


Fig. 2.

Fig. 1.

Fig. 3.

WITNESSES:

J. A. Garrod.
O. E. Murray.

INVENTOR

Ira E. Stump
BY
Milo B. Stevens & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

IRA E. STUMP, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO
ERNEST N. FOOTE, OF CLEVELAND, OHIO.

RATCHET SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 699,773, dated May 13, 1902.

Application filed July 22, 1901. Serial No. 69,192. (No model.)

To all whom it may concern:

Be it known that I, IRA E. STUMP, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ratchet Screw-Drivers; 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 the figures of reference marked thereon, which form a part of this specification.

My invention relates to ratchet screw-drivers or similar tools.

It consists in a stock having a tool at each end, said stock having at its middle a ratchet block or collar adapted to engage other corresponding blocks fitted to the stock, so that the screw-driver or other tool may be revolved in either direction without complete rotation of the handle.

It further consists of a removable handle or cap adapted to be placed over one tool while the other is in use.

It further consists of a yoked handle pivotally secured at its ends to the ratchet-block and adapted to span and inclose the removable handle and to convey a thrust longitudinally the tool, as is usual, and also to be turned and extended laterally at an angle to the stock, so as to form a powerful lever to turn the tool when desired.

In the accompanying drawings I have shown a combined awl and screw-driver.

Figure 1 is a longitudinal elevation of the tool. Fig. 2 is a longitudinal elevation taken at right angles to Fig. 1 and also showing the yoked handle in dotted lines brought out to form a lever to turn the tool. Fig. 3 is a longitudinal section on line 3 3 of Fig. 2.

Referring more particularly to the drawings, the stock of the tool is indicated at 6, provided at one end with a screw-driver 7 and at the other end with an awl 8.

Mounted upon the stock, at or about the middle thereof, is a ratchet-block 9, each end of which is provided with ratchet-teeth 9^a.

This block is loosely mounted upon the stock of the tool and is capable of rotation thereon; but longitudinal movement of the block is prevented by pivot-pins 10, which are fixed to the ends of the arms of the yoked handle 11 and pass through perforations in the block into an annular groove 12, formed in the stock at or about the middle thereof. The pivot-pins permit the handle 11 to be turned from one end of the tool to the other to reverse the tool or to be extended at a right angle to the stock to form a lever for the tool.

Sleeved upon the stock at each end of the ratchet-block are relatively stationary ratchet-thimbles 13, each of which has a longitudinal slot 14 with a lateral extension 14^a, adapted to receive a stud 15 on the stock. The ratchet-thimbles 13 are longitudinally movable on the stock to the extent permitted by the stud to effect their engagement or disengagement with the teeth of the ratchet-block 9 and to allow the teeth to slip over each other in the reverse movement. The thimbles are caused to normally engage the ratchet-block by spiral springs 16, coiled around the stock and held in tension between the thimbles and the collars 17. The springs permit the necessary longitudinal movement of the thimbles to allow the reverse slip of the teeth in the operation of the ratchet. The collars 17 have a slight longitudinal movement, for a purpose to be hereinafter described, such movement being limited by studs 17^a, which project into short longitudinal grooves 18 formed in the stock. The teeth of the respective ends of the ratchet-block are presented in opposite directions, so that when both thimbles are engaged therewith the tool acts integrally, as in an ordinary tool. To operate the tool as a ratchet-tool, one of the thimbles is disengaged from the ratchet-block by being moved longitudinally against the tension of the spring and turned, engaging the pin 15 within the extension 14^a of the slot, whereby longitudinal movement of the thimble is prevented and it is held out of engagement with the ratchet-block. To illustrate, to drive a screw the lower thimble is set at disengagement, as shown in Fig. 1. The

upper thimble remains in engagement, and the driving movement of the handle is communicated to the tool in the proper direction. In the reverse movement of the handle the

5 thimble yields to the ratchet-teeth by compression of the spring. To draw a screw, the upper thimble is disengaged and the lower one engaged, as shown in Fig. 2, which permits the application of the power and the

10 related reverse slip of the ratchet-teeth in the other direction.

As heretofore stated, the yoke-handle 11 is pivoted at 10 to the ratchet-block. Thereby it can be reversed relative to the tools and

15 also extended in a lateral direction to form a lever to turn the tool, as indicated in dotted line in Fig. 2. To cover the tool not in use, a removable handle 19 is provided, which is longitudinally recessed to receive the tool,

20 which it covers and incloses. The handle has at its open end a ferrule 19^a, which bears against the collar 17 on the stock. This collar has a slight yielding longitudinal movement, as heretofore stated. The removable

25 handle 19 is of such length and shape that it fits snugly within the space between the arms of the yoke-handle. The inner face of the yoke-handle at its bend is concave, as indicated by a dotted line at 11^a, so that the head

30 of the removable handle fits within the concavity and is yieldingly retained therein by the spring 16. To insert the removable handle within the yoke, it is necessary to force the handle 19 inwardly upon the stock to the

35 extent permitted by the movement of the collar 17, when it can be slipped within the edge of the yoke-handle and seated in the concavity by the action of the spring. When so seated, it prevents the tool from buckling or

40 turning on the pivot 10 under longitudinal pressure. The cavity within the handle 19 is of sufficient size to permit the rotation of a tool therein when the ferrule bears against the collar 17, so that when the yoke-handle

45 is used as a lever to turn the stock the tool in use is guided and pressed to the work by the handle 19, held in the hand of the operator.

It is to be understood that the invention is not limited to the combination of the awl and

50 screw-driver illustrated. Any similar tools may be formed upon or attached to the stock. Thus a bit, gimlet, or other tool may be combined with the screw-driver or otherwise, as desired.

55 Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a tool-stock, having a tool at each end, a removable handle adapted

60 to cover one of the tools when the other is in use, and a yoked handle pivotally connected to the stock and adapted to rotate the same.

2. In combination, a tool-stock, a relatively stationary ratchet-thimble secured thereto, a

relatively movable ratchet-block mounted 65 upon the stock and adapted to engage the thimble, and a handle pivoted to the ratchet-block.

3. In combination, a tool-stock, a pair of non-rotatable ratchet-thimbles thereon having 70 teeth inclined in opposite directions, a rotatable ratchet-block upon the stock between the thimbles having teeth at each end adapted to engage the teeth of the thimbles, and a reversible handle secured to the ratchet- 75 block.

4. In combination, a reversible tool-stock having a tool at each end, a rotatable ratchet-block thereon, a yoked handle the arms of 80 which are pivotally connected to the ratchet-block and adapted to rotate the same, and a ratchet-thimble upon the stock adapted to engage the block and rotate the stock.

5. In combination, a stock, a rotatable ratchet-block thereon having teeth at each 85 end, a pair of longitudinally-yielding non-rotatable thimbles on the stock having oppositely-inclined teeth adapted to engage the teeth of the ratchet-block, means to retain either thimble out of engagement with the 90 ratchet-block and a handle attached to the ratchet-block and adapted to rotate the same.

6. In combination, a stock having a tool at each end, a rotatable ratchet-block on the 95 stock having teeth at each end, a yoked handle the arms of which are pivotally attached to the ratchet-block so that it may be reversed relative to the tools or extended laterally as a lever, a pair of non-rotatable ratchet-thimbles on the stock having teeth adapted 100 to engage the block to turn the stock in opposite directions, and means to retain either thimble out of engagement with the block.

7. In combination, a stock having a tool at each end, a rotatable ratchet-block on the 105 stock having teeth at each end, a yoked handle pivotally attached to the ratchet-block so that it may be reversed relative to the tools or extended laterally as a lever, a removable handle adapted to cover the tool not in use 110 and to fit between the arms of the yoked handle, a pair of non-rotatable ratchet-thimbles on the stock having teeth adapted to engage the block to turn the stock in opposite directions, and means to retain either thimble out 115 of engagement with the block.

8. In combination, a ratchet-driven stock having a tool at each end, a yoked handle, the stock being pivotally mounted between 120 the arms of the handle and reversible therein, and means to prevent pivotal turning of the stock, so as to retain the stock and handle rigid.

9. In combination, a stock, a tool at each end thereof, a ratchet-block rotatably mounted 125 upon the stock having oppositely-disposed teeth at each end, non-rotatable ratchet-thimbles upon the stock having teeth adapted to

engage the ratchet-block and turn the stock
in opposite directions, springs bearing against
the thinbles causing the same to normally
engage the ratchet-block, means to retain
5 either thimble out of engagement with the
ratchet-block, collars upon the stock, a re-
movable handle adapted to cover the tool not
in use and to bear upon the collar so as to

permit the rotation of the said tool there-
within. 10

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

IRA E. STUMP.

Witnesses:

LOTTIE NEWBURN,
JOHN A. BOMMhardt.