(No Model.)

T. G. G. MOUAT.

SCREW DRIVER.

No. 346,058. Patented July 20, 1886.

Fig. 1.

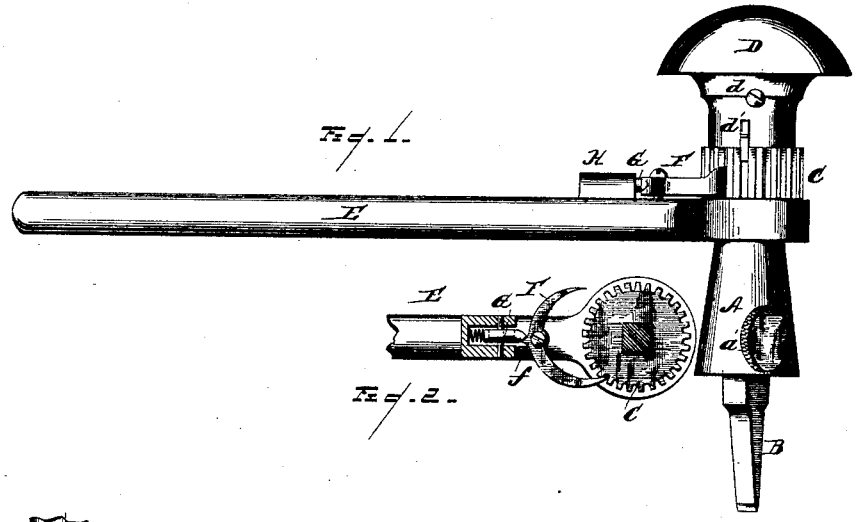
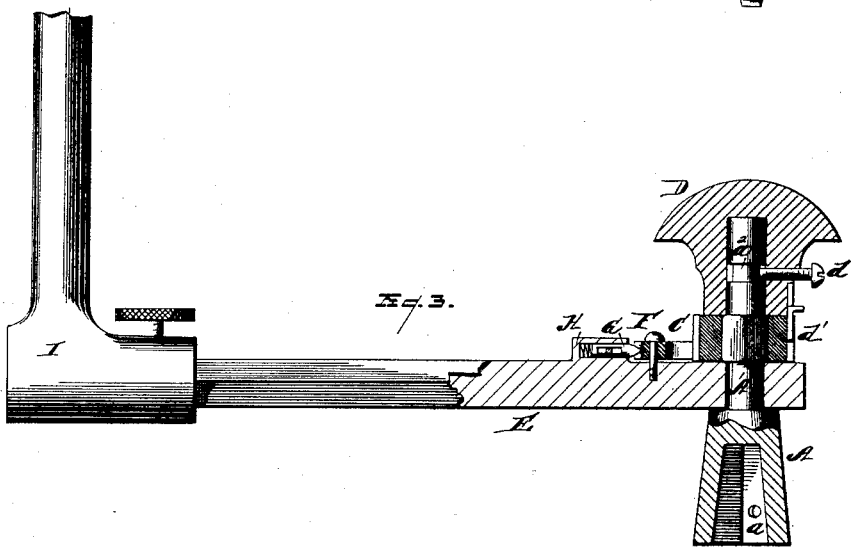


Fig. 2.

Fig. 3.



WITNESSES

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THOMAS G. G. MOUAT, OF DETROIT, MICHIGAN.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 346,058, dated July 20, 1886.

Application filed December 3, 1885. Serial No. 184,624. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. G. MOUAT, of Detroit, county of Wayne, State of Michigan, have invented a new and useful Improvement in Ratchet Screw-Drivers; and I 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 pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention is designed to provide an improved ratchet screw-driver, which shall also be adapted for analogous uses—as, for instance, a borer and a ratchet-brace; and it consists of the combinations of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a view in elevation. Fig. 2 is a horizontal section showing parts in plan; Fig. 3, a horizontal section showing parts in elevation.

My invention is designed more especially to provide a screw-driver which may be used in limited spaces. In certain kinds of work where parts are to be fastened together by screws there is no room for the operation of an ordinary hand screw-driver large enough to stand the strain and apply the power desired to drive the screw.

My invention provides an instrument by which screws can be driven and withdrawn where but little room is given for the operation.

My invention also provides a screw-driver of great power which may be readily operated for driving or withdrawing the screw, as it may be instantaneously adjusted to work in either direction. It also provides for the application of power upon the screw, if desired, in forcing it home.

The device is so constructed, moreover, that the screw may be started by hand without the application of the ratchet mechanism connected therewith.

I carry out my invention as follows: A is a holder provided with a socket, *a*, for receiving the tool B. This socket may be provided with any ordinary means for securing the tool in place—as, for instance, a set-screw, *a'*. The holder is provided with a stem, A', provided with a ratchet-wheel, C, located thereon.

D is a cap into which the stem of the holder is sleeved, so as to be rotatable therein. This cap affords ready means for hand-pressure to be applied to the holder. It may be held in place by recessing the stem, as shown at a^2, the cap being provided with a screw, *d*, engaged in said recess.

E is a handle or lever engaged at one end upon the stem of the holder, as shown, said lever provided with an escapement-pawl, F, pivotally connected therewith, so as to be readily adjusted to engage the ratchet-wheel at either point. This escapement-pawl is constructed with a point, *f*, which is engaged by a spring-bar, G. H is a housing for said spring-bar. The construction of the spring-bar and its adjustment to the escapement is such that the bar will yield to permit the escapement being turned to throw either point in connection with the ratchet-wheel, the spring-bar bearing against the corresponding side of the point *f* to hold the ratchet in its adjusted position, the pawl being adjusted to operate the ratchet-wheel in the desired direction. The handle may be then operated so as to throw the ratchet-wheel in the desired direction, thereby rotating the holder and the tool engaged therein. Should it be desired to operate the tool in the opposite direction, the position of the escapement is adjusted to correspond. By this means the tool may be operated in either direction, as desired, simply by a change of the position of the escapement-pawl. It will be observed that this lever, operating through the pawl upon the ratchet-wheel, affords great power in the operation of the tool.

Should it be desired to start a screw before the application of power by the lever, any suitable means may be employed to lock the cap upon the stem of the holder—as, for instance, the cap D may be provided with a slide, *d'*, arranged to be thrown into any of the spaces between the teeth of the ratchet-wheel, which will permit the operation of the tool without the application of power by the lever or handle. By withdrawing this slide the power may be applied to the tool, as al-

ready described. It is evident that the handle or lever E may be engaged, if desired, in a stock, I, whereby it might be operated as shown in Fig. 3, thereby increasing its power and adapting it for a boring-tool or drill.

What I claim is—

1. The combination of a handle or lever carrying a pawl, a tool-holder having a stem journaled in the handle or lever, a ratchet-wheel secured to the stem and engaged by the pawl on the handle or lever, and a cap sleeved upon the stem above the ratchet-wheel, substantially as described.

2. The combination of a handle or lever carrying a pawl, a tool-holder having a stem journaled in the handle or lever, and having an annular recess, a ratchet-wheel secured to the stem below the recess, a cap loose on the upper end of the stem, and a screw passing into the cap and engaging the recess in the stem, substantially as described.

3. The combination, with a handle or lever, E, carrying a pawl, F, of a tool-holder, A, having a stem, A′, journaled in the handle or lever and projecting therefrom, a ratchet-wheel, C, secured to the stem, a cap, D, sleeved upon the stem, and a slide, *d*′, carried by the cap for engaging the ratchet-wheel, substantially as described.

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

THOMAS G. G. MOUAT.

Witnesses:
M. B. O'DOGHERTY,
SAMUEL E. THOMAS.