

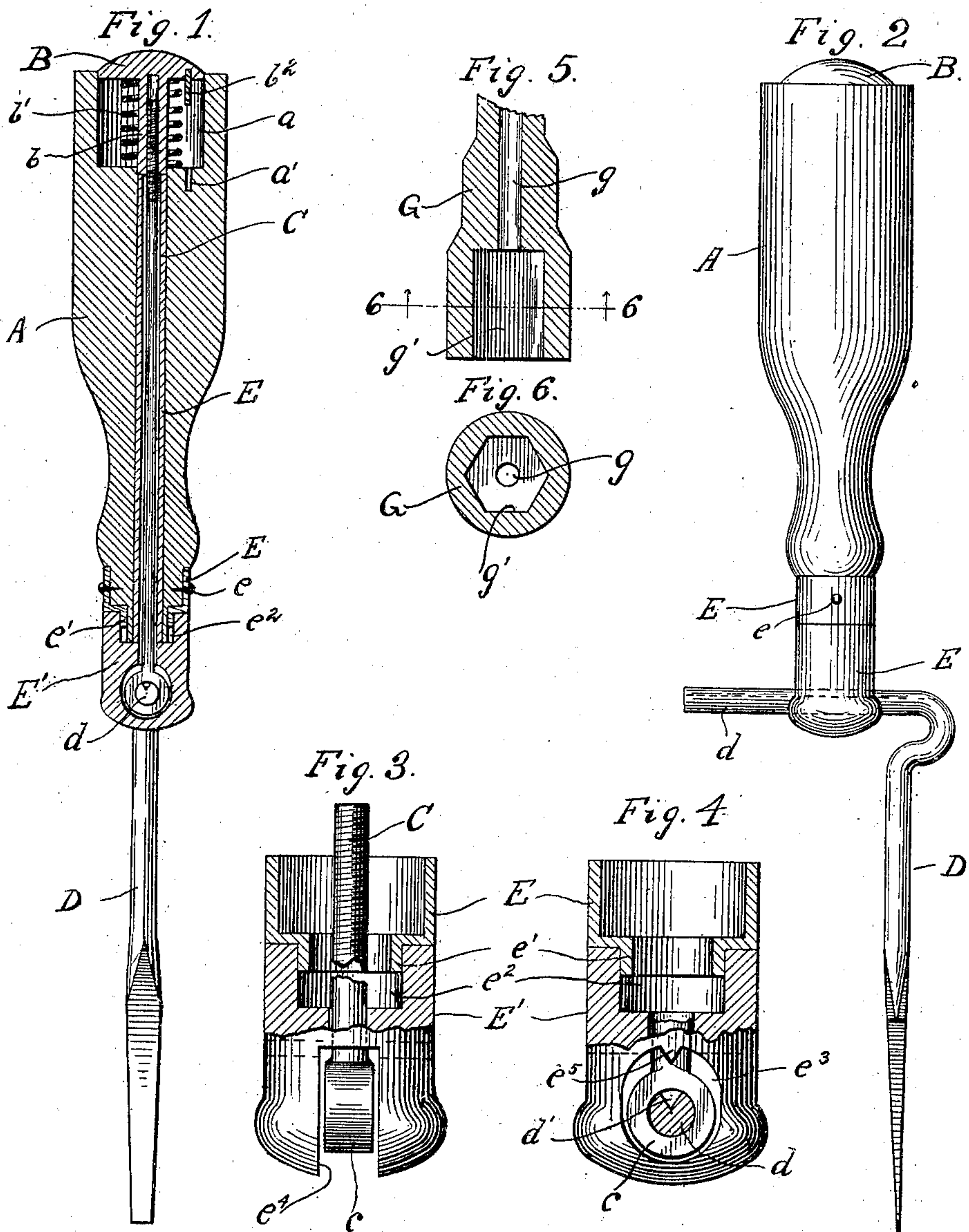
No. 709,603.

Patented Sept. 23, 1902.

J. F. LARSEN.  
SCREW DRIVER.

(Application filed Mar. 28, 1902.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

JACOB F. LARSEN, OF CHICAGO, ILLINOIS.

## SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 709,603, dated September 23, 1902.

Application filed March 28, 1902. Serial No. 100,426. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB F. LARSEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Screw-Drivers, of which the following is a specification.

This invention relates to improvements in a tool or device to be used for driving screws and for tightening or removing nuts; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of my invention is to provide a tool of the above-described character by means of which screws can be more rapidly driven and nuts more easily tightened or removed than by the use of ordinary screw-drivers or wrenches and which shall be simple and inexpensive in construction, strong, durable, and effective in operation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a vertical central sectional view through the handle portion of a screw-driver embodying my invention. Fig. 2 is a view in side elevation thereof. Fig. 3 is an enlarged view, partly in section and partly in elevation, of the lower portion of the handle part, showing the securing-rod shortened for the convenience of illustration. Fig. 4 is a similar view of like parts looking in another direction. Fig. 5 is a vertical sectional view of a portion of the detachable wrench; and Fig. 6 is a cross-sectional view thereof, taken on line 6 6 of Fig. 5.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the handle, which may be made of any suitable size, form, and material, but preferably of wood and of substantially the shape shown in the drawings. The upper end of the handle A is provided with an opening or recess *a*, in which is movably located a head B, which is provided with a hollow and screw-threaded stem *b* to engage

the screw-threaded portion of a rod C, which has on its lower end a collar *c* to receive the crank or horizontal portion *d* of the screw-driving bit D, which is flattened and pointed at its lower end, as usual.

Extending vertically through the handle A is a tube E, which surrounds the rod C, as is clearly shown in Fig. 1 of the drawings. Surrounding the stem *b* of the head B is a coiled spring *b'*, which rests at one of its ends against the lower surface of the head B and at its other end on the bottom of the recess or opening *a*, which recess or opening is provided in its bottom with an opening *a'* to receive a pin or projection *b<sup>2</sup>* on the lower surface of the head. Secured to the lower end of the handle A by means of small nails or screws *e* is a cap E, which has a neck *e'*, fitting in the socket *e<sup>2</sup>* in the upper end of the locking member E', which is provided in its lower portion with a circular opening *e<sup>3</sup>* and at right angles thereto with a slot *e<sup>4</sup>*, the former being for the purpose of allowing the crank or horizontal portion *d* of the bit D being inserted through the opening in the collar *c* on the lower end of the rod C and the latter for the movement of said collar. Projecting downwardly into the upper central portion of the opening *e<sup>3</sup>* of the locking member E' and on each side of the socket *e<sup>2</sup>* therein is an angular-shaped projection *e<sup>5</sup>* to engage a similar-shaped groove *d'* in the upper surface of the crank or horizontal portion *d* of the screw-driving bit.

In Figs. 5 and 6 of the drawings I have shown an attachment or wrench to be used in connection with my tool for tightening or removing nuts, which consists of a piece G, having an opening *g* for the reception of the bit D, which may be secured therein by any suitable means, and another opening *g'*, preferably angular in shape, to fit over and engage the nuts.

From the foregoing and by reference to the drawings it will be seen and clearly understood that by placing the crank or horizontal portion *d* of the bit D in the collar *c* and holding the handle A in one hand the locking member E' may be slid down until the lugs or projections *e<sup>5</sup>* thereon will engage the groove *d'* in the crank *d*, when by a further pressure

downwardly the pin  $b^3$  on the head B will engage the recess  $a'$  in the handle, when the latter may be used for turning the bit D, which on account of its crank or horizontal portion will afford greater leverage for driving the screw or turning said bit. When it is desired to use the tool for tightening or loosening nuts, the wrench or piece G may be placed on the lower end of the bit and there secured by any suitable means.

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

1. The combination with a hollow handle, of a rod located therein and having on its lower end a collar, a bit having at its upper end a crank or horizontal portion located in said collar, and a locking member movably secured on the lower end of the handle and

having means to engage the crank of the bit, substantially as described.

2. The combination with a hollow handle having in its upper end a recess, of a rod located in the hollow of the handle and having on its lower end a collar, a spring-actuated head on the upper end of the rod within the recess of the handle, a bit having at its upper end a crank or horizontal portion provided with a groove and located in said collar, and a locking member movably secured on the lower end of the handle and having a projection to fit in the groove of the crank, substantially as described.

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Witnesses:

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