

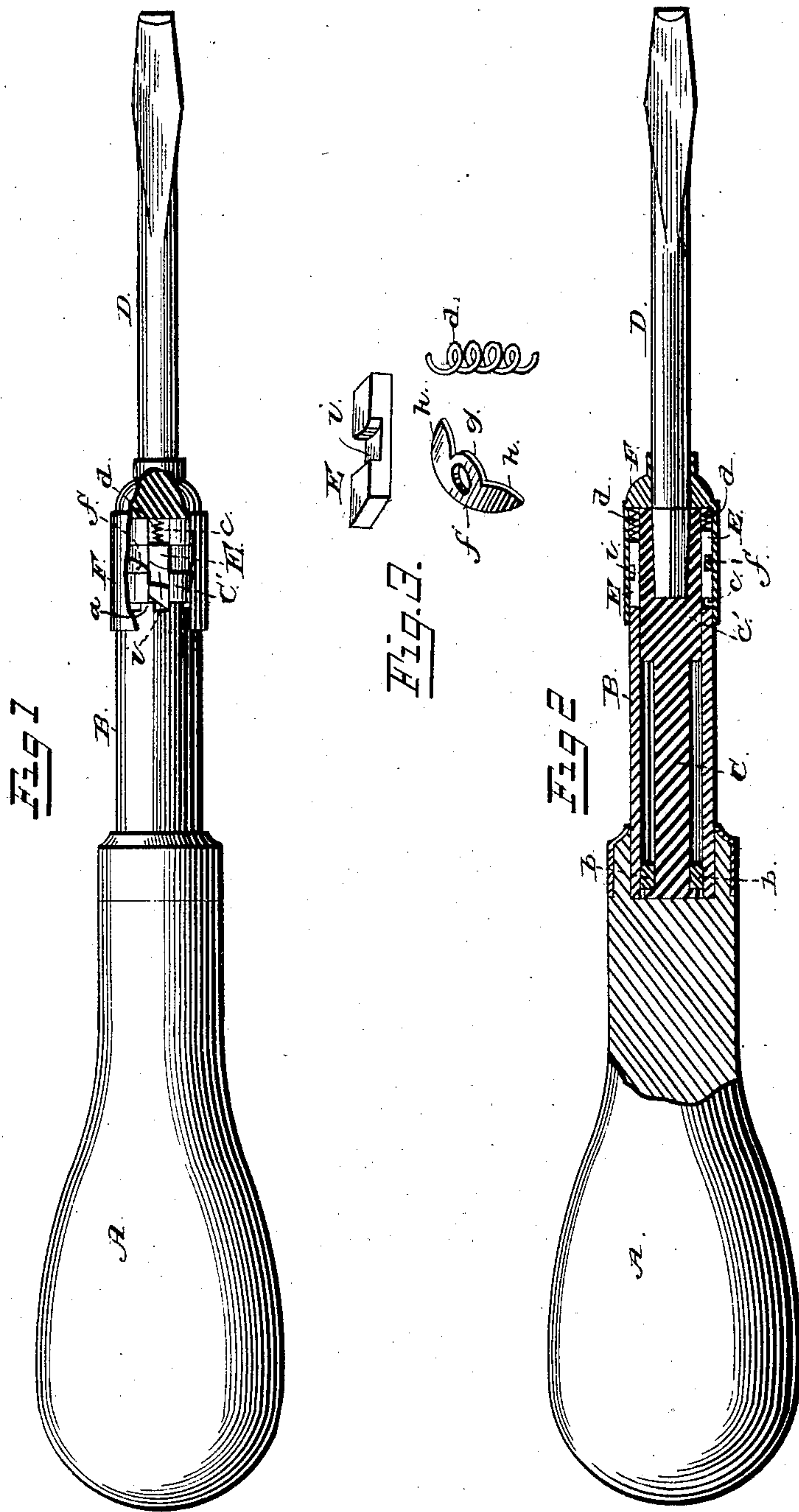
(No Model.)

Z. T. FURBISH & F. L. HAMLEN.

SCREW DRIVER.

No. 315,137.

Patented Apr. 7, 1885.



WITNESSES

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UNITED STATES PATENT OFFICE.

ZACHARY T. FURBISH AND FRANKLIN L. HAMLEN, OF AUGUSTA, MAINE.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 315,137, dated April 7, 1885.

Application filed January 7, 1883. (No model.)

To all whom it may concern:

Be it known that we, ZACHARY T. FURBISH and FRANKLIN L. HAMLEN, citizens of the United States, residing at Augusta, in the county of Kennebec and State of Maine, have invented a new and useful Improvement in Screw-Drivers, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to screw-drivers, and more particularly to that class known as "ratchet-drivers;" and it has for its object to provide improved means for changing the direction of the turning of the spindle or blade.

A further object of the invention is to provide a screw-driver of the class above referred to, which shall be cheap and simple in its construction, effective in its operation, and one that will be strong and durable.

With these ends in view the invention consists in the improved construction and combinations of parts hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is an elevation of a screw-driver constructed in accordance with our invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a perspective view of parts detached.

In the accompanying drawings, in which like letters of reference indicate corresponding parts in all the figures, A represents a suitable handle, in which is secured a pipe or tube, B, which extends out some distance from the handle, and is provided with a series of teeth, *a*, at its lower end. In the pipe or tube B is placed a nut, *b*, which is rigid and does not turn therein.

C represents a rod or spindle which is swiveled in said nut, and upon the lower end of said rod or spindle is formed integral therewith a shank, C', which has a rectangular seat or recess in its lower end for the reception of the rectangular end of the blade D. The shank C' is formed upon diametrically-opposite sides with vertical grooves or recesses *c*, extending from end to end, and communicating with the teeth on the lower end of the pipe or tube B.

E E represent pawls which are seated in the grooves or recesses in the shank C', said pawls having their upper ends beveled off in oppo-

site directions, said beveled ends being adapted to fit the teeth upon the lower end of the pipe or tube B. The pawls E E are held in engagement with the teeth of the pipe or tube B by means of spiral springs *d*, which are seated in the grooves of the shank C', and bear upon the lower ends of said pawls. The pawls E E and the springs *d* are held in place in the grooves or recesses of the shank C' by means of a metal cap, F, which incloses the shank, said cap or sleeve having an opening at its lower end for the passage of the blade D. The said shank C' is also formed with a circumferential groove or recess midway between its ends, and in said groove or recess *e* is mounted a shipping-plate, *f*. The shipping-plate *f* consists of a main or body portion, *g*, having at its lower end laterally-extending arms *h*, said arms having inclined upper faces, and being adapted to fit recesses or seats *i* upon the outer faces of the pawls when turned to engage the same. The recesses in the said pawls are formed with inclined upper walls, so that when said shipping-plate is turned to engage the recesses or seats of either of the pawls it will withdraw the same from engagement with the teeth of the pipe B. The said shipping-plate is rigidly connected with the cap by a screw or equivalent fastening, so that when said cap is turned it will move the shipping-plate.

It will be observed that, if the shipping-plate is held in a position between the pawls and does not engage either of them, the shank C' will be held rigidly in engagement with the pipe or tube B, thus holding the blade against turning in either direction, but that, if the shipping-plate be moved to withdraw one of the pawls from engagement with the teeth of the pipe, the pipe and shank carrying the blade will turn loose in one direction and be rigid if turned in the opposite direction, and that, if the shipping-plate be moved to withdraw the other pawl from engagement with the teeth of the shank, the operation will be reversed.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a screw-driver, the combination, with a barrel or pipe having a series of teeth at its

lower end, of a revoluble shank carrying spring-actuated pawls, a shipping-plate located and adapted to move on said shank, and a blade connected with the shank to be turned thereby, substantially as set forth.

2. The combination, in a screw-driver, with a pipe or barrel provided at its lower end with a series of teeth, of a revoluble shank, spring-actuated pawls on said shank, a shipping-plate located in a recess in said shank, a blade connected with said shank, and a cap, substantially as set forth.

3. In a screw-driver, the combination, with a handle-carrying pipe or barrel provided at its lower end with a series of teeth, of a revoluble shank having a spindle working in a nut rigid in the barrel, spring-actuated pawls on said shank, a shipping-plate, a blade connected with said shank, and a cap, substantially as set forth.

4. In a screw-driver, the combination, with a handle carrying a pipe having a series of teeth at its lower end, of a revoluble shank having a spindle turning in said pipe, vertical grooves or recesses in said shank, pawls located in said recesses, spiral springs bearing against the lower ends of said pawls, a shipping-plate having its ends adapted to fit recesses or seats on the front faces of the pawls, a cap, and a blade, as set forth.

5. In a screw-driver, the combination, with a handle having a pipe or barrel provided at

its lower end with a series of teeth, of a revoluble shank mounted to turn loosely upon the lower end of said barrel or pipe, pawls located in vertical grooves or recesses of said shank, spiral springs bearing against the lower ends of the pawls, a shipping-plate located in a groove or recess of said shank, a cap, and a blade, substantially as set forth.

6. In a screw-driver, the combination, with a handle having a pipe or barrel provided at its lower end with a series of teeth, of a revoluble shank having an integral spindle mounted to turn in said pipe, said pipe having diametrically-opposite grooves or recesses and a circumferential groove or recess, pawls having their ends beveled off in opposite directions, said pawls being located in said vertical recesses, spiral springs bearing against the lower ends of said pawls, seats or recesses in said pawls, said seats having their upper walls inclined, as shown, a shipping-plate having extensions provided with inclined upper faces, a cap, and a blade, substantially as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

ZACHARY T. FURBISH.
FRANKLIN L. HAMLEN.

Witnesses:

E. W. WHITEHOUSE,
L. M. PERCEVAL.