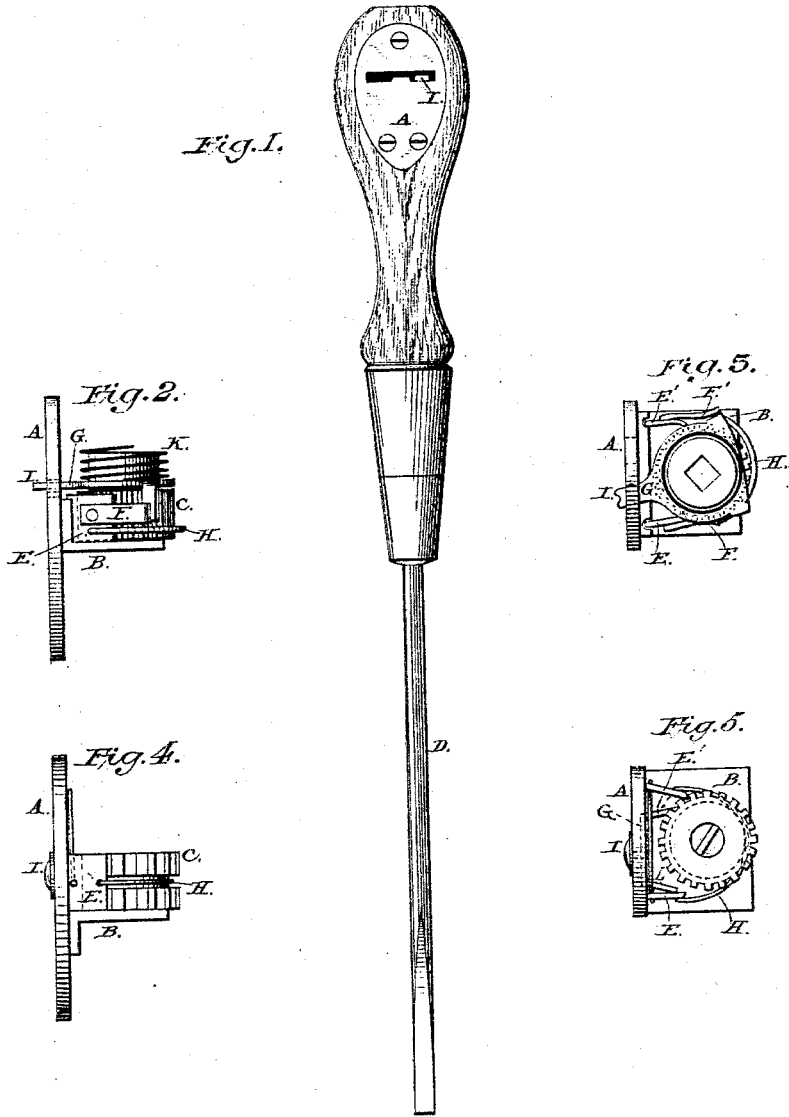


G. E. GAY.
Ratchet Screw-Driver.

No. 210,942.

Patented Dec. 17, 1878.



WITNESSES
John A. ...
D. P. ...

Geo. E. Gay
INVENTOR, by

Geo. A. Sawyer,
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE E. GAY, OF AUGUSTA, MAINE, ASSIGNOR OF ONE-HALF HIS RIGHT
TO JOHN H. PARSONS, OF SAME PLACE.

IMPROVEMENT IN RATCHET SCREW-DRIVERS.

Specification forming part of Letters Patent No. **210,942**, dated December 17, 1878; application filed
November 13, 1878.

To all whom it may concern:

Be it known that I, GEORGE E. GAY, of Augusta, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Screw-Drivers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 is a view of the exterior of my improved screw-driver complete. Fig. 2 is a vertical side view, and Fig. 3 is a top view, showing the mechanism. Figs. 4 and 5 show a slightly different arrangement of the pawls and operating-catch.

The drawing shows the screw-driver with the common and most ordinary form of handle—a shape found to be the cheapest and easiest to manufacture, and the most convenient and handiest in use. To preserve this well-known and popular shape I have arranged my ratchet to occupy the enlarged upper part, as shown in the figure, thereby preserving the symmetry and strength of the handle, and placing the machinery in that part of the tool best adapted for its reception.

The mechanism is very simple, and adapted to work both right and left handed.

The plate A, forming the cover to the orifice containing the working parts, has a plate, B, attached to it, upon which rests the metallic wheel C. This wheel has through its center a hole to receive the head of the screw-driver blade D, and a part of its surface is toothed.

A pawl, E, is adapted to operate upon the toothed wheel revolving in one direction, and a pawl, E', on the other side, upon the wheel, when it is revolved in the contrary direction.

In Figs. 2 and 3 both pawls have projections F F' formed to engage the arms of the catch G, by which one or the other is raised from its contact with the toothed wheel. In Figs. 4 and 5 the arms of the catch G bear directly against the pawl, and a groove is cut in the wheel to prevent the arms from striking the teeth and interfering with its revolutions. A spring, H, bears against both pawls and keeps them to their work.

In Figs. 2 and 3 the catch G is formed of a piece of thin metal. It has a hole through

it to fit around the cylindrical part of the wheel C. It has hanging arms on both sides to engage the projections F F' on the pawls, and an arm, I, passes through a slit in the cover-plate A, by which it is operated from the outside. A spring, K, laid on its upper surface and bearing against the top of the orifice in the handle, holds it down on the wheel C.

In Figs. 4 and 5 the catch G is a piece of metal attached to the plate A by the button L, the stud of which passes through the slit, and its arms L L' bear against the pawls and throw them in or out of action.

The operation of this device is as follows: Suppose the outside projecting point I of the catch G to be turned to the left, as shown in Fig. 3, the pawl E bears against the toothed wheel and allows its revolution only away from it. The hanging arm on the opposite side is brought in contact with the projection F', which raises the pawl E' and allows the wheel free movement. If the point of the catch G is turned to the right the pawl F' is in contact with the toothed wheel, which may then be revolved in the contrary direction. Thus the screw-driver may be used to drive the screw into the work without changing the grasp of the hand upon it or removing the point of the blade from the screw-head, and by shifting the catch G the screw may be withdrawn under like conditions.

If the point I of the catch G be held in the middle of the slit both pawls will be engaged with the teeth, and the blade will not revolve in either direction, and the tool may be used in the usual manner.

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

1. In a ratchet screw-driver, the combination of the plate A B, the ratchet mechanism, and the handle, substantially as described.

2. In a ratchet screw-driver, the combination of the blade, the toothed wheel C, the pawls E and E', and the operating-catch G, arranged substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE E. GAY.

Witnesses:

LEWIS SELBING,
HIRAM SAWTELLE.