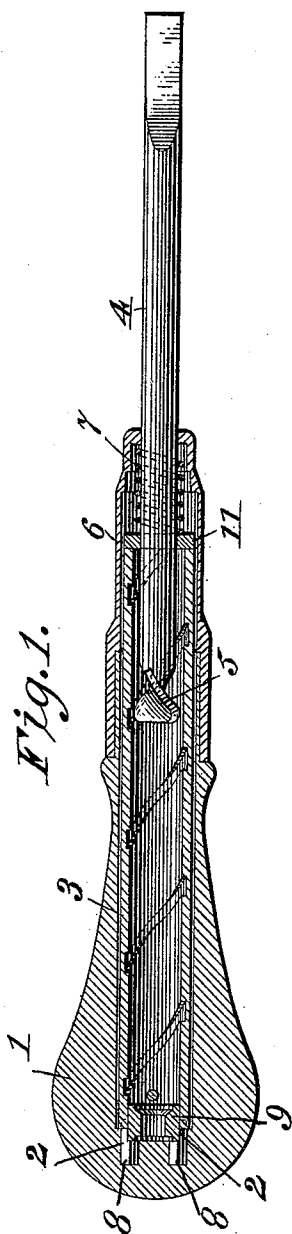


(No Model.)

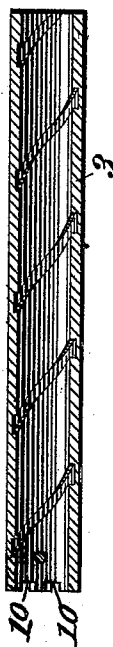
G. E. GAY & J. H. PARSONS.  
SCREW DRIVER.

No. 484,004.

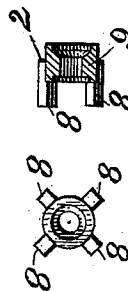
Patented Oct. 11, 1892.



*Fig. 2.*



*Fig. 3.*



Witnesses:  
*Elijah Hayward*  
*Harry W. Golder.*

Inventors:  
*George E. Gay*  
*John H. Parsons.*

# UNITED STATES PATENT OFFICE.

GEORGE E. GAY AND JOHN H. PARSONS, OF AUGUSTA, MAINE.

## SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 484,004, dated October 11, 1892.

Application filed November 16, 1891. Serial No. 412,106. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE E. GAY and JOHN H. PARSONS, 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.

Our invention relates to that class of screw-drivers in which a rotary motion is imparted to the blade by a downward or endwise pressure upon the handle; and the objects of our improvement are to simplify and lessen the cost of constructing such tools. Specially we propose to improve upon the construction of the screw-driver shown and described in United States Letters Patent No. 91,634, granted to William Hofer and bearing date of June 22, 1869. We attain these objects by the mechanism shown in the accompanying drawings, in which—

Figure 1 represents a sectional view of the screw-driver complete. Fig. 2 shows the upper end of the metallic tube 3 with its notches 10. Fig. 3 shows a plan and side view of the metallic fastening 2 with its lower or guiding end 9 and the angular projections 8.

In Fig. 1, 1 is the handle having a hole bored nearly to its upper end to receive the operating parts of the mechanism.

2 is a metallic fastening or fitting having angular projections 8, the upper ends of which are firmly embedded in the wood of the upper part of the handle 1, and the lower ends of said projections adapted to automatically engage with notches 10 in the upper end of the revolving tube 3 and having, preferably, a cylindrical end 9, adapted to enter and guide the metallic tube 3. This metallic fastening 2 may be secured to the handle by means of pins or screws instead of by angular projections; but we prefer the method shown.

3 is a metallic tube adapted to revolve freely and having a limited longitudinal motion within the handle 1, having one or more internal spiral grooves, and also having notches 10 in its upper end, adapted to automatically engage the lower ends of the angular projections 8 on the metallic fastening 2.

4 is the spindle or blade, having its lower end adapted to engage the slots of screws and having its upper end 5 enlarged and fit-

ted, so as to operate freely in the spiral groove or grooves of the metallic tube 3.

6 is a metal ferrule with a hole in its lower end through which the spindle or blade 4 passes, covering the lower part of the tube 3, and having its upper end firmly fitted to the lower end of handle 1. The spindle is made smooth or plain in order to avoid catching the fingers of the operator and also to avoid the catching of dirt and grease.

11 is a plain washer or ring through which the blade passes, placed between the lower end of the tube 3 and the upper end of the spring 7.

7 is a spiral spring having its lower end resting in the lower end of the ferrule 6 and its upper end pressing against the washer 11 to push the tube 3 toward the upper part of the handle 1, holding it in engagement with the lower ends of the angular projections 8 of the metallic fastening 2.

When the blade is pulled downward or out of the handle, the notches in the tube are disengaged from the metallic fastening by means of the hold which the upper end of the blade has upon the internal spiral threads of the tube, which is sufficient to compress the spring, so as to allow the tube to revolve freely, as the spring is only heavy enough to balance the weight of the tube and hold the tube in contact with the metallic fastening when it is not compressed.

The spring 7 and washer 11 may be omitted, allowing the lower end of the tube 3 to rest in the lower end of the ferrule 6, if preferred.

The metallic tube 3 may be modified by being made with an internal spiral rib or ribs, instead of having an internal spiral groove or grooves, as shown in the drawings, and the enlarged upper end 5 of the spindle 4 may also be modified by having a spiral groove or grooves to conform to the internal spiral rib or ribs in the modified form of the metallic tube 3.

The operation is as follows: When it is desired to force a screw into some material, the spindle or blade 4 is extended outward to its proper extent, and the wedge-shaped point is inserted in the nick of the screw and pressure is applied to the handle in a direction toward the screw. This will cause the notched end

of the tube 3 to engage with the projections 8 of the metallic fastening 2, which is secured to the handle 1. If the pressure be continued, or the tube 3 be pressed downward over the spindle or blade 4, the blade will be caused to rotate by means of its engagement with the spirally-threaded interior of said tube 3, thereby revolving the screw. If the pressure be released and the handle 1 withdrawn, the projections 8 on the metallic fastening 2 will be disengaged from the notches 10 in the tube 3, allowing the tube 3 to revolve freely around the spindle or blade 4 as the handle is withdrawn.

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

The combination of a tubular handle with a loosely-revolving metallic tube having a 20 limited longitudinal motion and a spirally-

threaded interior and having notches or projections on one end, with a longitudinally-moving spindle or blade having one end enlarged and fitted to conform to the spirally-threaded interior of said tube and its other 25 end flattened and projecting beyond the handle, with a metallic fastening or fitting secured to the handle and having notches or projections adapted to engage with the notches or projections on said tube, all substantially as described and set forth. 30

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

GEORGE E. GAY.  
JOHN H. PARSONS.

Witnesses:

ELIJAH HAYWARD,  
HARRY W. GOLDER.