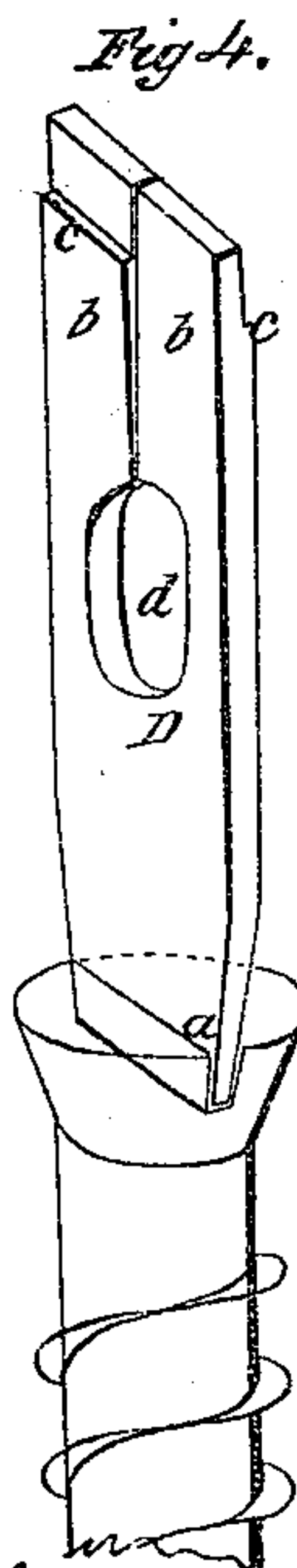
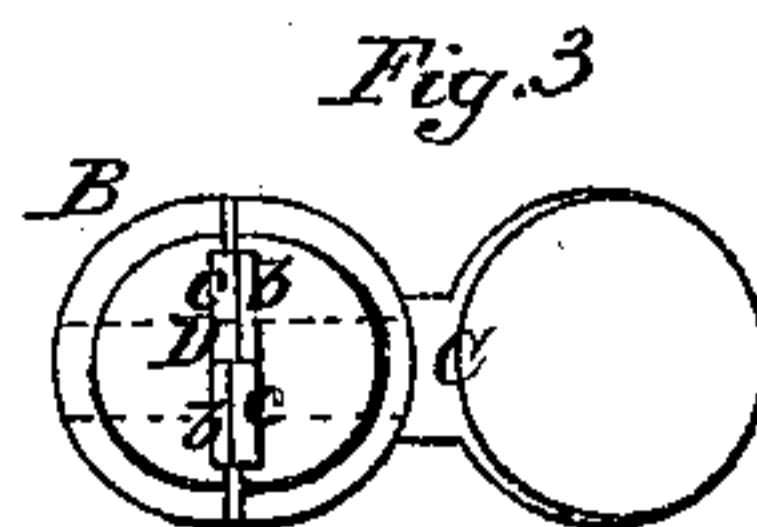
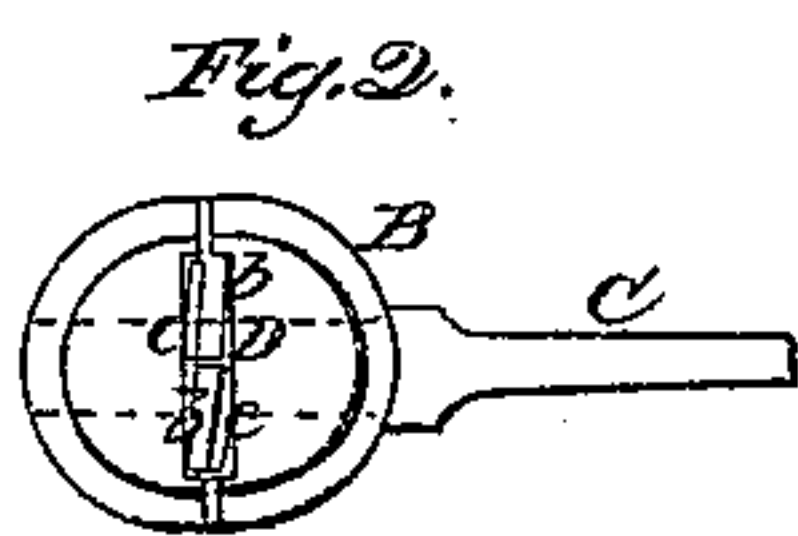
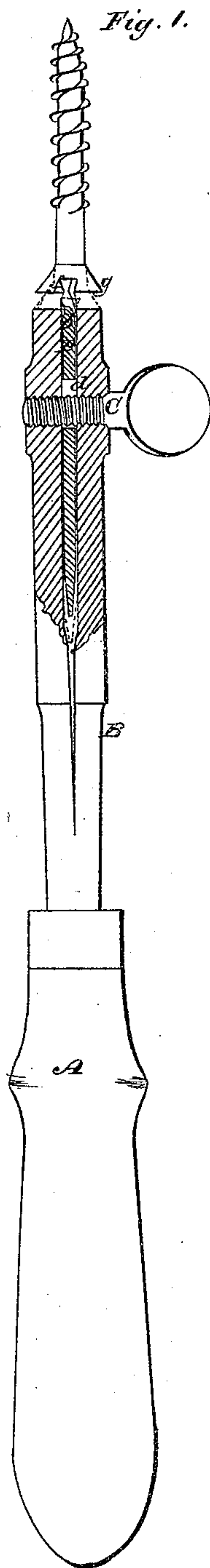


J.A. Ayres,
Screw-driver,
No 39,200, Patented July 14, 1863.



Witnesses.
J.W. Coombs
Att'y at l.

Inventor.
J.A. Ayres.
per Munn & Co.
attorneys.

UNITED STATES PATENT OFFICE.

J. A. AYRES, OF HARTFORD, CONNECTICUT.

IMPROVED SCREW-DRIVER.

Specification forming part of Letters Patent No. 39,206, dated July 14, 1863.

To all whom it may concern :

Be it known that I, J. A. AYRES, of Hartford, in the county of Hartford and State of Connecticut, have invented a new and Improved Screw-Driver; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention, partly in section; Figs. 2 and 3, end views of the same; Fig. 4, a detached view of the bit or turn-screw.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment or use of a bit or turn-screw and a shank, constructed and arranged in such a manner that the bit or turn-screw may be readily and firmly secured in the shank, and the former rendered capable of being firmly secured or held in the slot of the screw, so that the latter may be made to enter the wood or screwed into it without the application of the hands to the screw. The bit or turn-screw is so constructed and arranged as to be reversible, one end being formed in the ordinary way, or like a common screw-driver or turn-screw, and the other end being constructed in a novel way, so as to bind in the slot of the screw, as hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a wooden handle, which has a metal shank, B, firmly secured in it. This shank is slotted longitudinally from its outer end inward a certain distance, and has a set-screw, C, passing transversely through it, as shown clearly in Fig. 1. The shank B may be of cylindrical form, and it has a flat end, which is at right angles to its periphery, as shown clearly in Fig. 1.

D represents the bit or turn-screw, one end, *a*, of which is formed in the usual way, as shown clearly in Fig. 4, and the opposite end is slotted longitudinally a certain distance so as to form two prongs, *b b*. On one side of each prong there is a shoulder or lateral projection, *c*, the projection of one prong being at one side of the bit, and the other projection at the opposite side, as shown more particularly in Fig. 4. At about the center of

the bit or turn-screw D there is made an oval hole, *d*, and the slot *e* of the bit or turn-screw extends to this hole *d*. The prongs *b b* have a certain degree of elasticity, and when said prongs are not acted upon by any extraneous force or power the ends of the prongs will be in line with each other, as shown in Fig. 4, and form an ordinary screw-driver. This end of the bit or turn-screw, however, operates widely different from an ordinary turn-screw, and it is used as follows: The bit or turn-screw D is fitted in the slot of the shank B, the set-screw C passing through the hole *d* in the turn-screw. The ends of the prongs *b b* are then fitted in the slot *f* of the head *g* of the screw, and the head *g* is then adjusted in contact with the flat end of the shank, and the two parts of the shank clamped firmly against the sides of the turn-screw by turning or screwing up the set-screw C. As the two parts of the shank press against the projections *c c*, the prongs *b b* will be thrown out of line with each other and thereby made to bind firmly in the slot *f*, and hold the screw to the shank B. In Fig. 2 the ends of the prongs *b b* are shown in line with each other, and out of line with each other in Fig. 3. When the other end of the turn-screw is to be used, it is removed from the shank and reversed. By this arrangement it will be seen that the screw may be firmly secured to the shank B, and the screw may be made to enter the wood and screwed into it without applying the hands to the screw, and without the possibility of the turn-screw slipping out from the slot *f*.

This invention may be used to advantage with all kinds of screws which are designed to be turned by a screw-driver, and is especially adapted for use with my improved screw provided with a dovetail slot, and formerly patented by me, the Letters Patent bearing date April 14, 1863.

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

1. A screw-driver formed or composed of a shank, B, slotted longitudinally and provided with a set-screw, C, and a detached or removable bit or turn-screw, D, substantially as set forth.

2. Having the bit or turn-screw D provided with two prongs, *b b*, formed by slotting

the bit or turn-screw longitudinally, and having each prong provided with a lateral projection, *c*, or an equivalent device or arrangement, so that the prongs will be thrown out of line with each other by screwing up the set-screw *C*, and made to bind in the slot *f* of the screw, substantially as herein described.

3. The reversible bit or turn-screw *D*, pro-

vided at one end with the two elastic or yielding prongs *b b*, and at the other end with the ordinary turn-screw *a*, so that either may be used as described.

J. A. AYRES.

Witnesses:

CHAS. C. SHULTAS,
DAVID L. HUBBARD.