

G. H. Talbot,
Screw Driver.

N^o 19,162.

Patented Jan. 19, 1858.

Fig. 1

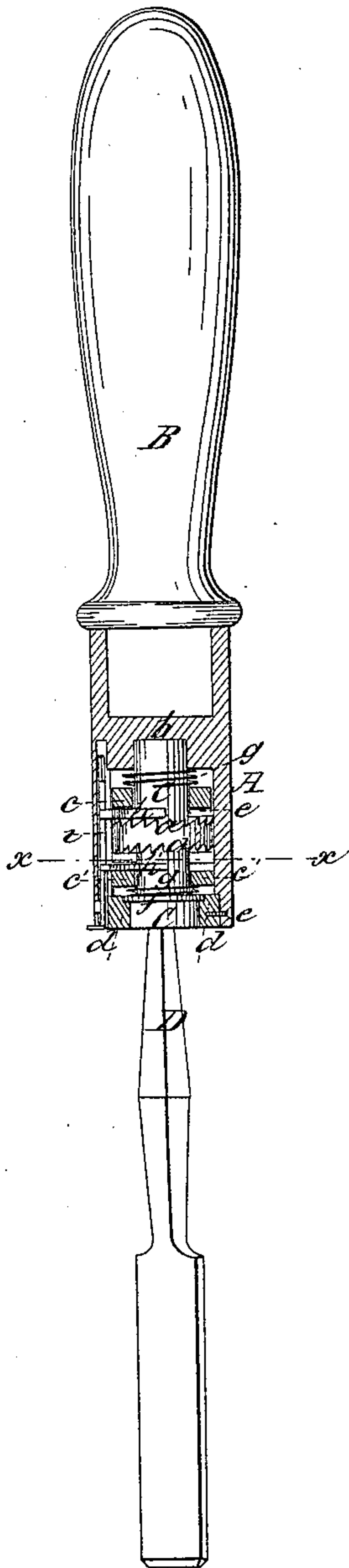
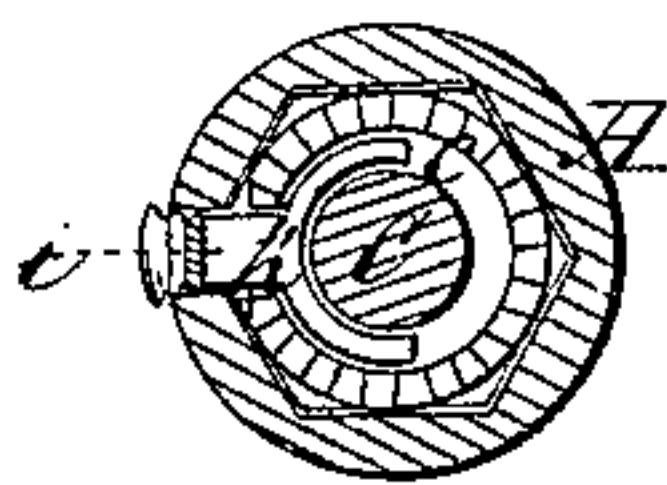


Fig. 2



UNITED STATES PATENT OFFICE.

G. H. TALBOT, OF BOSTON, MASSACHUSETTS.

RATCHET-MOVEMENT FOR SCREW-DRIVERS.

Specification of Letters Patent No. 19,162, dated January 19, 1858.

To all whom it may concern:

Be it known that I, GUILLAUME HENRI TALBOT, of Boston, in the county of Suffolk and State of Massachusetts, have invented
5 a new and useful Improvement in Ratchet-Movements for Screw-Drivers and other Tools Which Operate with a Rotary Motion; and I do hereby declare that the following is a full, clear, and exact description
10 of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a longitudinal view of a screw driver, with my invention applied exhibiting the box which holds the ratchet movement in section. Fig. 2 is a transverse section in the line x, x , of Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

20 This invention consists in the combination with the sliding rag wheels of an adjusting slide piece which is provided with forks or claws, as hereinafter set forth.

A is a metal box fitted and secured to the
25 handle B, to receive a rotating socket piece C, in which the screw driver D or other tool is held, and the ratchet movement by which rotary motion is caused to be imparted to the said socket by turning the handle back
30 and forth.

The socket piece C is turned at its back or upper end to fit a bearing b in the center of the back or top part of the box and its front or lower end is fitted to a bearing in the
35 center of a ring d , which is fitted into the mouth of the box and secured immovably therein by screws e . The said socket piece C though free to turn easily in the box A is prevented moving endwise therein by its
40 back or upper end fitting close up against the back of its bearing b , and by a small collar f , near the front end fitting against the interior face of the ring d . The socket piece C carries rigidly attached to it within
45 the box A a double ragwheel constituting strictly speaking two separate rag wheels or flat circular ratchets a, a' having their teeth set opposite ways.

c, c' are two rag wheels or circular face
50 ratchets, the former of which matches with the upper rag wheel a , and the other with the lower rag wheel a' on the socket piece C. These rag wheels c, c' are fitted to slide easily upon the socket piece C, and within
55 the box A, in a longitudinal direction but are prevented from turning within the box

and caused to turn with the handle by having the interior of the box made of polygonal form and providing the rag wheels c, c' with flanges whose perimeters are of a
60 corresponding form as is illustrated in Fig. 2.

A helical spring g , is coiled around the socket C, between the back of the rag wheel c , and the back of the interior of the box
65 A, and a similar spring g' , is applied in the same way between the rag wheel c' and the collar f , of the socket C, said springs exerting a tendency to push the wheels c, c' , each into contact with its respective wheel a or
70 a' . It is however rendered impossible for both pairs of wheels a, c , and a', c' , to be in gear at once, by two claws or forks h, h' which are attached to a sliding piece i working in a recess in the interior of the box A
75 and which stand between the wheels c, c' , the said claws being set at such distance apart as to hold the said wheels c, c' so far from each other that when one is in gear the other is out of gear and vice versa.
80

By drawing the sliding piece i outward as far as possible from the box A the wheel c' is moved by the claw h' out of gear with a' and the wheel c allowed to come into gear with that a as shown in Fig. 1; and by
85 pushing the said sliding piece as far as possible into the box, the wheel, c , is moved by the claw h out of gear with the wheel a , and the wheel a' , allowed to come into gear with c' . The claws h, h' are let into recesses
90 made in the faces of the rag wheels c, c' , deep enough to prevent their interference with the rotation of the rag wheels a, a' , when the latter are in gear.

The sliding piece i is furnished with a
95 thumb piece at its outer end and has a spring applied to it to make it catch either above or below a projection in one side of a slot in the mouth of the box and thus hold the slide in position to keep either wheel
100 c or c' in gear. Whichever wheel c or c' is in gear always has its spring in a free or operative condition so as to allow the teeth of the wheel to slip over its fellow when the handle is turned in one direction.
105

In using the tool the operator takes the handle B firmly in his hand and turns it backward, and forward on its axis without releasing his grasp. The rag wheel c or c' that is in gear engages with its fellow a or
110 a' as it turns in one direction and turns the socket C and with it the tool but in turning

the opposite way the teeth of the said wheel slip over those of its fellow and no motion is produced.

It is obvious that as the two pairs of rag wheels a, c and a', c' have their teeth set opposite ways the act of throwing one wheel c , or c' out of gear and the other one in gear by the movement of the slide i will cause the direction of the rotary movement imparted to the socket C , to be reversed.

Instead of constructing the box A , with a socket C , to receive the tool D , the head of the tool may be fitted up in the same manner as the socket C , as described.

This ratchet movement may be applied to auger handles, bit stocks or the handles or stocks of all tools operating by a rotary motion and for which it is desirable to have a reversing motion.

A sliding rag wheel pressed by a spring into gear with a fixed rag wheel, is seen in the device of J. W. and A. Frost, 1855, I therefore disclaim the same. In the said de-

vice there is also seen a sliding piece by which the shank of the blade may be locked to the handle of the tool, so that on the reverse movement of the handle, the motion of the blade will be reversed. But to give this reverse motion to the blade, the grip of the hand, upon the handle, must be constantly changed, the same as with an ordinary screw-driver.

My improvement permits the moving of the blade of the tool, in either direction, without changing the grip of the hand upon the handle.

What I claim, and desire to secure by Letters Patent, is:

The combination with the sliding rag wheels (c, c') of a sliding piece (i) having claws (h, h'), substantially as and for the purposes described.

G. H. TALBOT.

Witnesses:

I. F. BUCKLEY,
W. TUSCH.