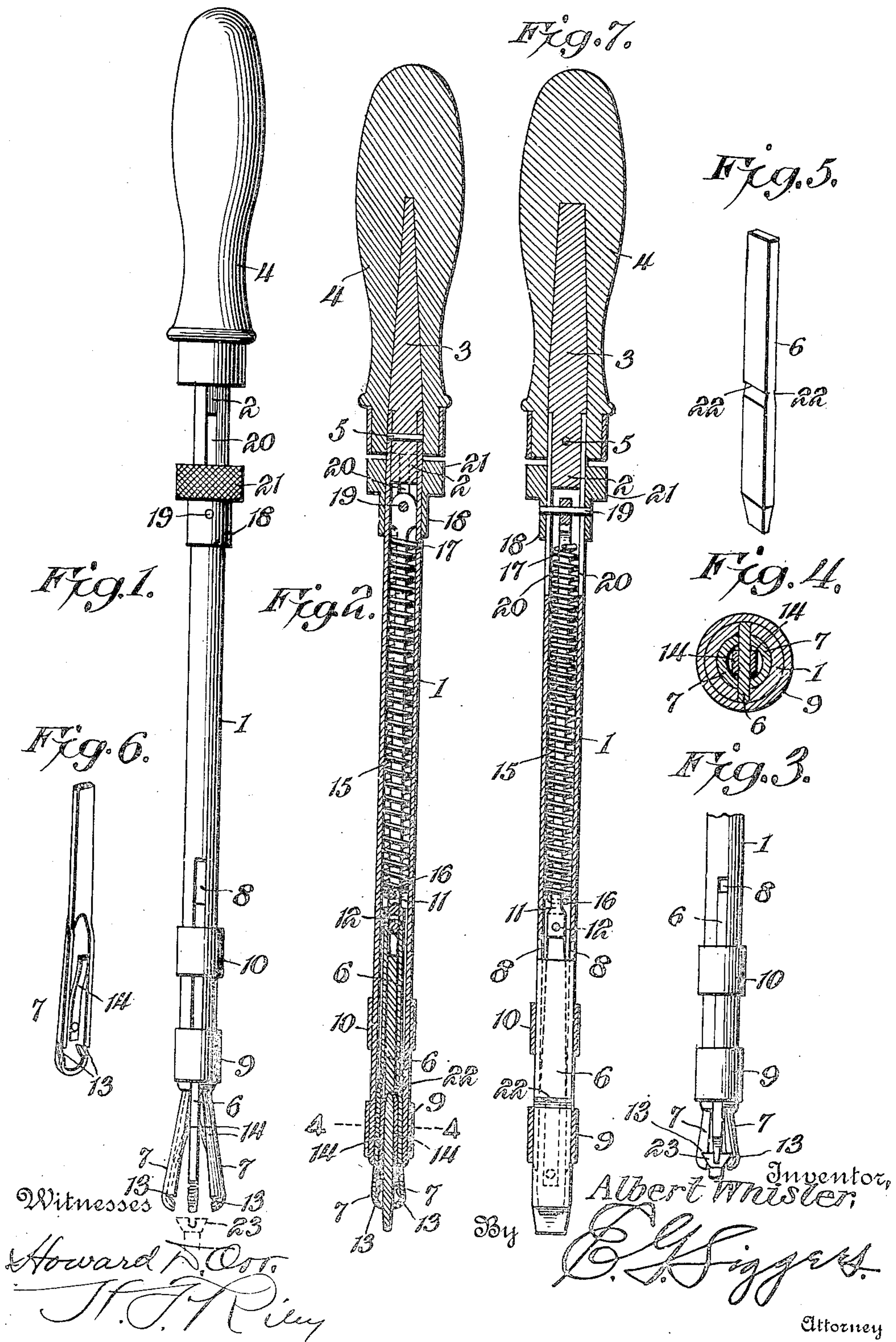


A. WHISLER.
SCREW DRIVER.
APPLICATION FILED JUNE 13, 1908.

915,003.

Patented Mar. 9, 1909.



UNITED STATES PATENT OFFICE

ALBERT WHISLER, OF BURLINGTON, KANSAS.

SCREW-DRIVER.

No. 915,003.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed June 13, 1908. Serial No. 438,371.

To all whom it may concern:

Be it known that I, ALBERT WHISLER, a citizen of the United States, residing at Burlington, in the county of Coffey and State of Kansas, have invented a new and useful Screw-Driver, of which the following is a specification.

The invention relates to improvements in screw drivers.

10 The object of the present invention is to improve the construction of screw drivers, and to provide a simple and comparatively inexpensive one equipped with jaws for engaging the head of the screw and movable inwardly and outwardly to vary the distance between them to adapt the device for en-

15 gaging screws of different sizes. A further object of the invention is to provide a tool of this character, having a screw driver blade adjustable simultaneously with the screw-engaging jaws, and adapted also to project beyond the same to enable the tool to be used as an ordinary screw driver.

20 With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims here-

25 to appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention. 30 In the drawing:—Figure 1 is a side elevation of a screw driver, constructed in accordance with this invention, the jaws being open. Fig. 2 is a longitudinal sectional view, the jaws being closed. Fig. 3 is a detail view of the outer portion of the tool, illustrating the manner of gripping a screw. Fig. 4 is an enlarged transverse sectional view, taken substantially on the line 4—4 of Fig. 2. Fig. 5 is a detail perspective view of the 40 screw driver blade. Fig. 6 is a detail perspective view of one of the jaws and the spring thereof. Fig. 7 is a longitudinal sectional view, taken at right angles to Fig. 2.

45 Like numerals of reference designate corresponding parts in all the figures of the drawing.

1 designates a barrel or casing of tubular form, secured at its inner end to the reduced portion 2 of a tapering shank 3, which is 55 secured within a longitudinal opening of a

handle 4, whereby the barrel or casing is connected with the same. The shank 3 is secured to the barrel or casing by means of a rivet 5, but any other suitable means may be employed for fastening the reduced end of 60 the shank 3 to the inner end of the barrel or casing.

The outer end of the barrel or casing, which receives an adjustable screw driver blade 6 and a pair of screw-engaging jaws 7, is pro- 65 vided at opposite sides with longitudinal slots 8, forming ways for guiding the side portions of the screw driver blade in the inward and outward movements thereof, whereby the said blade is held against rotary 70 movement independently of the barrel or casing 1. The slotted outer portion of the barrel or casing is embraced by metallic bands 9 and 10, which reinforce the barrel or casing and prevent the slotted portion 75 from spreading under the strain incident to driving a screw. The bands 9 and 10 also prevent lateral movement of the screw driver blade.

The jaws, which are constructed of spring 80 metal, are secured at their inner ends to the outer end of a connecting rod 11, by means of a rivet 12, or other suitable fastening means, and the outer engaging portions of the jaws, which are arcuate, are provided at 85 opposite sides with notches 13 to receive the opposite edges of the head of the screw, whereby the jaws are adapted to securely grip the screw and prevent the same from accidentally falling from the tool. The 90 screw-engaging jaws are moved inwardly and outwardly in a direction longitudinally of the barrel to open and close them, the jaws being automatically spread by means of a pair of springs 14, secured at their outer ends to the 95 jaws at the inner faces thereof and having their inner portions free and arranged at an angle to the said jaws and adapted to bear against the screw driver blade. The jaws are automatically retracted or withdrawn 100 within the barrel or casing to the limit of their inward movement by means of a coiled spring 15, disposed on the connecting rod 11 and secured at its outer end 16 to the same and having its inner end 17 secured to the 105 barrel or casing. The coiled spring may, however, be arranged in any other manner for moving the connecting rod inwardly. The jaws are moved outward against the action of the spring by means of a sleeve 18, 110

slidable on the inner portion of the barrel or casing and connected with the inner end of the rod 11 by means of a transverse pin 19, or other suitable fastening device. The pin 19 operates in longitudinal slots 20 of the barrel or casing of the sleeve 18, which is provided with a milled flange or portion 21, and is adapted to be moved outward away from the grip or handle of the tool for spreading the screw-engaging jaws. When the screw-engaging jaws are moved outward with relation to the barrel or casing, their outer portions are spread by the said springs 14. This also distends the coiled spring 15, which is adapted to automatically move the jaws inward. The spring is also of sufficient strength to hold the jaws 7 firmly in engagement with the head of a screw, so that the latter may be placed in position and started. The screw driver blade is moved outward to arrange its engaging edge in proper position with relation to the notches of the jaws, and it is moved inward with the jaws to preserve the relative arrangement while the jaws are being adjusted to operate on screw heads of different diameters. During the first portion of the outward movement of the jaws, the blade is carried by the springs through their gripping action, but as the jaws gradually spread or open, the gripping action is diminished until the springs release the screw driver blade, which has its outward movement completed by the rod 11. This causes the jaws and the screw driver blade to assume the position shown in Fig. 1, when the sleeve is moved outward. When the jaws are drawn inward by the coiled spring, they carry the screw driver blade 6 with them, and the inward movement of the blade is limited by the inner end walls of the slots, which form solid abutments for the screw driver blade. The screw driver blade is provided at opposite sides with recesses 22, forming inner shoulders and having beveled or angularly disposed side faces. The shoulders are engaged by the springs 14, which positively move the screw driver blade inward. When the jaws are at the limit of their outward movement, the outer end of the connecting rod abuts against the screw driver blade and the engaging outer end thereof extends slightly in advance of the screw-engaging notches 13, so as to project into the groove of a screw 23 engaged by the jaws, as illustrated in Fig. 3 of the drawing. In this position the free ends of the springs 14 are located beyond the shoulders of the recesses 22 and do not engage the same until the jaws are drawn inward a sufficient distance to cause the outer engaging end of the screw driver blade to project beyond them to enable the tool to be used as an ordinary screw driver. The screw driver blade is movable or adjustable longitudinally of the tool simultaneously with the

screw-engaging jaws in order to maintain its head in the proper position with relation to the screw-engaging notches for engaging a screw gripped by the jaws. The inner ends of the screw driver blade abuts against the outer end of the connecting rod during this adjustment, so that both the jaws and the blade are positive in their engagement with the head of the screw.

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

1. A tool of the class described including a barrel or casing, screw-engaging jaws movable into and out of the casing, a screw driver blade also movable inwardly and outwardly to maintain its proper position with relation to the jaws, operating mechanism connected with the jaws, and springs interposed between the jaws and the blade for automatically spreading the jaws and for engaging and moving the screw driver blade inward with the jaws.

2. A tool of the class described including a barrel or casing, screw-engaging jaws movable into and out of the casing, a screw driver blade also movable inwardly and outwardly to maintain its proper position with relation to the jaws, operating mechanism connected with the jaws, and springs extending longitudinally of and secured to the inner faces of the jaws and having free ends engaging the screw driver blade to spread the jaws and also to actuate the screw driver blade.

3. A tool of the class described including a barrel or casing, jaws movable into and out of the barrel or casing, operating mechanism connected with the jaws, a screw driver blade arranged between the jaws and movable into and out of the casing to maintain its proper position with relation to the jaws, and yieldable means for spreading the jaws and for engaging the screw driver blade to move the same simultaneously with the said jaws.

4. A tool of the class described including a barrel or casing, jaws movable into and out of the barrel or casing, operating mechanism connected with the jaws, a screw driver blade arranged between the jaws and movable into and out of the casing, and yieldable means for spreading the jaws and for engaging the screw driver blade to move the same simultaneously with the said jaws, said yieldable means permitting the jaws to move independently of the screw driver blade a limited distance.

5. A tool of the class described including a barrel or casing, jaws movable into and out of the barrel or casing, operating mechanism connected with the jaws, a screw driver blade arranged between the jaws and provided with shoulders, and springs interposed between the jaws and the screw driver blade and adapted to spread the former, said springs

being secured to the jaws and arranged to engage the shoulders of the screw driver blade to move the same with the jaws.

6. A tool of the class described including
5 a barrel or casing provided at its outer portion with opposite slots forming ways, bands embracing the slotted portion of the barrel or casing, a screw driver blade slidable in the slots and having its inward movement limited
10 by the same, jaws located at opposite sides of the screw driver blade and having a limited movement independently of the same, and operating mechanism connected with the jaws.

15 7. A tool of the class described including a barrel or casing, jaws movable into and out of the casing and provided near their outer ends with notches arranged to engage the head of screw at opposite sides thereof, a
20 screw driver blade located between the jaws and having its engaging end arranged adjacent to the said notches, and means for moving the jaws and the screw driver blade inward and outward, said means permitting
25 a limited independent movement of the said

parts to cause the screw driver blade to project when the said parts are at the limit of their inward movement.

8. A tool of the class described including
a barrel or casing provided at its inner portion with opposite slots, screw-engaging jaws
movable into and out of the outer end of the casing, a rod connected with the said jaws, a sleeve slidable on the inner portion of the barrel or casing and having a fastening device operable in the said slots and connecting
the sleeve with the inner portion of the rod, a spring for moving the rod inward, a screw driver blade arranged between the jaws, and means carried by the jaws for actuating the
screw driver blade, said means permitting a limited independent movement of the parts.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALBERT WHISLER.

Witnesses:

A. E. PALMER,
MAJOR A. SPEAKMAN.