

No. 701,941.

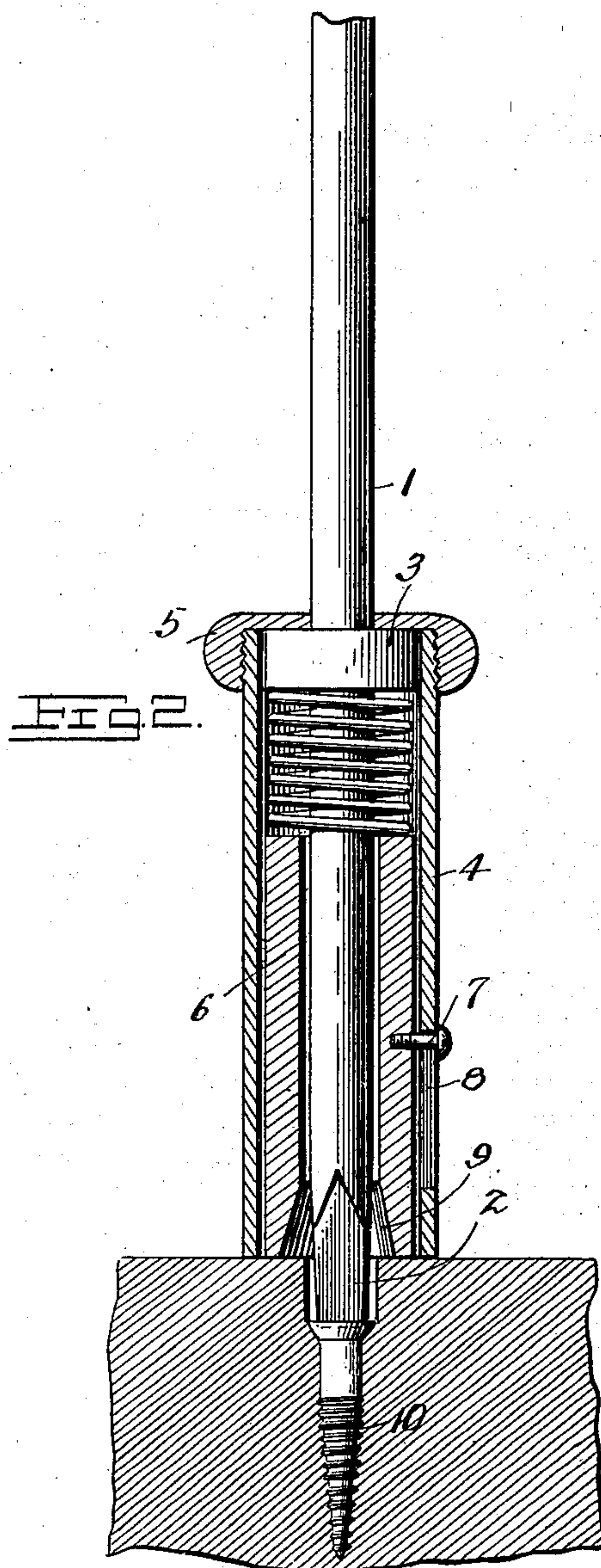
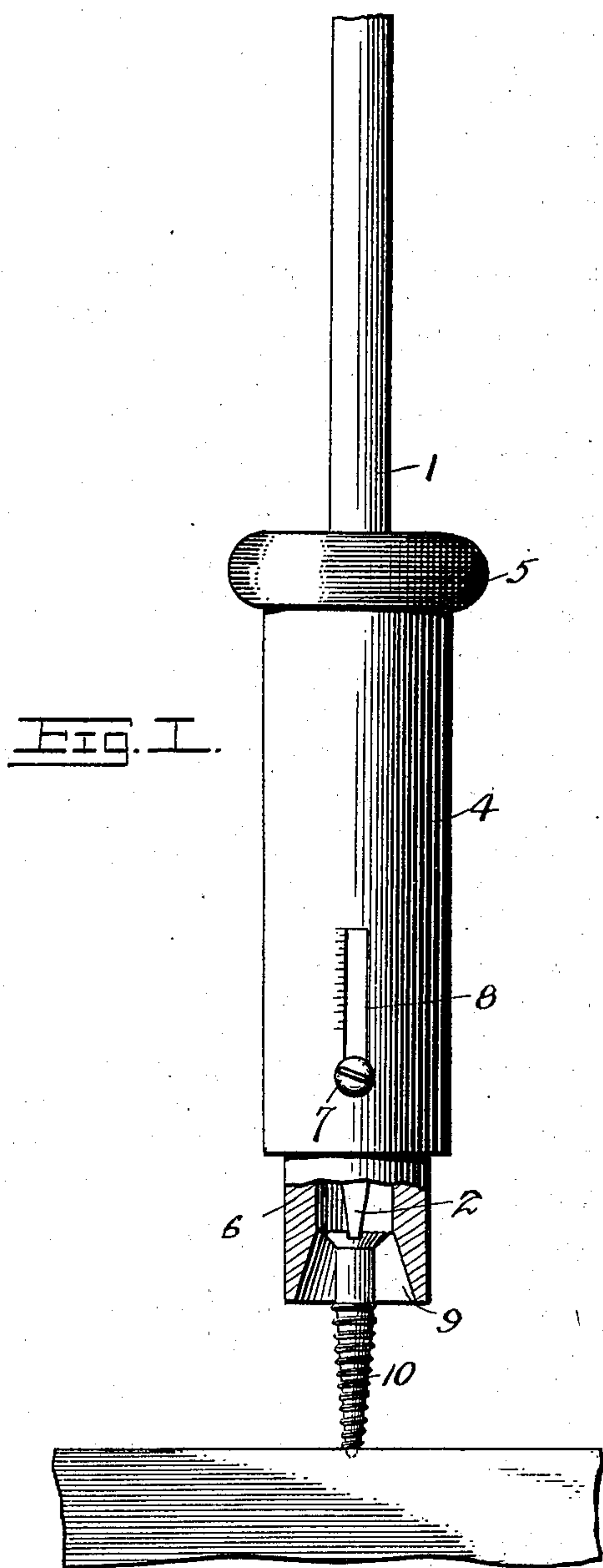
Patented June 10, 1902.

E. G. ROWLANDS.

SCREW DRIVER.

(Application filed June 29, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

ERROLL G. ROWLANDS, OF RACINE, WISCONSIN.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 701,941, dated June 10, 1902.

Application filed June 29, 1901. Serial No. 66,547. (No model.)

To all whom it may concern:

Be it known that I, ERROLL G. ROWLANDS, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented a new and useful Screw-Driver, of which the following is a specification.

This invention relates to screw-drivers, and has for its object to provide improved means for holding the point of the driver in the groove of a screw, so as to obviate slipping of the driver. It is furthermore designed to arrange for guiding the point of the driver without directly engaging the rotatable stem of the device and to avoid damaging the wood-work into which a screw is being set.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of the stem portion of a screw-driver provided with the present invention, parts being broken away to show the engagement of the driver with a screw. Fig. 2 is a longitudinal sectional view showing the device setting a screw beneath the surface.

Like characters of reference designate corresponding parts in both figures of the drawings.

Referring to the drawings, 1 designates the stem of an ordinary screw-driver, which is cylindrical, as usual, and is provided with the flattened point 2, and at a suitable distance from the latter there is also provided a marginal shoulder 3, which is cylindrical in shape. Applied to the lower end of the stem, so as to loosely embrace the shoulder thereof, is a cylindrical sleeve 4, which has its outer end terminated short of the lower end of the stem, their being an internally-screw-threaded cap 5 fitted to the externally-screw-threaded inner or upper end of the sleeve and loosely embracing the stem above the shoulder 3, there-

by rotatably mounting the sleeve upon the stem.

Within the external sleeve or casing 4 there is located a shorter inner sleeve 6, which is loose to slide endwise upon the stem and is provided with a headed pin or projection 7, extended radially outward and working in a slot 8, formed longitudinally in the outer or lower end portion of the outer sleeve, whereby the inner sleeve is connected to the outer sleeve and prevented from turning independently thereof. The pin is preferably a screw, and its head forms a finger-piece for sliding the inner sleeve within the outer sleeve when ever required. The outer end of the inner sleeve has its bore flared outwardly for a suitable distance, as at 9, to form a substantially conical seat for the reception of the head of the screw 10, which is being driven by the device. As shown in Fig. 1, the inner sleeve is normally projected outwardly beyond the outer sleeve and the point of the stem, the outward limit of the sleeve being governed by the pin 7, engaging the outer end of its guide-slot. The head of a screw is placed in the conical seat of the outer end of the inner sleeve with the point of the driver-stem engaged with the groove of the screw, after which the stem is rotated in any suitable manner to set the screw as usual, the outer sleeve or casing forming a handle for guiding and steadying the device during the operation thereof as the stem rotates independently within the casing. As the screw is fed downwardly the projected end of the inner sleeve prevents the stem from becoming displaced from the screw, and finally the said inner sleeve strikes the part into which the screw is being set and yields gradually against the tension of the helical spring 11, embracing the stem within the external sleeve and bearing in opposite directions against the inner end of the inner sleeve and the lower side of the shoulder 3. By observing the head of the pin 7 the position of the screw may be determined, and is designed to have graduation-marks provided at the edge of the slot, as shown in Fig. 1. In view of the fact that the sleeves do not rotate they do not damage or mar the woodwork into which the screw is being set. Furthermore, there is comparatively little pressure upon

the sleeves, as it is mostly taken up by the stem and screw. To facilitate the removal of a screw, which is countersunk, the inner sleeve is drawn inwardly by means of the 5 finger-piece formed by the projected head of the pin 7, so that the point of the stem may be projected or, rather, uncovered, whereby it is free to be centered in the countersink and engaged with the head of a screw, after 10 which the sleeve is permitted to resume its normal position and the screw is removed by rotating the stem in the usual manner.

What is claimed is—

1. In a screw-driver, the combination with 15 a rotatable stem having a beveled point, of an external sleeve rotatably embracing the stem, terminated short of the point thereof and fixed against endwise movement toward the point of the stem whereby the sleeve 20 forms a handle for guiding the stem, and an inner endwise-slidable sleeve, which is spring-pressed and has its outer end provided with a screw-head seat, said inner sleeve being yieldingly connected with the external sleeve 25 and arranged to be received wholly within the same.

2. In a screw-driver, the combination with a rotatable stem having a beveled point, of an external sleeve rotatably mounted upon the 30 stem, terminated short of the point thereof and fixed against endwise movement toward the point of the stem and thereby forming a relatively fixed handle for guiding the stem, there being a longitudinal slot formed in the 35 sleeve, an inner spring-pressed endwise-slidable sleeve mounted within the outer sleeve and embracing the stem, the outer end of the inner sleeve being provided with a screw-head seat, said inner sleeve normally project- 40 ing beyond the external sleeve and adapted to be depressed wholly within the same, and a guide-pin carried by the inner sleeve and working in the slot of the outer sleeve, the projected end of the pin forming a finger- 45 piece for adjusting the inner sleeve.

3. In a screw-driver, the combination with a rotatable stem, having a beveled point, and a marginal shoulder, of an external sleeve ro- 50 tatably embracing the shoulder and terminated short of the point of the stem, a cap applied to the inner end of the sleeve and ro- tatably embracing the shoulder, there being a longitudinal slot formed in the outer end portion of the sleeve, an inner sleeve mounted 55 to slide endwise upon the stem and within the outer sleeve, the outer end of the inner sleeve having a conical screw-head seat, a coiled spring embracing the stem and bearing in opposite directions against the shoulder on the stem and the inner end of the inner sleeve, 60 and a headed pin projected outwardly from the inner sleeve and working in the slot in the outer sleeve.

4. The combination with a screw-driver bit, 65 of a bit-centering sleeve in which the bit is

revolubly mounted and in which it is axially movable, a second sleeve having a limited forward movement with relation to the bit, said bit-centering sleeve normally projecting be- 70 yond the other sleeve and capable of being received wholly within the latter, and connections between the sleeves for limiting the movement of the centering-sleeve with relation to the second sleeve.

5. The combination with a screw-driver bit, 75 of a spring-advanced bit-centering sleeve in which the bit is revolubly mounted and in which it is axially movable, a second sleeve encircling the bit-centering sleeve and having a limited forward movement with relation to 80 the bit, said bit-centering sleeve normally projecting beyond the other sleeve and capable of being received wholly within the latter, and connections between the sleeves for limiting the movement of the centering-sleeve 85 with relation to the second sleeve.

6. The combination with a screw-driver bit of a spring-advanced bit-centering sleeve in which the bit is revolubly mounted and in which it is axially movable, a second sleeve 90 having a limited forward movement with relation to the bit, said bit-centering sleeve normally projecting beyond the other sleeve and capable of being received wholly within the latter, and means for indicating the axial po- 95 sition of the centering-sleeve with relation to the second sleeve.

7. The combination with a screw-driver bit, of a spring-advanced bit-centering sleeve in which the bit is revolubly mounted and in 100 which it is axially movable, a second sleeve having a limited forward movement with relation to the bit, and a limiting and indicating connection between said sleeves, for de- 105 termining the limit of the axial movement of the centering-sleeve independently of the second sleeve, and also for indicating the relative positions of said sleeves, said bit-centering sleeve being normally projected be- 110 yond the second sleeve.

8. The combination with a screw-driver bit of a spring-advanced bit-centering sleeve in which the bit is revolubly mounted and in which it is axially movable, a grip inclosing 115 and housing the centering-sleeve, said centering-sleeve normally projecting beyond the grip and held from independent rotary movement while capable of independent axial movement with relation thereto, and a gage 120 carried by the bit-centering sleeve for indicating the position of the centering-sleeve with relation to the grip.

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

ERROLL G. ROWLANDS.

Witnesses:

R. M. BOYD,

W. W. ROWLANDS.