

(No Model.)

O. Z. GREENE.
SCREW DRIVER.

No. 422,520.

Patented Mar. 4, 1890.

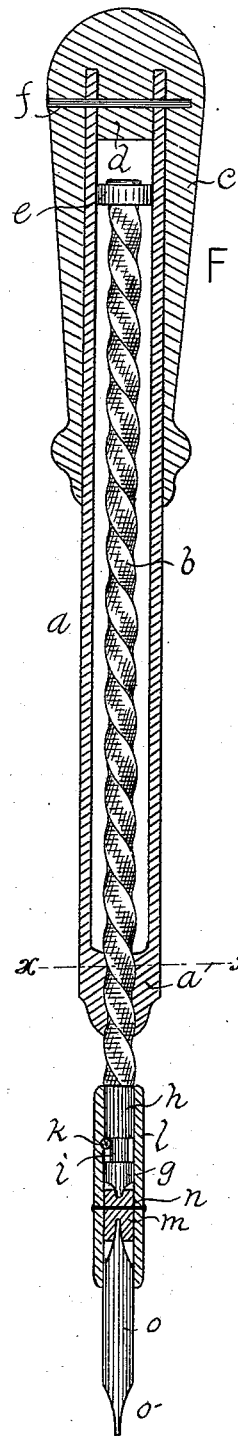


Fig. 1.

Fig. 2.



Fig. 3.

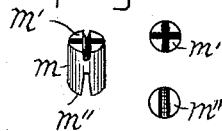
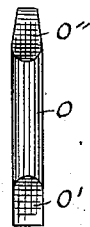


Fig. 4.



ATTEST

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INVENTOR

O. Z. GREENE
By *L. P. Graham*
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UNITED STATES PATENT OFFICE.

OLIVER Z. GREENE, OF DECATUR, ILLINOIS.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 422,520, dated March 4, 1890.

Application filed January 23, 1889. Serial No. 297,233. (No model.)

To all whom it may concern:

Be it known that I, OLIVER Z. GREENE, of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Screw-Drivers, of which the following is a specification.

My invention relates to screw-drivers that are operated by reciprocating the handle longitudinally; and it consists in the details of construction and combinations of parts hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 shows my device in central longitudinal section. Fig. 2 shows the shaft and bearing of drive-cylinder in cross-section on broken line *x* in Fig. 1. Fig. 3 shows a perspective and end views of the coupling-plug. Fig. 4 is a side view of the bit.

The hollow cylinder *a* has a bearing *a'*, adapted to spiral shaft *b*, as shown in Fig. 2. The handle *c* is longitudinally recessed to receive cylinder *a* and has the internal tenon *d*, exactly filling the end of the cylinder. The securing-pin *f* extends through the cylinder and the tenon, and through or partly through the handle. The shaft *b* has on its upper end a head or collar *e*, that acts as a guide-bearing in the cylinder. The lower end of the shaft is rounded, as shown at *h*, has the annular recess *i*, and its termination *g* is bladed somewhat like the termination of a screw-driver bit. The sleeve *l* is adapted to the rounded portion of the shaft and has the pin *k*, that extends through the recess *i* and secures the shaft in the sleeve, while permitting a limited amount of longitudinal motion. The plug *m* is held in the sleeve by pin *n*, and it has its upper end grooved diametrically to receive the shaft-blade and its lower end grooved or recessed to receive the operative end of the bit. In Fig. 3 the plug is shown with its upper end *m'* grooved at right angles, which is preferable for the reason that more prompt engagement with the shaft-blade may thus be had. The lower end *m''* has a single recess, which is sufficient. The bit *o* has two oper-

ative ends *o'* and *o''*, the one wider than the other, and both adapted to the sleeve and the recess of the plug.

In operation the upward draw of the handle disengages the blade of the shaft from a groove of the plug and permits the shaft to rotate without affecting the sleeve and the bit. The downward push of the handle causes the blade to engage a groove of the plug and rotates the sleeve and the bit with the spiral shaft. As either end of the bit may be held in the plug, and as they vary in width, it is an easy matter to adapt the device to either large or small screws.

In constructing the device it is necessary to attach the handle after the shaft is secured in the cylinder. Should the hole for the securing-pin *f* be bored through the handle and into the cylinder, the chips and dust would remain in the cylinder to the manifest detriment of the operation of the device. To avoid this difficulty and incidentally to strengthen the connection is the object of tenon *d*.

I claim as new and desire to secure by Letters Patent—

1. In screw-drivers, in combination, spiral shaft *b*, adapted to be driven in reverse directions by the longitudinally-reciprocating handle, the round portion *h*, having the annular recess *i* and the blade-formed termination *g*, the sleeve *l*, secured to the shaft by pin *k*, and the tool-holding plug *m*, secured in the sleeve and having grooves for the blade of the shaft, as set forth.

2. In combination with a screw-driver shaft, the cylinder *a*, adapted to drive the shaft by longitudinal reciprocation, handle *c*, having tenon *d*, adapted to the hollow of the cylinder, and securing-pin *f*, extending through the cylinder and the tenon, as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

O. Z. GREENE.

Attest:

L. P. GRAHAM,
I. D. WALKER.