

(No Model.)

E. D. KING.  
SCREW DRIVER.

No. 343,150.

Patented June 1, 1886.

Fig. 1.

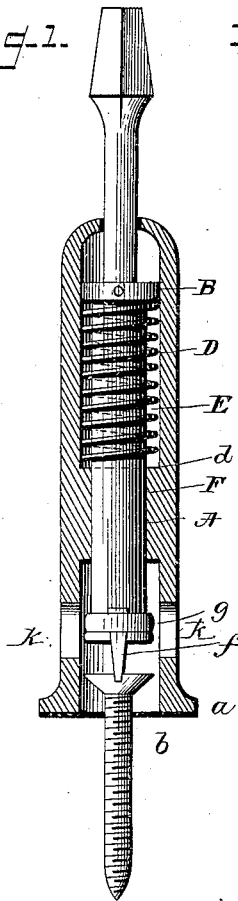


Fig. 2.

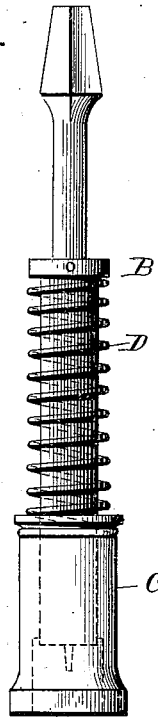


Fig. 3.

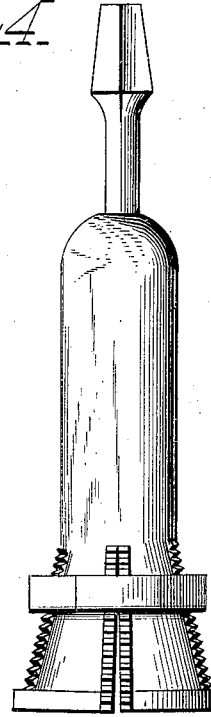
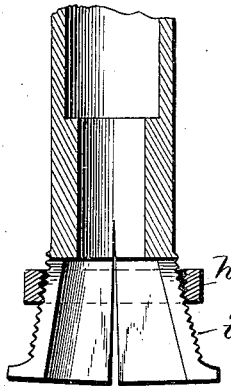


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 343,150, dated June 1, 1886.

Application filed September 17, 1885. Serial No. 177,352. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE DELBERT KING, a citizen of the United States, residing at Homer, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Screw-Drivers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in screw-drivers; and the purpose of my improvement is to provide, principally, a housing which shall encircle the spindle of the bit to serve as a guide to the same and envelop the head of the screw used after it has been started in the material into which it is to be driven, so that said screw may be quickly and squarely driven to place without the usual liability to lateral movement and slipping of the point of the driver in the slot of the screw, common to the use of the ordinary screw-driving tool. The housing and guide of my device is provided at its mouth or end with a hollow cylindrical space intended to fit over the head of the screw, so that after the said screw has been placed through the surface of the material the annular wall of said space, when the screw-driver moves laterally in the slot, will impinge upon the head of the said screw and prevent a disengagement of the driver's point from its hold. The screw-driver proper is of ordinary form as to its engaging end and shank; but the spindle of same is provided with a stop or annular shoulder, which serves as an abutment for one end of a spiral spring, D, which has its other or opposite end abutting against an annular shoulder formed on the inside of the housing-guide. The spring referred to has the function to keep the annular space at the end of the housing-guide down over the screw-head until the bearing-surface of the annular wall of this space comes in contact with the surface of the material into which the screw is being driven, where it rests while the spring yields against the force exerted upon the bit, to allow the screw-head to enter the material flush with the surface, as usual.

In my drawings, Figure 1 is a sectional view of my screw-driver with a housing entirely incasing the spiral spring. Fig. 2 shows a view of the device provided with a housing which

covers the driving end of the bit only, the lower end of the spring-wire in this case being secured to the outside of the housing, while the opposite end abuts against the annular stop surrounding the spindle of the bit. Fig. 3 is an elevation showing the housing provided at the lower end with means for reducing and enlarging the mouth or base. Fig. 4 is a sectional view of the lower part of the housing and spring-mouth.

Similar reference-letters in my drawings indicate like parts in all of the figures.

Referring to the drawings, A is the bit, which is preferably cylindrical in form, provided at one end with the ordinary shank for a brace-socket, (or a handle, if a hand screw-driver be used,) and at the other end with an elongated point, *f*, formed to fit into the slot of the screw to be driven.

I have shown in my drawings, Fig. 1, the point of the screw-driver projecting from the blunt end of the bit-spindle, the latter forming a shoulder, so that the said point may have a projection equal to the depth of any ordinary screw-slot. I have shown, also, in one view the point formed with a dovetail adapted to fit within a corresponding dovetail space in the blunt end of the bit. By this construction, should the point break or be rendered useless in any way, a new point might be supplied with but trifling expense and without the waste of time required to sharpen and harden it.

Near the end of the shank or handle of the bit I provide and secure an annular stop, B, as a bearing or abutment to the spring D.

C is the housing-guide, formed with a bearing, *a*, and an annular space, *b*, to cover the head of a screw, a space, E, to receive a spiral spring, and a cylindrical space, F, of a size sufficient to receive with a snug fit the bit A. A shoulder, *d*, formed in the housing-guide, serves as an abutment to one end of the spring D, the other end of said spring abutting against the stop B, secured to the spindle of the bit near the shank.

In Fig. 2 I omit the space E and surrounding wall of same for the spiral spring, and in place of the shoulder *d*, I form a groove about the housing C', and secure the end of the wire of the spring in it.

In applying my improved screw-driving device to practice, I grasp with the left hand the

movable housing-guide C, and press the bit outward against the force of the spring D until the point is outside of the housing, so that the operator may see to properly engage the slot of the screw, which already may have been started in the material to be entered. When pressure or force upon the bit is withdrawn, the spring D recoils the housing and covers the head of the screw. Force being again applied to the bit the screw is driven, while the annular wall of the space *b* prevents the point of said driver from slipping laterally in the slot of the screw as the latter enters the material. When the bearing *a*, by the independent movement of the bit, comes in contact with the surface of the material into which the screw is being driven an even bearing of the footing is found, and any crookedness of the screw with reference to the surface of the material will be rectified, while the screw, by continued force, is driven home to place.

In the lower part of the housing, on opposite sides, I provide openings *k*, through which the head of the screw may be seen by the operator, so that, if preferred, the end of the driver may find its place in the slot without the necessity of forcing it outside of the said housing, as previously mentioned.

The spring D, though useful in its place, is not indispensable, as the hand of the operator may manage the housing-guide without said spring.

The footing of the housing-guide may be conical in form and split laterally to render the parts springy, and the mouth of said guide may be then increased or reduced in diameter by means of screw-threads (or annular threads) and a suitable nut, as shown in drawings, Fig. 3.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. The housing-guide C, provided on the inside with an annular projecting offset to form a shoulder, *d*, an enlarged base with an annular space, *b*, openings above said space, and a space for the spring formed between the reduced upper portion and the shoulder *d*, in combination with a screw-driver provided with a cylindrical shank fitting snugly within and guided by the annular projecting offset, the spiral spring encircling the said shank and confined within the housing between the upper shoulder, *d*, of the offset and the reduced upper portion of said housing, all arranged substantially as and for the purpose set forth.

2. A screw-driver shank having a dovetail slot cut through the same near the lower end, its largest part being upward, and an annular offset at the lowest end, in combination with a detachable point of dovetail form adapted to fit into the dovetail slot of the shank, and an annular ring formed to slide upon the said shank and hold the screw-driver point against lateral movement, as and for the purpose set forth.

3. In combination with a screw-driver, the housing provided with a conical threaded base split radially in two or more vertical lines, to allow of expansion to the part which covers the screw-head, and the limiting and holding nut which runs upon the threads of the cone, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE DELBERT KING.

Witnesses:

JOSEPH WHITE,  
JERRY HORAN.