(No Model.)

N. FELLERS.

SCREW DRIVER.

No. 355,392. Patented Jan. 4, 1887.

Fig. 1.

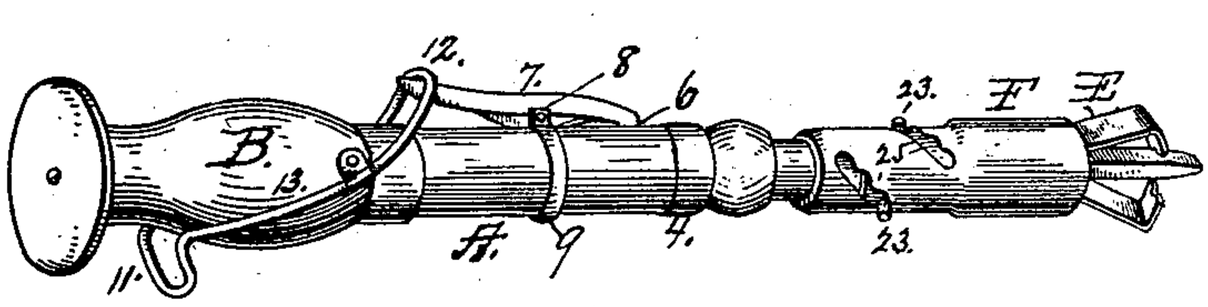


Fig. 2.

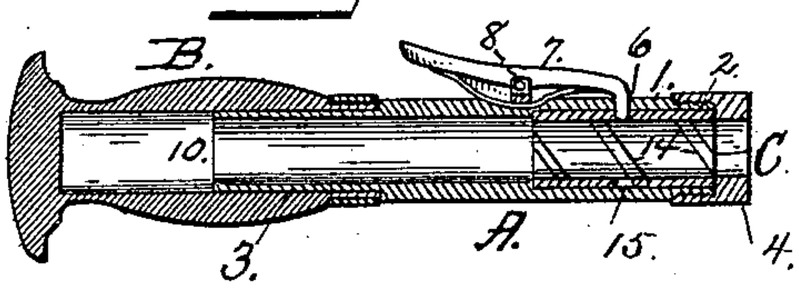


Fig. 3.

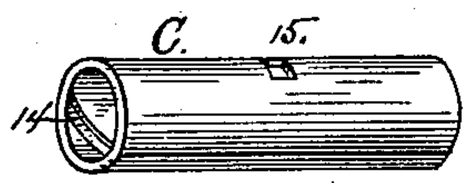


Fig. 4.

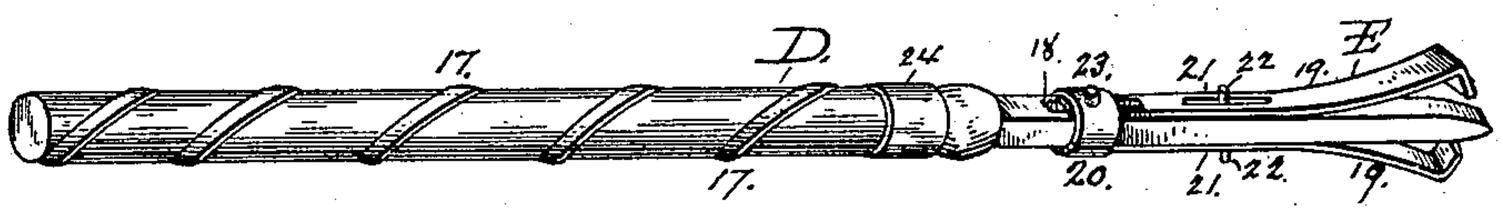


Fig. 5.

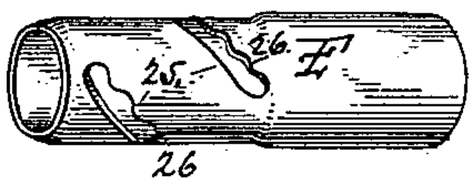
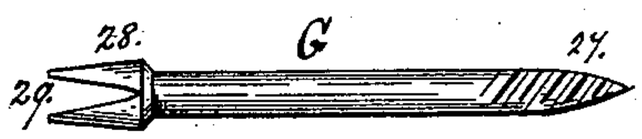


Fig. 6.



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UNITED STATES PATENT OFFICE.

NOAH FELLERS, OF McCOMB, OHIO.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 355,392, dated January 4, 1887.

Application filed July 9, 1886. Serial No. 207,532. (No model.)

To all whom it may concern:

Be it known that I, NOAH FELLERS, a citizen of the United States of America, residing at McComb, in the county of Hancock, in the State of Ohio, have invented a new and useful Screw-Driver, of which the following is a specification.

My invention has relation to improvements in implements or tools for drawing and extracting screws and similar objects, and is of that class having a handle which can be turned in a contrary direction while the point of the tool is engaged without driving the screws back with it, and which is provided with spring-catches to grip below the head of the screw when desired or necessary.

The object, generally, of the present invention is to improve and simplify the construction of such-described implements, and to render them more effective and durable. Specially, I propose to improve the construction of the implement shown and described in United States Letters Patent No. 327,780, granted to me and bearing date the 6th day of October, A. D. 1885, and that I attain by means of a peculiar construction of the driving-shank, the spring-catches applied thereto, and the clamping ferrule or sleeve on the shank and spring-catches; also, in the novel construction and combination of parts, as will be hereinafter more fully described, and specifically as pointed out in the claim made hereto, as required by the statute.

I have fully illustrated my invention in the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a perspective of the completed tool. Fig. 2 is a longitudinal central sectional view thereof without the driving-shank. Fig. 3 is a view of the interior thimble or sleeve. Fig. 4 is a view of the naked driving-shank. Fig. 5 is a view of the clamping-sleeve detached, and Fig. 6 is a view of the detachable reamer or bit.

Reference being had to the drawings, the letter A designates the exterior sleeve, constituting the lower part of the handle of the implement, and that in which is fitted the revoluble thimble, which takes the shank bit or rod. This tube A consists of a tube of suitable material of such dimensions as to serve the purpose of a convenient hand-tool. Exteriorly the sleeve is comprised of the part 1, of largest diameter, terminating in a threaded lower end, 2, of smaller diameter, and having the upper end, 3, extended and of smaller diameter, and adapted to fit snugly in the ferrule of the hand-grip. The interior of the part 1 is chambered to receive the interior sleeve, hereinafter described, and a screw-threaded cap, 4, having a shank-aperture, is fitted to the threaded lower end of the sleeve. In the main part or 1 is formed an opening, 6, through which the end of a spring-pawl, 7, passes. This spring-pawl 7 is pivotally supported on the binding-pin 8 of a band, 9, which is fitted about the middle of the sleeve.

The letter B designates the hand-piece of the handle. This is formed with a tubular shank, 10, the bore of which fits over the projecting part of the sleeve A, as seen in Fig. 2 of the drawings. This extended part of the sleeve, which runs into the shank of the hand-piece, gives room to use a longer driving-shank, and so increases the capacity of the implement by giving the shank-bit a greater number of revolutions in the tool. On the hand-piece is pivoted a pawl-operating lever, 11. This consists of a piece of wire with a loop, 12, extending to set across the end of the pawl, and a hand-loop, 13, which sets under the hand. By means of this lever the pawl may be operated to suit the desire, or it may be held detached from its seat in the interior sleeve; or the lever may be swung around from beneath the hand and from the pawl, and the pawl thus left in contact with its seat in the interior sleeve.

The letter C designates the interior sleeve. This is fitted to the chamber of the exterior sleeve, A, and is held revoluble therein by the cap over the end of the latter. This interior sleeve is formed with spirally-arranged grooves 14, in which the ribs of the shank fit. Oppositely arranged in this interior sleeve are formed apertures 15, to receive the end of the spring-pawl, and by which engagement the sleeve is held against turning when driving or drawing a screw, as may be desired.

The letter D designates the bit-shank. The upper part of this bit-shank is formed with spiral ribs 17, which fit in the grooves of the revoluble interior sleeve of the handle, and by means of which the shank is moved back

and forth, and the lower part constitutes the driving-bit. This latter is of the usual general form, is provided with a slot, 18, to receive the pin or screw 23, which projects through the ferrule or head-ring 20 of the spring-jaws, and the ends of which pin or screw project into the spiral slots of the clamping-sleeve and turn that sleeve down to clamp the jaws, as hereinafter more specifically stated.

The letter E designates the spring-jaws. These consist of two arms, 19, fixed to a sleeve or head-ring, 20, and having their lower ends formed to grasp the neck of a screw with the head above them. The upper part of these jaws are formed with longitudinally-arranged slots 21, into which are projected the ends of a guide-pin, 22, let through the shank. This pin guides the jaws in their movements up or down, and keeps them from other displacement consequent in the use of such an implement.

As heretofore stated, a turning pin or screw, 23, in the head-ring of the jaws is projected through the slots in the drawing-bit, and the ends of this pin or screw turn in the spirals of the clamping-sleeve. This clamping-sleeve F consists of a metallic sleeve having the lower end somewhat flared to better grasp the shape of the spring-jaws, as shown, and the upper end somewhat contracted to slide with less rattle or shake on the bit-shank, and to give the movements more certainty; and to hold the clamping-sleeve up on the bit-shank I put a ferrule, 24, on the shank D, which fits the bore of the upper end of the clamping-sleeve with sufficient frictional contact to hold it when drawn up over that part. In the clamping-sleeve F are formed spirally-arranged slots 25, the lower edges of which are serrated or notched, as seen at 26, which notches form seats for the ends of the pin 23, and sets the sleeve in position when clamped down on the spring-jaws.

The operation may be stated briefly, as follows: For driving, a screw may be set in the jaws, and the clamping-sleeve then turned down to hold the bit in the groove of the screw-head. For drawing a screw, the srcew may be started, and then the jaws be slid down below the head of the screw, and then the clamping-sleeve turned down to hold the jaws gripped to the screw, the action of the spirals being well known, and the handle being adapted to turn or to be set in either motion of driving or drawing.

The letter G designates a detachable reamer or bit. This bit is formed with a shank terminating in a bit end, 27, and at its upper end has a somewhat conical head, 28, in which is formed a wedge-shaped slot, 29, to take the lower end of the main bit. The purpose of this detachable bit is to provide a reamer or bit to be used in connection with the implement by inserting the end of the bit-shank in the slot of the head of the reamer or bit, and clamping the jaws below the shoulder of the head, thus holding the reamer to the bit-shank, and providing a tool for boring or reaming.

What I claim is—

1. The combination of the shank-bit D, formed with a longitudinally-arranged slot, 18, and a guide-pin, 22, of the spring-jaws E, projected from a head-ring, 20, having turning-pin 23, and the clamping-sleeve F, having spiral slots 25, the lower edges of which are formed with pin-seats 26, substantially as described.

2. The combination, with the bit-shank formed with a longitudinal slot, 18, and the clamping-jaws 19, provided with a turning-pin, 23, projected through the longitudinal slot in the shank, of a clamping-sleeve, F, formed with spiral grooves 26, to take the projecting ends of the turning-pin 23, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two attesting witnesses.

NOAH FELLERS.

Attest:
ELISHA TODD,
B. M. TODD.