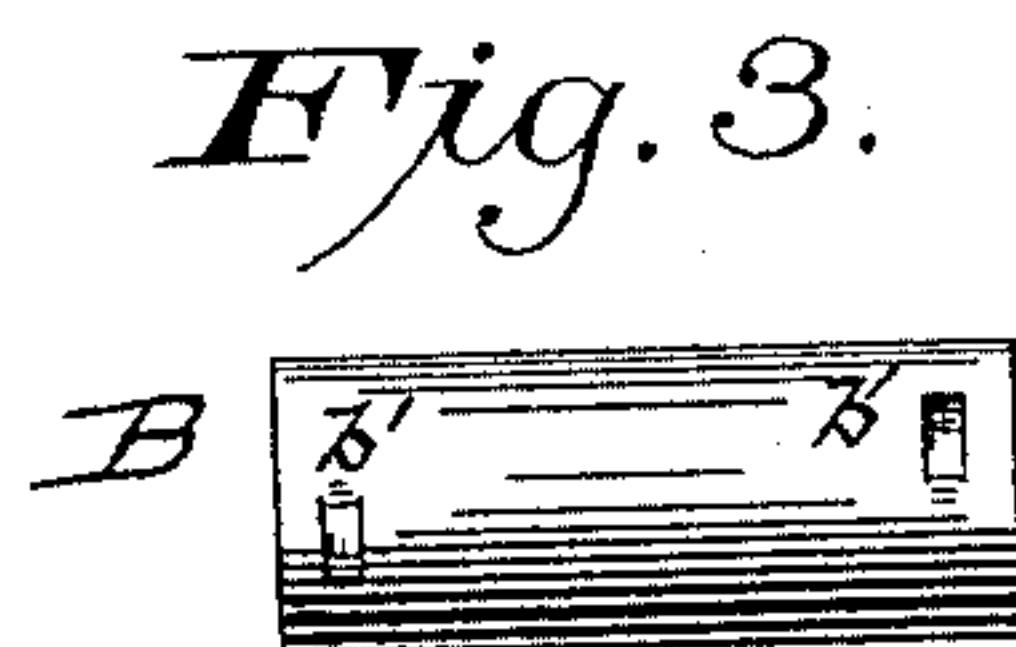
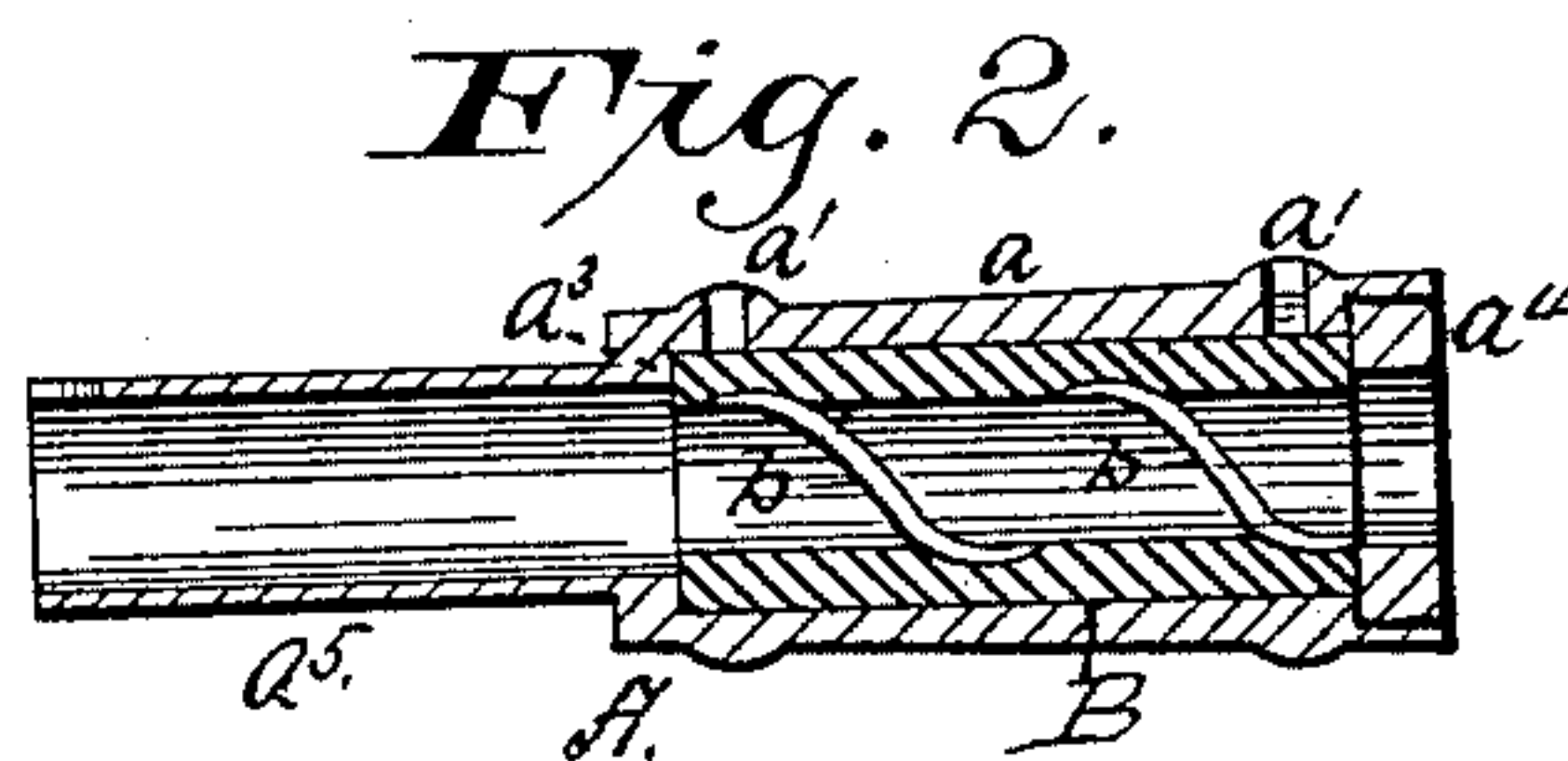
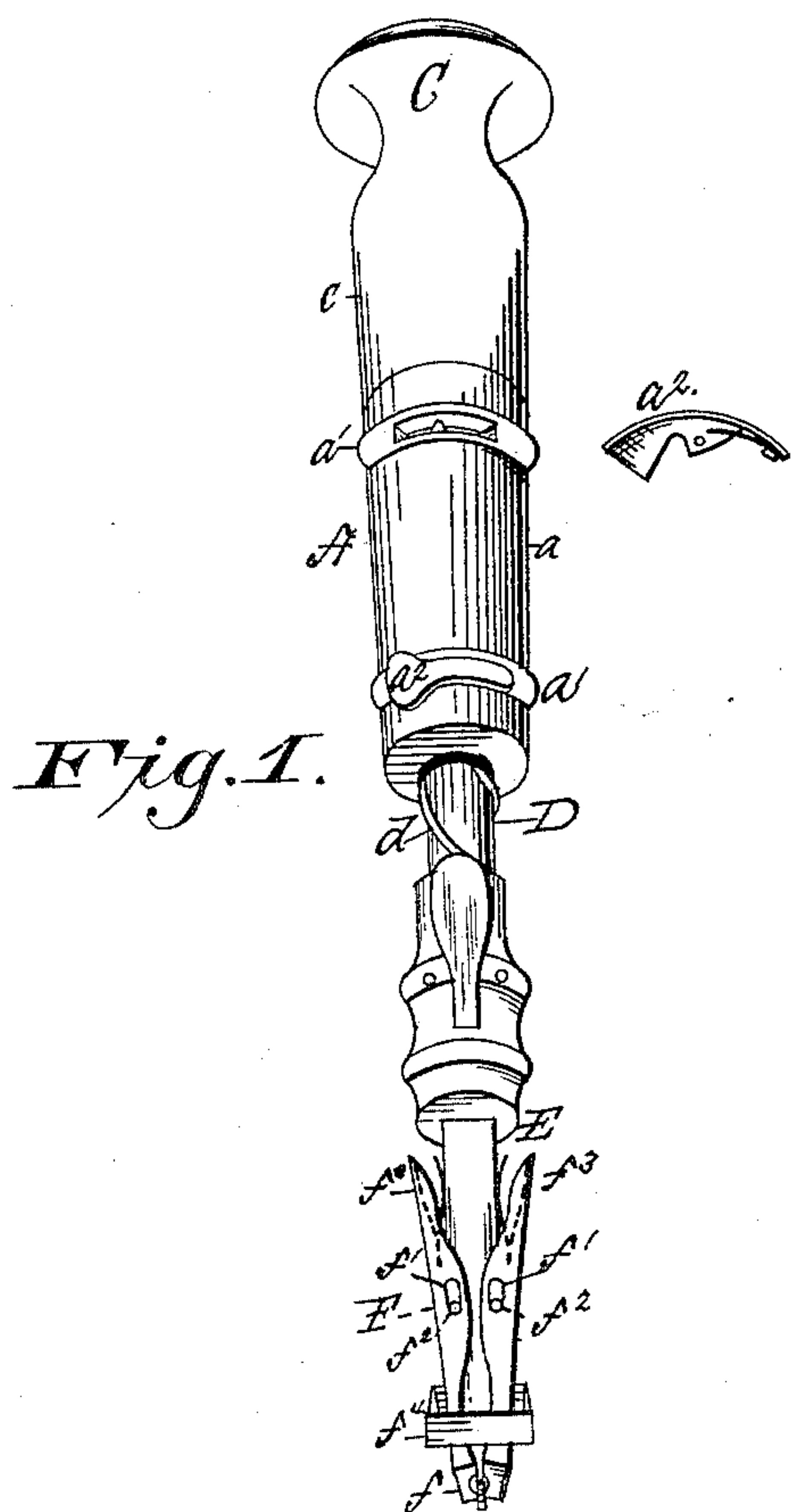


(No Model.)

N. FELLERS.
SCREW DRIVER.

No. 327,780.

Patented Oct. 6, 1885.



WITNESSES

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UNITED STATES PATENT OFFICE.

NOAH FELLERS, OF McCOMB, OHIO.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 327,780, dated October 6, 1885.

Application filed June 22, 1885. Serial No. 169,424. (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 and State of Ohio, have made a new and useful Invention in Screw Drivers and Extractors, of which the following is a specification.

My invention has relation to improvements in implements or tools for driving 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 screw back with it, and which is supplied with spring-catches to grip below the head of the screw when desired or necessary. The object is to simplify and improve existing implements of the kind.

I have fully illustrated my improved device in the accompanying drawings, forming a part of this specification, and wherein Figure 1 is a perspective of the completed tool. Fig. 2 is a longitudinal central sectional view. Fig. 3 is a view of the interior thimble or sleeve. Fig. 4 is a view of the shank with spiral ribs.

The letter A designates the exterior shell of the handle. This consists of a metallic shell, the lower part, a , of which, at its upper and lower ends, is provided with transversely-arranged slots a' a' , in which the spring-pawls a^2 a^2 have their bearings. The barrel of this part of the handle is cored out, thus forming a shoulder, a^3 , at the upper end of the interior, and in the lower end is fitted and secured a ring or bushing, a^4 , the whole of which is of proper size to receive the stem of the spiral shank. The upper part of this central section is extended, as indicated at a^5 , this part being a plane cylinder inside, of somewhat larger diameter than the shank of the driver, and so as to receive it when the shank is run upward with its end above the threaded sleeve of the handle. The exterior diameter of this extended part a^5 is smaller than the lower part of this section, a shoulder, a^3 , being formed at the intersection of the parts.

The letter B designates a shell fitted to rotate within the interior of the section A, with its ends resting, respectively, against the shoulder at the upper end, and on the edge of the

ring at the lower end. The interior of this shell is formed with two or more spiral grooves, b , to engage with the spiral spines on the shank; and the outside of the shell is formed with ratchets b' , arranged thereon to register with the transverse slots in the outer shell, and to engage with the spring-pawls set in said slots. These ratchets are formed in reverse order to each other, and the spring-pawls arranged in the slots accordingly, in order that the movements of the interior sleeve may be checked in either direction of rotation, or held fixed from turning at all.

The letter C designates the hand end or cap of the handle, formed with an extended barrel, c , which slips down over the extended portion of the central section, the lower end setting on the shoulder of the central section.

The letter D designates the bit-shank, formed with spiral ribs d , arranged to engage with the spiral grooves of the interior sleeve. In the upper end of this shank is a cross-pin, d' , the projecting ends of which prevent the withdrawal of this end of the shank below the upper end of the interior sleeve.

The letter E designates the driver end of the shank. This of course may be made detachable from the spiral part of the shank by simply fixing a tool-socket in the end of the spiral part, and fitting the formed end of the driver or bit thereto, as seen in the drawings, or it may be made integral with the spiral shank. To the lower part of the shank of the bit are fitted and attached spring-catches F. These are formed with their edges struck down to embrace the edges of the bit, and with their lower ends struck to approach each other, as at f , and have slots f' longitudinally arranged, through which pass pins or studs f^2 , fixed in the bit to serve as bearings, and to the upper end of each catch is secured a spring, f^3 , the free end of which rests on the face of the bit, and serves to close the ends of the catches when they are pushed below the point of the tool, or they hold the catch above the point when so desired. These different positions of the catches are allowed by means of the slots f' , which adapt them to be moved along the bit for the length of the slots. For the purpose of additional security to the catches in their hold

about the neck of the screw, I fit about their lower arms the sliding collar f^4 . This collar is of such size that when down at the points of the catches it will admit them to open to receive the head of the screw, and after the grasp has been effected by the operation of the spring the collar is moved upward and locks the jaws about the neck of the screw.

The operation is briefly stated as follows:
 10 The end of the bit is set in the groove of the screw with the jaws of the spring-catches grasping the neck of the screw, which is held by the action of the springs, additional force being given to the grip by means of the sliding collar. The turn of the handle then forces the screw forward. One of the pawls being employed to set the shell and shank in the position for driving or drawing, the other is free and permits the handle to turn freely in an opposite direction, while the action of the spirals on the shank in engagement with the grooves of the interior shell gives a driving or drawing tendency thereto.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination the exterior sleeve, A, com-

posed of the parts a and a^7 , and formed with transverse slots a' , provided with spring-pawls a^2 , arranged in reverse order, the interior detachable sleeve, B, formed with exterior ratch-ets, b' , to register with the slots and engage with the pawls of the exterior sleeve, and formed with interior spiral groove, the bit-shank D, formed with exterior spiral ribs to engage the grooves of the revoluble sleeve, and the hand-grip piece C, formed with a tubular shank to set over the exterior of the central section, substantially as described.

2. In combination with the bit-shank D, provided with pins or studs f^2 , the spring-catches F, formed with slotted bearings f' , arranged to slide vertically on the studs of the shank, and a sliding collar, f^4 , passed over the spring-catches, substantially as and for the purpose stated.

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

NOAH FELLERS.

Attest:

O. A. BALLORD,
WM. H. ANDERSON.