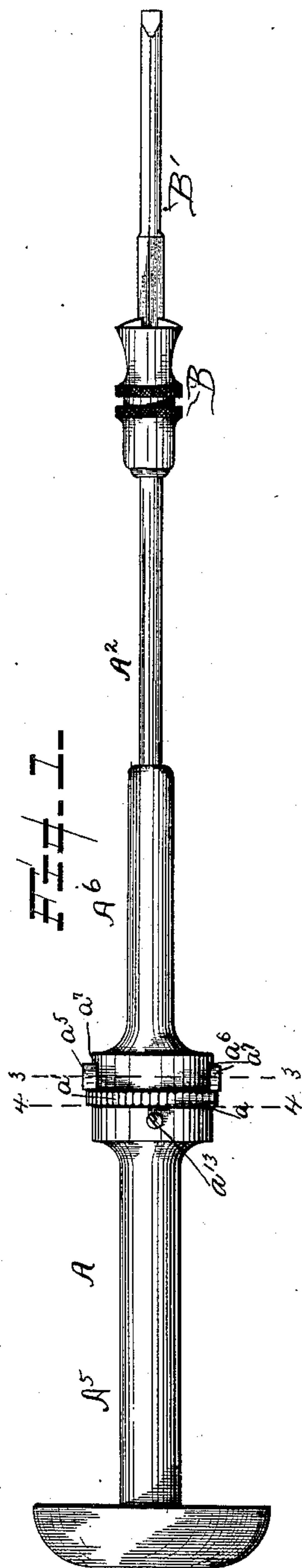


(No Model.)

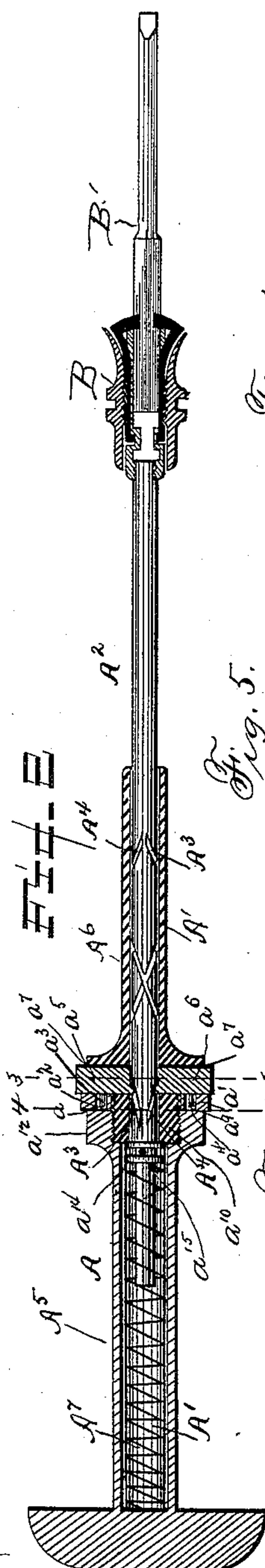
J. LUCAS.
SCREW DRIVER.

No. 428,012.

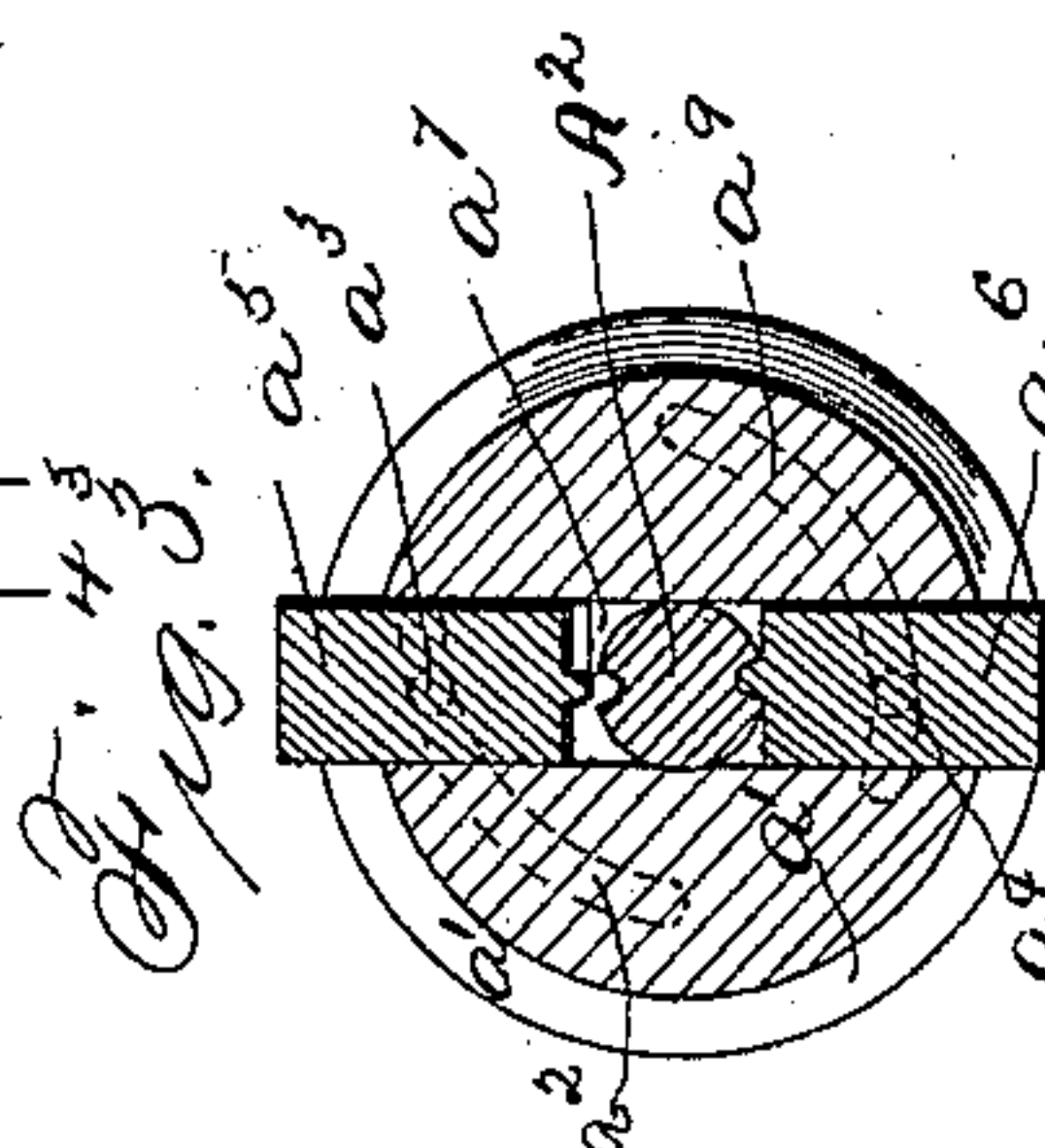
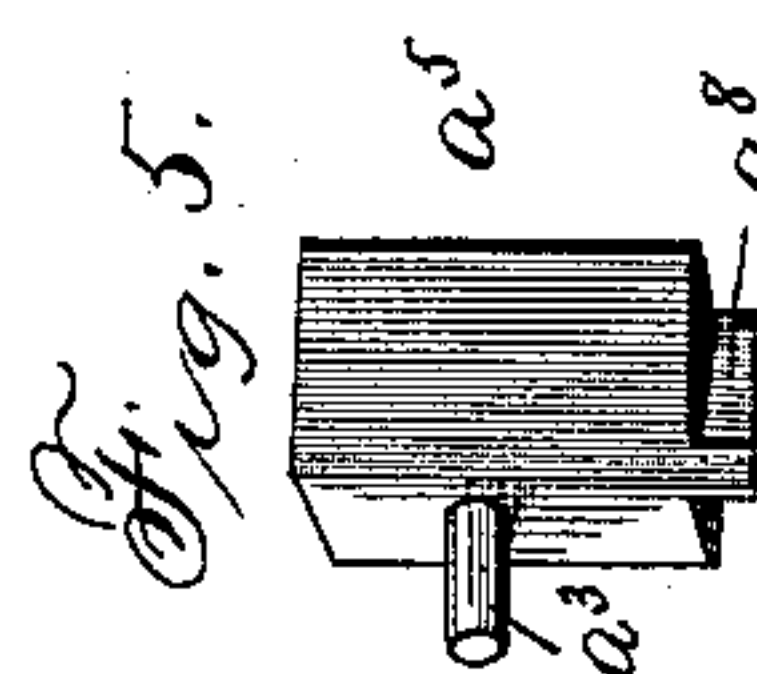
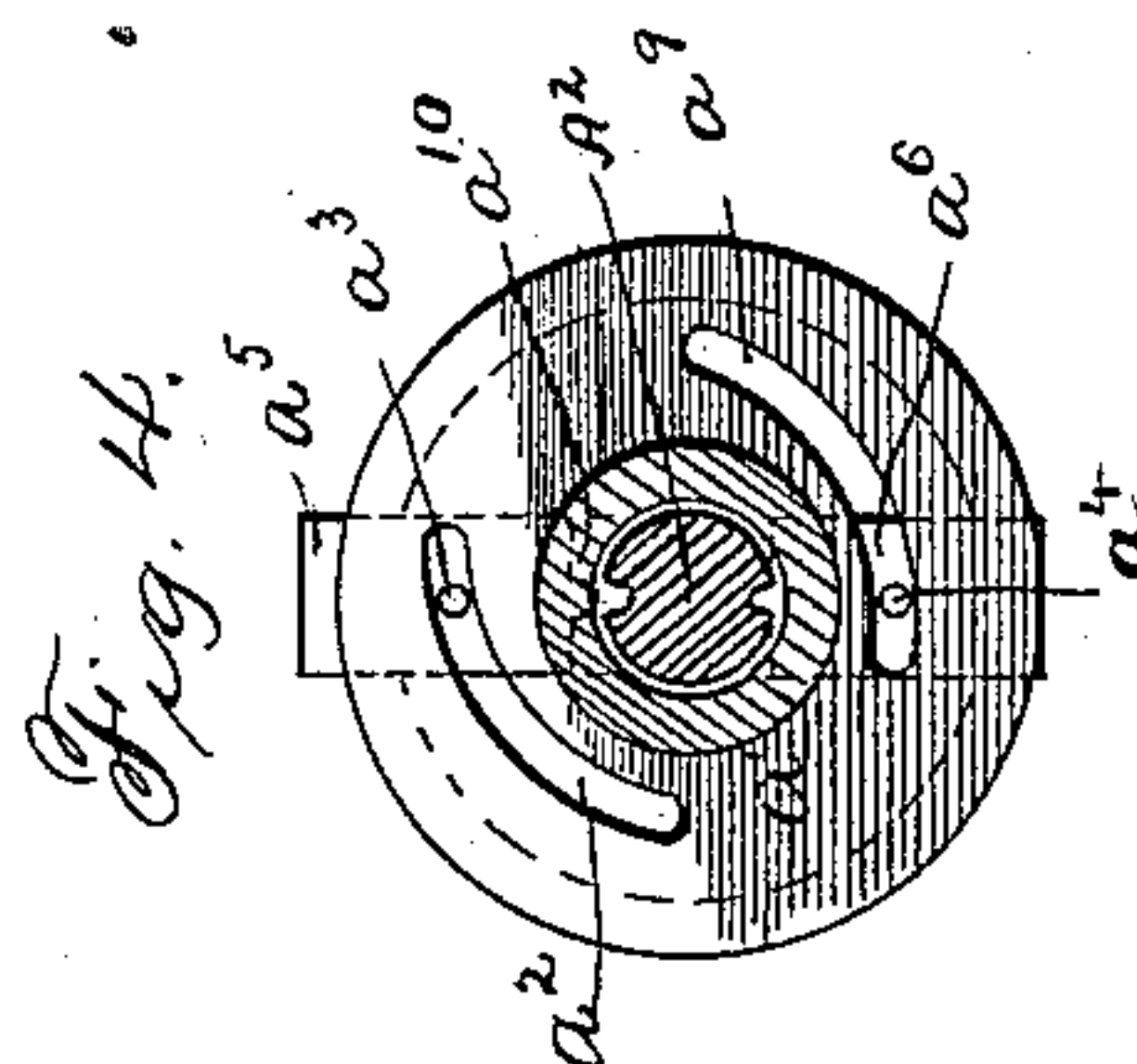
Patented May 13, 1890.



WITNESSES
R. S. Elmer,
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INVENTOR
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per Haddock and Haddock
Attorneys.



UNITED STATES PATENT OFFICE.

JOSEPH LUCAS, OF NEW YORK, N. Y.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 428,012, dated May 13, 1890.

Application filed March 26, 1889. Serial No. 304,842. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LUCAS, a subject of the Queen of Great Britain, residing at New York, in the county of New York 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 relates to that class of screw-drivers which have a bit that is revolved by pushing upon the end of the handle while the end of the blade is inserted into the notch upon the head of the screw.

The object of my invention is to simplify this form of screw-driver.

The invention consists of constructions and combinations, all as will hereinafter be described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation; Fig. 2, a longitudinal section; Fig. 3, an enlarged transverse section on line 3 3, Figs 1 and 2; Fig. 4, an enlarged transverse section on line 4 4, Figs. 1 and 2; and Fig. 5, a detail showing one of the buttons in perspective.

A represents the handle or stock, formed of two parts A^5 and A^6 , the latter having projection a^{10} screwed into the cup a^{12} of the former, and to which it is locked by the screw a^{13} . The handle or stock is provided with a passage A' for the bit or blade A^2 , having near its end a double collar a^{14} , secured thereto in any suitable manner, a pin a^{15} being shown in the drawings. The lower collar primarily rests upon the projection a^{10} and prevents the bit or blade from being withdrawn from the stock. The upper collar supports the lower end of a spring A^7 in the upper part of the passage A' and forces the bit outwardly when the end of the bit is not pressed upon. The blade or bit is provided with two spiral grooves A^3 and A^4 running in opposite direc-

tions. Between the parts A^5 and A^6 is a space or groove a for an oscillating plate a' , provided with cam-shaped slots a^2 a^9 , into which pins a^3 a^4 on the buttons a^5 a^6 are passed for the purpose of alternately moving the buttons in and out as the ring is oscillated. These buttons are inserted in recesses a^7 and are provided with lips a^8 , which enter alternately the grooves A^3 and A^4 , respectively, when the plate a' is turned.

B represents a bit-chuck of any desired form secured to the bit or blade A^2 in any desired manner, and provided with the ordinary means for holding the part B' in place.

The operation of the device is as follows: When it is desired to force a screw into a body, the plate a' is turned until the lip a^8 of button a^5 is forced into groove A^3 by the cam-slot a^9 acting upon pin a^4 , so that the bit will be free to revolve when its end is placed against the screw and the end of the handle is pressed upon. By turning the plate a' in the opposite direction the lip a^8 on button a^5 is withdrawn from groove A^3 and the lip a^8 on the button a^6 is inserted in groove A^4 , so that the bit will revolve in the opposite direction when the end of the handle or stock is pressed upon. As soon as the pressure is removed from the end of the bit or the stock the spring A^7 forces the bit out, so as to be ready for the next movement.

What I claim as new is—

In a screw-driver, the stock having the passage A' , the spring A^7 , buttons a^5 and a^6 , provided with lip a^8 and pins a^3 and a^4 , and the oscillating ring having the cam-slots, in combination with a bit having the reverse spiral grooves, substantially as described.

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

JOSEPH LUCAS.

Witnesses:

W. G. CAMPBELL,

JOHN J. DINNEEN.