

(No Model.)

J. FARRIN.
SCREW PUNCH.

No. 374,464.

Patented Dec. 6, 1887.

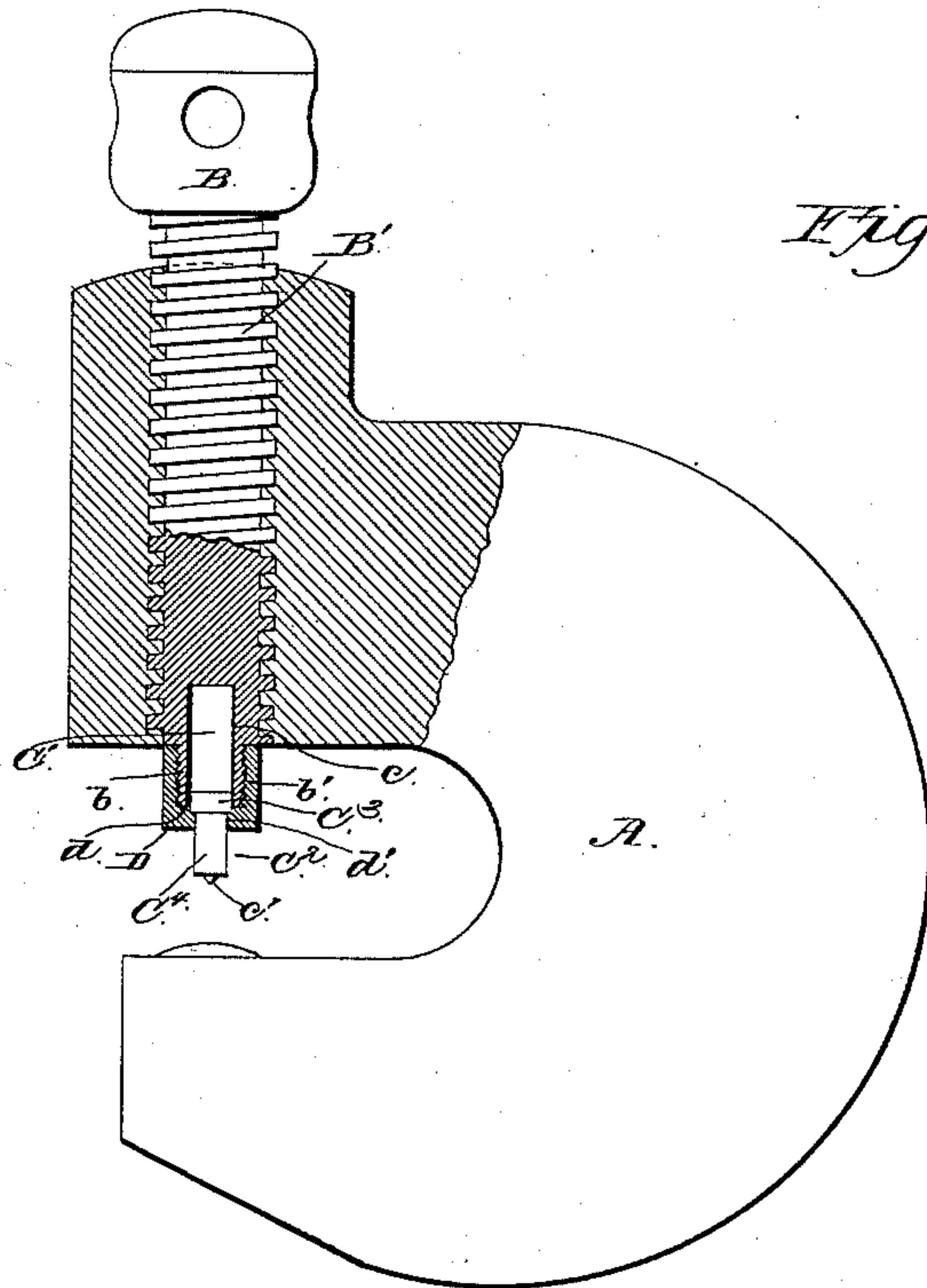


Fig. 1.

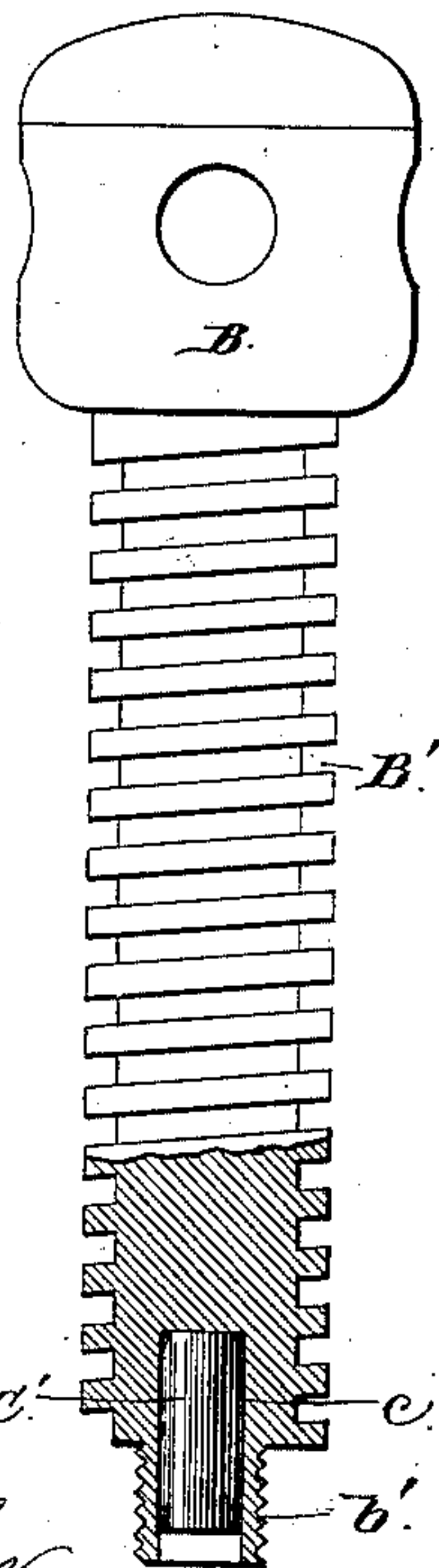


Fig. 2.

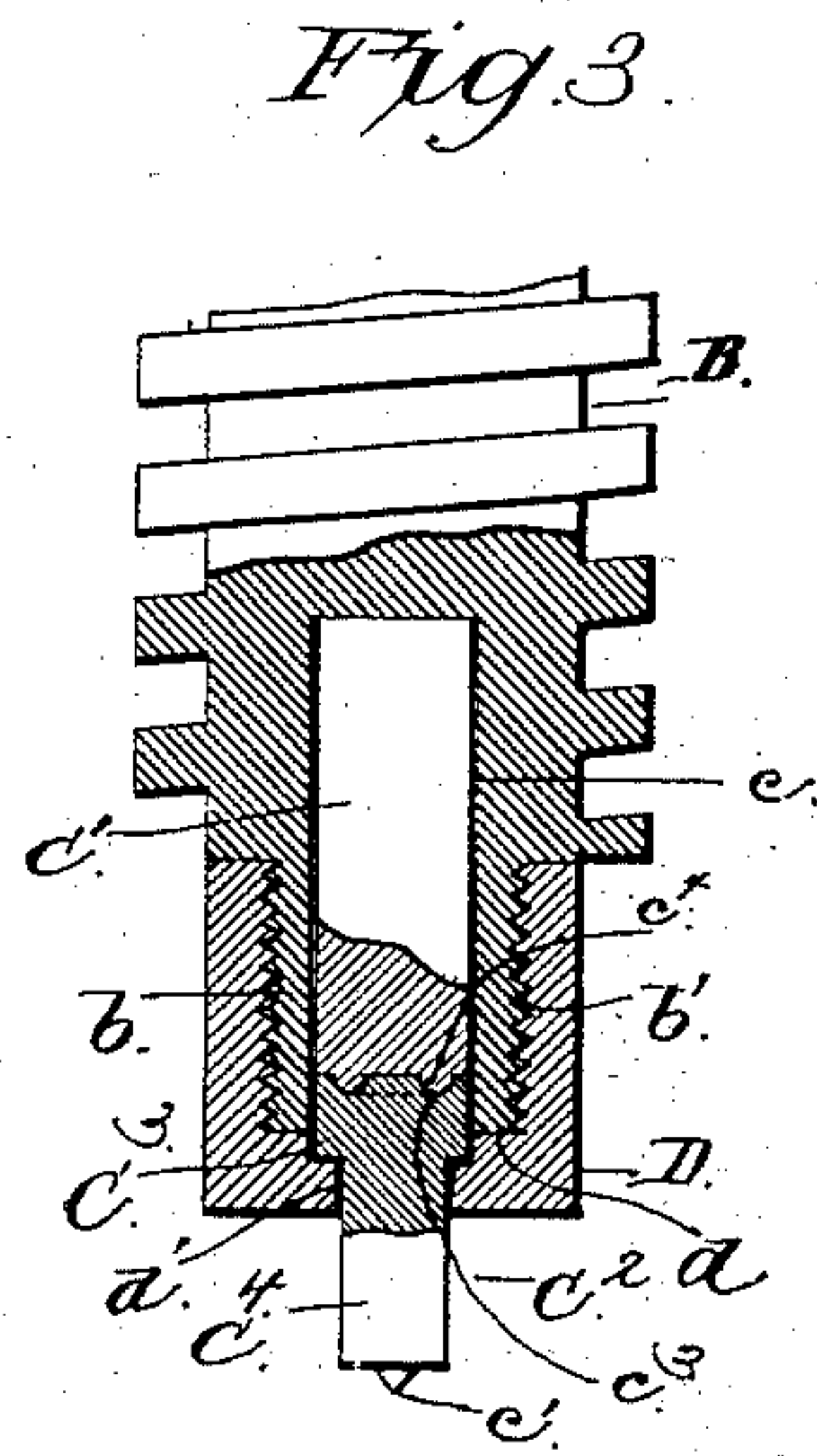


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN FARRIN, OF MARTINSBURG, WEST VIRGINIA.

SCREW-PUNCH.

SPECIFICATION forming part of Letters Patent No. 374,464, dated December 6, 1887.

Application filed March 29, 1887. Serial No. 232,902. (No model.)

To all whom it may concern:

Be it known that I, JOHN FARRIN, a citizen of the United States, residing at Martinsburg, in the county of Berkeley and State of West Virginia, have invented a new and useful Improvement in Screw-Punches, of which the following is a specification.

My invention relates to screw-punches; and it consists in the construction and arrangement of the parts of the same, which will be more fully hereinafter described, and pointed out in the claims.

The object of my invention is to provide a screw-punch which is adapted for use in punching sheets of metal of considerable thickness, and which is simple and effective in its construction and operation, strong and durable, easily handled, and readily understood, positive in its desired ultimate result, and comparatively inexpensive in manufacture. I attain this object by the mechanism illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a longitudinal vertical section of the frame and a portion of my improved punch. Fig. 2 is a longitudinal vertical section of the punch mechanism removed from the supporting frame-work and cap-nut, the punch and core being removed from the end of the punch. Fig. 3 is another form of the device.

A indicates the frame-work or housing, formed of suitable material, preferably of hard metal, in which the punch is supported, and is constructed in the form of a goose-neck with an under supporting end, and within these two outer ends of the frame the punch is supported and operates.

The punch consists of a metallic cylinder provided with a head, B, and formed with a right screw-threaded surface, B', which is mounted in the projecting ends of the frame or housing A, and is operated in connection therewith by engagement with female screw-threads formed therein. The lower end of the punch is constructed with a projection, b, which is provided with a left screw-threaded outer surface, b', for the reception of a confining cap-nut, D. This projection b and a part of the right screw-threaded portion B of the punch is counterbored, as at c, which

counterbore is constructed of a sufficient depth to obtain the desired function and operation of a removable core, C', formed of hardened steel, and removably situated within the said counterbore c. The core C' does not extend through or fill the entire depth of the counterbore c, a space being left between the lower end thereof and the lower end of the projection b for the reception of the flanged head C³ of the punch C². The head C³ of the punch C² is constructed of such diametric cross-section as to removably fit into the lower portion of the counterbore c, resting against the core C'.

The lower end or butt, C⁴, of the punch C², below the head C³ thereof, is constructed of the same size throughout its entire length, and has the usual sharp point, c', on its lower end, which facilitates the entrance of the punch into the iron. When the head C³ is inserted in the lower portion of the counterbore c, a portion thereof extends below the lower end of the projection b. When the parts as just described have been so arranged, they are retained in removable connection with the main body or stock of the punch by means of the cap-nut D, which is screwed onto the projection b. This cap-nut D is constructed hollow, with an internal right screw-threaded surface for engagement with the left screw-threaded surface, b', of the projection b. In the lower portion thereof a shoulder, d, is formed, which provides a surface for engagement with the lower end of the projection b, and also a recess for the reception of the lower projecting portion of the head C³ of the punch C². The lower end of the nut D is further provided with an aperture, d', through which the cylindrical portion or butt C⁴ of the punch C² is adapted to pass, as will be readily understood. When the cap-nut D is screwed home, as described, the several parts are held in operative engagement with the main body of the punch, but may be readily removed therefrom at any time and for any purpose desired.

The core C and the punch C² are constructed of hard-tempered steel, and are arranged as described for the purpose of resisting the wear and strain brought to bear thereupon and for convenience in removal thereof, for the purpose of replacement or substitution of other like parts when desired, and at the same time

sustaining and preserving the efficient and positive operation and durability of the punch entire.

By constructing the projection B with a lift screw-thread a more ready means is provided for the removal of the cap-nut D, in order to adjust or remove the core C and punch C².

In Fig. 3 another form of construction of some parts of the device is shown. In this instance the top portion of the flanged head C³ of the punch C² is provided with a circular groove, which is engaged by a head, C⁴, formed with the lower end of the core C'. By this means a steady and positive engagement between the core C' and the punch C² is obtained, which greatly increases the effectiveness of operation of the said parts.

The operation of the punch will be readily understood. The head B' is turned by suitable means and the screw B run through the frame A until the punch C² engages with the metallic sheet desired to be punched. More pressure is then brought to bear upon the punch C² by turning the screw B, and the metal is punched. Any form or size of hole may be punched, as may be desired, and which must of necessity be controlled by the will of the operator.

The utility and efficiency of my improvement are evident, and it is of great usefulness in the art to which it appertains, and is especially adapted for punching heavy sheets of metal in a rapid and desirable manner.

It is obvious that many slight variations in the construction and arrangement of the parts of the improvement could be made and substituted for those shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, I claim—

1. In a screw-punch, the combination of a main body or screw portion having a counter-

bore in its lower end, a removable core mounted in said counterbore, a removable punch engaging with and resting against said core, and means, as set forth, for retaining the several parts in adjustment and connection, substantially as described.

2. In a screw-punch, the combination of a main body or screw portion mounted in supporting frame-work having a counterbore in its lower end, a removable core mounted in said counterbore, a removable punch engaging with and resting against said core, and an apertured cap-nut passing over said punch and engaging with the lower left screw-threaded projection, b, to retain the parts in place, substantially as described.

3. In a screw-punch, the combination of the frame A, the right screw-threaded stock B, mounted therein, having a left screw-threaded projection, b, at the lower portion thereof, and a counterbore, c, passing through said projection into the stock, a removable core, C, mounted in said counterbore, a removable punch, C², having a head, C³, resting against said core C and extending below the lower edge of the projection b, and an apertured cap-nut, D, having a shoulder, d, engaging with the left screw-threaded surface of the said projection b and retaining these several parts in relative engagement, substantially as described.

4. In a screw-punch, the screw or body portion having a counterbore at its lower end, the removable core fitted in the counterbore and having the head C⁴, and the punch grooved to receive the head.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN FARRIN.

Witnesses:

WM. N. MOORE,
E. G. SIGGERS.