

No. 608,120.

Patented July 26, 1898.

W. HEFFNER.

NUT WRENCH.

(Application filed Aug. 12, 1897.)

(No Model.)

2 Sheets—Sheet I.

Fig. 1.

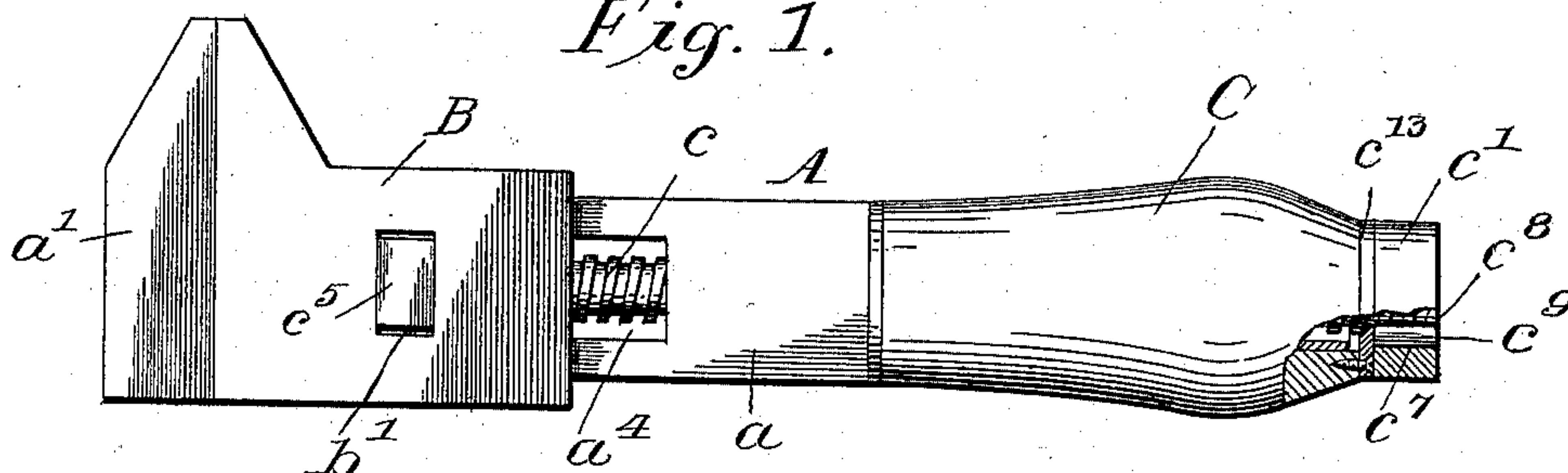


Fig. 2.

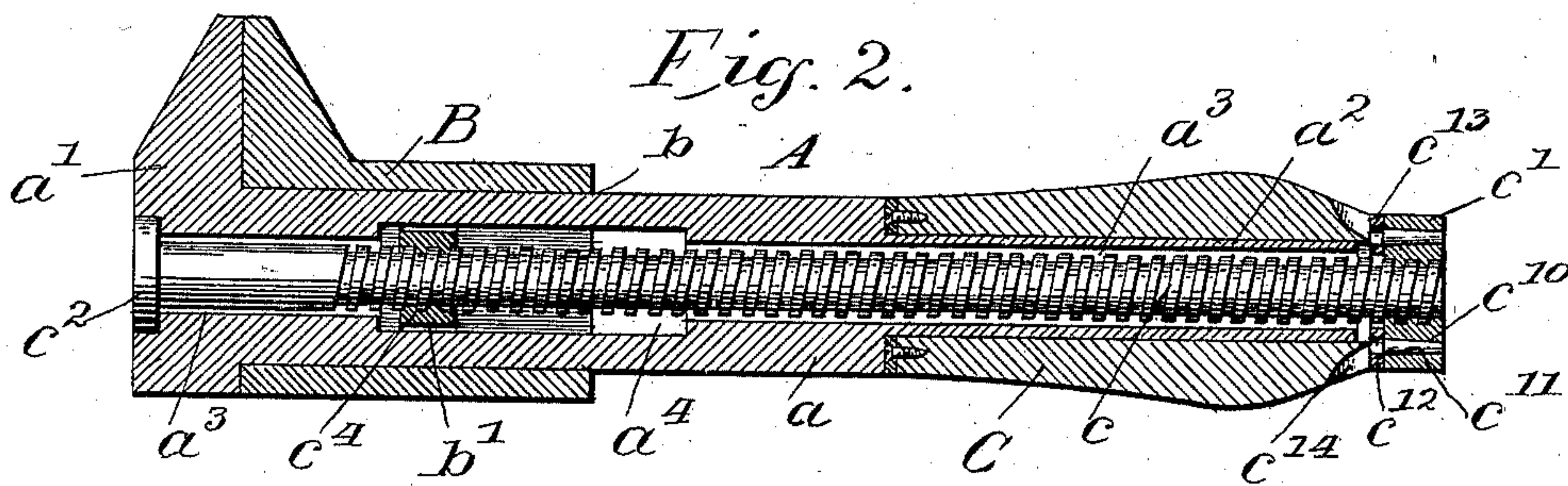


Fig. 3.

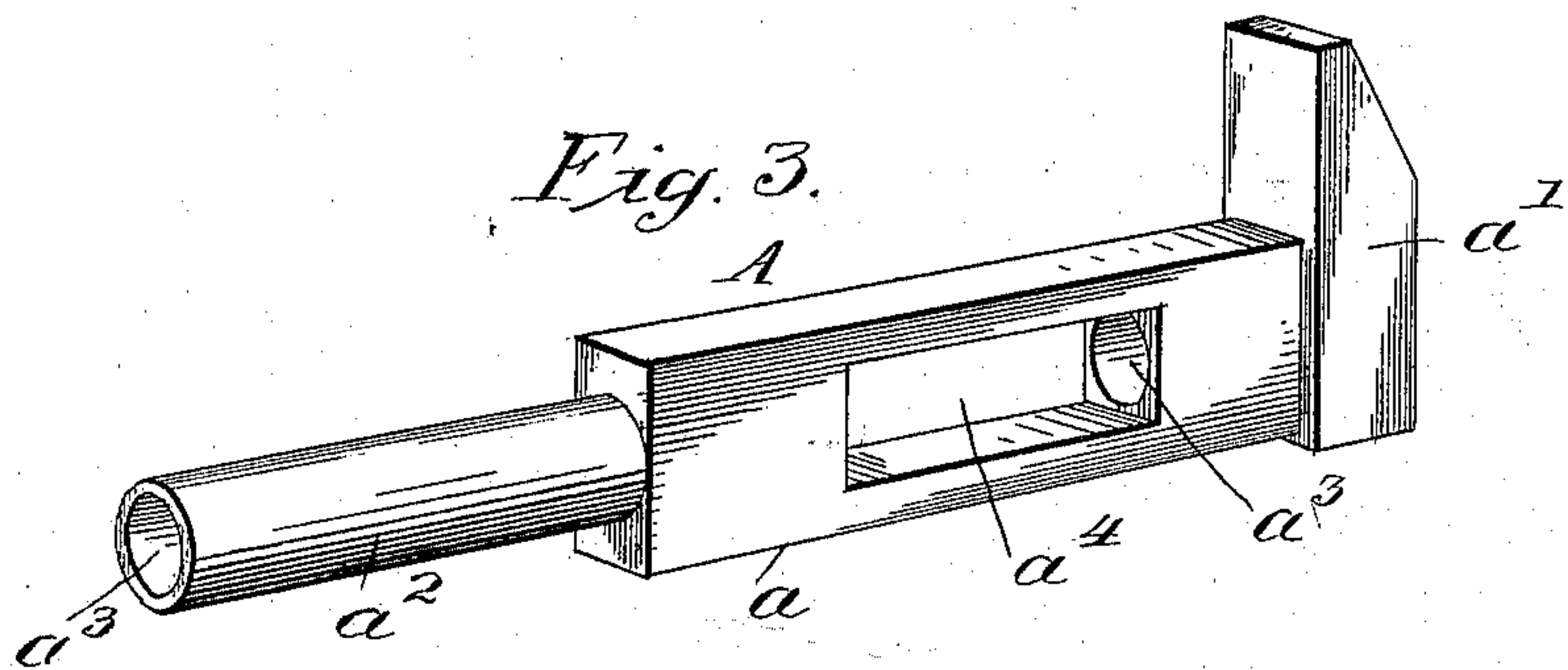


Fig. 4.

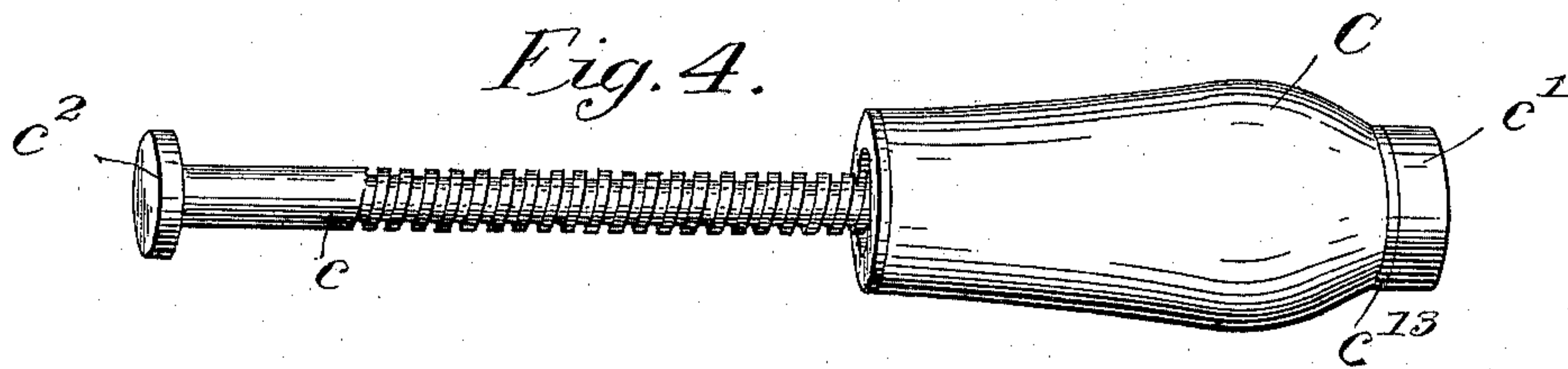
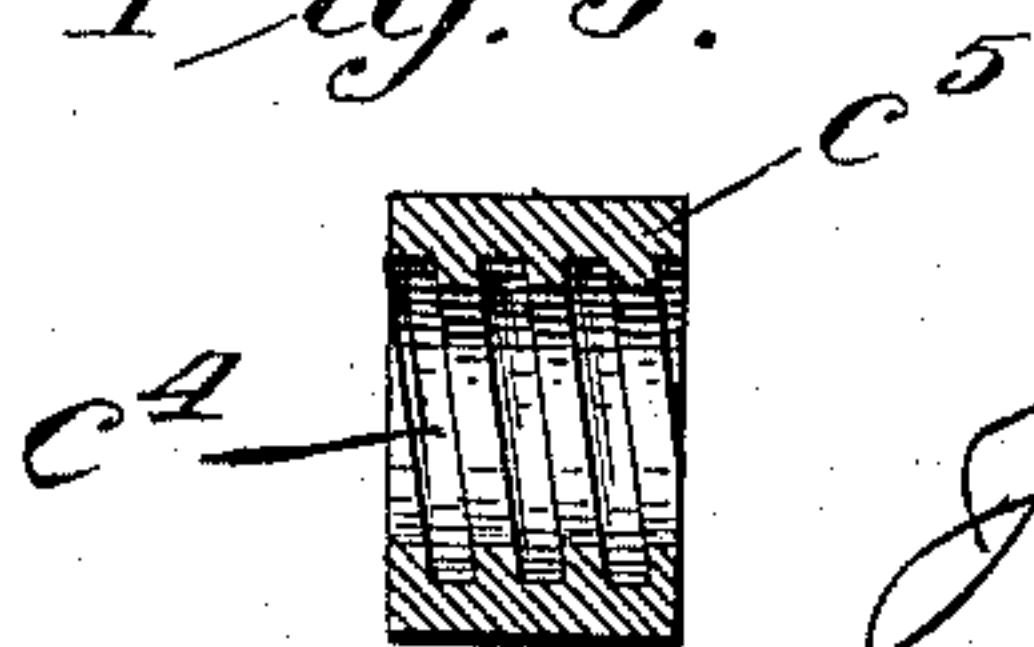


Fig. 5.



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Fig. 6.

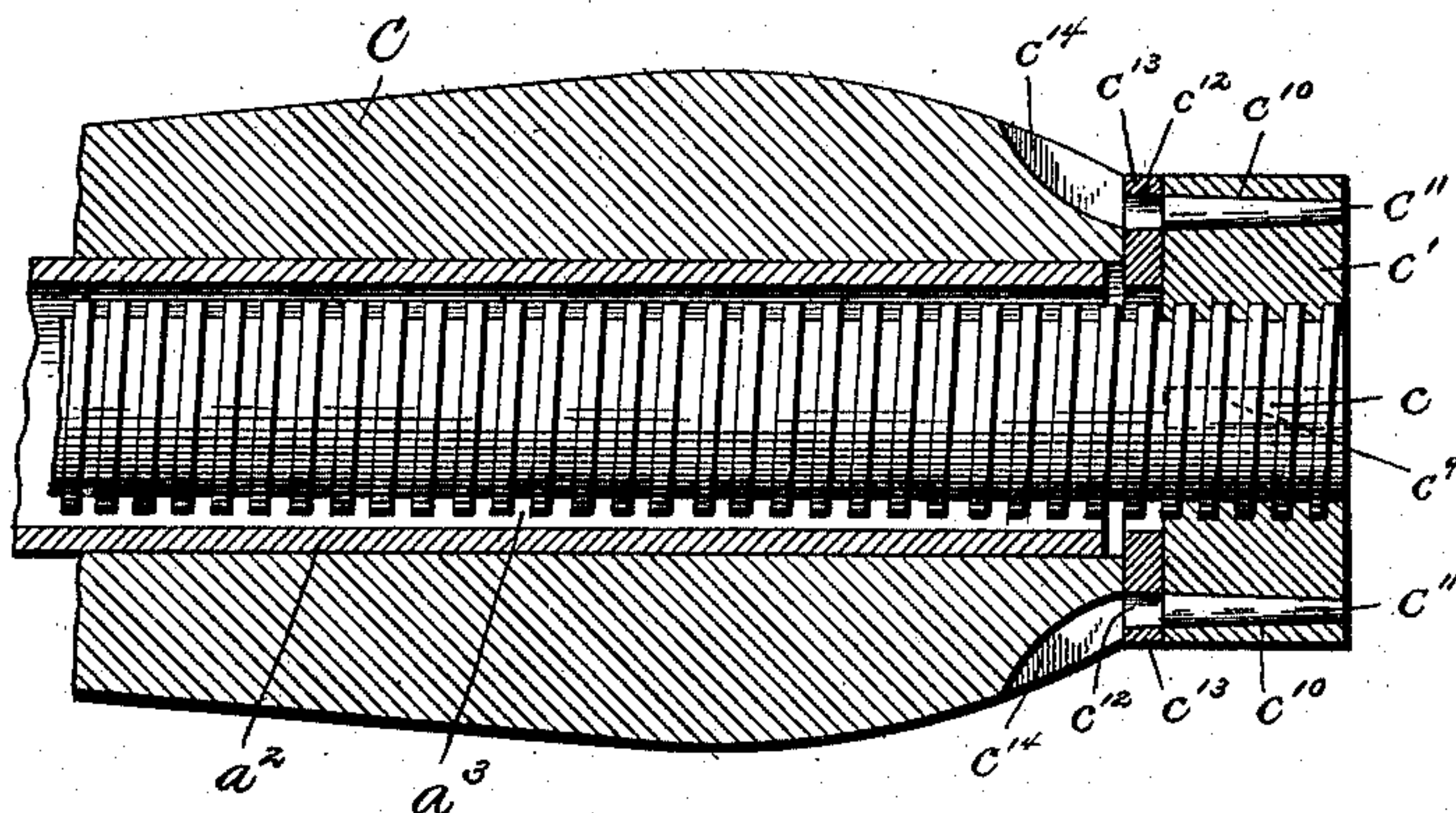


Fig. 7.

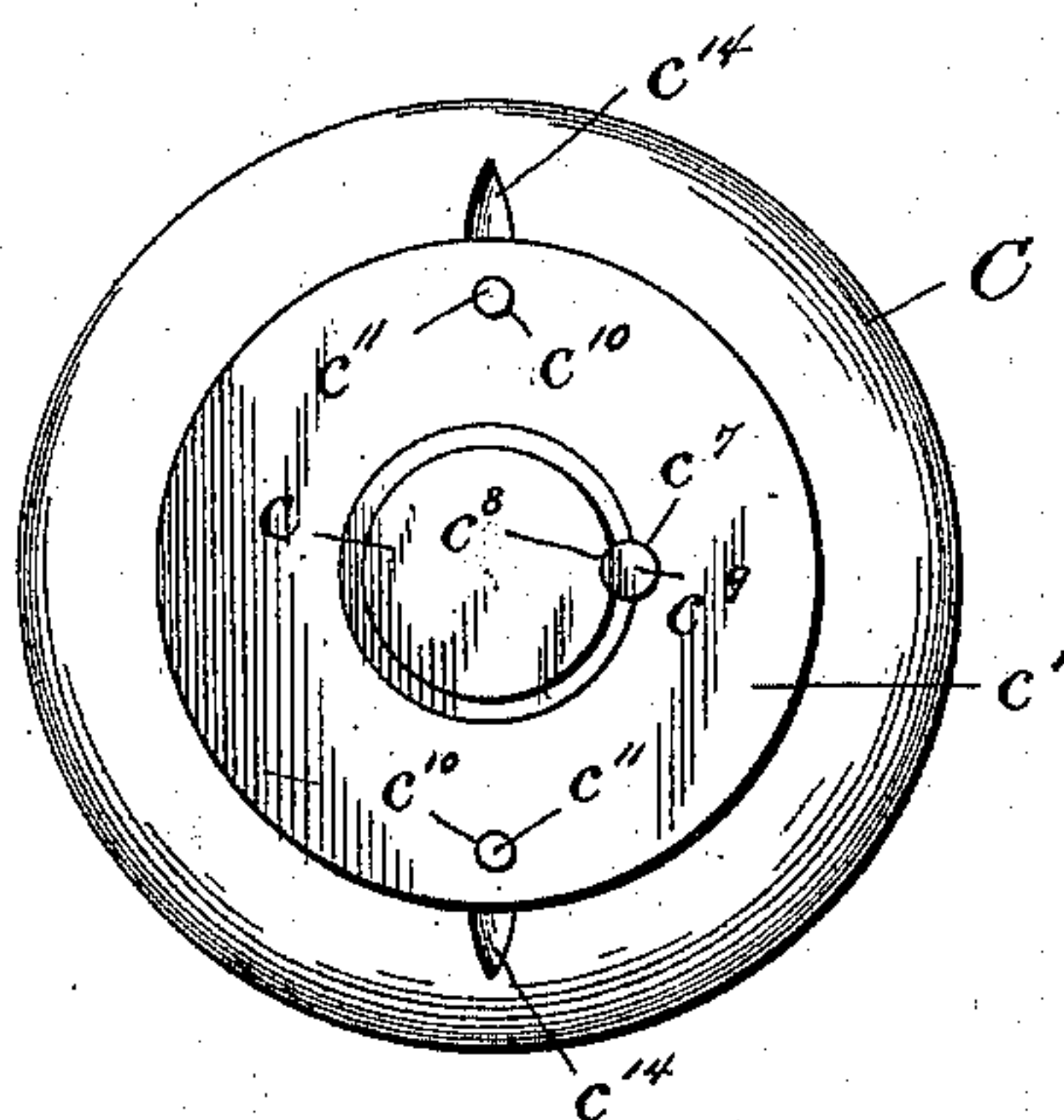
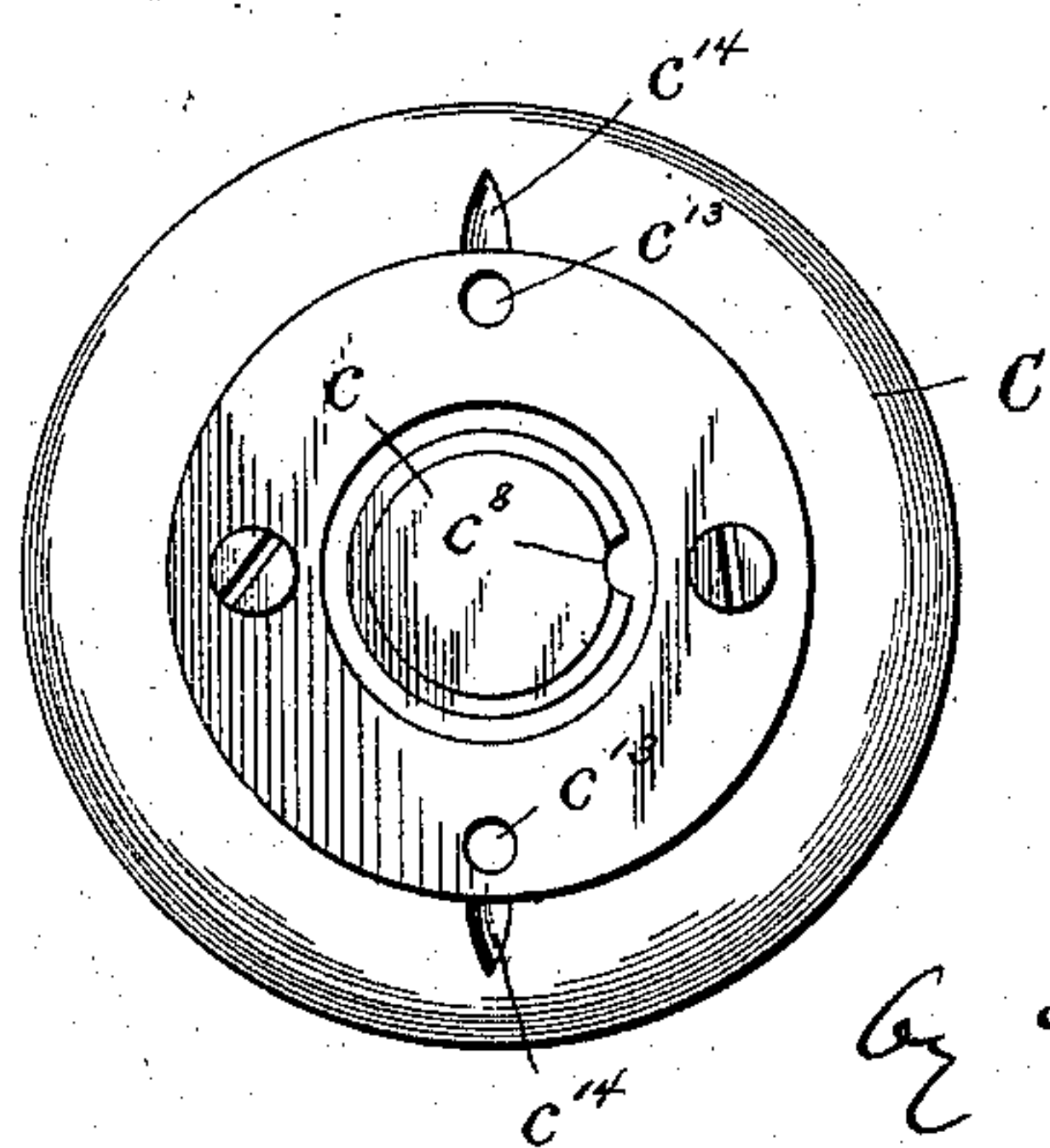


Fig. 8.



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# UNITED STATES PATENT OFFICE.

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## NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 608,120, dated July 26, 1898.

Application filed August 12, 1897. Serial No. 648,022. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HEFFNER, of Benton Harbor, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Nut-Wrenches; 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.

This invention relates to improvements in wrenches, and has more particular relation to nut-wrenches.

The invention consists of certain novel constructions, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation of a wrench embodying my invention. Fig. 2 represents a central vertical longitudinal section through the same. Fig. 3 represents an enlarged detail perspective view of the body portion and its rigid jaw. Fig. 4 represents an enlarged perspective view of the operating-handle and the screw-threaded bolt. Fig. 5 represents an enlarged detail central vertical section through the adjustable nut. Fig. 6 is a longitudinal sectional view, on an enlarged scale, through the rear end of the wrench. Fig. 7 is a rear end view of the wrench, and Fig. 8 is a similar view with the nut removed.

A in the drawings represents the body portion of my improved wrench, B the sliding jaw, and C the operating-handle. Said body portion A comprises a square shank  $a$ , having a rigid jaw  $a'$  at its upper end, and a rounded shank  $a^2$ . The said portions  $a$  and  $a^2$  are provided with a longitudinal passage  $a^3$ , and said square portion  $a$  is further provided with a transverse passage  $a^4$ , connecting the longitudinal passage  $a^3$  with the exterior of said body portion.

The sliding jaw B is provided with a central passage  $b$ , whereby it may be slid over the square shank  $a$ . The said sliding jaw is further provided with side apertures  $b'$ , the use of which will be hereinafter more particularly described.

The handle C is hollow, so that it may be fitted over the cylindrical shank  $a^2$  and ro-

tated thereon. Said handle is provided with a screw-threaded bolt  $c$ , detachably secured thereto at its lower end by a nut  $c'$ , so as to project upwardly through said handle and out beyond the top of the same. When the said handle is applied upon the shank  $a^2$ , the said screw-bolt  $c$  passes up through the passage  $a^3$  and out through the rigid jaw  $a'$ . Said bolt is held against longitudinal movement in the passage  $a^3$  by a head  $c^2$  at the upper end of the same and seated in a counter-sunk recess in the rigid jaw. A nut  $c^4$  is mounted on said bolt  $c$  and is provided with projecting ends  $c^5$ , that extend through the passage  $a^4$  in the body portion of the wrench and engage the apertures  $b'$  formed in the sliding jaw. The nut  $c'$  is provided with a key-groove  $c^7$ , which is adapted to correspond with a similar key-groove  $c^8$  formed in the screw  $c$ , so that after said nut is secured in position upon the lower end of the screw it may be locked against any accidental independent rotation by a suitable key  $c^9$  applied in said key-grooves. Said nut  $c'$  is further provided upon diametrically opposite sides with tapering passages  $c^{10}$ , in which are mounted tapering plugs or studs  $c^{11}$ , the construction being such that said plugs cannot move outward beyond the nut  $c'$ , but may be moved inward at will to cause their inner ends to engage recesses  $c^{12}$ , formed in a ring  $c^{13}$ , which is secured to the handle C, whereby the screw may be caused to rotate with the handle. Said handle C is further provided with inclined passages  $c^{14}$ , terminating just under the recess  $c^{12}$ , so that when desired the plugs  $c^{11}$  may be forced up out of said recess  $c^{12}$  into the nut  $c'$ , so that the wrench may be adjusted by the rotation of the nut alone when so desired.

It will be observed from the foregoing description that when it is desired to adjust the sliding jaw of the wrench the handle C is rotated either one way or the other, which rotation is imparted to the bolt  $c$ , and as said bolt cannot move longitudinally the nut  $c^4$ , mounted upon the same, is moved, carrying the sliding jaw with it.

By the employment of my invention the wrench may be almost instantly adjusted to fit any-sized nut and when so adjusted is held firmly in such adjusted position and cannot



be moved one way or the other unless the handle or the nut is rotated.

I preferably construct the parts of my wrench of metal, with the exception of the handle C, which may be made of wood or any other desirable material.

The pitch given to the threads upon the bolt  $c$  is such that a very slight rotation of the handle C or the nut will cause the sliding jaw to move very rapidly over the shank and thus secure the proper adjustment of said jaw with the expenditure of very little time and trouble. By means of the extended shank  $a^2$ , entering the handle C, the said handle is braced, and the strain incidental to the operation of the wrench is thus removed from the screw-threaded bolt and thrown onto said extending shank. This construction relieves the bolt of any strain or wear that would tend to render it inoperative. Said shank  $a^2$  also holds the handle firmly in position and permits the bolt  $c$  to pass loosely through the entire length of the wrench without affecting the rigidity of the handle.

Should it become necessary at any time to separate the different parts of the wrench, this may be instantly accomplished by simply removing the nut  $c'$  and screwing the screw out of the nut  $c^4$ .

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage and a transverse passage, of a sliding jaw mounted on said body portion, a handle also mounted on said body portion and provided with a screw-threaded bolt adapted to enter the longitudinal passage, a nut mounted on the end of said bolt for preventing the same from moving longitudinally in said passage, and another nut mounted on said bolt and adapted to engage the sliding jaw whereby the latter is moved upon the rotation of the bolt, substantially as described.

2. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage, a transverse passage and a

cylindrical shank, of a sliding jaw mounted on said body portion and provided with side apertures, a hollow handle mounted on the cylindrical shank, a screw-bolt connected to said hollow handle and extending through the longitudinal passage, a nut on the end of said screw-bolt for preventing the same from moving longitudinally in said passage, and another nut mounted upon said bolt and projecting through the transverse passage of the body portion to engage the apertures of the sliding jaw to move the latter upon the rotation of the bolt, substantially as described.

3. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage and a transverse passage, of a sliding jaw mounted on said body portion, a handle also mounted on said body portion, a screw-threaded bolt adapted to enter the longitudinal passage, a nut mounted on said bolt and engaging the sliding jaw, and another nut mounted on the end of said bolt and adapted to be engaged or disengaged from the handle at will, whereby the bolt may be rotated either by the handle or the nut, substantially as described.

4. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage and a transverse passage, of a sliding jaw mounted on said body portion, a handle also mounted on said body portion, a screw-threaded bolt mounted in the longitudinal passage, a nut mounted on said bolt and engaging said sliding jaw, and another nut mounted on the end of said bolt and provided with movable plugs adapted to engage apertures in the end of the handle, whereby said latter nut may be connected or disconnected from the handle at will, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM HEFFNER.

Witnesses:

PETER DECKESHUN,  
F. W. SESSIONS.