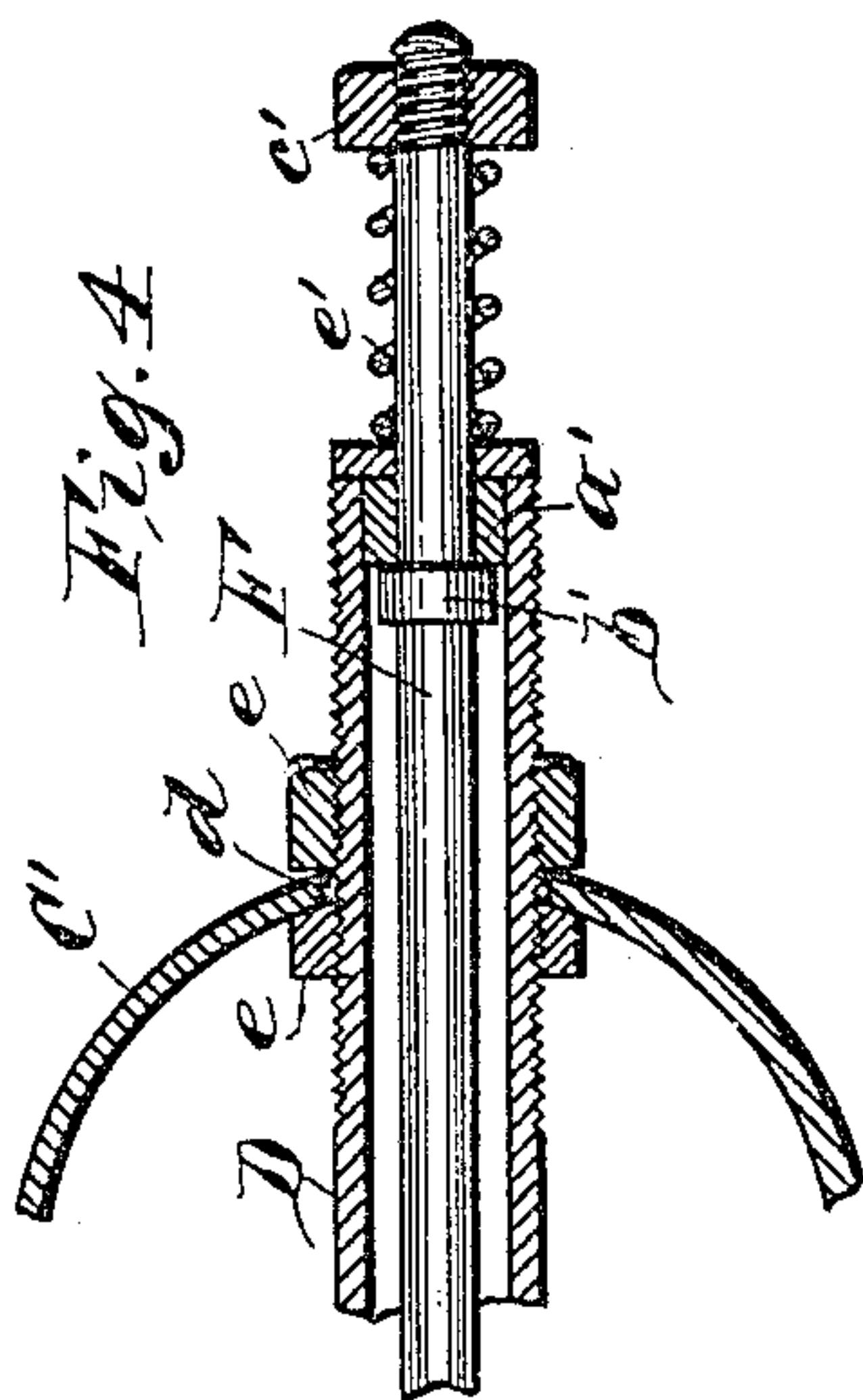
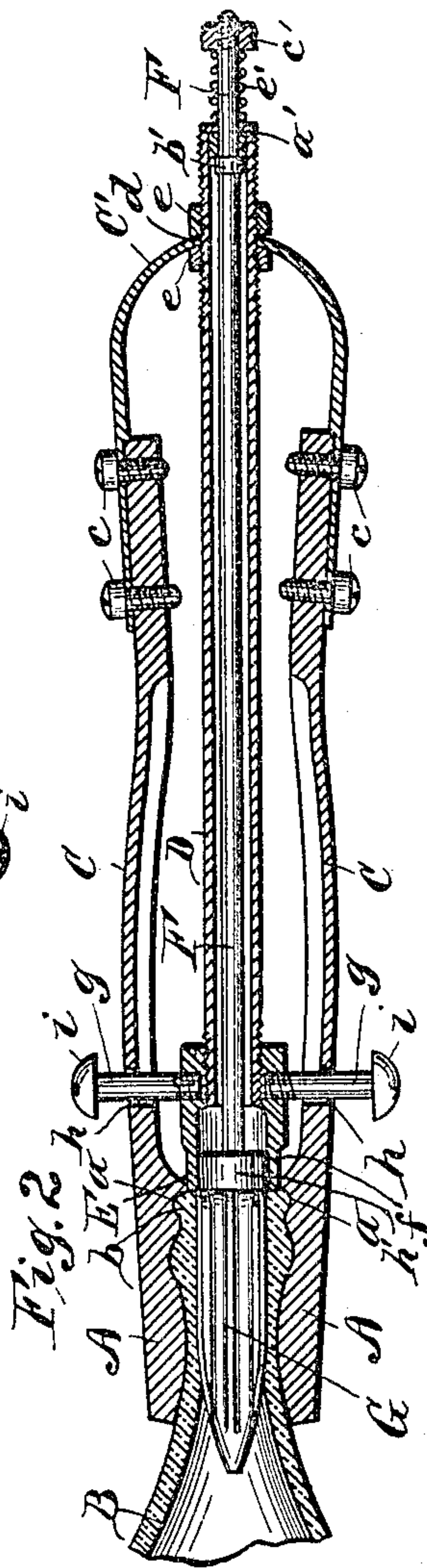
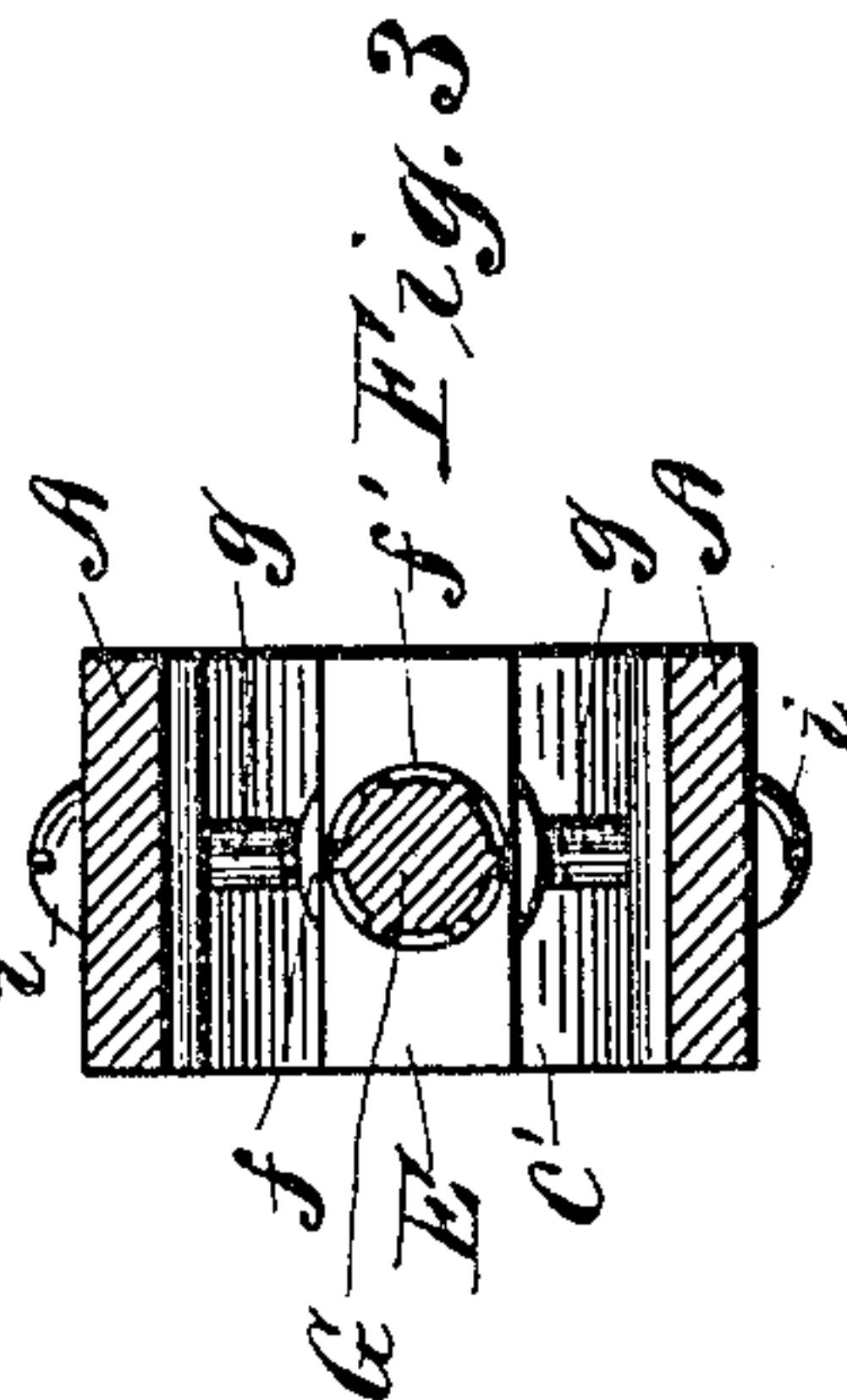
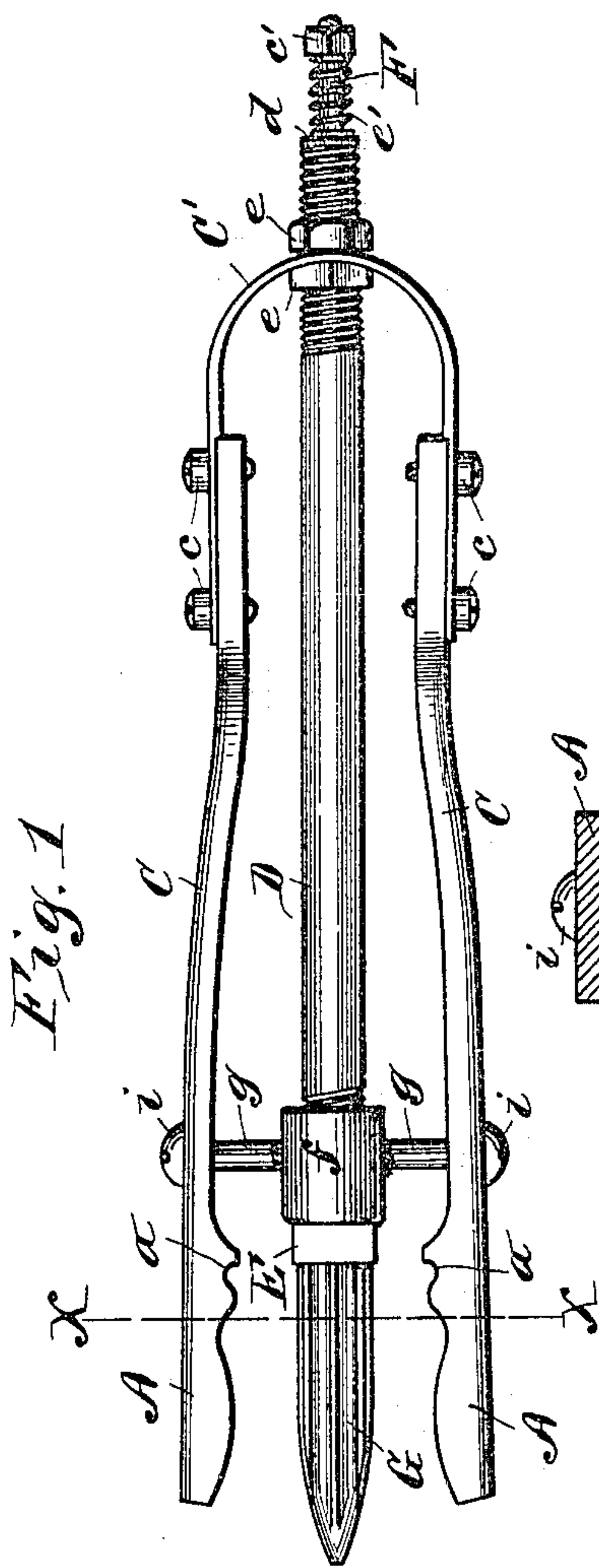


No. 818,691.

PATENTED APR. 24, 1906.

C. HOUSE.
TOOL FOR SHAPING BOTTLE NECKS.
APPLICATION FILED JAN. 4, 1906.



WITNESSES:

H. H. Kuhlman.
J. J. Laess.

INVENTOR

Charles House
By *E. Laess*
his ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES HOUSE, OF ONEIDA, NEW YORK, ASSIGNOR TO CORRUGATED BOTTLE COMPANY, OF ONEIDA, NEW YORK, A CORPORATION OF NEW YORK.

TOOL FOR SHAPING BOTTLE-NECKS.

No. 818,691.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed January 4, 1906. Serial No. 294,505.

To all whom it may concern:

Be it known that I, CHARLES HOUSE, a resident of Oneida, in the county of Madison, in the State of New York, have invented new and useful Improvements in Tools for Shaping Bottle - Necks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention pertains to the manufacture of bottles of that style having the neck formed with an external bead for the reception of a metallic inclosing cap and with internal flutings or corrugations designed to prevent the use of an ordinary cork.

The present invention relates to the tools which are employed for imparting the aforesaid shape to the bottle-neck, and it has special reference to the class of tools which consist of a pair of grooved jaws secured to or formed integral with the free ends of two arms or handles united at their opposite ends by a spring for forcing them apart, a longitudinal revoluble spindle disposed centrally between the arms and journaled at one end in a suitable bearing on the spring and having its opposite or forward end journaled in a member which is supported loosely between the arms, and a tapering fluted or corrugated head secured to the forward end of the spindle and disposed between the jaws and adapted to be inserted into the heated bottle-neck, the said jaws being adapted to be pressed onto the exterior of the neck while the head is inserted therein and the bottle rolled back and forth upon a suitable support, whereby the desired shape is imparted to the neck. In practice with tools of this character some inconvenience has been experienced in the operation of inserting the fluted head of the tool into the heated neck of the bottle, owing to the tendency of the forward end of the spindle to vibrate between the jaws, which vibration is caused by reason of the forward bearing part for the spindle being supported loosely on the arms or handles, and therefore such tools have proven objectionable. A further objection is that the loose connection of the bearing part to the arms tends to allow one of the jaws to engage the bottle-neck prior to the other, with the liability of distorting the neck, whereby a great deal of time and care are required for properly shaping

the neck and the resultant increase in the cost of manufacture caused thereby. Furthermore, this vibration of the spindle tends to move the forward bearing out of alignment with the rear bearing, thus preventing a free rotation of the spindle.

The main object of this invention is to provide a tool of the aforesaid type with means for rigidly sustaining the spindle between the arms or handles and which at the same time shall permit the spindle to rotate freely.

It is well known to persons familiar with the art of manufacturing bottles that these neck-shaping tools are necessarily subjected to a coating of charcoal or other substance before applying the same to the heated neck of a bottle for the purpose of preventing adhesion of the molten glass to the tool. It has been discovered that by this treatment of the tool there is a tendency of the forward bearing of the spindle to become clogged, which destroys a free rotation of the spindle. Therefore another object of my invention is to provide a tool which shall permit the spindle to be moved longitudinally for the purpose of cleaning the said bearing.

Other objects of the invention will be apparent by the novel combination and arrangement of the component parts of the tool hereinafter fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side view of my improved tool. Fig. 2 is a longitudinal section of the tool applied to a bottle-neck. Fig. 3 is a transverse section on the dotted line X X in Fig. 1, and Fig. 4 is an enlarged longitudinal sectional view of the rear end portion of the tool.

Similar letters of reference indicate corresponding parts.

A A denote the two jaws which are adapted to be pressed onto the exterior of the bottle-neck and are provided with the usual narrow transverse grooves *a a*, which are designed to produce an external bead at the mouth of the bottle B, as indicated at *b*, and the said jaws are otherwise shaped to produce the required finish to the exterior of the neck. The said jaws A A are preferably formed integral with the free or forward ends of arms or handles C C, which are united at their opposite ends by means of usual U-shaped spring C' normally forcing the arms apart.

This spring may be formed separately from the arms C C and fastened thereto by means of screws *c c* or rivets, as shown, or it may be integral with the arms. In the central portion
5 of spring is provided an aperture *d*.

D denotes a tube which is disposed centrally and longitudinally between the arms or handles C C and has its end portions exteriorly screw-threaded. The rear end portion
10 of this tube extends through the aperture *d* of the spring and is provided with two nuts *e e*, between which the spring is firmly clamped, whereby the forward end of said tube is rigidly sustained in relation to the jaws A A.

E represents a plate which is formed integral with an internally-screw-threaded sleeve *f*, rigidly embracing the forward end of the tube D. Said plate is preferably elongated transversely in relation to said jaws and dis-
20 posed to allow the inner portions of the latter to abut against the same when the jaws are pressed against the neck of the bottle to limit their movement. The outer face of this plate serves to finish the end of the bottle, and
25 in the center of the same is provided an annular socket *f'*, forming a bearing which will be shortly referred to. To said sleeve *f* are rigidly secured two oppositely-projecting transverse pins *g g*, passing freely through aper-
30 tures *h h* in the arms C C adjacent to the jaws and provided on their outer ends with heads *i i*, serving to limit the outward movement of the arms.

F denotes the revoluble spindle which extends longitudinally through the aforesaid tube D and is journaled at its outer end portion in a bushing *a'*, secured in the end of the tube. Said spindle is provided with a collar *b'* within the tube, which is shouldered on the
40 aforesaid bushing *a'*, and it extends beyond the end of the tube and is screw-threaded and provided with a nut *c'*. Between this nut *c'* and a washer *d'*, bearing on the end of the tube, is a spiral spring *e'*, surrounding the spindle
45 and serving to force the latter rearward, which movement is limited by the engagement of the collar *b'* with the bushing *a'*. The forward end of this revoluble spindle extends into the aforesaid sleeve *f* and is provided
50 with a fluted or corrugated head G, having a tapered outer end portion and disposed between the jaws A A. This head may be formed integral with the spindle and is provided with a smooth annular inner end por-
55 tion *h'*, journaled in the aforesaid socket *f'* of the plate E, and it is retained in said socket by the rearward expansive force of the spring *e'* exerted on the spindle as aforesaid. This head is inserted into the heated neck of the
60 bottle and the jaws forced toward each other so as to embrace the neck, and then the bottle is to be rolled back and forth upon a suitable support in the usual manner, whereby the spindle and head are caused to rotate there-
65 with. Thus the flutings or corrugations are

produced in the interior of the neck and at the same time the external bead *b* is formed at the mouth of the bottle. It is obvious that by means of the described rigid supporting-tube the spindle is effectually prevented from
70 vibrating between the jaws, thereby permitting a free rotation of the spindle.

It will be readily seen that when the tool is removed from the bottle the operator can push the spindle forward for the purpose of
75 cleaning the bearing of the head, and when this is effected and the spindle released the parts will be automatically restored to their normal positions by the spring *e'*.

What I claim as my invention is—

1. A tool of the class specified comprising a pair of arms or handles united at one end by a spring forcing the same normally apart and provided on their opposite or forward ends with jaws for shaping the exterior of a bottle-
85 neck, a tube disposed centrally and longitudinally between the arms and rigidly supported by the spring and terminating at its forward end adjacent to the jaws, a sleeve rigidly embracing said end of the tube and formed with
90 a transverse plate having a central annular socket, transverse pins extending rigidly from said sleeve and passing loosely through the said arms and provided on their outer ends with heads for limiting the outward
95 movement of the arms, a revoluble spindle disposed within the said tube and journaled at its rear ends therein and provided at its forward end with a tapering fluted head disposed between the jaws for shaping the inter-
100 rior of the bottle-neck, said head having a plain inner end portion by which it is journaled in the aforesaid socket and adapted to be moved out of the socket, and a spring exerting expansive force on the spindle for au-
105 tomatically returning the head to its normal position as and for the purpose set forth.

2. A tool of the class specified comprising a pair of arms or handles united at one end by a U-shaped spring forcing the same nor-
110 mally apart and provided on their free ends with jaws for shaping the exterior of a bottle-neck, a tube screw-threaded externally at both ends and disposed centrally and longitudinally between the arms, one
115 end portion of said tube passing through the spring and provided with nuts clamping between them the said spring for rigidly supporting the tube, a sleeve rigidly embracing the forward end of the tube and formed with
120 a transverse plate provided with a central annular socket, transverse pins extending rigidly from opposite sides of the sleeve and passing loosely through the arms and provided on their outer ends with heads limiting the
125 outward movement of the arms, a bushing secured in the rear end of the tube, a revoluble spindle disposed within the tube and journaled in said bushing and extending beyond the latter, a collar on the spindle adapted to
130

abut against the inner end of the bushing, a nut on the rear end of the spindle, a spiral spring surrounding the spindle and disposed between the said nut and end of the tube for
5 forcing the spindle rearward, and a tapering fluted head firmly secured to the forward end of the said spindle and journaled in the afore-
said socket and disposed between the jaws for shaping the interior of the bottle-neck as set forth and shown.

CHARLES HOUSE.

Witnesses:

GEORGE E. KIRKPATRICK,
MYRON H. MASON.