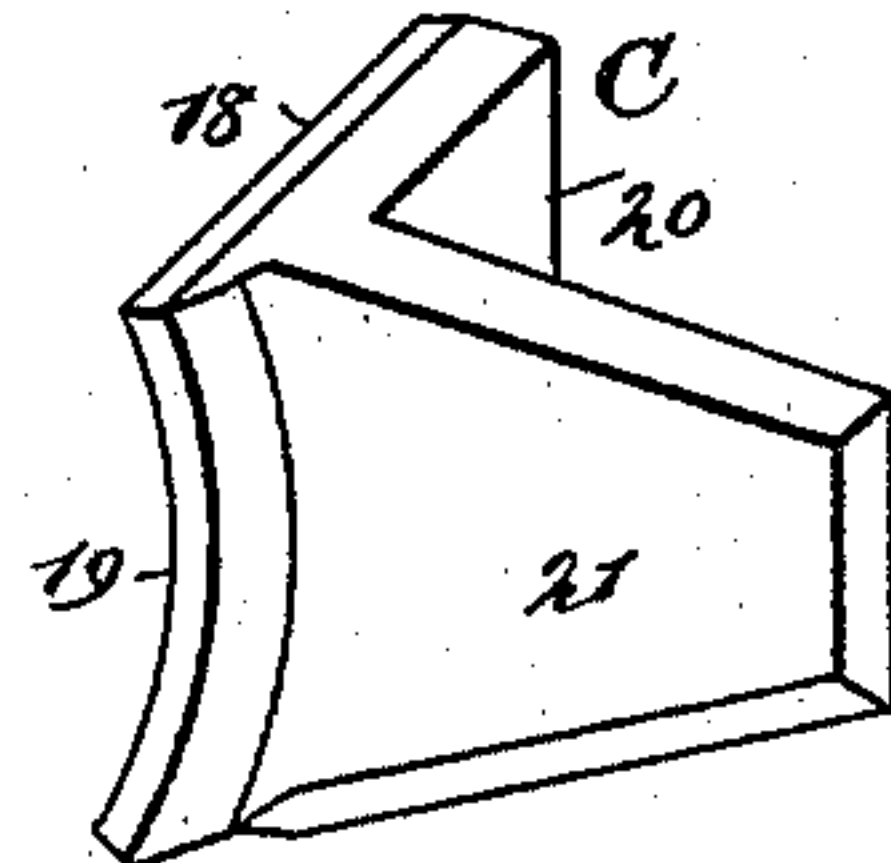
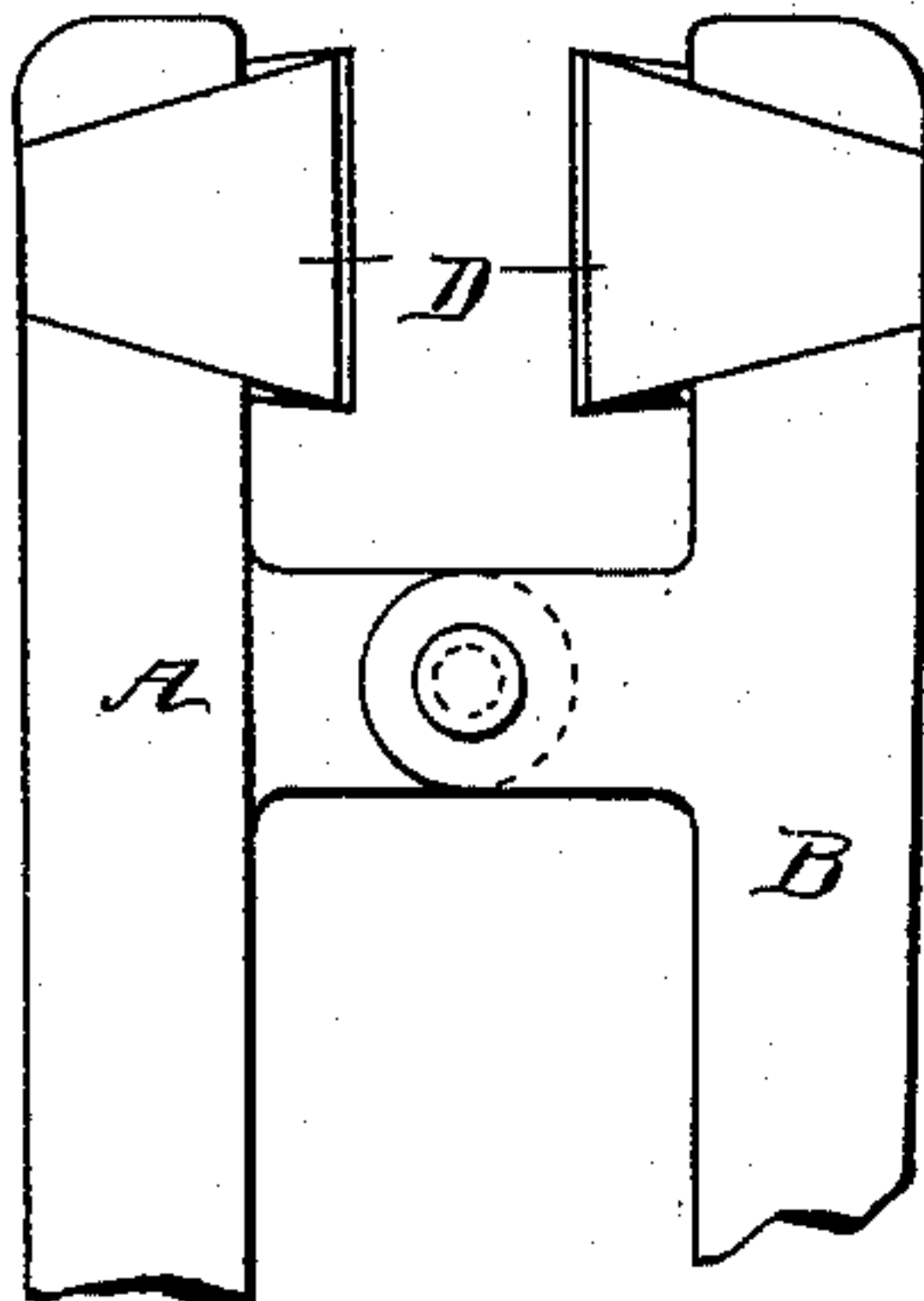
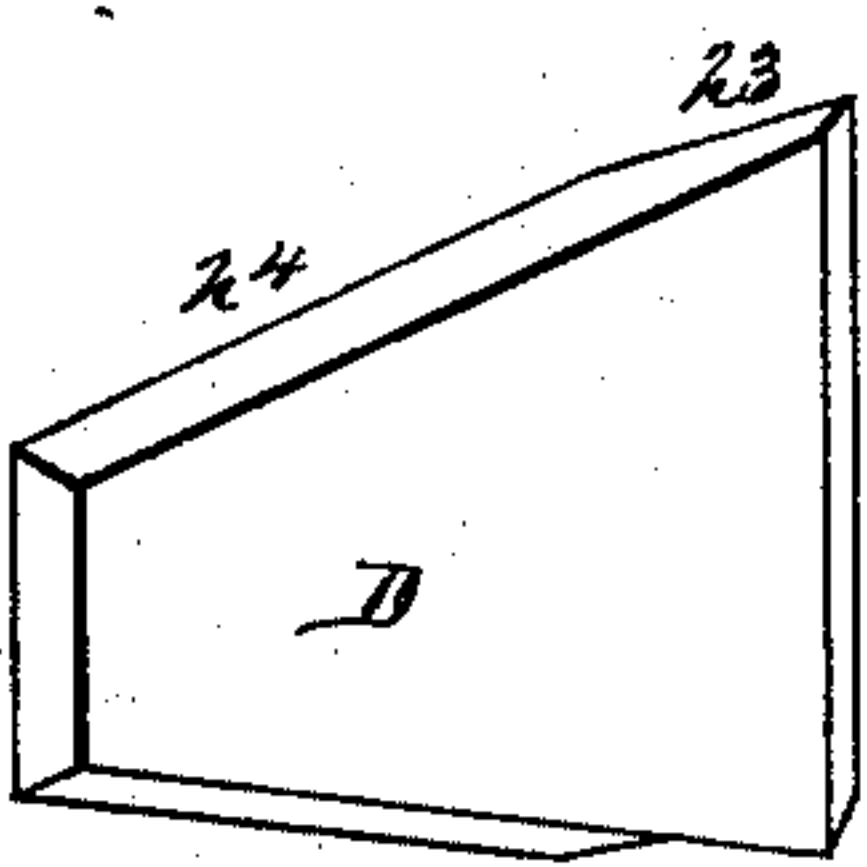
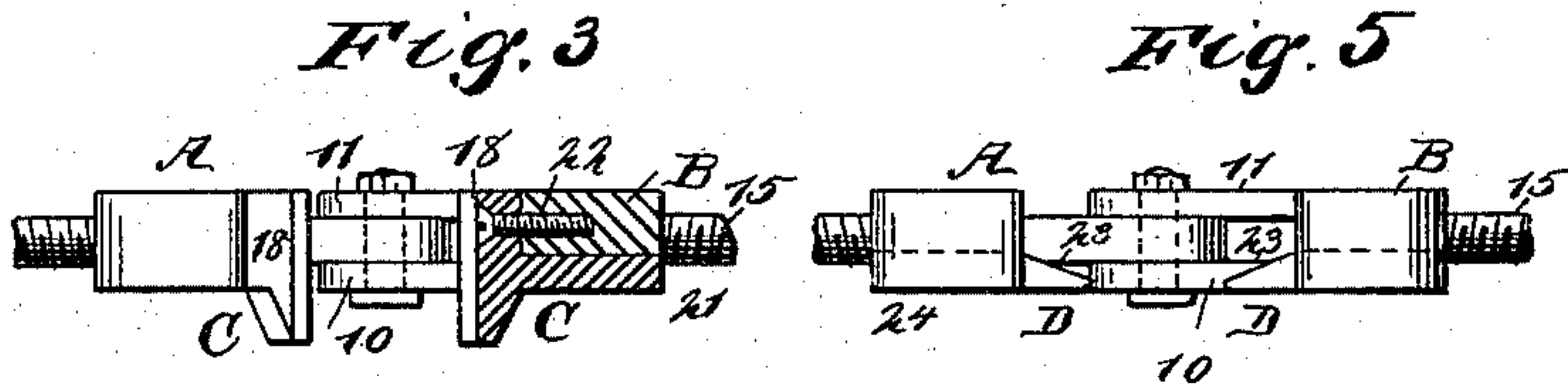
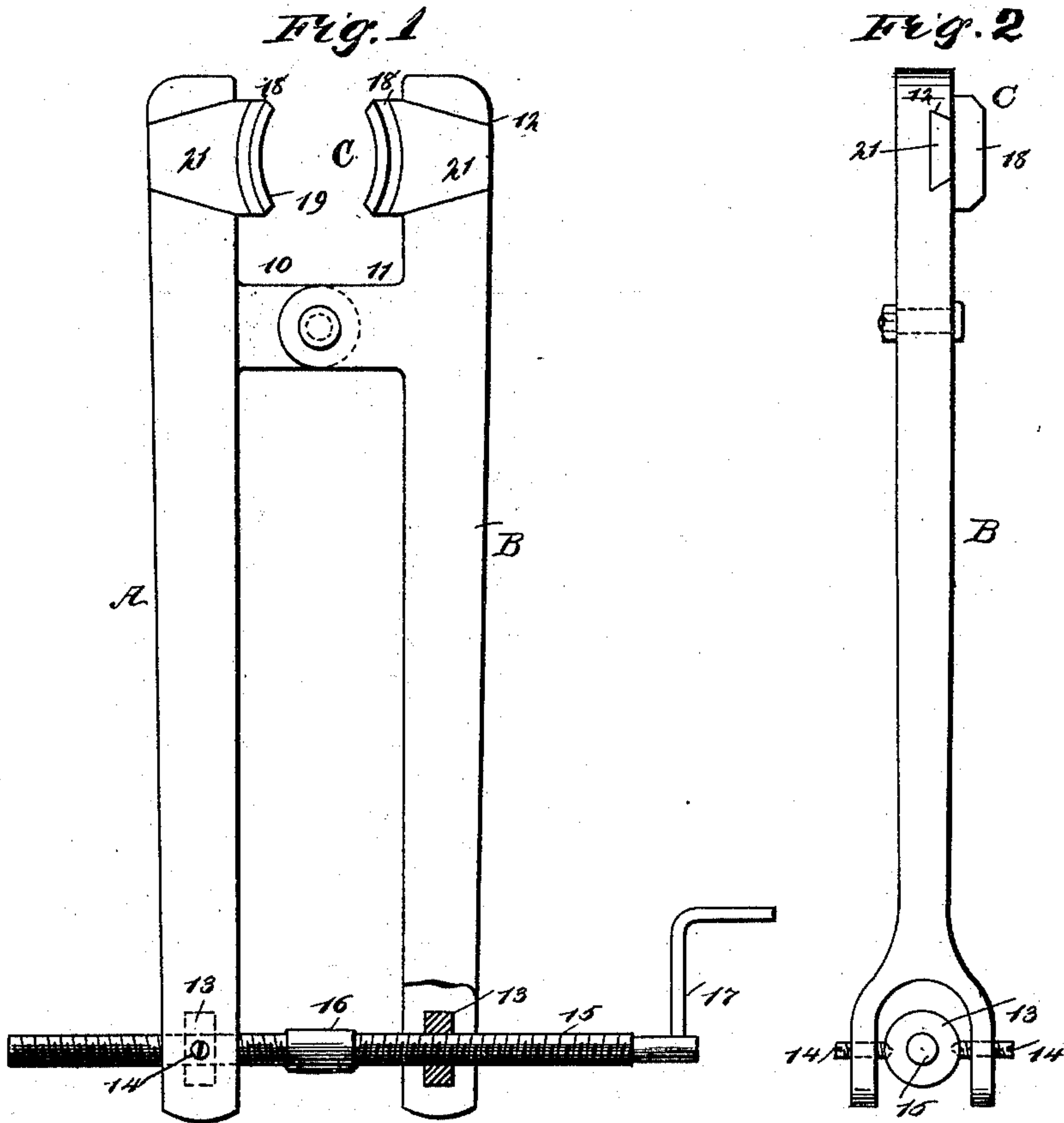


(No Model.)

M. McNALLEY.
FORCEPS.

No. 509,671.

Patented Nov. 28, 1893.



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FORCEPS.

SPECIFICATION forming part of Letters Patent No. 509,671, dated November 28, 1893.

Application filed March 23, 1893. Serial No. 467,316. (No model.)

To all whom it may concern:

Be it known that I, MICHEAL McNALLEY, of the city of St. Louis, in the State of Missouri, have invented a new and useful Improvement in Forceps, of which the following is a full, clear, and exact description.

My invention relates to an improvement in forceps, and especially to that class of forceps utilized in veterinary practice for withdrawing teeth of animals, or cutting or trimming them.

The object of the invention is to construct a pair of forceps of the character above set forth, capable of being expeditiously and conveniently opened and as rapidly and conveniently closed, and whereby further when the forceps have been brought to bear upon an object they may be made to clamp it effectively, enabling the object to be removed by the forceps; and furthermore whereby the two jaws of the forceps may be gradually and equally drawn together to produce a cutting action of the jaws when such action is required.

A further object of the invention is to provide forceps for veterinary use which will be exceedingly light and durable and capable of being readily handled.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improved forceps. Fig. 2 is an edge view thereof. Fig. 3 is a plan view, the jaws of the forceps in the above figures being illustrated as constructed for drawing teeth. Fig. 4 is a partial side elevation of the forceps, the jaws being shown as formed for cutting purposes. Fig. 5 is a plan view of the forceps when provided with the cutting jaws. Fig. 6 is a detail perspective view of one of the cutters removed from the jaw of the forceps; and Fig. 7 is a perspective view of one of the clamps used in drawing teeth.

The body of the forceps consists of two members A and B, which members may be

brought in parallel position when desired, and the two members are connected near their upper ends by projecting from their inner faces studs 10 and 11, the two studs being connected by a pivot or hinge in order that the ends of the members may be made to approach one another or may be carried outward to increase the space between them.

The upper portions of the members A and B, and these members may properly be termed handles, constitute the jaw sections of the forceps, as the handles above their pivot points are each provided in one of their side faces with a tapering slot 12, the said slots being preferably dovetail shape in cross section. The lower ends of the handles are bifurcated, and nuts 13, are held in a stationary manner in the bifurcated portions of the handles, as shown in Figs. 1 and 2. Ordinarily the nuts are maintained in position by passing screws 14, through the side faces of the handles, and into opposite faces of the nuts so that the nuts are capable of turning on the said screws when the jaws are opened or closed. These nuts are adapted to receive a right and left-hand threaded screw 15; consequently one nut is provided with a right-hand thread and the other with a left-hand thread, corresponding portions of the screw entering correspondingly threaded nuts; and preferably at the center of the screw 15, a plain surface 16, is provided, in order that the screw may be turned by placing the fingers between the handles; but when it is desired to turn the screw very rapidly, and it is necessary to exert considerable force in order to draw the jaw sections of the handles together, the screw is turned by means of a crank arm 17, formed at one of its ends.

When the forceps are to be used for drawing teeth for example, each jaw section is provided with a clamping jaw C, one of which is shown in detail in Fig. 7. This clamping jaw comprises a body section 18, provided with a concaved inner face 19 and an essentially flat outer face 20, while from one side of the body a shank 21, is projected, being located at right angles to the body, and this shank is dovetail shape in cross section and tapered in general contour; in fact, the shank is shaped to correspond to the contour of the jaw recess 12, as it is adapted to enter such recess. When

a clamping jaw is fitted in the recess 12 in the jaw section of the handle, the straight rear portion 20 of the body of the clamp will engage with the inner straight surface of the handle; thus by causing the body of the clamp to extend beyond both faces of the shank the clamp may be made much wider than the thickness of the handle, as shown best in Fig. 3, thereby providing for a maximum amount of bearing surface on the clamp, while the handle carrying the clamp need not necessarily be made very clumsy. When the clamp jaw C, is in position upon the handle it is held in that position by passing a screw 22, or like fastening device through the wider portion of the body and into the handle adapted to carry the clamp, as illustrated in Fig. 3. It will be readily understood that by turning the adjusting screw 15, the jaw sections of the handles may be brought close together or in position to engage with any object, a tooth, for example, and that the clamps when used may be held so tightly around the teeth as to enable the latter to be readily withdrawn. Furthermore, a quick adjustment of the jaw sections of the handles is obtained through the medium of the screw, which is readily operated from its outer end and may be nicely adjusted by turning it at its center.

In Fig. 6 I have shown a cutter D, which may be substituted for the clamp when it is desired to trim or cut off the teeth, or to use the forceps for cutting purposes of any kind. The said cutter consists of a body 23, which is beveled upon one of its faces, its inner face, for example, and a shank 24, adapted to fit in one of the recesses of a handle A or B. When the cutters are placed in position they appear as shown in Fig. 5, their flat faces being outermost and their beveled faces face inward. It is not necessary that any fastening devices should be employed to retain the cutters in position in the handle, but screws may be used for that purpose if in practice it is found desirable.

I desire it to be understood that although I have described the forceps as being particu-

larly adapted for use in veterinary practice, they may be applied to any purpose for which forceps are ordinarily used, since any form of jaws or cutters may be placed in the recesses 12 of the handles.

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

1. As an improved article of manufacture, forceps, the same comprising two handle sections bifurcated at one of their ends and capable of being placed in parallel positions, the sections being spaced and pivotally connected, jaws removably located in one end of the handle sections, nuts held stationary in the bifurcated ends of the handle sections and having a pivotal connection therewith and a right and left hand threaded adjusting screw engaging with the said nuts, and capable of carrying said sections outward and inward, as and for the purpose specified.

2. As an improved article of manufacture, forceps, the same consisting of two pivotally connected handle sections having jaws at one end, nuts each having a pivotal connection with one of the handle sections and provided with contrary female threads, and an adjusting screw having two oppositely threaded ends to engage the said pivoted nuts, as and for the purpose set forth.

3. As an improved article of manufacture, forceps, the same consisting of handle sections spaced and pivotally connected, jaws removably located in the handle sections above their pivot points, nuts located in the opposite ends of the handle sections and each having a pivotal connection with one of the handle sections, one nut having its inner wall provided with a right-hand and the other with a left-hand thread, and a right and left hand threaded adjusting screw passed through the nuts, said screw being provided with a central grip surface and a crank at one of its ends, as and for the purpose set forth.

MICHEAL McNALLEY.

Witnesses:

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