

L. E. FUNK.

TONGS.

APPLICATION FILED APR. 4, 1910.

973,862.

Patented Oct. 25, 1910.

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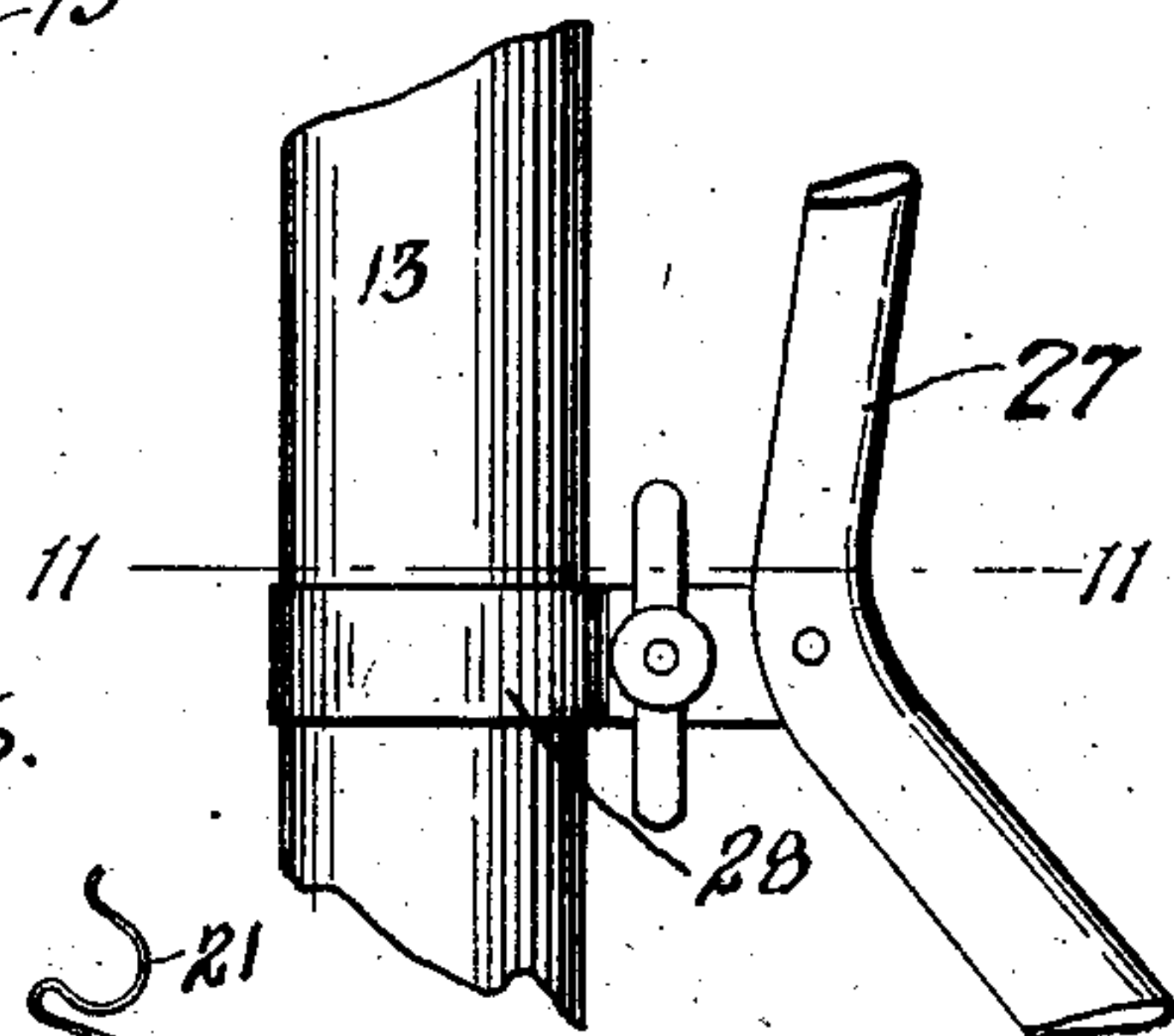
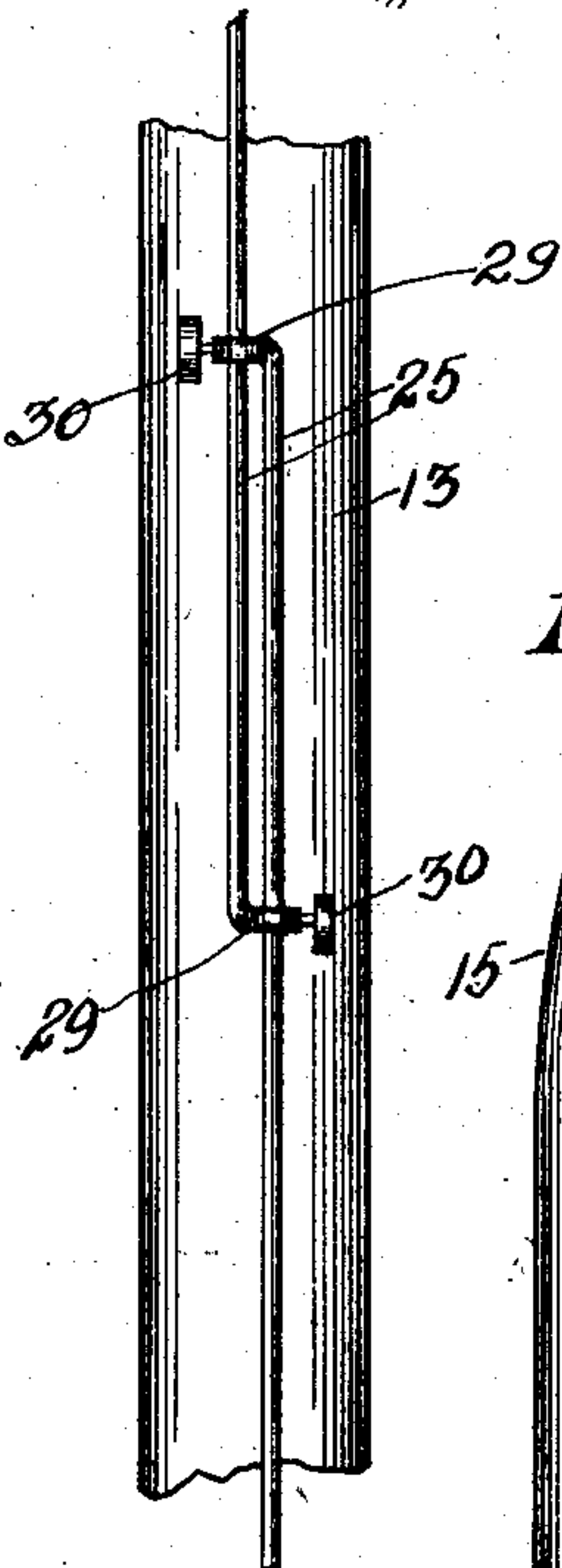
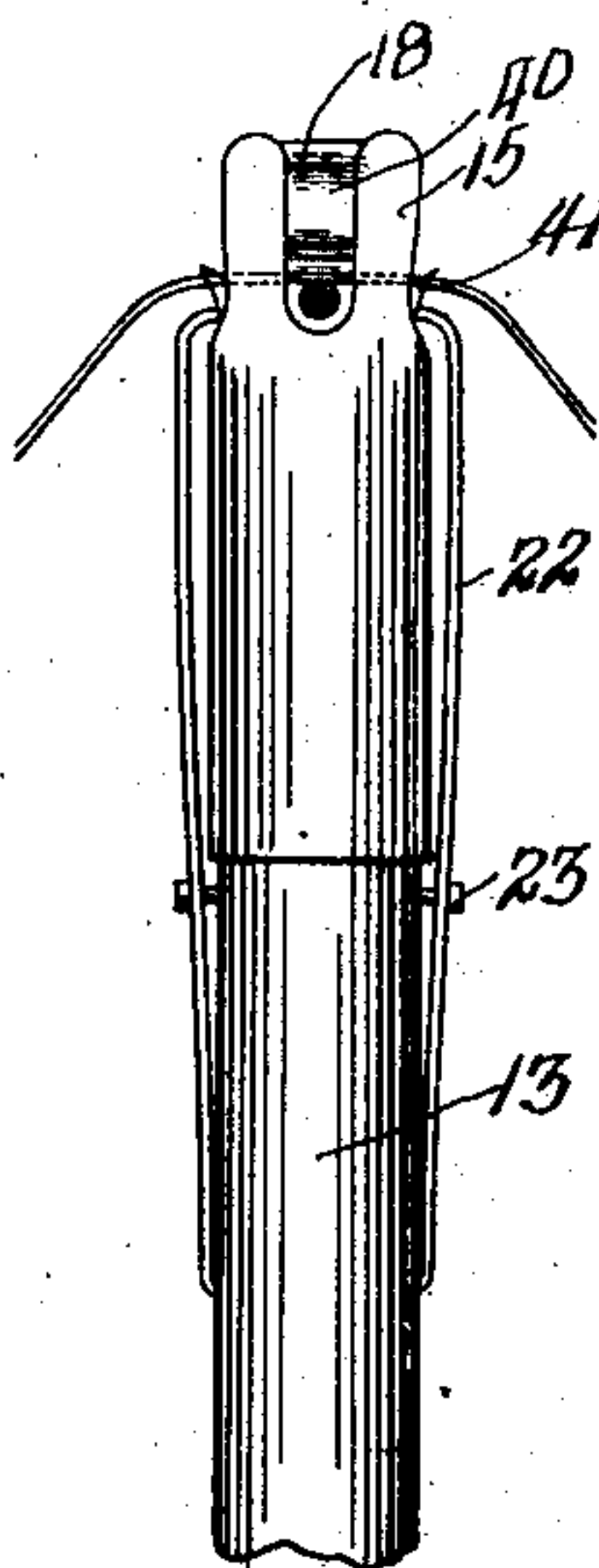
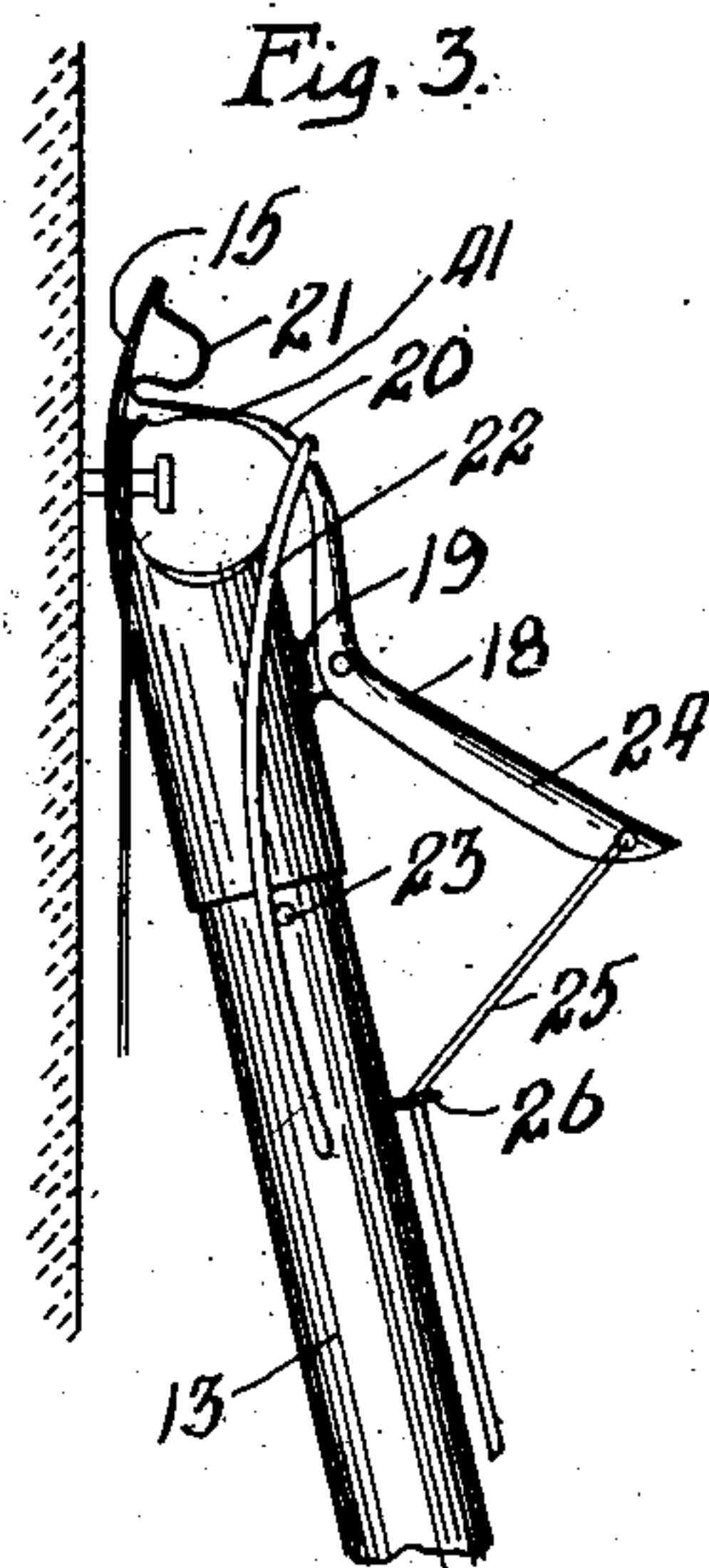
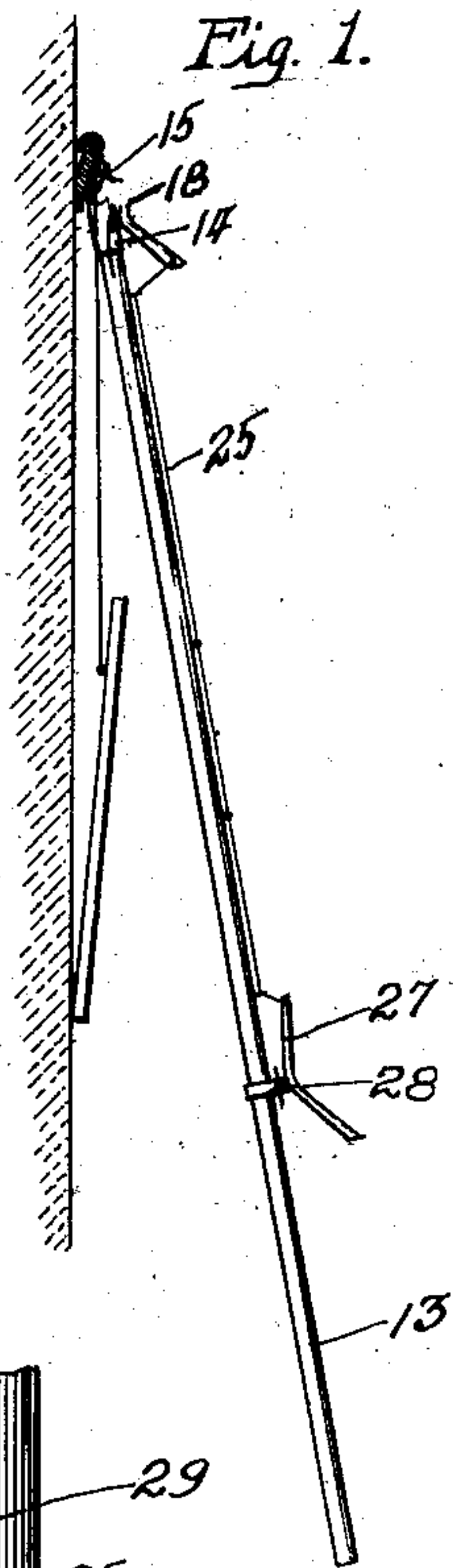
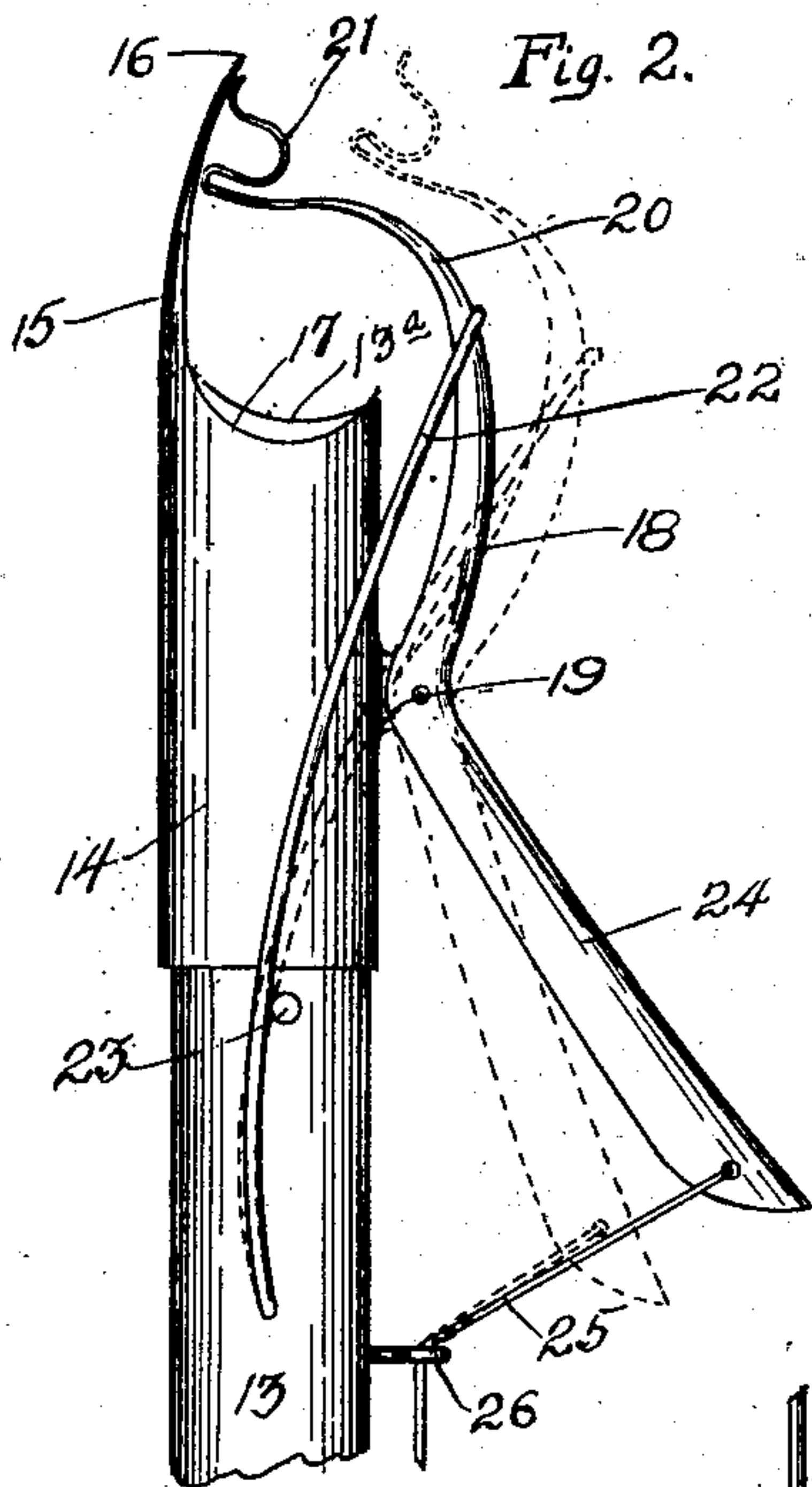
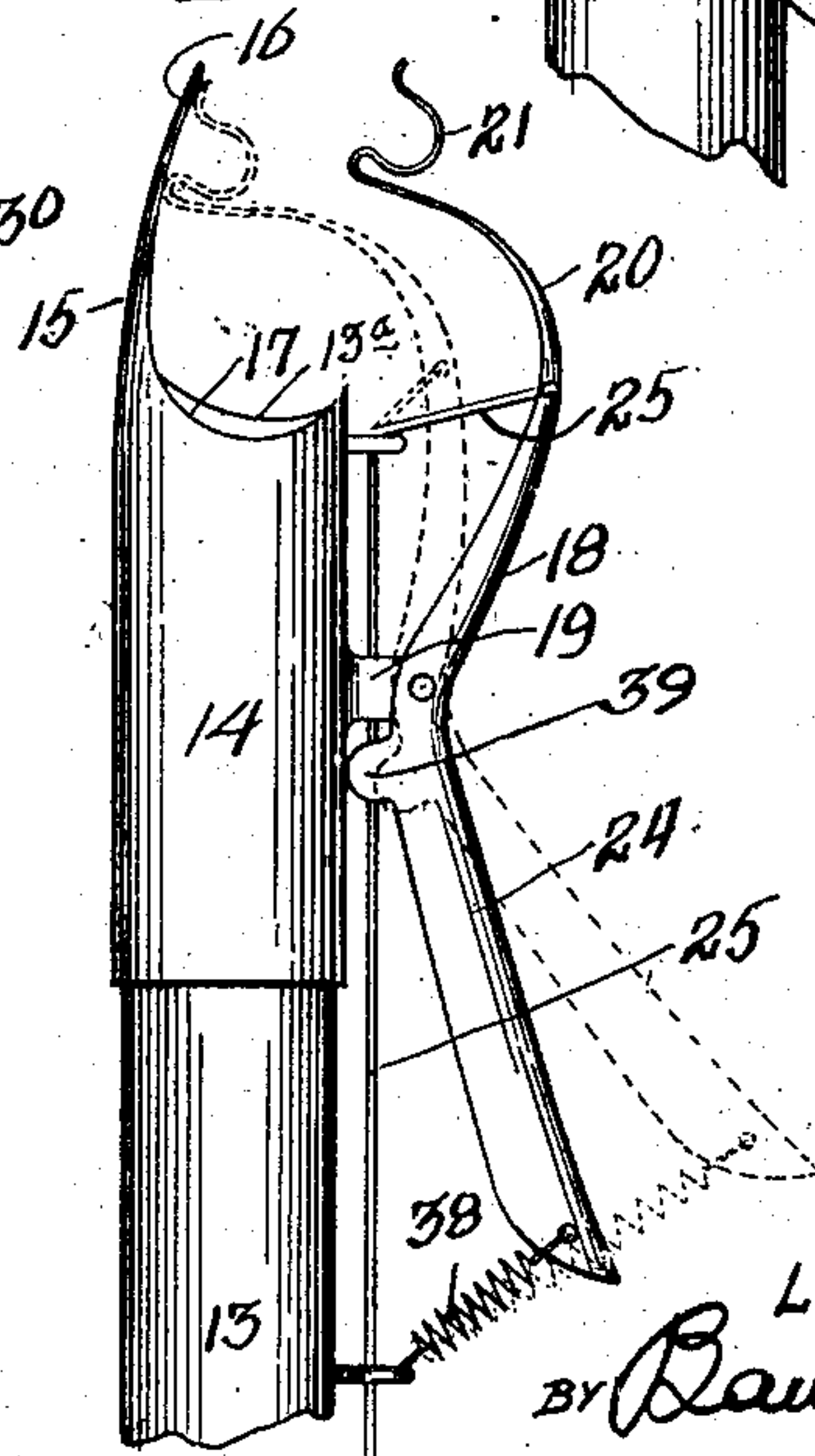


Fig. 6.

Fig. 7.



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2 SHEETS—SHEET 2.

Fig. 8.

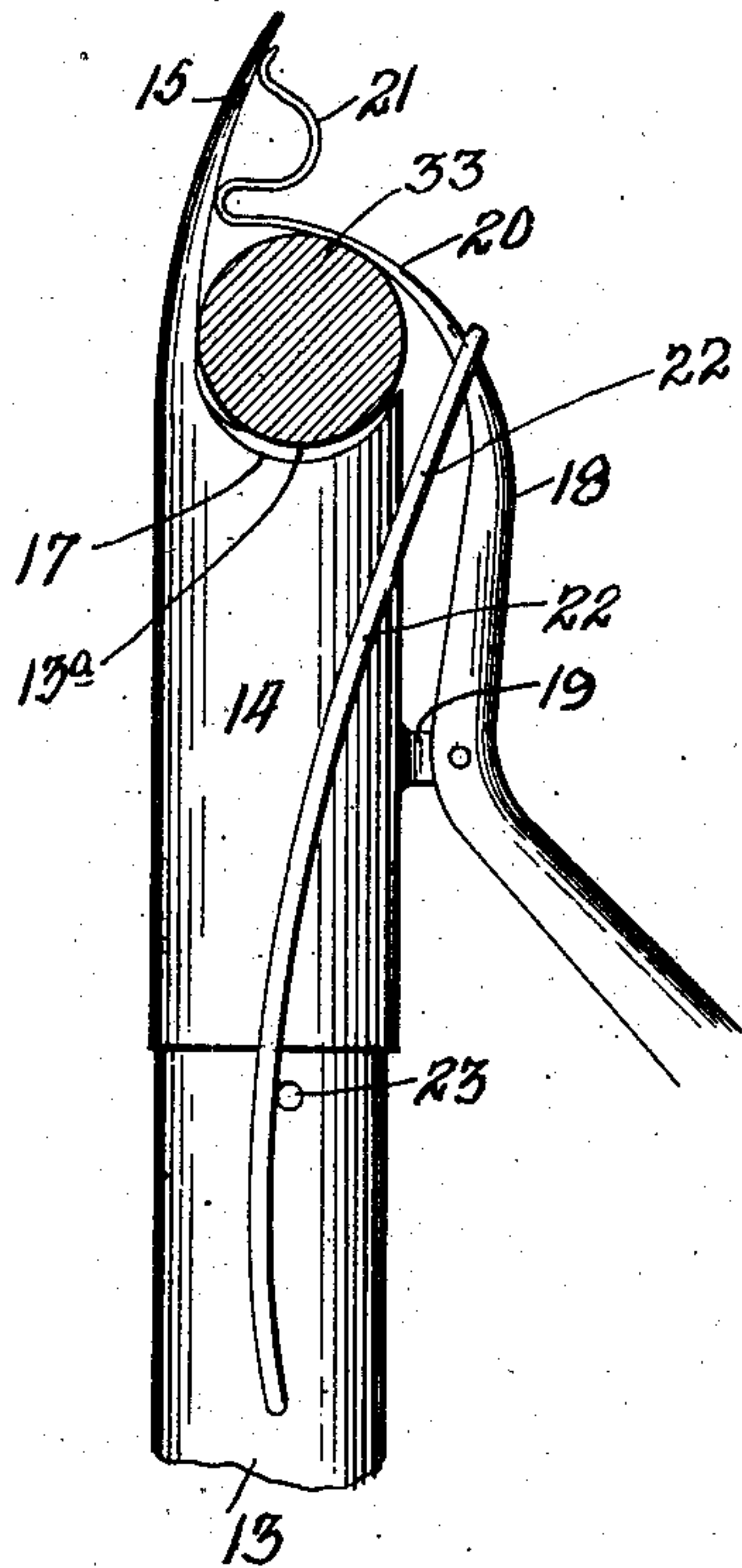


Fig. 9.

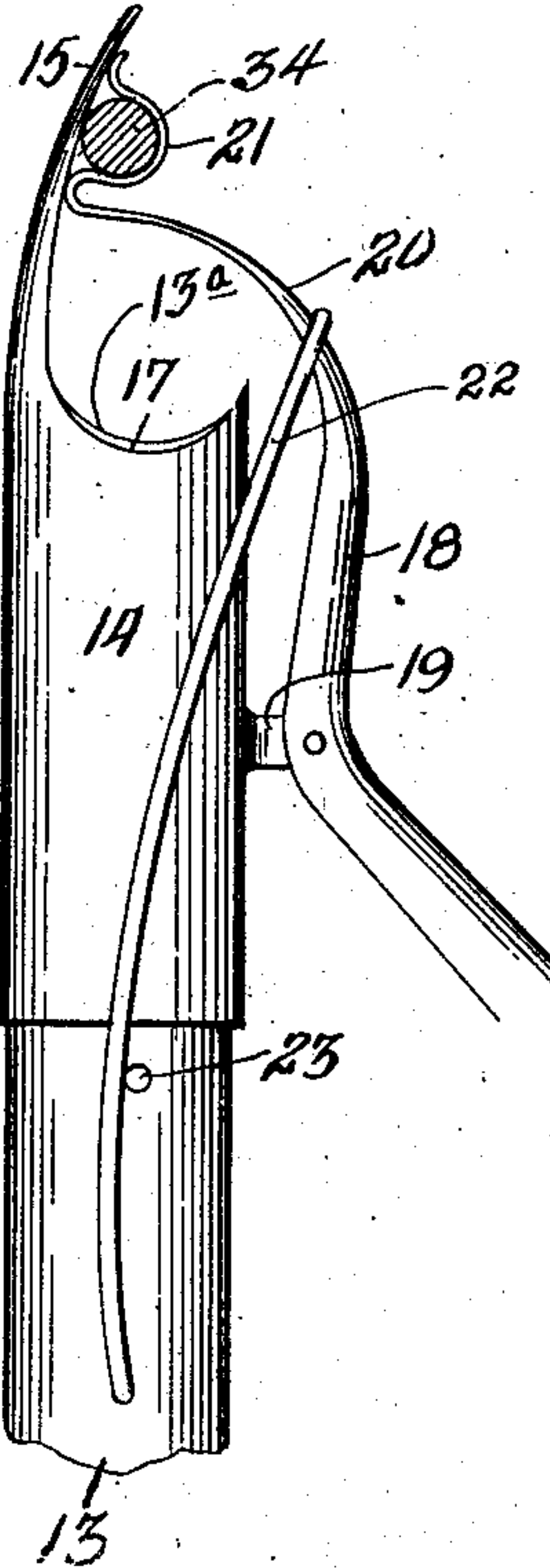


Fig. 12.

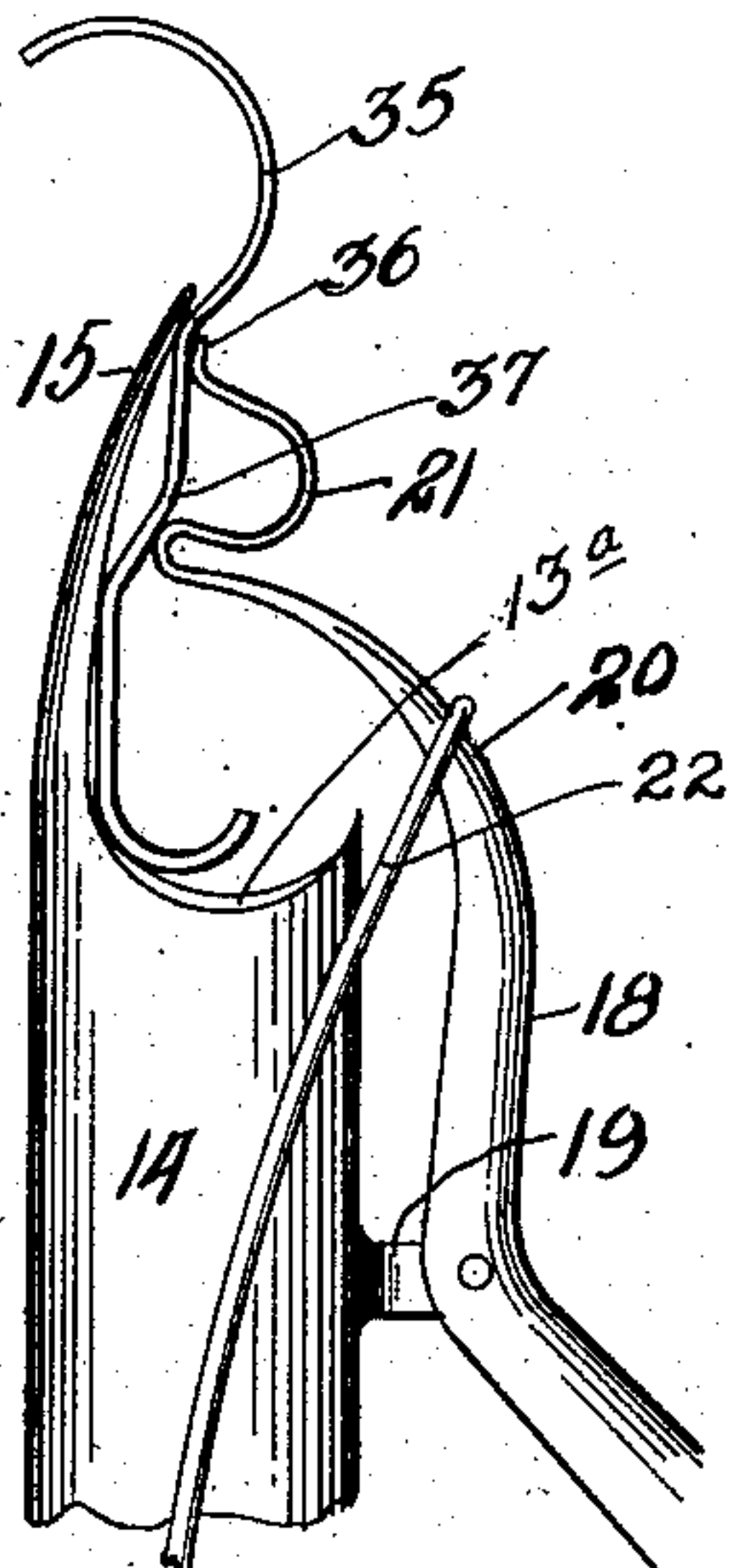
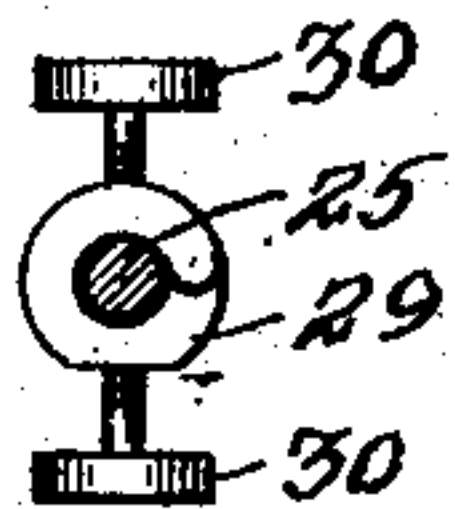
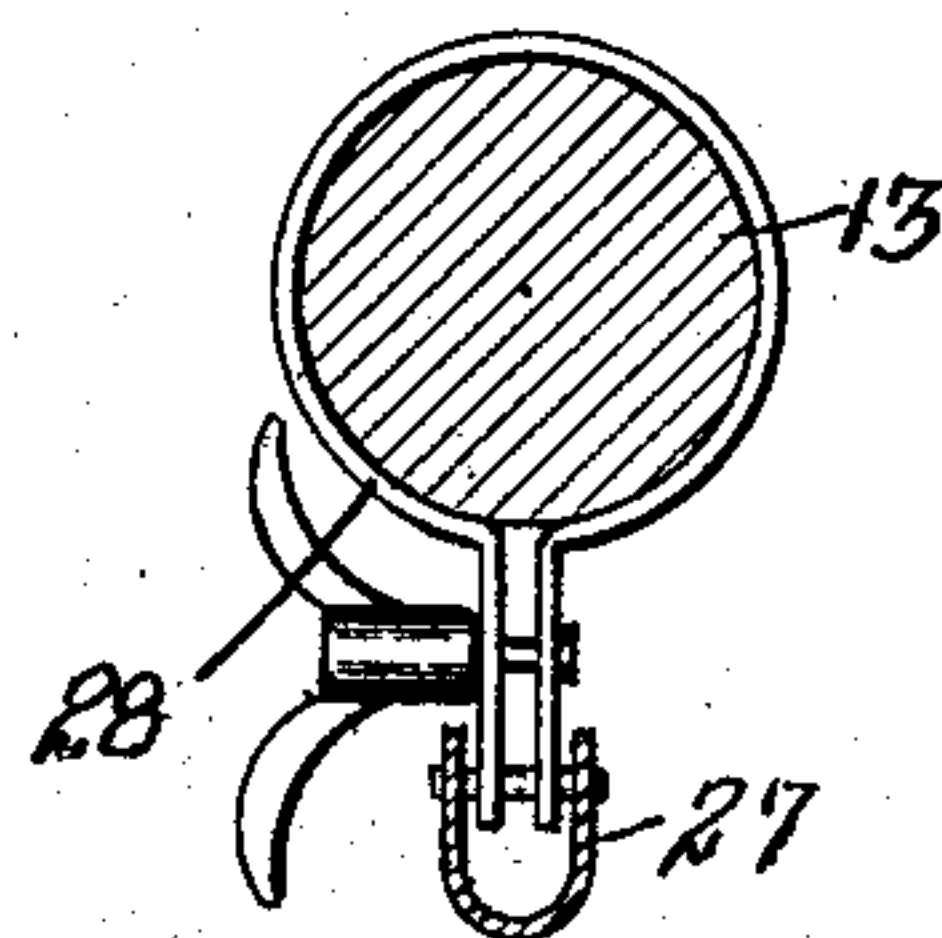


Fig. 10.

Fig. 11.



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# UNITED STATES PATENT OFFICE

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## TONGS.

973,862.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed April 4, 1910. Serial No. 553,203.

*To all whom it may concern:*

Be it known that I, LOUIS E. FUNK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tongs, of which the following is a specification.

The present invention relates to tongs which are intended to be placed upon the end of a pole and operate to clasp and retain an object which is positioned at a point out of reach of the user.

The objects of the invention are, to construct a device which is cheap and simple of manufacture; which will be efficient for the purpose to which it may be applied; which is capable of being used to accomplish a number of results; to construct the operating mechanism so that it may be adjusted to various distances on the pole; to provide a surface which is of a nature to be easily slipped in back of a picture or rod, or other article, upon which the tongs are operating; and to so form the tongs that they will efficiently and firmly grip the object and will not be displaced from gripping position during the operation in which they are being used.

The invention further consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a view showing the tongs in operative position for removing a picture; Fig. 2, an enlarged view, showing the tongs in closed position in full lines, and in open position in dotted lines; Fig. 3, a view of a modified construction of tongs; Fig. 4, a rear view of the form shown in Fig. 3; Fig. 5, a detail of the adjusting mechanism; Fig. 6, a view similar to Fig. 1, showing a modified construction; Fig. 7, a detail showing mechanism for adjusting the operating member; Fig. 8, a detail showing the tongs gripping a pole of relatively large diameter; Fig. 9, a view similar to Fig. 8, showing the tongs gripping a pole of relatively small diameter; Fig. 10, a detail showing the tongs in engagement with a picture hook; Fig. 11, a section on line 11—11 of Fig. 7; and Fig. 12, a detail showing a plan view of the adjusting mechanism shown in Fig. 5.

The present invention was designed more especially to dispense with the use of step-ladders and like means commonly employed in removing pictures, rods, etc., from the

walls of a room. It has been found in cases where the object desired to be moved or lowered is at a considerable distance from the floor, that it was a difficult matter to successfully remove the same while standing upon a step-ladder or other similar contrivance. This is especially true where the object is of appreciable weight. The present invention is so designed that the user may stand upon the floor and readily reach the object which he desires, and, by a single operation, actuate the tongs, so that they will grip the object and retain their grip thereon during the operation of lowering or moving the object.

The device is intended to be placed upon the end of a pole 13, and consists, as shown, of a ferrule or stem 14, which terminates in an upwardly extending member 15, which, for the purpose of convenience in description, may be termed the fixed section of the tong mechanism. The fixed section 15, as shown, is formed with a slight curve inward and is tapered to a point at its end 16. This formation permits it to be easily inserted between the wall and the object which is to be gripped, without having the edges thereof scrape against the wall and mutilate it. The ferrule 14 is cut away so as to produce a semi-circular groove 17, up from which the fixed member 15 of the tong mechanism extends. The tong mechanism further comprises a member 18, which, for the sake of convenience in description, may be termed the movable member. Said member, as shown, is in the form of a bell crank lever and is pivoted to ears 19 formed with the ferrule 14. The upper or acting end of the movable member is of an S-shaped formation and comprises a curved portion 20 and a curved portion 21, the curve of the portion 20 being on a larger radius than the curve of the portion 21.

As shown in Fig. 2, the upper end of the movable section has two points of contact with the fixed section, thus aiding in preventing the pulling out from between the sections of the clamped article. The semi-circular end 17 of the ferrule 14 and the curved portion 20 of the movable member 18 cooperate to provide a chamber or groove adapted to receive a relatively large object, and the curved portion 21 of the member 18 cooperates with the fixed member 15 to produce a relatively small recess or chamber. The function of these chambers will be



hereinafter more fully explained, as well as the functions of the double contacting surfaces produced by the S-shaped formation. In the construction shown in Fig. 2, the movable member is held normally in clamped position by a U-shaped spring 22, which bears against a stud or pin 23 in the handle 13; and the movable member has attached to its lower end 24, a cable 25, which passes downward through a plurality of guide-eyes 26. The cable 25 is attached, at its lower end, to the upwardly extending arm of a bell crank lever 27, and said lever is held to the rod 13 by a clamping ring 28, adapted to be tightened and loosened by the manipulation of a wing-nut or other similar device. The cable 25 is preferably formed in two sections, each of the sections terminating at their adjacent ends in loops 29, through which are entered set screws 30, which bear against the wires passing through the loops and lock them together. When it is desired to adjust the position of the bell crank lever 27, this can be readily accomplished by loosening the wing-nut and the set screws 30 and sliding the bell crank lever and the cable carried thereby up or down to the position desired.

As heretofore stated, the curved portion 20 of the member 18 and the semi-circular end 17 of the ferrule 14 cooperate to clamp objects of relatively large diameters, such as portière poles, etc. As shown in Fig. 8, one of these poles 33 is shown clamped in position; and in Fig. 9 is shown a pole 34 of relatively small diameter clamped in position between the curved portion 21 of the member 18 and the face of the fixed member 15. It will thus be seen from the description and by a study of Figs. 8 and 9 that the tong mechanism is adapted to clamp securely, objects of varying diameter, without any readjustment of the parts, and without distending the movable member an undue distance from the fixed section.

By referring to Fig. 10, it will be seen that in clamping a picture hook, the hook will be held at two points, one point 36, adjacent to one shoulder of the hook, and the other point 37, adjacent to another shoulder of the hook. Hence, when the hook is clamped in the manner shown, considerable weight will be necessary in order to force the hook out from its clamped position.

This is an especially desirable feature in the lowering of pictures, as they are oftentimes of great weight, and the tong mechanism must be of a sufficiently rigid gripping nature to withstand the strain placed thereon.

Referring to Fig. 6, there is shown a modified construction, in which a spring 38 is attached to the lower end of the bell crank lever and tends to hold the acting or gripping end of the lever in position away from the fixed clamping member; and the out-

ward movement of the member is limited by the contact of an ear or abutment 39 against the side of the ferrule 14. The mechanism for actuating the lever is similar to that described in connection with the construction shown in Fig. 1, except that the cable, in place of being attached to the lower end of the bell crank lever, is attached to it at a point above its pivotal point.

In Figs. 3 and 4 is shown another modification, which is similar in all respects to that shown in Fig. 1, except that a slot 40 is formed in the member 15, and prongs 41 are provided, which outwardly project from the sides of the member 15, and which have their upper edges lying in a horizontal plane midway the length of the slot 40. The function of the slot 40 is to permit the section 15 to straddle and project about a nail or screw, as shown in Fig. 3, and the function of the prongs 41 is to provide shoulders which will contact the wire hung upon the nail when the member 15 is slid by, and lift the wire sufficiently to permit it to be lifted over the head of the nail when the device is moved outward, the width of the slot 40 being sufficient to permit the head of the nail or screw to pass therethrough.

As will be seen from a study of Fig. 1, when the picture hook or other article is clamped, it can be lifted off from its seat and positioned upon a seat at a point distant, without lowering the pole and removing the article, or without in any way disturbing the adjustment of the picture or other article carried thereby.

While I have described and shown the device of my invention as being used for the purpose of removing pictures and poles, it will, of course, be understood that it can be readily used for all manner of work which could consistently come within the scope of the claims and for which the device is apparently adapted.

As shown in Fig. 10, the curved end 13<sup>a</sup> of the pole 13 lies flush with the curved end of the ferrule 14, and upon this face 13<sup>a</sup>, the picture hook rests when the picture is being moved, so that the major portion of the strain is placed upon the end of the pole during the moving operation.

I claim:

1. In a device of the class described, the combination of tong mechanism mounted upon one end of a pole, and mechanism adjacent to the other end of the pole for actuating said tong mechanism, the tong mechanism comprising a fixed section and a movable section, and the upper end of the movable section being of an S-shaped formation and contacting the article at a plurality of points during the clamping operation, substantially as described.

2. In a device of the class described, the combination of tong mechanism mounted



upon one end of a pole, and mechanism adjacent to the other end of the pole for actuating said tong mechanism, the tong mechanism comprising a fixed section and a movable section, the upper end of the movable section being of an S-shaped formation and producing a plurality of various sized grooves between the fixed and movable sections, for the reception of articles of various sizes, substantially as described.

3. In a device of the class described, the combination of tong mechanism mounted upon one end of a pole, mechanism adjacent to the other end of the pole for actuating said tong mechanism in one direction, the tong mechanism comprising a fixed section and a movable section, the upper end of the movable section being of an S-shaped formation and contacting the article at a plurality of points during the clamping operation, and a spring for actuating the movable clamping member in the other direction, substantially as described.

4. In a device of the class described, the combination of tong mechanism mounted upon one end of a pole, said mechanism comprising a fixed section and a movable section, the movable section being in the form of a bell crank lever, having its upper or clamping end of an S-shaped formation and contacting the article at a plurality of points during the clamping operation, an actuating member adjacent to the other end of the pole, and comprising a bell crank lever, a connection between the movable section and the actuating member, means for adjusting said connection, and means for adjusting the actuating member up and down upon the pole, substantially as described.

5. In a device of the class described, the combination of tong mechanism mounted upon one end of a pole, said mechanism comprising a fixed section and a movable section, the movable section being in the

form of a bell crank lever, having its upper or clamping end of an S-shaped formation, said S-shaped formation producing a plurality of various sized grooves between the fixed and movable clamping members, for the reception of articles of different sizes, an actuating member adjacent to the other end of the pole, and comprising a bell crank lever, a connection between the movable section and the actuating member, means for adjusting said connection, and means for adjusting the actuating member up and down the pole, substantially as described.

6. In a device of the class described, the combination of tong mechanism mounted upon one end of a pole, and mechanism adjacent to the other end of the pole for actuating said tong mechanism, the tong mechanism comprising a fixed section and a movable section, and the upper end of the movable section being of an S-shaped formation and contacting the article at a plurality of points during the clamping operation, the rear face of the clamping member curving inward toward its upper end, substantially as described.

7. In a device of the class described, the combination of tong mechanism mounted upon one end of a pole, and mechanism adjacent to the other end of the pole for actuating said tong mechanism, the tong mechanism comprising a fixed section and a movable section, the upper end of the movable section being of an S-shaped formation and producing a plurality of various sized grooves between the fixed and movable sections, for the reception of articles of various sizes, the rear face of the fixed clamping member curving inward toward its upper end, substantially as described.

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