

No. 871,083.

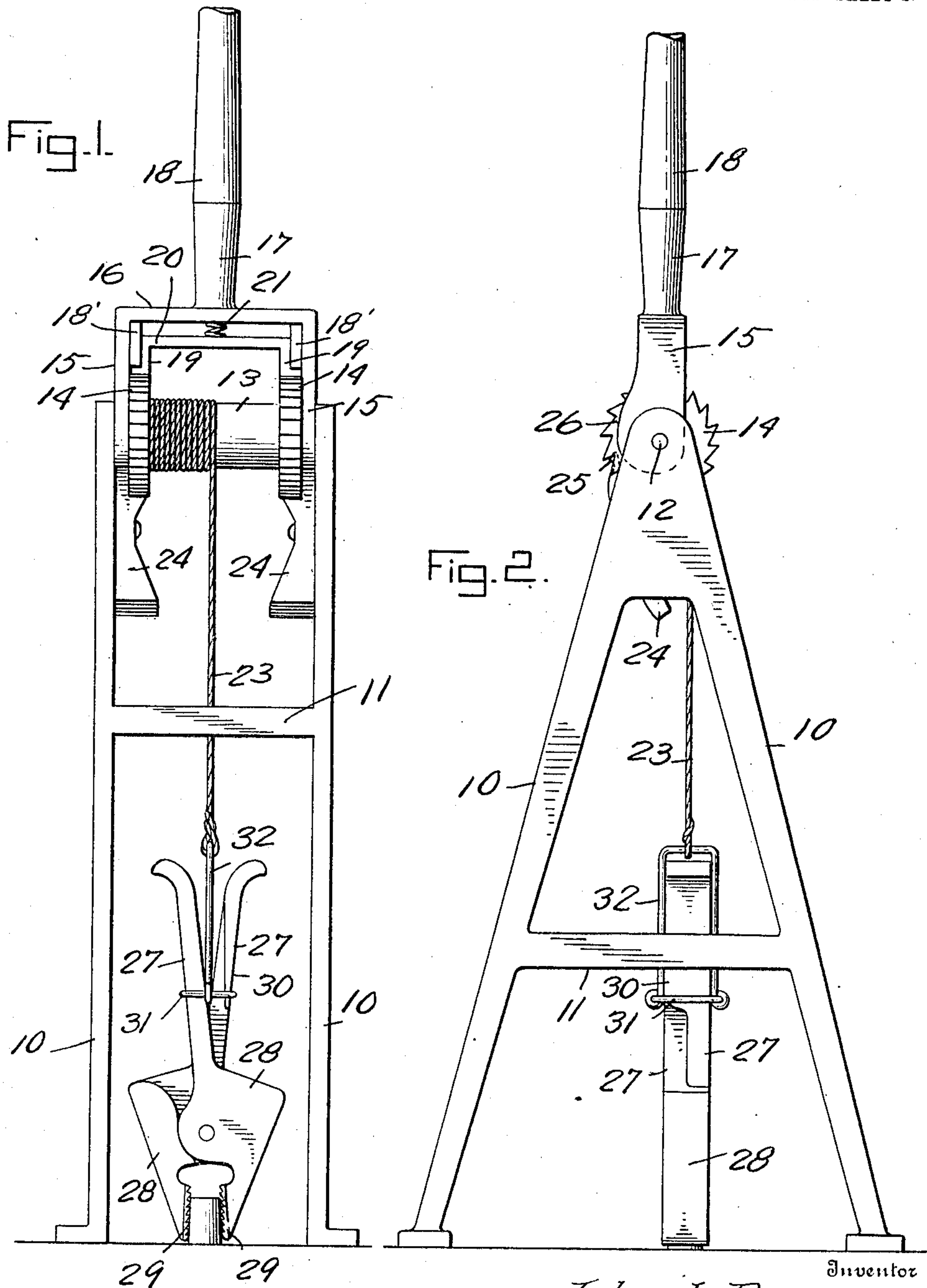
PATENTED NOV. 12, 1907.

J. I. BROWN.

JACK.

APPLICATION FILED MAY 6, 1907.

3 SHEETS—SHEET 1.



Witnesses

G. R. Thomas
H. G. Smith.

John I. Brown

By *Charles H. Brown*

Attorneys

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3 SHEETS—SHEET 2.

Fig. 3.

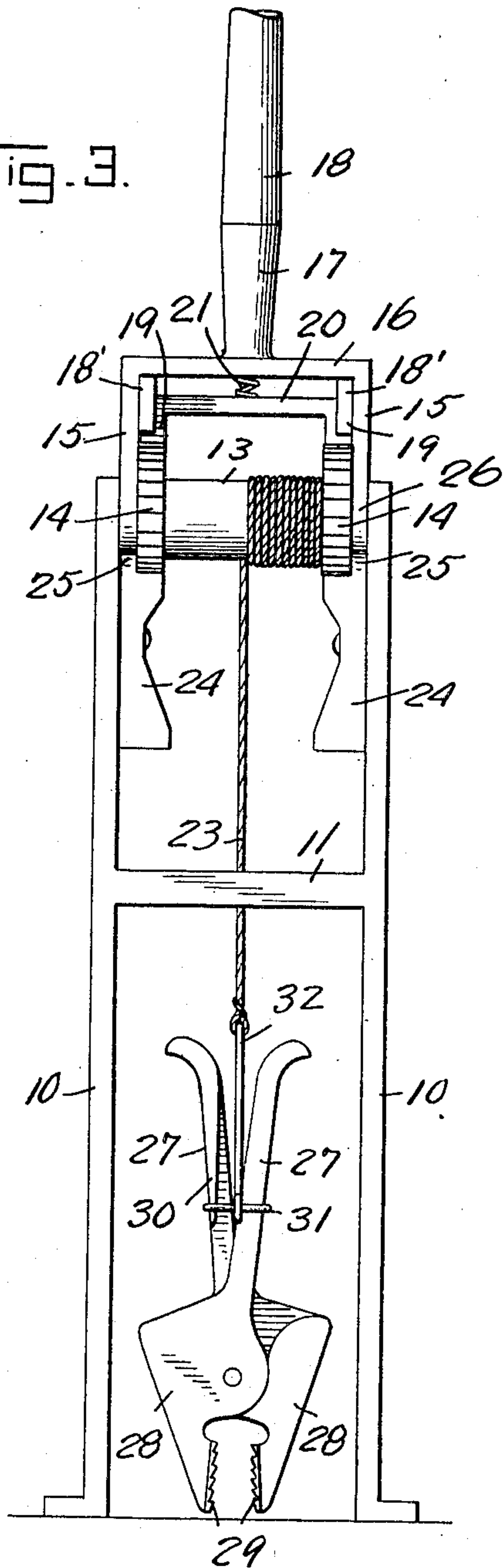


Fig. 4.

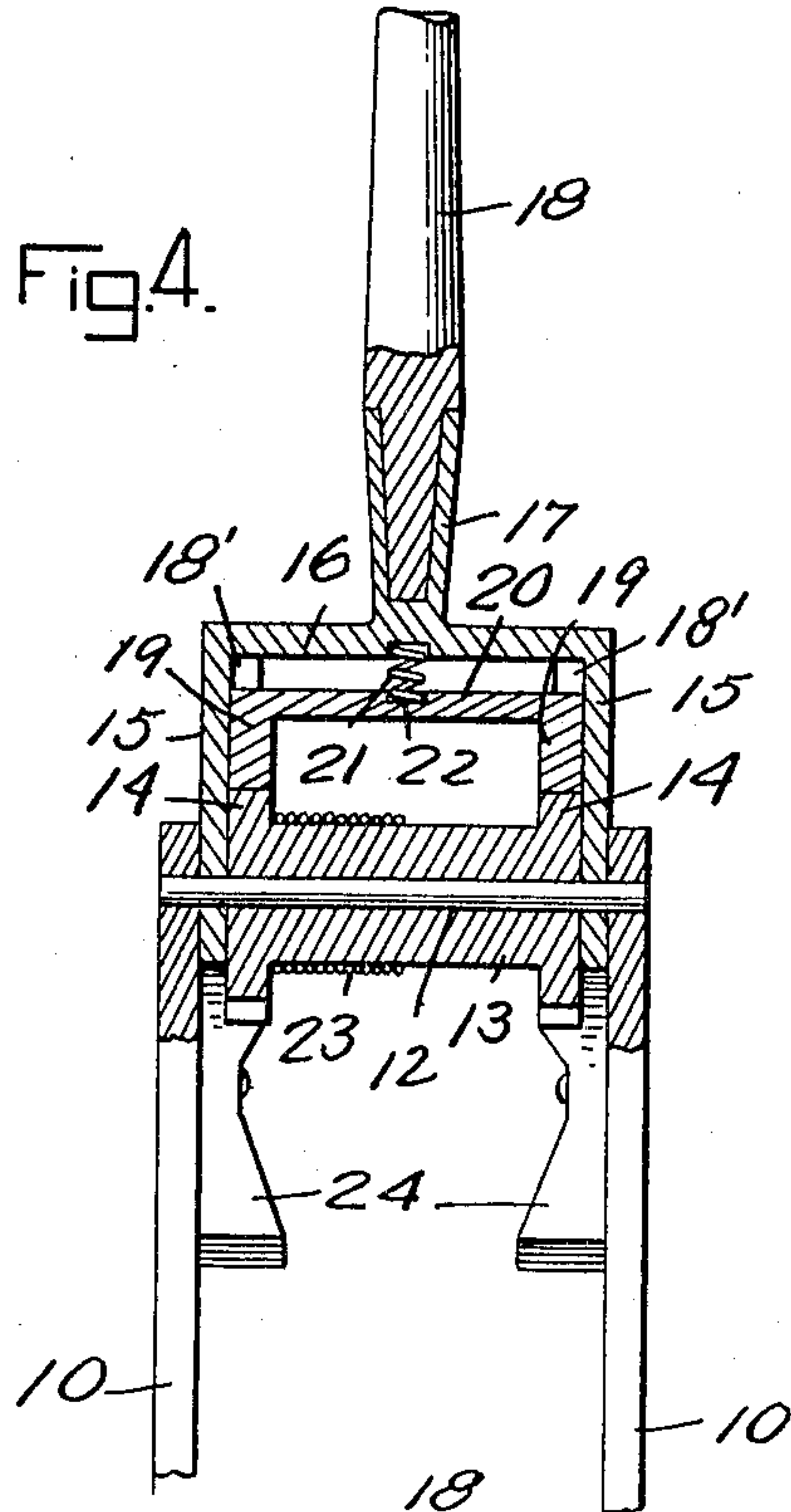
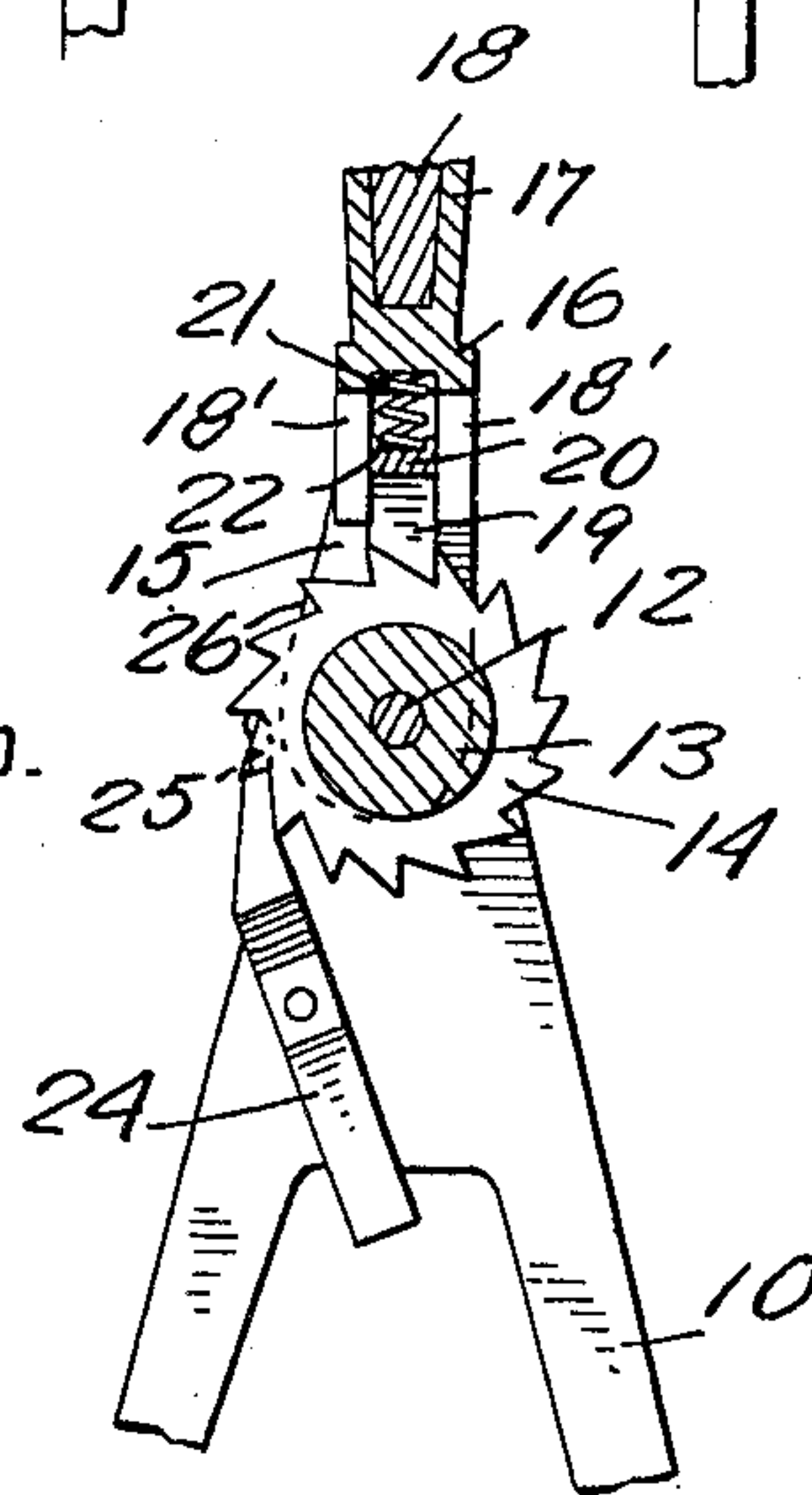


Fig. 5.



Witnesses

G. R. Thomas
J. G. Smith.

Inventor

John I. Brown

By

Charles C. Sample

Attorneys

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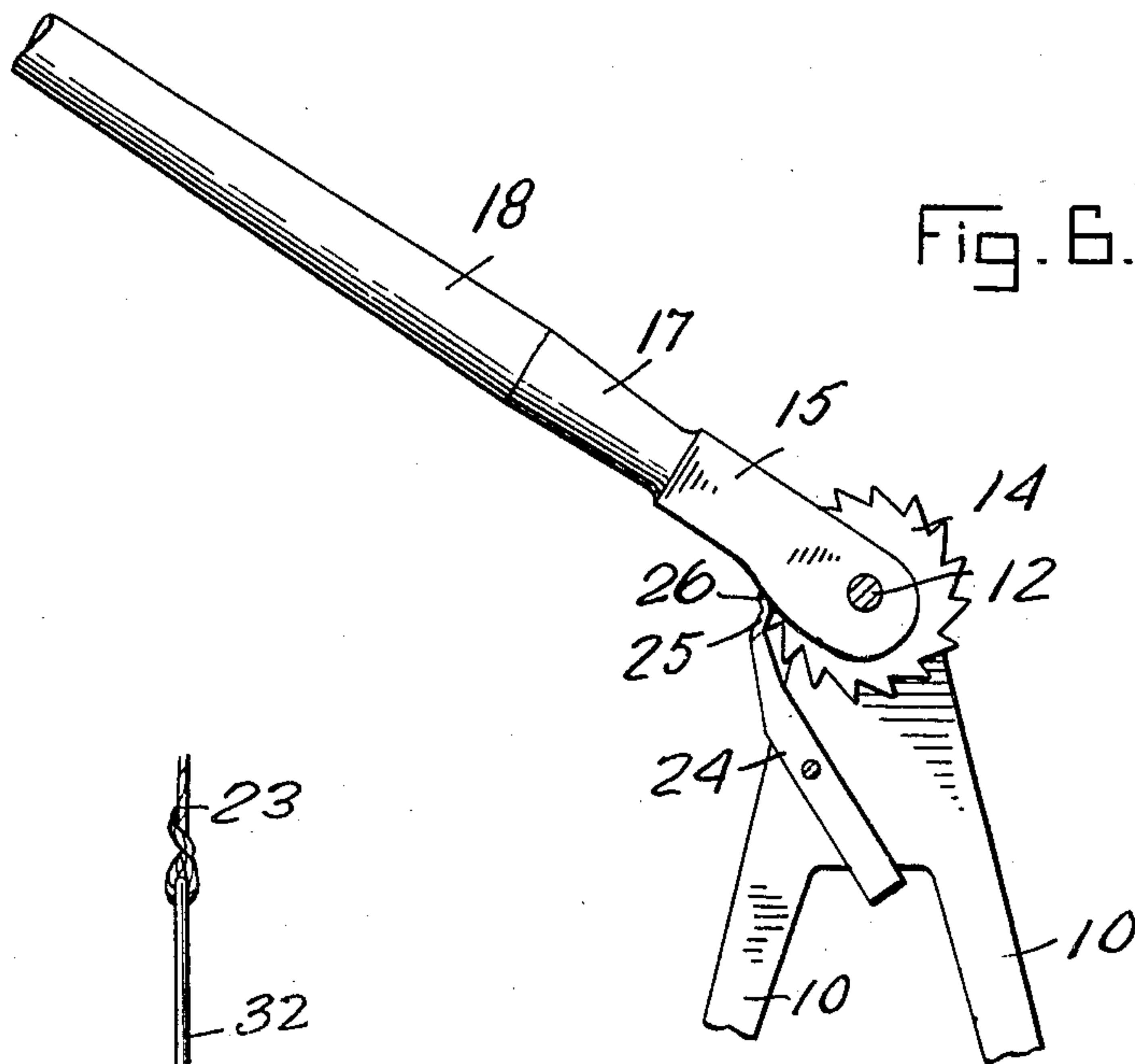


Fig. 7.

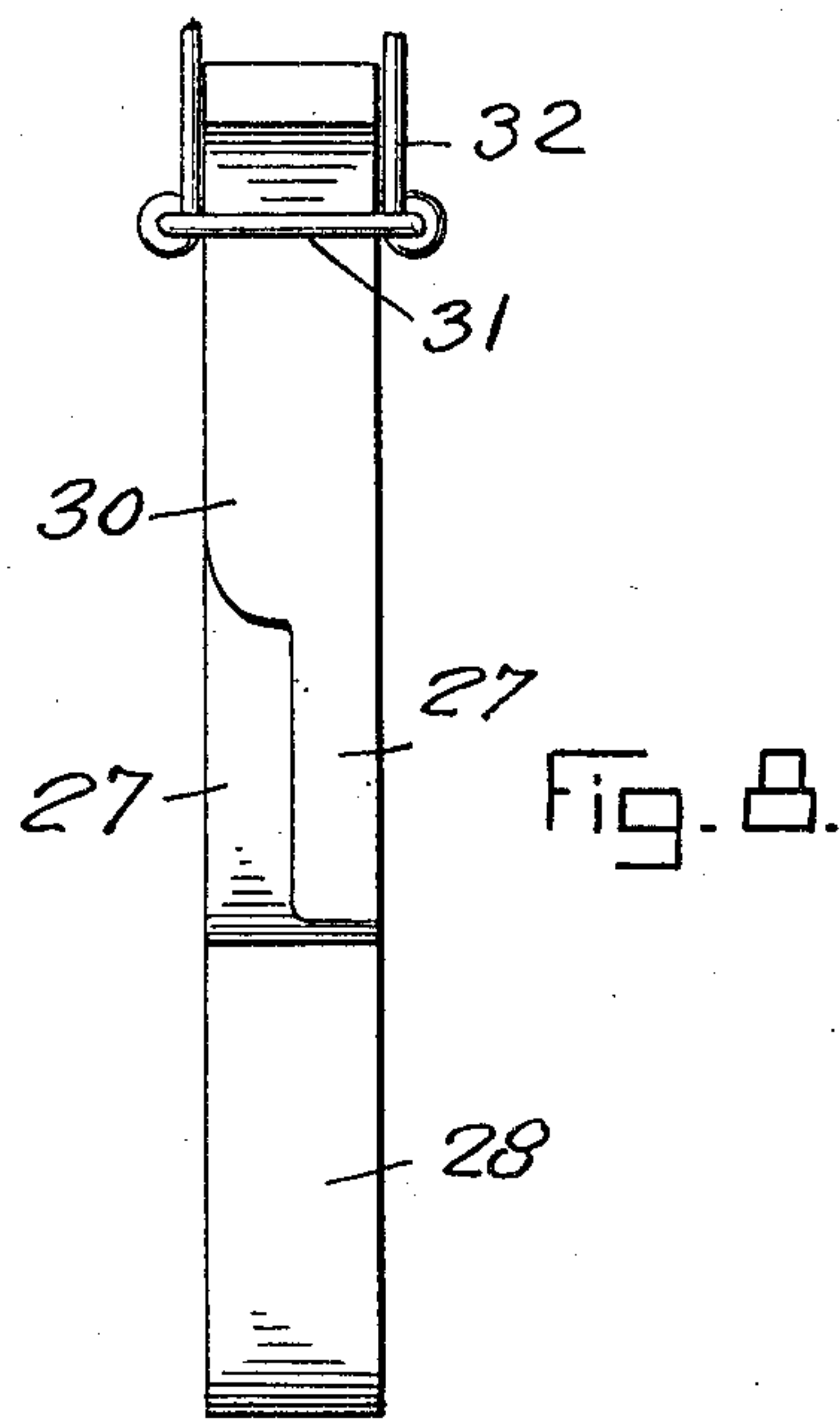
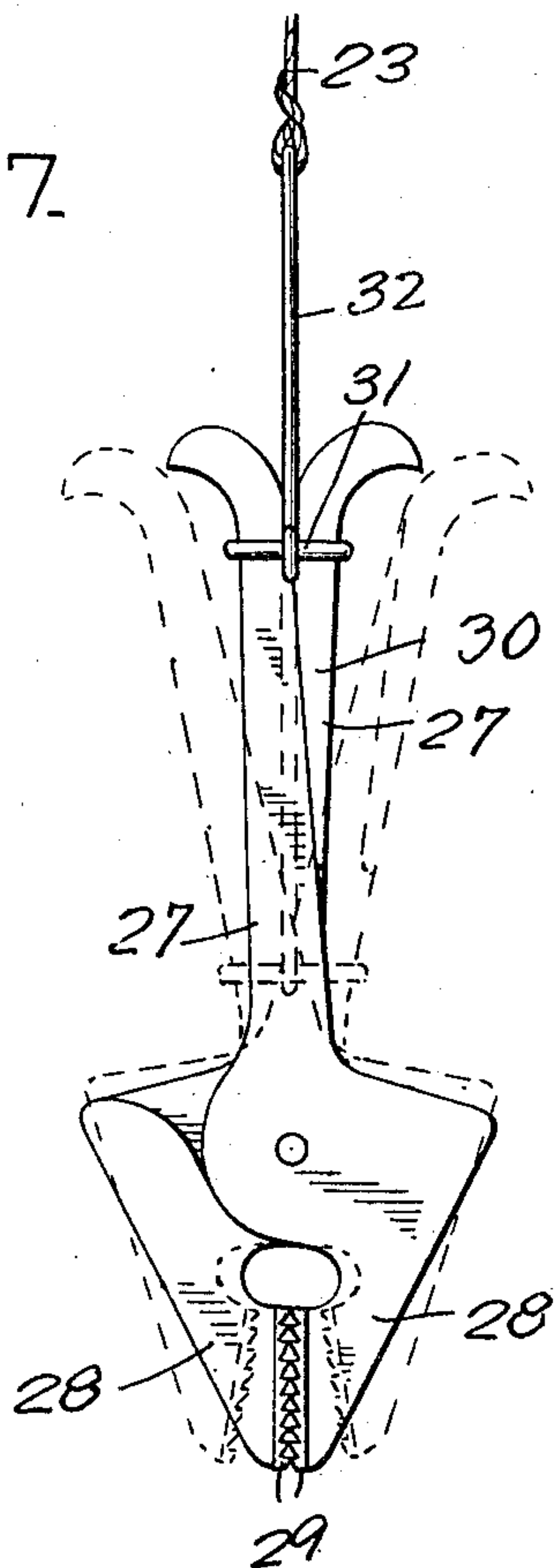


Fig. 8.

Witnesses

G. R. Thomas
J. G. Smith

Inventor

John I. Brown

By

[Signature]

Attorney

UNITED STATES PATENT OFFICE.

JOHN I. BROWN, OF MARION, IOWA, ASSIGNOR OF ONE-HALF TO JOSEPH RUBEK, OF MARION, IOWA.

JACK.

No. 871,083.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed May 6, 1907. Serial No. 372,216.

To all whom it may concern:

Be it known that I, JOHN I. BROWN, a citizen of the United States, residing at Marion, in the county of Linn, State of Iowa, have invented certain new and useful Improvements in Jacks; 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 jacks and more particularly to that class which are designed for use in pulling spikes, stakes and the like, and the primary object of the invention is to provide a device of this class which may be readily operated and which will not require as much exertion in operation, as do ordinary forms of claw bars now in use.

The device may be broadly described as comprising a windlass or winding drum upon which a cable or chain is to be wound and the spike or stake engaging element carried at the free end of the cable or chain. In carrying out my invention I have provided a novel form of pawl and ratchet mechanism whereby the drum may be rotated to wind the cable or chain thereon and may be held when so rotated, means being also provided whereby the operating mechanism for the drum may be moved to disengage the pawls from the ratchets and allow the chain or cable to slack.

In the accompanying drawings, Figure 1 is a front elevation of the device in use, Fig. 2 is a side elevation thereof, Fig. 3 is a rear elevation, Fig. 4 is a vertical transverse sectional view taken in a plane with the handle, Fig. 5 is a similar view but taken in a plane at right angles to the plane of Fig. 4, Fig. 6 is a view similar to Fig. 2 showing the manner of disengaging the pawls from the ratchets upon the winding drum, Fig. 7 is a detail front elevation of the spike or stake clamping member the same being shown in full lines in open position and in dotted lines in closed position, and, Fig. 8 is an edge view thereof.

As shown in the drawings the device comprises a pair of side standards 10 which are connected as at 11 by means of braces. Journaled at its ends in the upper ends of the standards is a shaft 12 and fixed upon this shaft for rotation therewith is a winding drum 13 the heads of which are in the form of ratchets 14. These ratchet heads are of course locked with the drum for rotation therewith and in order that the drum may be rotated through the instrumentality of the said ratchet heads, I have provided a hand operated pawl mechanism which will now be described. The said pawl mechanism is in the form of a frame including side portions 15 and a connecting portion 16 which carries a handle socket 17 for the reception of one end of a handle 18.

The shaft 12 passes loosely through the lower ends

of the side members 15 of the frame and hence the frame is movable upon the shaft as an axis both in a forward and rearward direction. Suitable guides 18' are located upon the opposing faces of the side members 15 of the frame of the ratchet mechanism and received in these guides for vertical movement therein are pawls 19, these pawls being connected by means of a cross piece 20, the said cross piece being extended from the upper end of one pawl to the corresponding end of the other pawl and directly beneath the connecting piece 16 of the frame for the pawl mechanism. A spring 21 is seated at its lower end in a recess 22 formed at the middle of the connecting cross piece 20 formed in the under face of the connecting piece 16 and this spring serves to hold the pawls in lowered position and in engagement at all times with the ratchet heads of the winding drums.

Now from the foregoing description it will be observed that oscillatory movement of the handle and the frame for the pawl mechanism with which the handle is connected, will result in the rotation of the winding drum for the reason that during the forward movement of the handle, the pawls will ride loosely over the ratchet heads but upon rearward movement of the handle, the pawls will positively engage the ratchet heads and cause rotation of the frame for a purpose to be presently explained.

Connected to the frame is one end of a chain or cable 23 and at the other end of this cable there is connected a gripping device which will be hereinafter specifically described and it will be understood that when the drum is rotated the cable will be wound thereon and will serve, through the instrumentality of the gripping device to remove the spike or stake engaged by the gripping device.

Now in order to prevent rearward rotation of the drum to unwind the cable I have provided a pair of pawls 24 which are pivotally mounted upon the opposing faces of the standards 10 and have their lower ends weighted and their upper ends held by gravity normally in engagement with the ratchet heads of the drum. The upper ends of these pawls are wider than the ratchet heads however and a portion of the upper end of each of the pawls extends between the corresponding ratchet head and the adjacent standard 10. These portions of the pawls are curved rearwardly as indicated by the numeral 25 and the rear edge of each side member 15 of the pawl frame hereinbefore described is of cam formation as indicated by the numeral 26 and when it is desired to allow the cable to run slack or in other words to unwind from the drum, it is only necessary to swing the pawl frame rearwardly until the cam edges of the side members thereof engage the portions 25 of the pawls 24, the said pawls being, by

reason of this engagement, moved out of engagement with the said ratchet heads.

The spike or stake engaging element of the device comprises a pair of crossed pivoted members 27 which at corresponding ends are provided with jaws 28 having serrated hardened face plates 29 secured thereon it being understood that the head of the spike or stake is received between these serrated face plates. The members 27 have their upper ends turned outwardly from each other and they are provided with extensions 30, the extensions upon one member being adapted to abut the other member when the device is closed. A ring 31 is engaged with the members 27 above their pivot and connected with this ring at opposite points are the ends of an inverted U-shaped yoke 32 to which the free end of the cable is connected. It will be understood that when the device is engaged with a spike or stake, the jaws are opened by spreading the upper portions of the members 27 and upward pull upon the yoke will of course serve to close the jaws by reason of the engagement of the ring with the said upper portions of the members 27.

What is claimed is—

A jack of the class described comprising a frame, a shaft journaled in the frame, a winding drum fixed upon the shaft for rotation therewith, a cable connected with the drum and adapted to be wound thereon, a grip device connected with the cable at the free end thereof, ratchet heads fixed at the ends of the drum, a pawl frame loosely connected with the shafts and adapted to be oscillated thereabout with the shaft as an axis, said frame comprising side members, a connecting member, a handle connected with the connecting member, guides mounted upon the side members, pawls slidably received in the guides, a cross piece connecting the pawls at their upper ends, a spring interposed between the cross piece and the connecting member of the pawl frame and adapted to hold the pawls at all times in engagement with the ratchet heads, the said side members having corresponding edges of cam formation, and pawls pivoted in position to rest normally in engagement with the ratchet heads and having cam portions for engagement by the cam edges of the side members of the pawl frame.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN I. BROWN.

Witnesses:

M. W. COURTNEY,
R. E. TRIPP.