No. 821,565. PATENTED MAY 22, 1906.

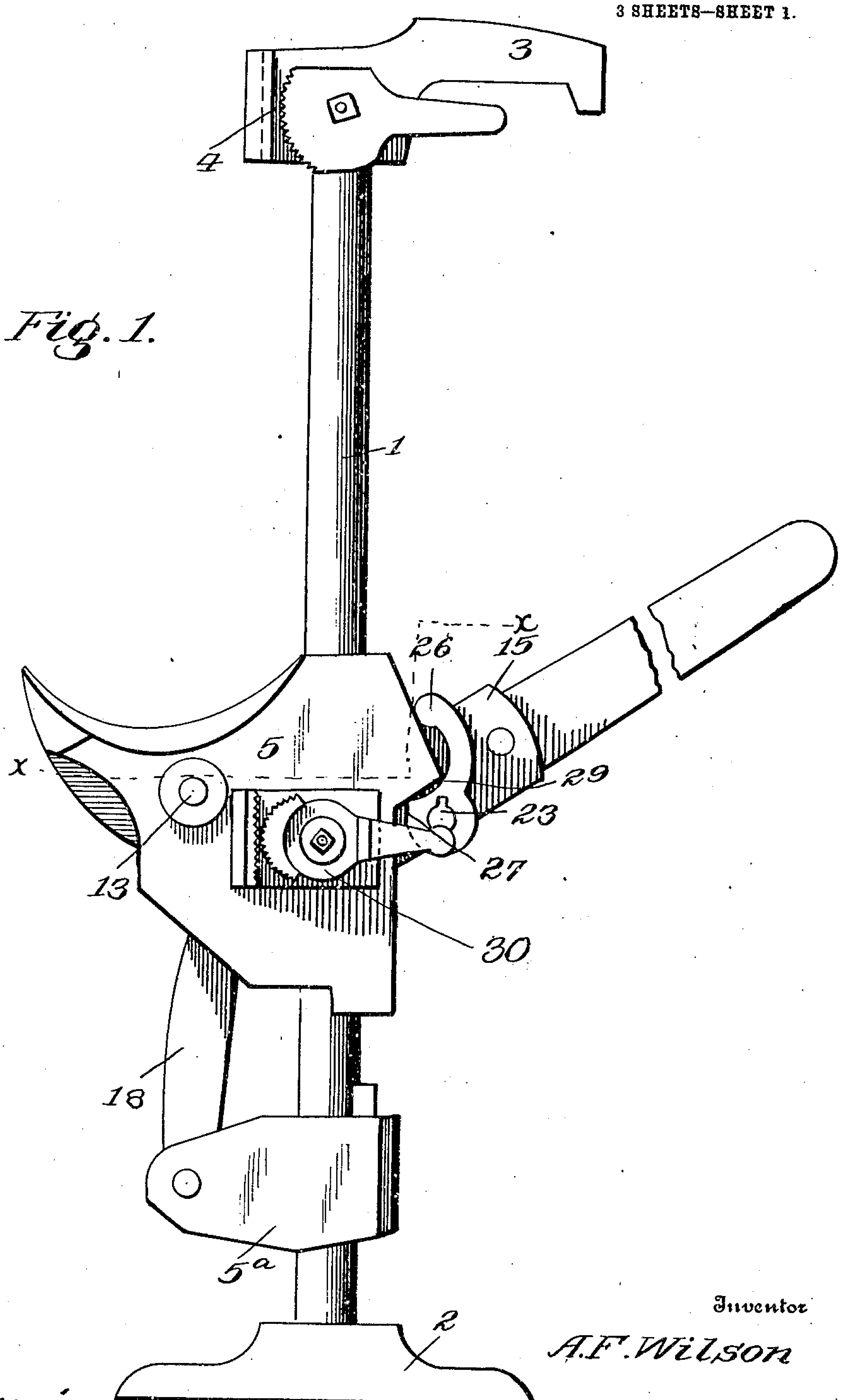
A. F. WILSON.

LIFTING JACK AND WIRE STRETCHER.

APPLICATION FILED JAN. 10, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

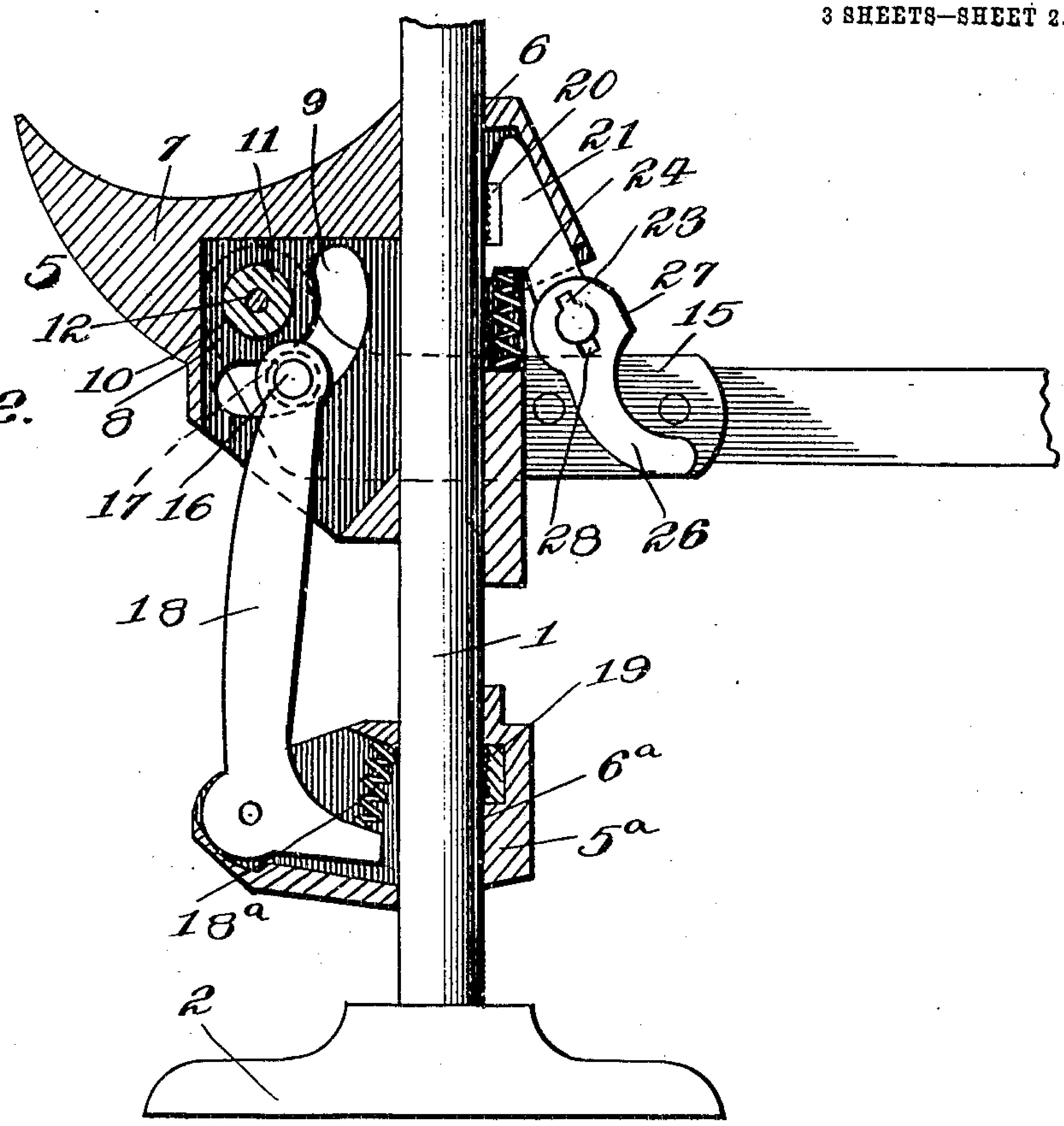
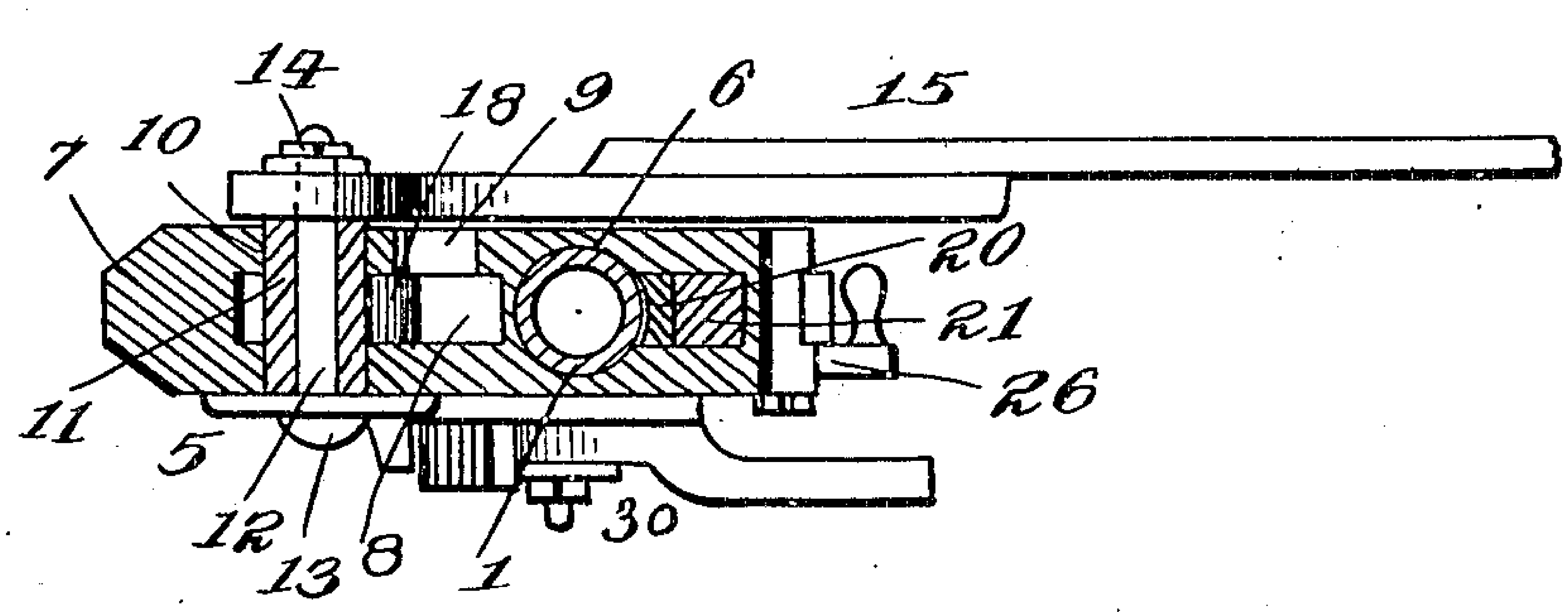


Fig. 3.



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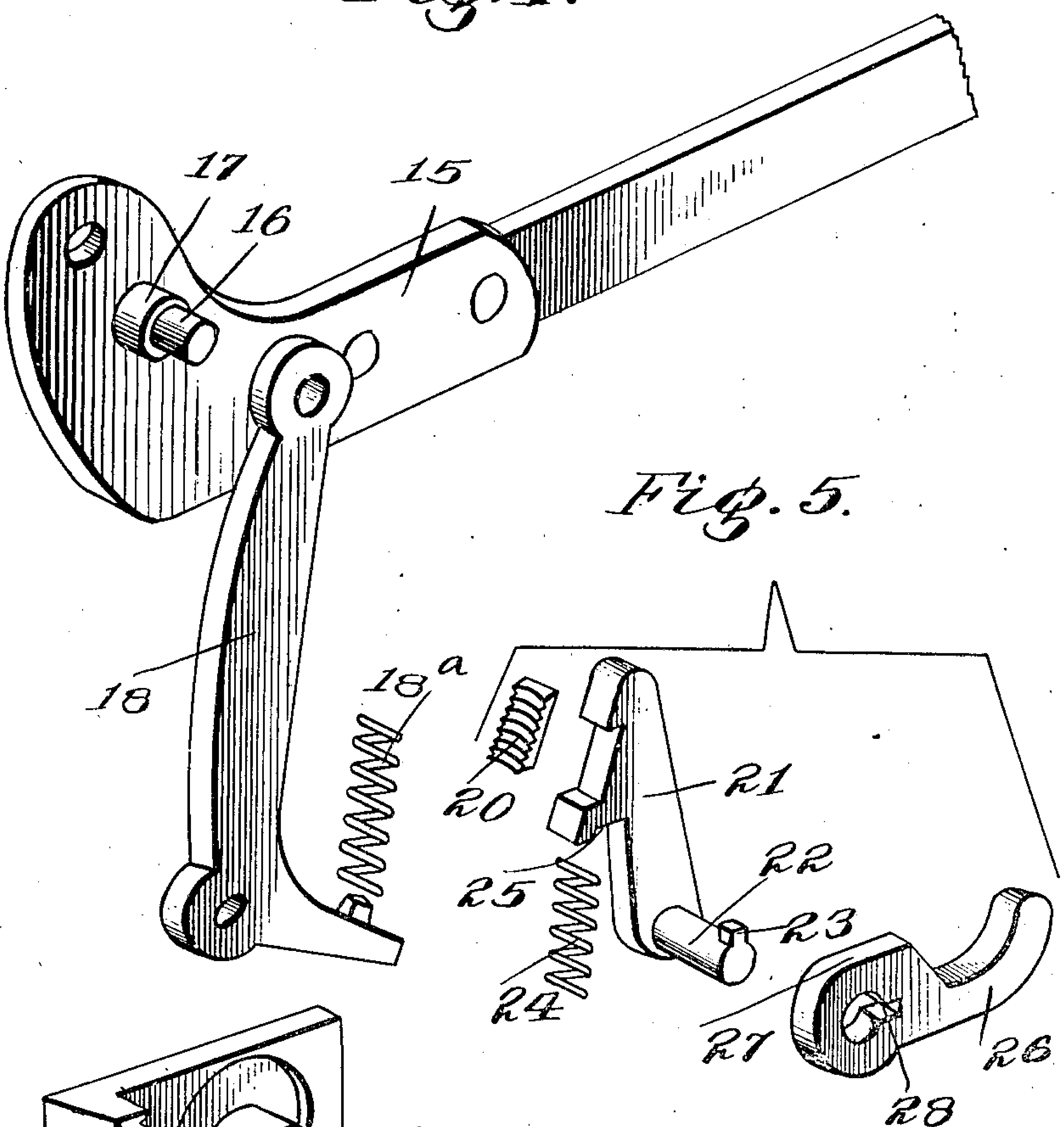
3 SHEETS—SHEET 3.

Fig. 4.

Fig. 5.



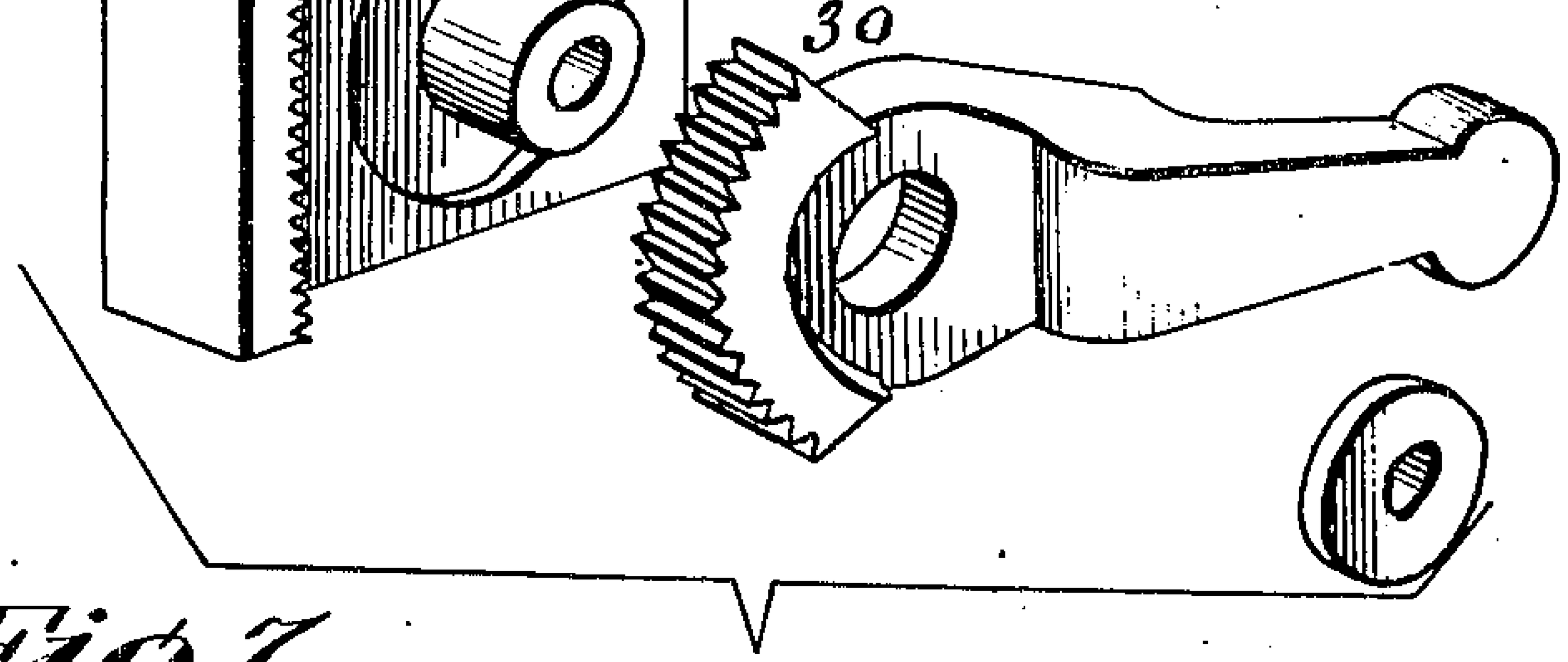
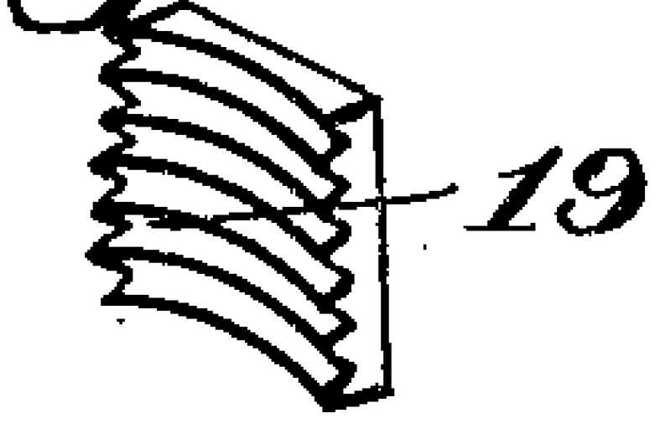


Fig. 6.

Fig. 7.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

ALFONZO F. WILSON, OF WORTHINGTON, INDIANA.

LIFTING-JACK AND WIRE-STRETCHER.

No. 821,565. Specification of Letters Patent. Patented May 22, 1906.

Application filed January 10, 1906. Serial No. 295 438.

To all whom it may concern:

Be it known that I, ALFONZO F. WILSON, a citizen of the United States, residing at Worthington, in the county of Greene and State of Indiana, have invented certain new and useful Improvements in Lifting-Jacks and Wire-Stretchers, of which the following is a specification.

My invention relates to that class of lifting-jacks and wire-stretching devices which embodies the clutch-loop principle; and the object of my invention is to provide certain new and useful features, hereinafter specifically described and claimed, in a particular construction of lifting-jack and wire-stretcher of this type.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side elevation of a lifting-jack and wire-stretcher embodying my invention. Fig. 2 is a similar view with parts broken away and other parts in section. Fig. 3 is a horizontal sectional view taken approximately on the line X X of Fig. 1. Fig. 4 is a detail perspective view of a portion of the actuating-handle and pitman designed for connection thereto. Fig. 5 is a similar view showing the detached parts of one of the wedging or gripping devices. Fig. 6 is a detail perspective view of the parts of one of the wire-clamps. Fig. 7 is a detail perspective view of the gripping-block for the lowermost runner.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the standard of my improved jack and wire-stretcher, the same being provided at one end with a base or foot 2 and at its other end with a handle 3 and a wire-clamp 4. It is particularly noted that the standard 1 is tubular and circular in cross-section and is preferably of cast-iron or similar rigid metal, so that it will combine rigidity and strength with lightness.

5 designates a hollow runner which is provided with a vertical circular bore 6, designed to snugly fit over the standard 1 and arranged to move longitudinally, as well as axially, on said standard. The runner 5 is also provided with a lifting-bracket 7 and with a recess 8, which extends up through the runner underneath the bracket and opens out on one side only of the runner by means of a curved slot 9. The runner 5 is also provided with a transverse bearing-opening 10, preferably concentric to the said curved slot 9 and extending entirely therethrough from side to side. The opening 10 contains a thimble 11, mounted to turn axially therein, and a headed bolt 12 extends through said thimble, the head 13 thereof contacting with one side of the thimble 11, while the threaded shank of said bolt projects out through the thimble and is held by a nut 14 in an aperture in one end of a handle 15.

The handle 15 is provided with a circular stud 16, preferably integral therewith and projecting from one side thereof. The stud 16 is provided with an enlarged collar 17, which has bearing within the curved slot 9, while the stud itself projects through said slot and into a correspondingly-shaped bearing in the upper end of a pitman or link 18, which is free to move within the recess 8 in the hollow runner 5. The other end of said pitman or link 18 is L-shaped and is fulcrumed in a lower runner 5^a, which is bifurcated at its rear end to receive it and is provided with a vertical bore 6^a, designed to snugly receive the tubular and circular standard 1. A spring 18^a bears against the lower end of the link 18, as shown.

The lowermost runner 5^a is provided with a preferably detachable gripping-block 19, which is transversely toothed or serrated, as shown, and is concave horizontally on its biting-face, so as to accurately fit the curvature of the tubular standard 1. The upper runner 5 is also provided with a toothed or serrated gripping-block 20, which is held in the front face of a preferably wedge-shaped finger 21, mounted in the runner at the rear side thereof. The finger 21 projects downwardly out of the runner 5 and is provided with an offset lug 22, having a wing 23 on one side. A spring 24 bears against the shoulder 25 on the said finger to press the same upwardly, so that its toothed gripping-block will be forced against the surface of the tubular standard 1, and to retract the said finger, so that its gripping-block will be carried out of engagement with the standard, I have provided the cam-lever 26, which is provided with a cam-surface 27 and with a keyhole-shaped slot 28, by which it may be inserted through the lat-

eral or offset lug of the finger into operative engagement therewith. The cam-surface of the said lever is designed to bear against a shoulder 29 at one side only of the runner 5. A wire-clamp 30 is secured to the upper runner 5, as shown.

In the practical operation of my improved lifting-jack and wire-stretcher to lift a load the handle 15 is given an up-and-down motion, like a pump-handle, and this will effect the alternate clutching of the runners 5 and 5^a with the standard 1. When the handle 15 is raised, the gripping-block 20 in the spring-pressed finger 21 will engage the standard to prevent any downward displacement of the uppermost runner 5, which directly supports the load. At the same time the upward movement of the handle will effect an upwardly-sliding movement of the lowermost runner 5^a. Then when the handle 15 is lowered the lowermost gripping-block 19 in the lower runner 5^a will effectively grip the standard 1, this action being assisted by the spring 18^a being pressed open by the foot of the link 18, and the lower runner 5^a will then serve as a stationary support, while the uppermost runner will be raised and slid upwardly on the standard by the straightening of the toggle-joint embodied in the link 18 and that portion of the handle between the pivot-stud 16 and the bolt 12 or thimble 11, which encircles said bolt. In this manner the runners may be actuated to alternately grip the standard, so as to climb the same and raise the load to the desired elevation. If it be desired to lower the runners 5 and 5^a, this may be accomplished by turning the cam-surface 27 of the lever 26 into riding engagement with the shoulder 29 on the one side of the upper runner 5. This will in turn effect a downward pull upon the finger 21 against the action of the spring 24 and will result in drawing the said finger downwardly and outwardly, so as to carry the gripping-block out of engagement with the standard 1. By then raising the handle 15 to near the upper limit of its movement the link 18 is rocked in the lower runner in a direction to allow the spring 18^a as much expansion as possible and to also permit the lower runner 5^a to be so centered or accurately lined with the standard that it may be readily slid downwardly thereon.

By having the standard 1 circular in cross-section as well as hollow and by forming the gripping-blocks before described to accurately fit the standard the operating parts of the jack or wire-stretcher may be readily turned to any position with respect to the axis of the standard, so that the parts may be conveniently adjusted axially as well as longitudinally without changing any desired position of the foot or base 2. It is also to be noted that the construction of the curved slot 9 and the operative connection between the upper runner and the actuating-handle and also the connection between the latter and a pitman or link through said curved slot constitutes an arrangement by which the parts may be readily adjusted or assembled. The precise construction of the actuating cam-lever for the finger that carries the lowermost gripping-blocks also renders easy the assembling of said parts.

Having thus described the invention, what is claimed as new is—

1. In a device of the type described, the combination of upper and lower runners, provided with circular bores, a tubular standard circular in cross-section and snugly accommodated in said bores, a pitman connection between the runners, and an actuating-handle therefor and gripping-blocks mounted in the said runners and provided with toothed surfaces concave to fit the surface of the said standard, as and for the purpose set forth.

2. A device of the type described comprising a standard provided with a foot, upper and lower runners mounted on said standard, and provided with toothed gripping-blocks, the upper runner being provided with a recess and a curved slot communicating with said recess and opening outwardly through one side only in the runner and provided with a transversely-extending bearing-opening concentric to said slot, a thimble mounted to turn in said opening, a headed bolt mounted in said thimble, an actuating-handle secured to said bolt and provided with a stud extending through said slot into the recess and with a collar on said stud and working in said slot, and a pitman or link secured at one end to the lower runner and extending into said recess and provided at its upper end with an opening in which the said stud is fitted.

3. A device of the type described, comprising a standard upper and lower runners mounted on said standard and operatively connected together, and means for effecting a climbing movement of said runners on said standard, said means including a toothed gripping-block in the lower runner, a spring-pressed finger in the upper runner and provided with a toothed gripping-block designed to grip the standard and projecting out of said runner and provided with an offset lug formed with a wing, and a cam-lever having a keyhole-shaped slot by which it may be adjustably secured to the said offset on the finger, there being provided a shoulder 29 on the runner against which the cam-surface of the lever is designed to bear, as and for the purpose set forth.

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

ALFONZO F. WILSON. [L. S.]

Witnesses:

HENRY W. MOORE,

GEO. D. TAYLOR.