

No. 762,918.

PATENTED JUNE 21, 1904.

O. L. LARSON.  
WINDLASS.

APPLICATION FILED JUNE 15, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

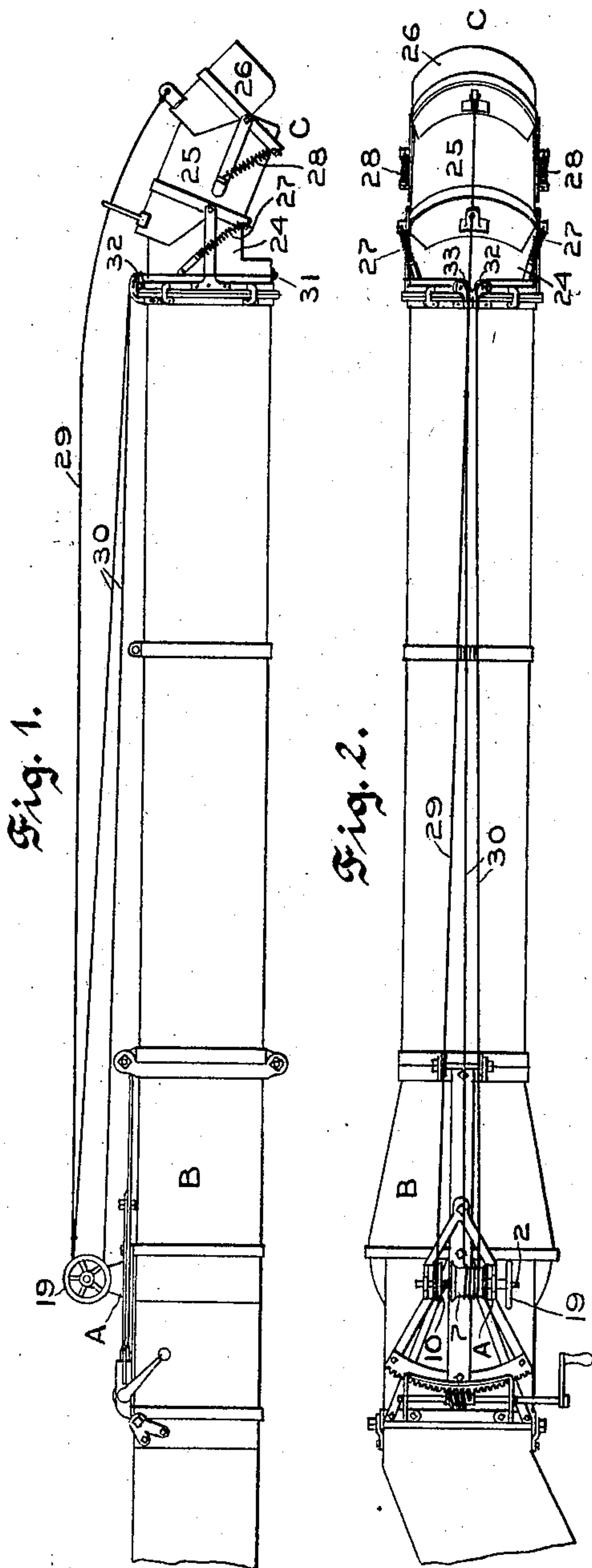


Fig. 4.

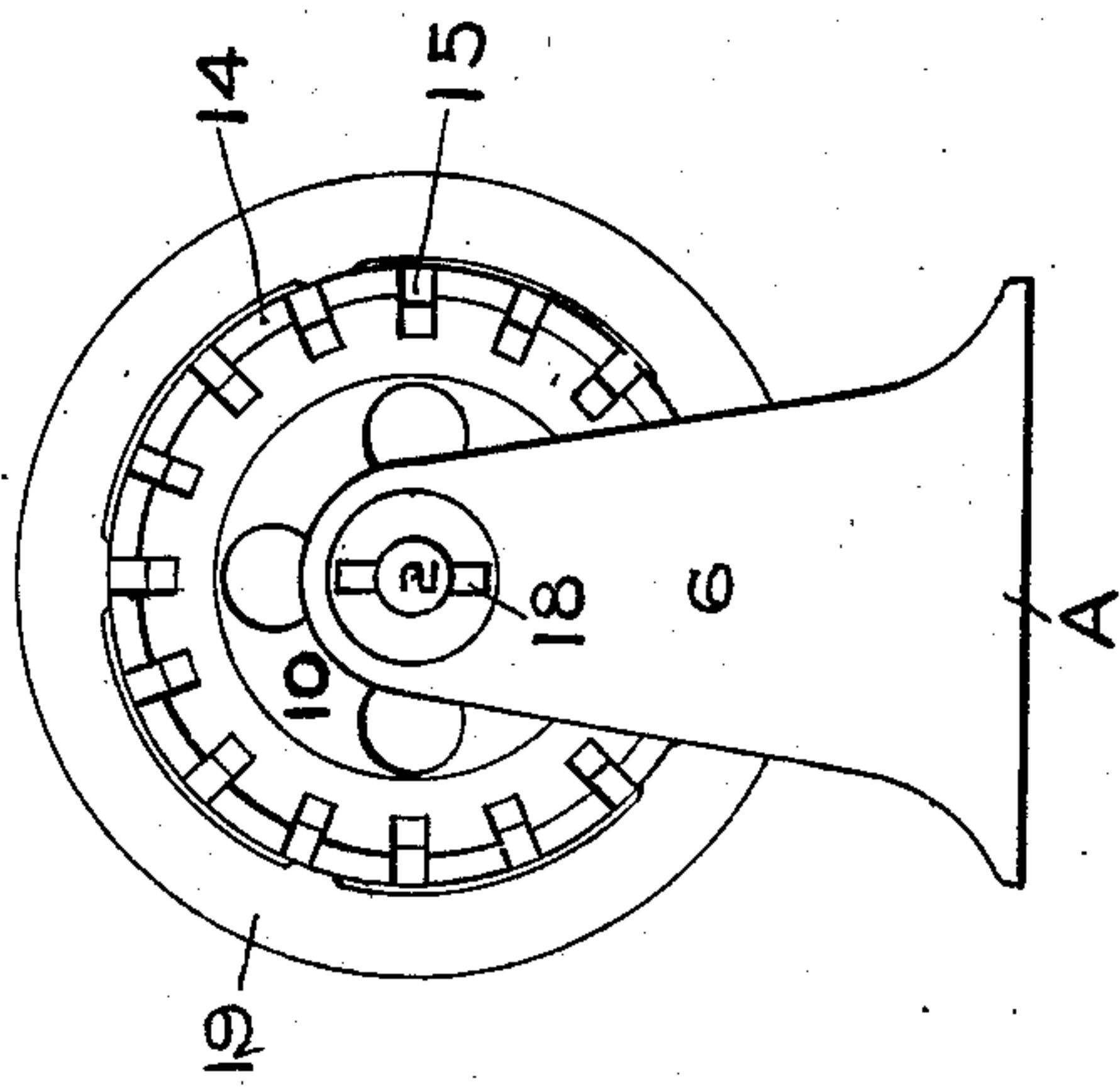
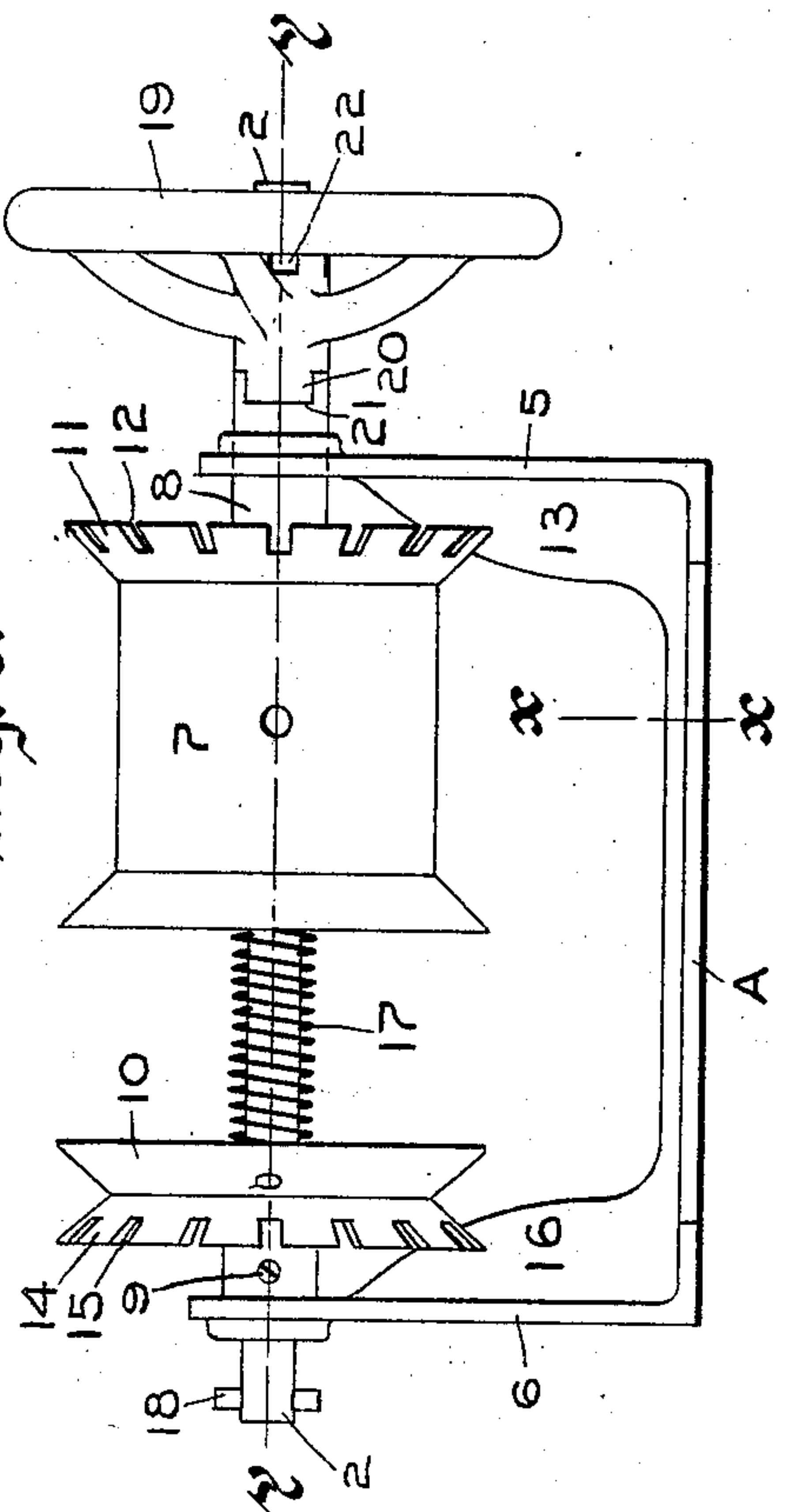


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 5.

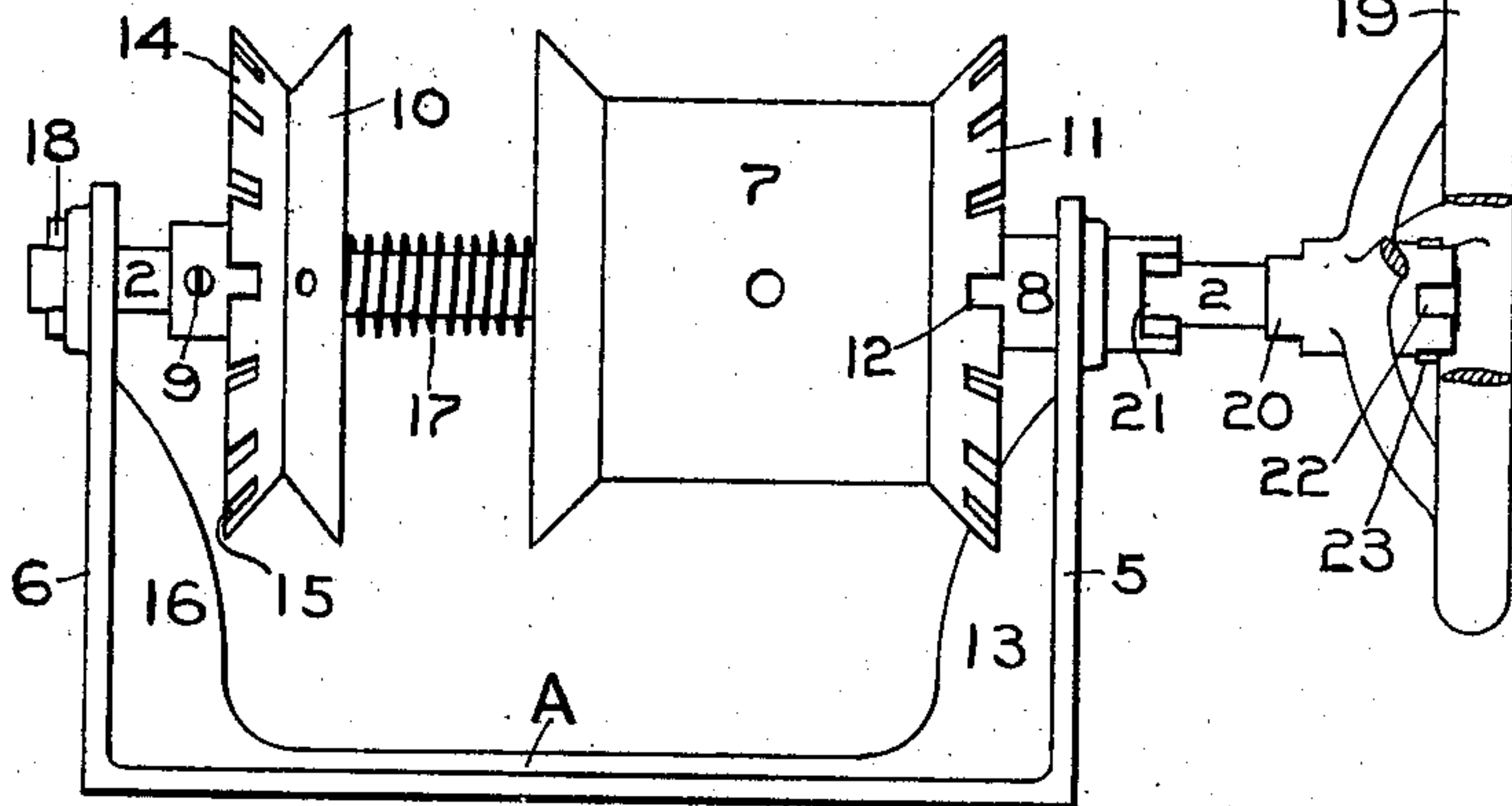


Fig. 6.

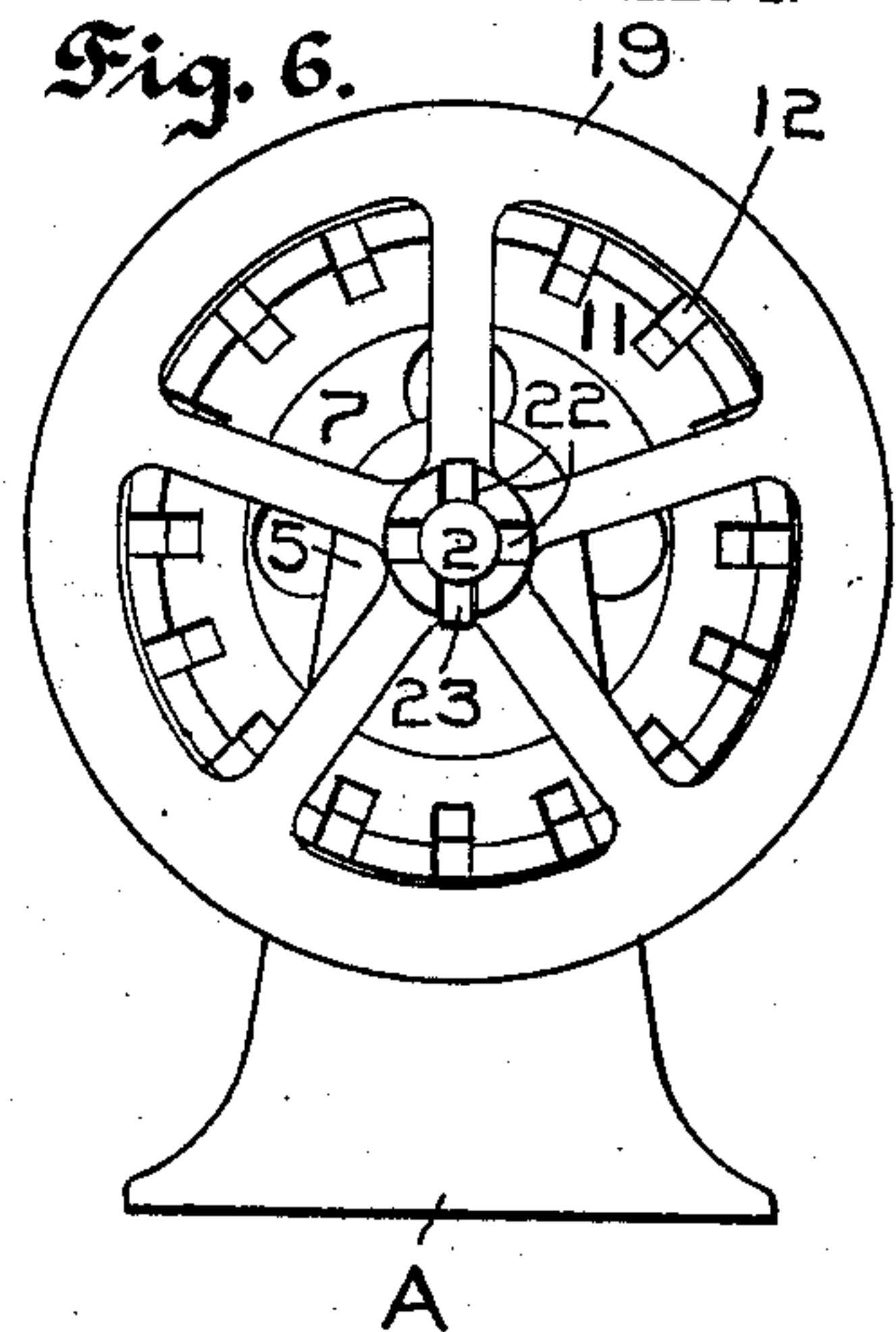


Fig. 7.

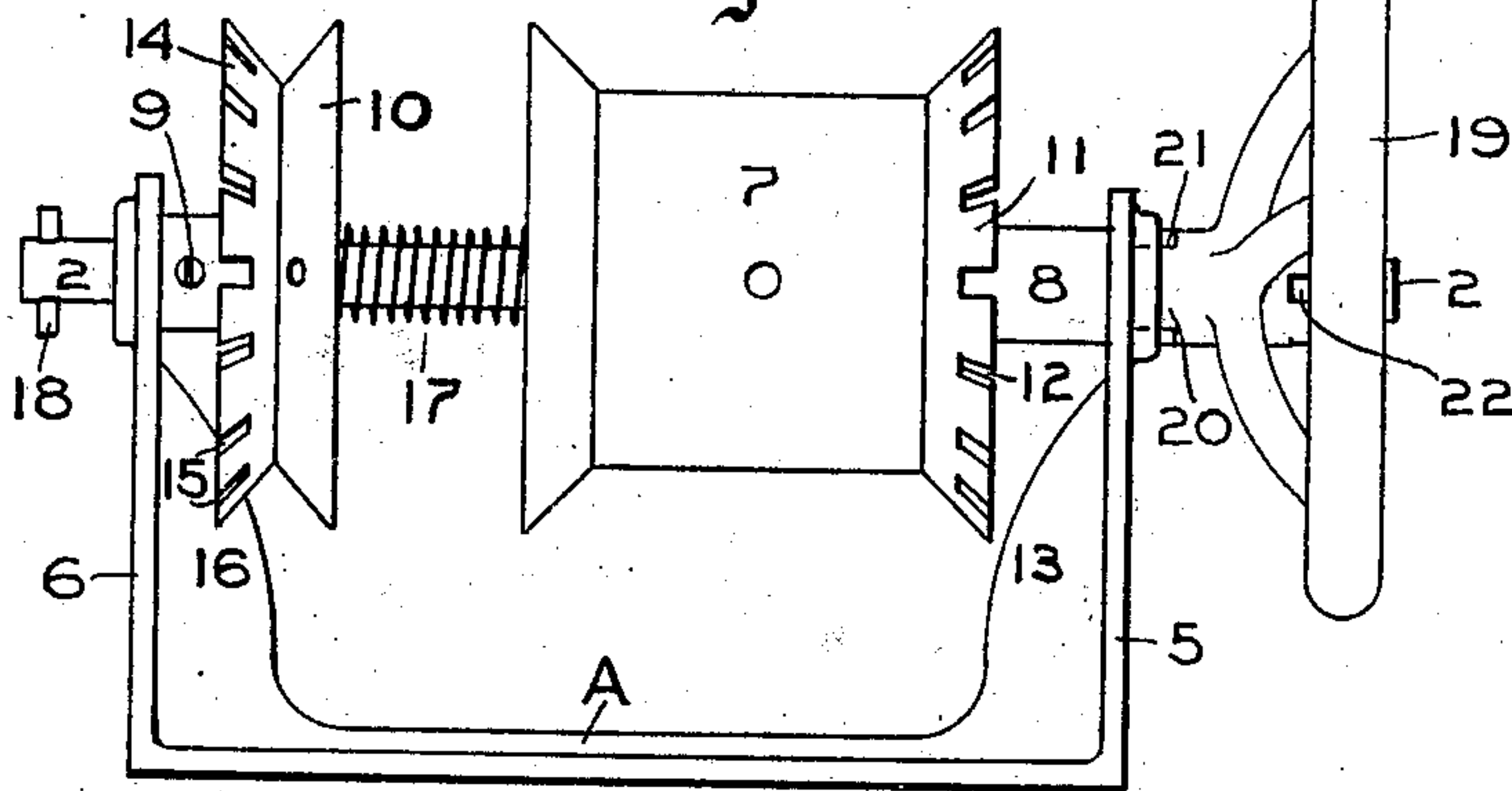


Fig. 8.

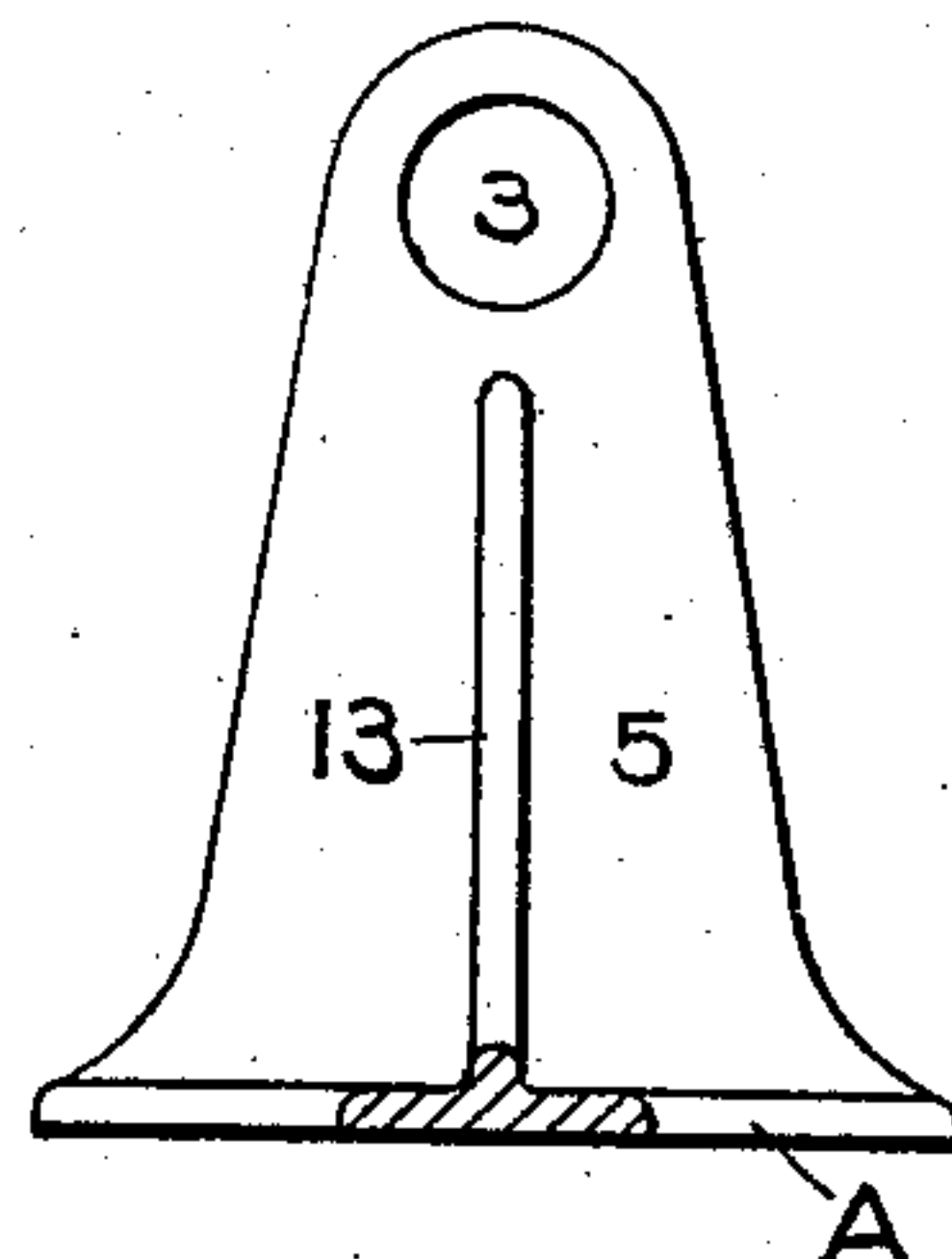
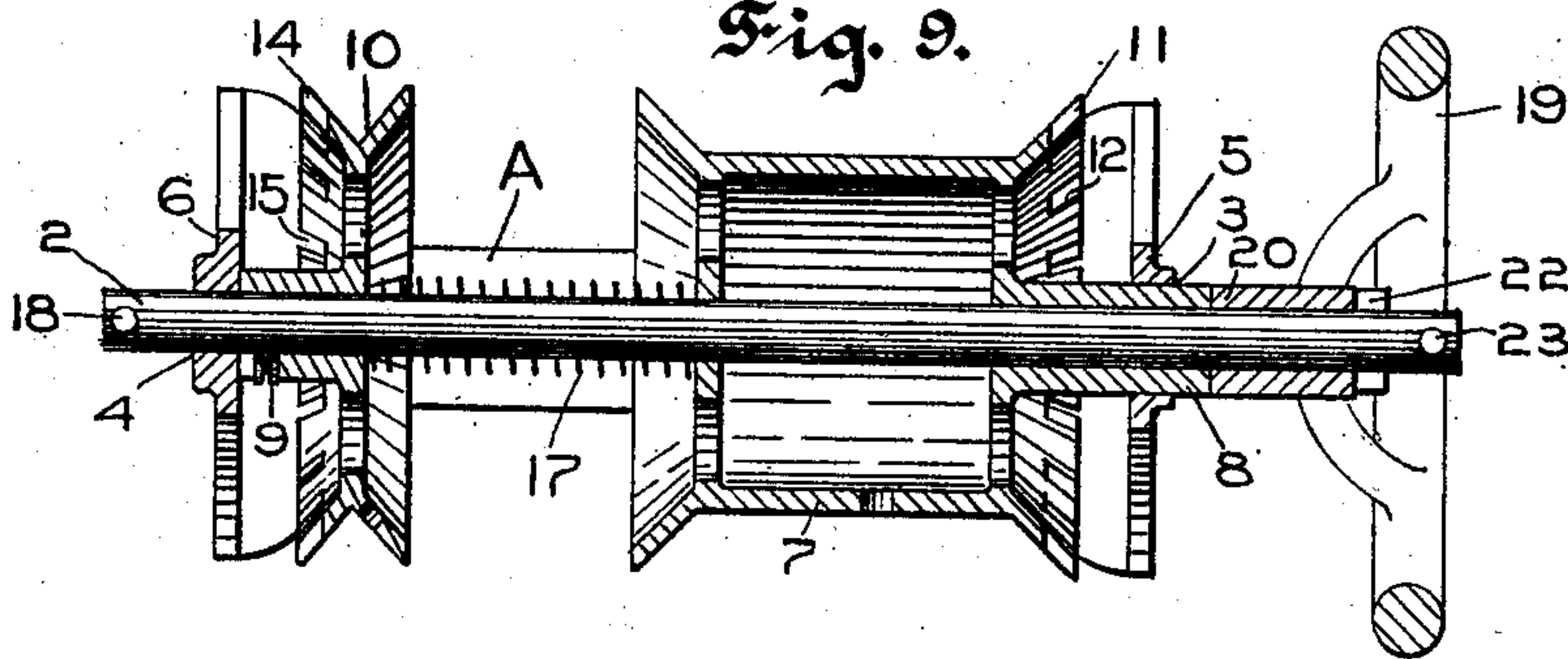


Fig. 9.



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# UNITED STATES PATENT OFFICE.

OLE L. LARSON, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO FOSSTON WIND STACKER COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA.

## WINDLASS.

SPECIFICATION forming part of Letters Patent No. 762,918, dated June 21, 1904.

Application filed June 15, 1903. Serial No. 161,410. (No model.)

*To all whom it may concern:*

Be it known that I, OLE L. LARSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Windlasses, of which the following is a specification.

My invention relates to improvements in windlasses, its object being to provide a single windlass which shall be simple in construction and easy and efficient in operation for operating two separate cables, each independently of the other, and to provide improved automatic locking devices for the cable drum or drums. The windlass is particularly adapted for use where, as in adjusting the hood of a wind-stacker for separators, it is desirable to have all the parts to be operated arranged conveniently to the operator.

To this end my invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of the discharge-trunk of a wind-stacker, showing my improved windlass applied thereto. Fig. 2 is a top view of the same. Fig. 3 is a side elevation of the windlass with the cable-drums in locked position. Fig. 4 is an end elevation of the windlass looking toward the outer end thereof. Fig. 5 is a side elevation of the windlass, showing the longer drum in locked and the shorter drum in unlocked position. Fig. 6 is an end elevation looking toward the operating-wheel. Fig. 7 is a side elevation showing the shorter drum in locked and the longer drum in unlocked position. Fig. 8 is a vertical cross-section of the windlass-frame on line *x x* of Fig. 3, and Fig. 9 is a horizontal longitudinal section taken on line *y y* of Fig. 3.

In the drawings, 2 represents the shaft of the windlass, which passes loosely through the holes 3 and 4 in the upwardly-extending posts 5 and 6, respectively, of the frame A.

Loosely mounted upon the shaft 2 between the posts is a drum 7, having an outwardly-extending sleeve 8, which preferably passes through the opening 3 in the post 5 and is rotatable and slidable therein. Also mounted upon the shaft 2, but secured to the shaft by the set-screw 9, is a second drum 10, which is shown in the drawings as shorter than the drum 7, but which may be of any convenient length.

On the outer side of the drum 7 is an outwardly-extending flange 11, having notches 12, adapted to engage the rib or projection 13 upon the inner side of the post 5, and similarly on the outer side of the drum 10 is a flange 14, having notches 15, adapted to engage the projection or rib 16 upon the inner side of the post 6. Interposed between the drums is a helical spring 17, which encircles the shaft 2 and holds the drums normally forced apart against the ribs 13 and 16, with which their notched flanges interlock, as shown in Fig. 3.

It will be seen that the shaft 2 has bearings at one end in the post 6 and at the other end in the drum-sleeve 8. In these bearings it is not only rotatable, but is slidable longitudinally, the length of its slide being determined by the distance between the fixed drum 10 and the stop 18, secured to the shaft outside the post 6. Rotatably and slidably mounted upon the shaft outside of the post 5 is a hand-wheel 19, the hub of which is notched to form a clutch member 20, adapted to engage the notches 21 upon the end of the drum-sleeve 8. The hub is also formed with notches 22 upon its outer side, adapted to engage with one or more stop pins or projections 23, secured to the shaft near its end.

Fig. 3 represents the parts in normal position, with the drums forced apart by the spring into locking engagement with the ribs on the posts. When it is desired to turn the fixedly-mounted drum 10 to wind or unwind a cable, the hand-wheel is slid toward the end of the shaft until the notches 22 engage the stop-pin



23, and then pulled against the pressure of the spring 17, so as to draw with it the shaft and the drum 10, secured thereto, until the notched flange 14 is drawn out of engagement with the rib 16, as shown in Fig. 5. If the hand-wheel be then turned, it will turn with it the interlocked shaft 2 and the drum 10, secured thereto. Upon releasing the wheel from the pull the fixed drum will be forced back by the spring 17 into locking engagement with the rib 16, as shown in Fig. 3. During all this time the rotatable drum 7 of course remains inactive and stationary in locked engagement with the rib 13.

When it is desired to operate the drum 7, the hand-wheel is slid inwardly upon the shaft to bring the clutch member 20 into engagement with the notched end of the sleeve 8 of the drum 7, and is then pushed against the drum-sleeve, forcing the drum inwardly against the pressure of the spring 17 until its flange 11 is released from engagement with the rib 13, as shown in Fig. 7. The wheel is then rotated upon the shaft 2 and carries with it the drum 7, with which it is in clutching engagement, the drum 10 in the meantime remaining inactive and stationary and in locked engagement with the rib 16.

To illustrate the use of the windlass, it is shown in Figs. 1 and 2 of the drawings mounted upon the discharge-trunk B of a pneumatic stacker to operate the hood C thereof, the rest of the stacker being omitted. As the discharge-trunk and hood form no part of the present invention, it is unnecessary to describe the parts thereof other than to say that the hood comprises a rotatable section 24 and overlapping pivoted sections 25 and 26, adapted to be raised on their pivots against the tension of springs 27 and 28 by a cable 29, secured to the top of one or both of these sections. The section 24 is rotated by a cable 30, having both its ends secured to the under side of the section at 31 and passing in opposite directions around the section and over pulleys 32 and 33, respectively, at the top thereof. The cable 29 is led back to the windlass, which may be secured to the discharge-trunk in any convenient manner and at any convenient place, and secured to one of the drums—as shown in the drawings, the drum 10—while the cable 30 is wrapped about the other drum. The convenience of operating both of these cables by a single windlass is obvious.

Among the important features of the invention are the automatic interlocking devices for the drums and the construction and mechanism whereby the drums may be operated each independently of the other by one and the same actuating device.

The details of the windlass, as hereinabove shown and described, may be modified in various ways without departing from the prin-

ciple of the invention, the scope of which is defined in the claims.

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

1. In a windlass, the combination, with the frame and its posts, of a projection upon one of the posts, a shaft loosely mounted in the posts, a drum mounted upon the shaft and having a notched flange adapted to engage the projection on the post, spring means for holding the drum normally in locked engagement with said projection, and means carried by the shaft for forcing the drum out of such engagement and for rotating it.

2. A windlass of the class described comprising, in combination, a frame, a shaft rotatably mounted therein, two drums mounted upon the shaft so that each is rotatable independently of the other, commonly-actuated means for rotating either of said drums and means for automatically locking either of them when released from engagement with said actuating means.

3. A windlass of the class described comprising a frame, a shaft rotatably mounted therein, two drums mounted upon the shaft, one fixedly and the other rotatably, and a clutch member slidably and rotatably mounted upon the shaft and adapted to be moved into clutching engagement with the rotatably-mounted drum to turn it, or into clutching engagement with the shaft to turn the shaft and with it the fixedly-mounted drum.

4. A windlass of the class described comprising, in combination, a frame, a shaft rotatably mounted therein, two drums mounted upon the shaft, one fixedly and the other rotatably, a clutch member mounted on the shaft and adapted to engage and rotate either of the drums independently of the other, and means for automatically locking either of said drums when released from engagement with the clutch member.

5. A windlass of the class described comprising, in combination, a frame provided with drum-locking devices, a shaft loosely mounted therein, two drums mounted upon the shaft, one fixedly and the other loosely, locking devices upon the outer ends of the drums adapted to engage the locking devices upon the frame, spring means to hold the drums normally apart and in locked engagement with the locking devices upon the frame, and a clutch device loosely mounted upon the shaft and adapted to be moved into clutching engagement with the loosely-mounted drum to turn it, or into clutching engagement with the shaft to turn the shaft and with it the drum fixedly secured thereto.

6. A windlass of the class described comprising, in combination, a frame having upwardly-extending posts, a rib upon the inner

side of each post, a shaft loosely mounted in the posts, two drums mounted upon the shaft, one loosely and the other fixedly, each drum having a notched flange adapted to engage the  
5 adjacent rib, a spring interposed between the drums for forcing them normally away from each other to bring their flanges into locking engagement with the ribs, and commonly-actuated means for forcing either drum out of

such locking engagement and for rotating it independently of the other drum.

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

OLE L. LARSON.

Witnesses:

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