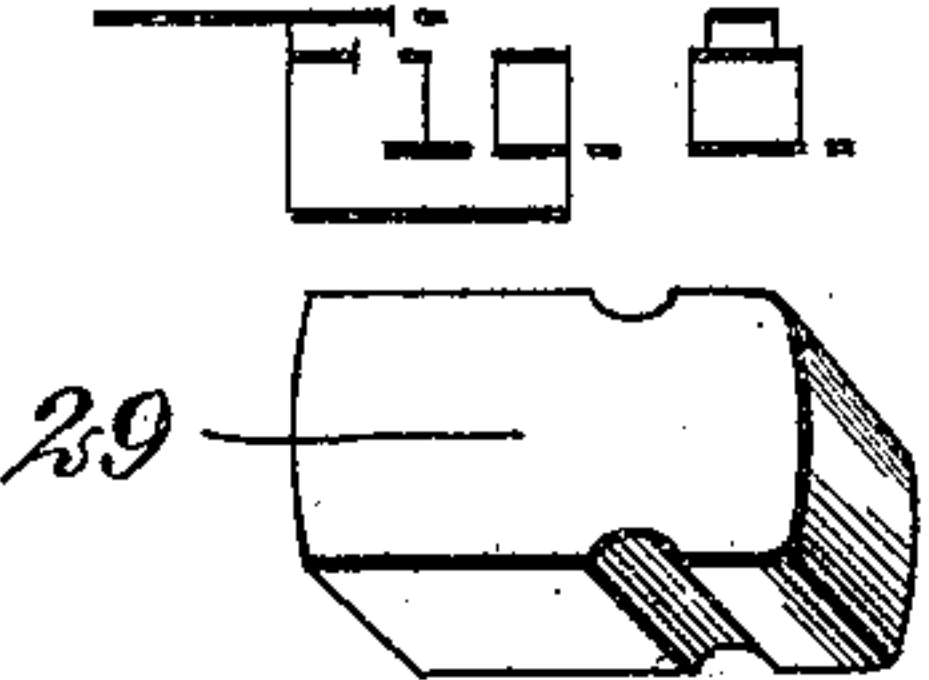
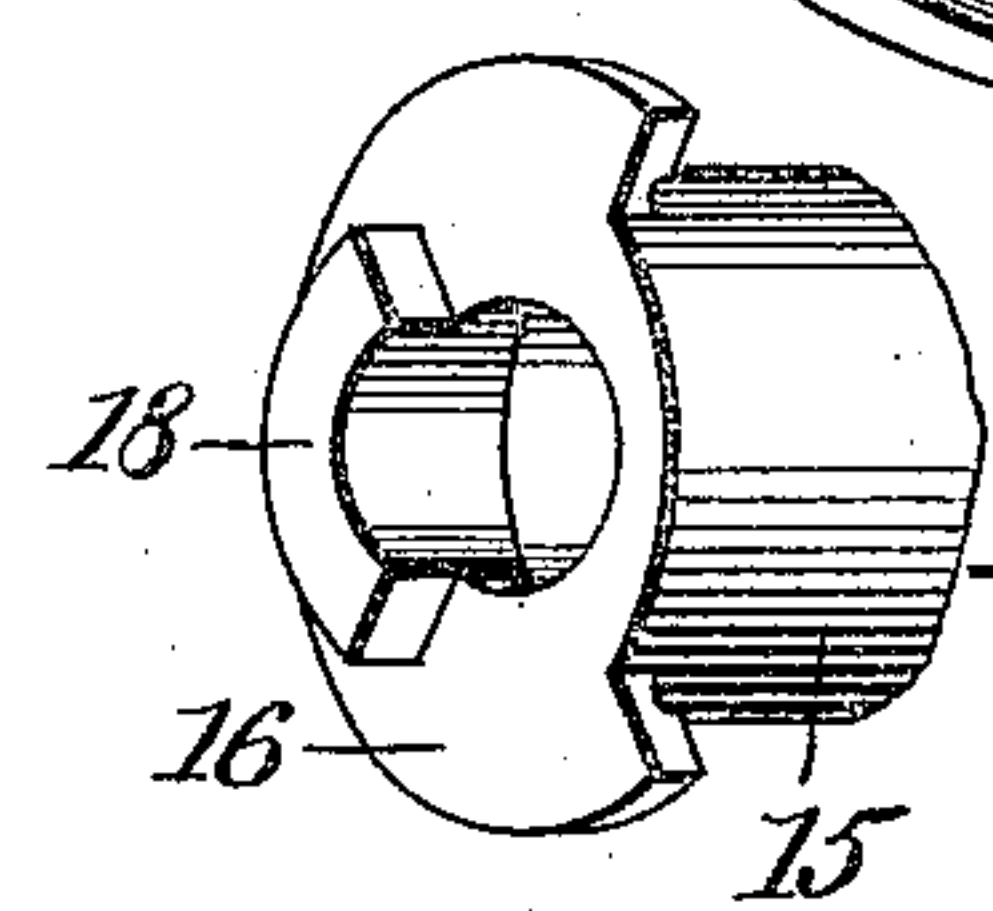
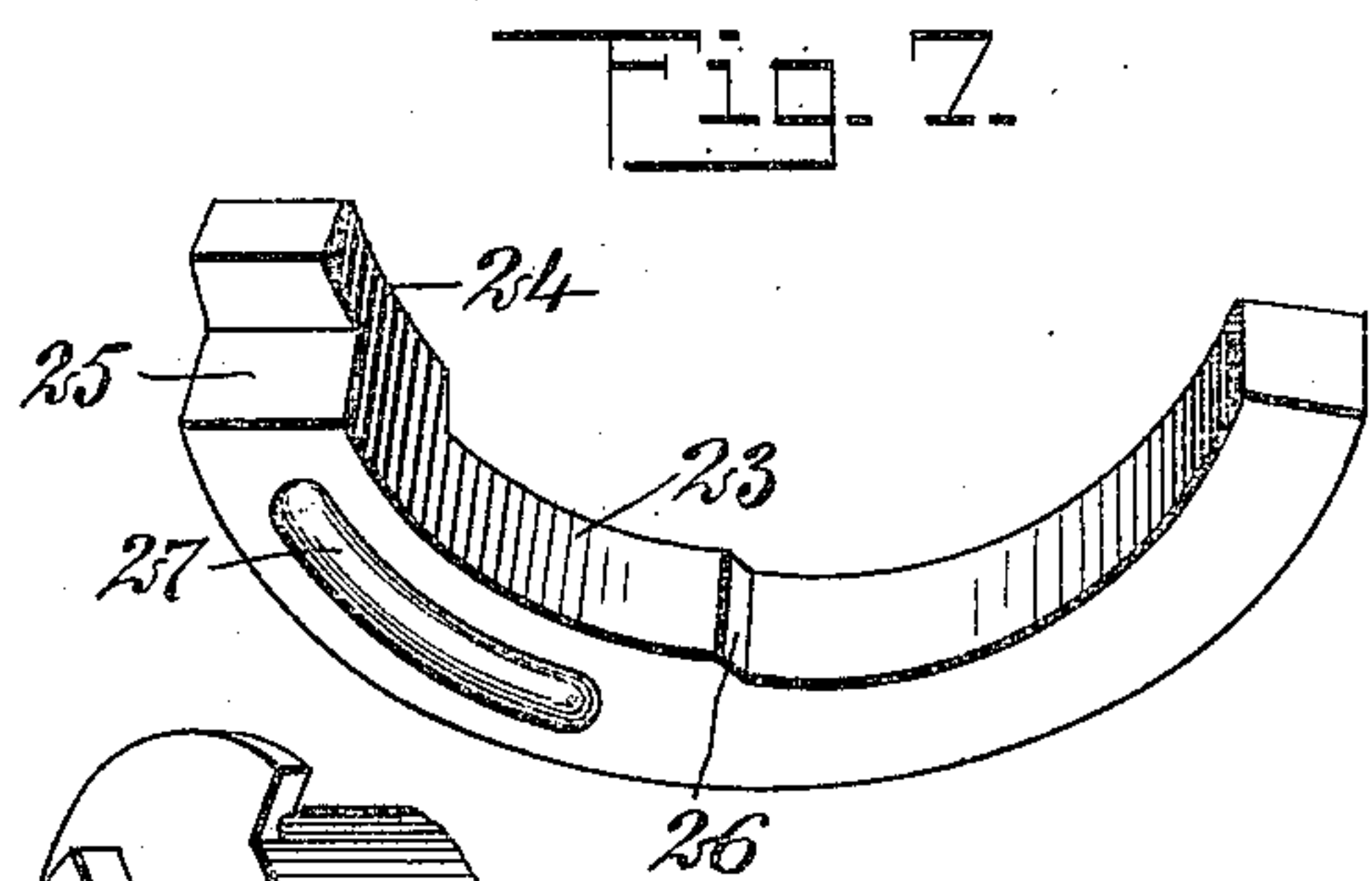
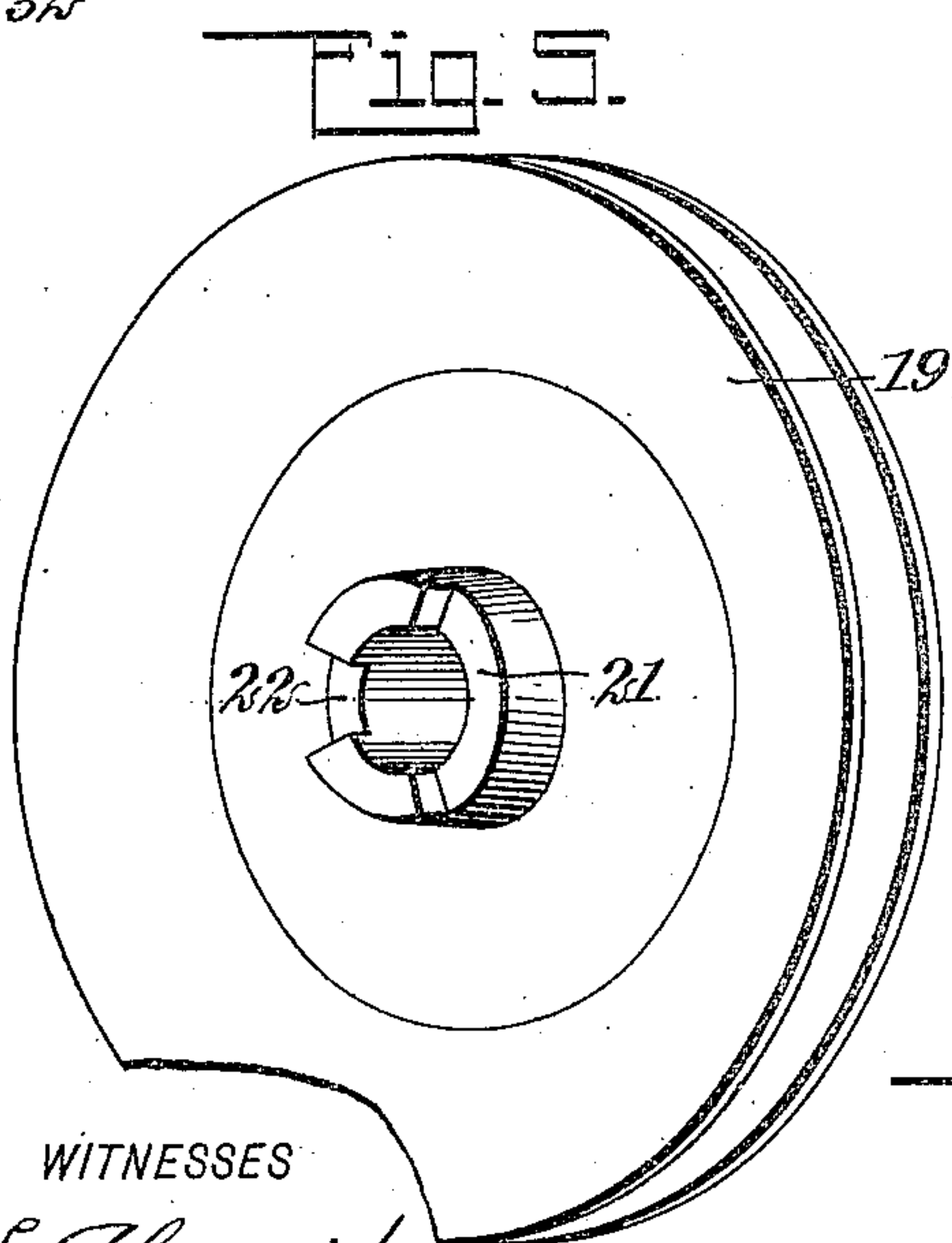
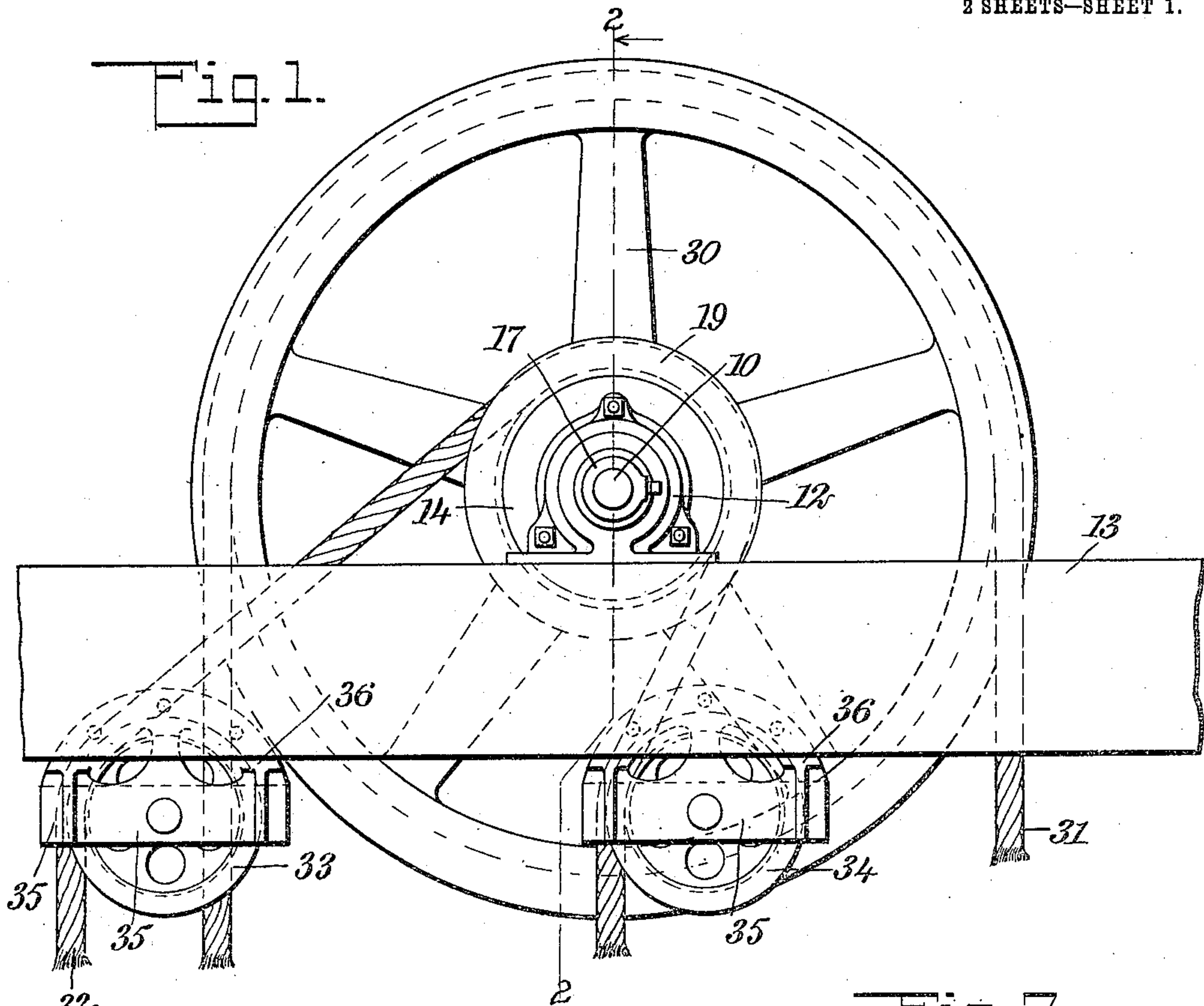


R. M. RODGERS.
 AUTOMATIC LOCK FOR HOISTING APPARATUS.
 APPLICATION FILED NOV. 7, 1908.

934,759.

Patented Sept. 21, 1909.
 2 SHEETS—SHEET 1.



WITNESSES
L. Almqvist
W. M. Jones

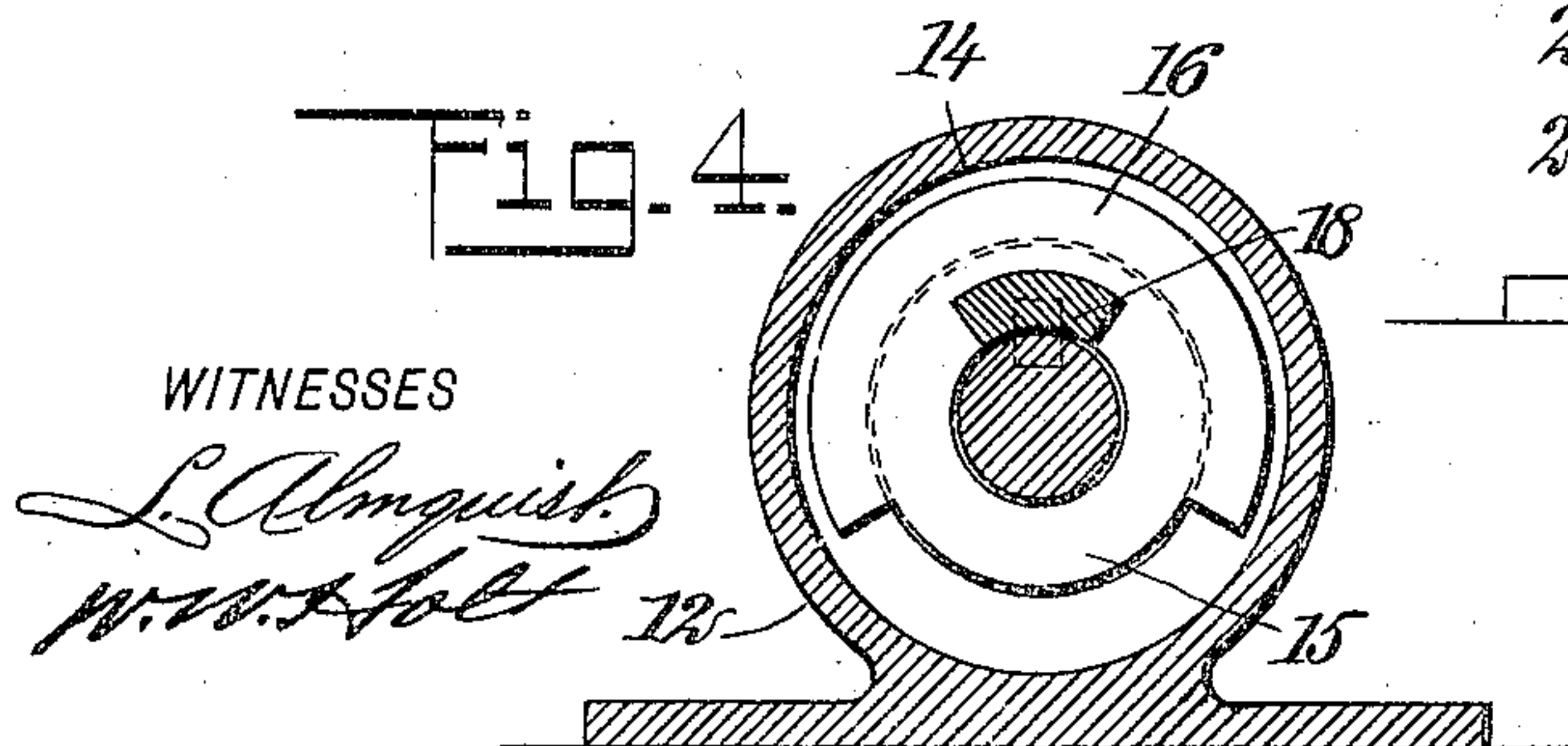
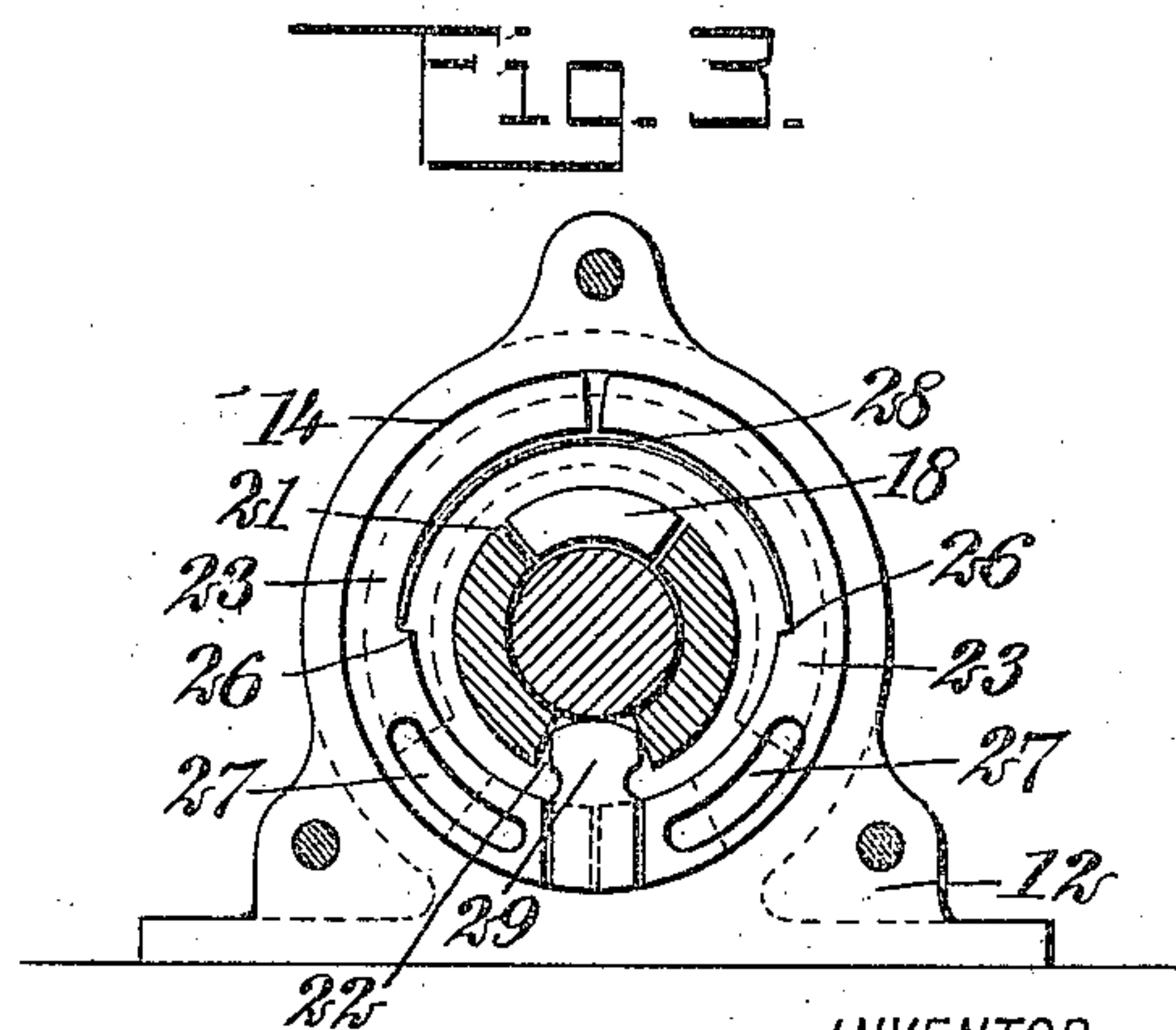
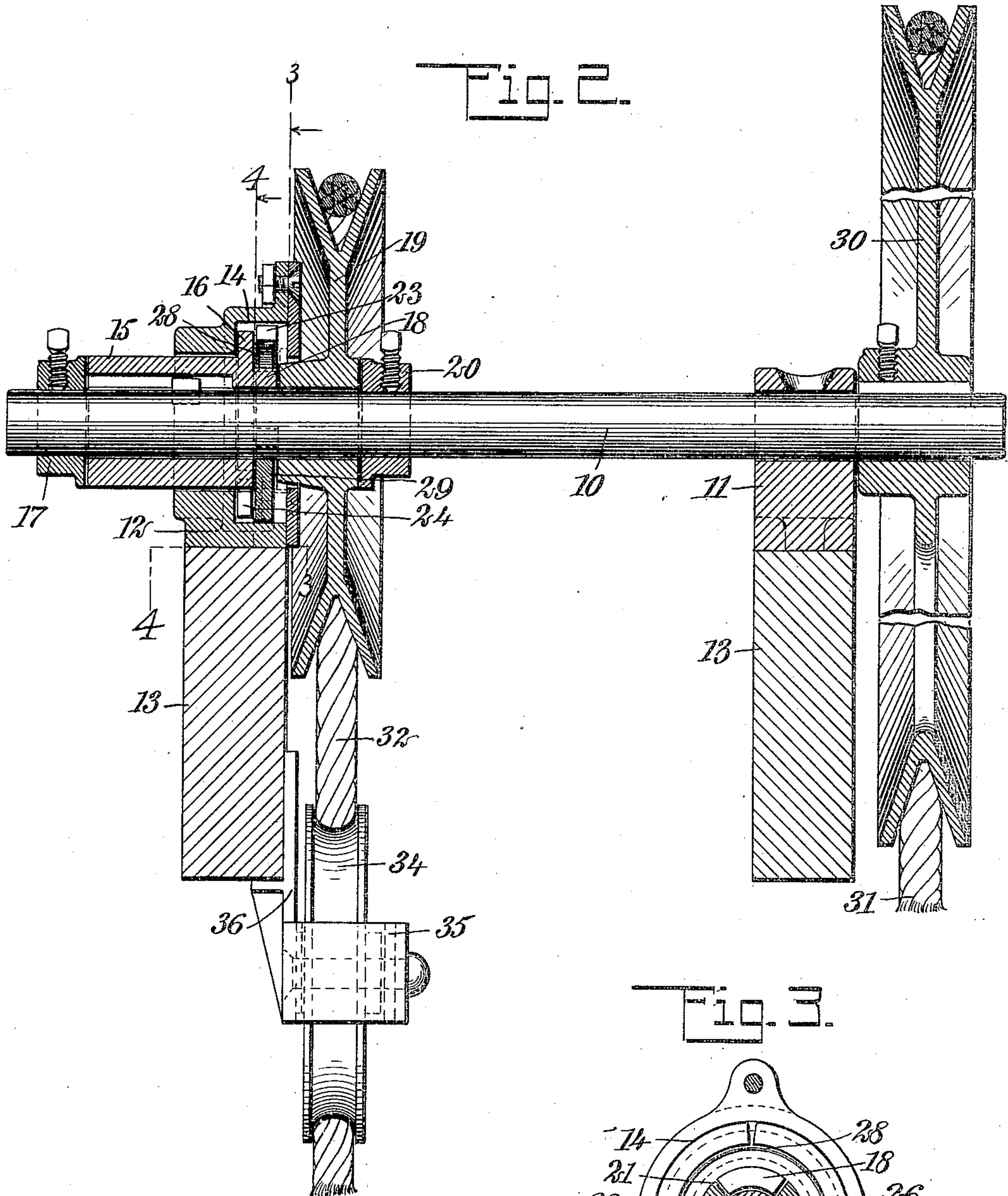
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ROBERT MAXMILIAN RODGERS, OF NEW YORK, N. Y.

AUTOMATIC LOCK FOR HOISTING APPARATUS.

934,759.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed November 7, 1908. Serial No. 461,508.

To all whom it may concern:

Be it known that I, ROBERT M. RODGERS, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Automatic Lock for Hoisting Apparatus, of which the following is a full, clear, and exact description.

10 The invention appertains to an improved locking device for hoisting appliances, more especially dumbwaiters, in which relation it automatically operates under the tendency of the load to lock the car in any position of its movement immediately after the pull on the hoisting wheel ceases.

15 The invention in a general way consists of a bearing, a sleeve journaled in the bearing, a drive shaft fixed to the sleeve, a lift-wheel loosely mounted on the drive shaft, engaged with the sleeve and having a slight rotary movement on the shaft independent of the sleeve, a split clamping ring inforced to turn with the sleeve and having a slight rotary movement independent thereof, and means extending between the ends of the clamping ring and in engagement with the wheel for expanding the ring by the slight rotation of the wheel on the shaft.

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

25 Figure 1 is a side elevation of the mechanism at the top of a dumbwaiter shaft having my improvements applied thereto; Fig. 2 is a central vertical section substantially on the line 2—2 of Fig. 1; Fig. 3 is a cross-section on the line 3—3 of Fig. 2; Fig. 4 is a like section on the line 4—4 of Fig. 2; Fig. 5 is a perspective view of the lift-wheel; Fig. 6 is a fragmentary perspective view of the inner portion of the sleeve forming an element of the lock; Fig. 7 is a perspective view of one section of the clamping ring; and Fig. 8 is a perspective view of the key for expanding the clamping ring by the action of the lift-wheel.

30 In the application of my improvements to a hoisting appliance, such as a dumbwaiter, a drive shaft 10 is journaled in bearings 11 and 12 respectively, which are supported on cross-beams 13 spaced apart and bridging the top of the dumbwaiter shaft or well. The bearing 12, which may be located at

either side, has an enlarged chambered or counterbored portion 14 on its inner face for containing the locking mechanism, and in its reduced outer portion is journaled a sleeve 15 splined or otherwise affixed to the shaft 10. It is ordinarily, however, loosely splined in order that it may be freely applied and adjusted on the shaft to which it is held against sliding movement by a flange 16 integral with its inner end, and a collar 17 attached to the outer end of the shaft. The flange 16 contacts with the outer face of the counterbored or chambered portion of the bearing and extends only about two-thirds the circumference of the sleeve, as is best seen from Fig. 4. At the opposite side of the sleeve from this cut-out or interrupted portion of the flange 16, the sleeve is provided with a projection or segmental boss 18.

35 On the shaft 10 is journaled or loosely mounted a lift-wheel 19 which is held adjacent to the chamber 14 by a collar 20. The hub of the lift-wheel has at one end oppositely-arranged segmental slots 21 and 22 respectively, the slot 21 being slightly longer than the segmental projection 18 which it receives. Within the chamber 14 is a clamping ring constructed of two like sections 23, 23, one section of which is shown in detail in Fig. 7, wherein it will be seen that it is thickened or provided with a projection 24 on its inner face adjacent to one end, and radially slotted or rabbeted at the extremity as indicated at 25. The opposite portion of each ring section is enlarged internally to form a shoulder 26, and an oil-groove 27 is formed in the outer face of the ring section between the shoulder 26 and the rabbeted end 25. When the two sections of the ring are assembled in the chamber of the bearing, the projections 24 are received in the cut-out portion of the flange 16 and are slightly less in combined length than this cut-out portion, whereby the ring has a slight rotary movement in the sleeve 15, but is enforced to turn therewith when the driving shaft is revolved. The rings are pressed outwardly against the walls of the chamber by a spring 28 resting at opposite ends on the shoulders 26. The slots produced by the rabbeted extremities 25 of the ring sections receive one end of a locking key 29, the opposite end of which projects into the slot 22 and is so shaped on the head that a slight rotation of the lift-wheel on the drive shaft will cock or tilt the key to one side and force the ring

sections apart into tight engagement with the inner curved wall of the chamber, thus securely locking the lift-wheel to the bearing.

On the end of the drive shaft adjacent to the bearing 11, and ordinarily on the outside of the beam 13, a hoisting wheel 30 is secured, which is provided with the usual operating cable 31 passing down through the dumbwaiter well. A cable 32 which passes over the lift-wheel 19 is respectively attached at opposite ends to the counterweight and car, as is the usual practice, also passed over guide-wheels 33 and 34, both wheels being arranged in the same vertical plane with the wheel 19, with the guide wheel 33 located at one side, the guide wheel 34 being so arranged as to direct that end of the cable passing to the car into vertical alinement with the drive shaft 10. The wheels 33 and 34 are journaled in frames 35 having hangers 36, the latter having feet designed to contact with the under face of one of the cross-sills 13, to which it is secured. By thus constructing the frames or hangers of these wheels, when the bearing 12 is positioned to have its inner face in a plane with the inner face of the sill 13, and the hangers secured flat against the inner face of this sill, the wheels 33 and 34 will be accurately arranged without requiring measurement.

In the operation of the appliance, on pulling up the car by the cable 31, the sleeve 15 will directly engage with the lift-wheel and force it to move therewith, together with the clamping ring and the locking key. When, however, the cable is released, the tendency of the load to revolve the lift-wheel on the shaft will operate the lock in the manner explained. In lowering the car when it is in a locked position, a slight pull on the cable 31 will carry the elements of the lock to a position to release the lift-wheel from the bearing, as shown in Fig. 3, at which time the car can be readily lowered.

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

1. In a hoisting appliance, a bearing having a chambered portion, a sleeve journaled in the bearing having a segmental flange and a segmental boss arranged within the chambered portion of the bearing, a clamping ring made in two sections and provided with pro-

jections extending into the removed portion of said flange, a lift-wheel having a slotted hub receiving the segmental boss, and a locking key extending between the sections of the ring and extending into the hub of the wheel.

2. In a hoisting appliance, a bearing having a chamber, a sleeve journaled in the bearing having a segmental flange and a segmental boss within the chamber, a clamping ring made in two sections, each section having a projecting portion adapted to fit in the removed or cutout portion of the flange and provided with a slotted end, a lift-wheel loosely mounted on the shaft with the hub thereof constructed with oppositely-arranged radial slots, one of which is of greater length and receives the segmental boss, and a locking key extending into the other slot of the hub and the slotted ends of the clamping ring sections.

3. In a hoisting appliance, a drive shaft, a sleeve fixed to the drive shaft, a lift wheel loosely mounted on the drive shaft clutched with the sleeve and having a slight rotary movement on the shaft independent of the sleeve, a clamping ring made in two separate sections enforced to turn with the sleeve and having a slight rotary movement independent thereof, a spring tending to force the sections of the clamping ring apart, and a key having a locking engagement with the wheel and extending between the two sections of the ring.

4. In a hoisting appliance, a drive shaft, a sleeve fixed to the drive shaft, a lift wheel loosely mounted on the drive shaft, movable with the sleeve and having a slight rotary movement on the shaft independent of the sleeve, a split clamping ring enforced to turn with the sleeve and having a slight rotary movement independent thereof, and a tilting key engaged at opposite ends respectively with the clamping ring and with the wheel for expanding the ring by the slight rotation of the wheel on the shaft.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT MAXMILIAN RODGERS.

Witnesses:

EDWIN MEGIE,
WALTER I. MEGIE.