

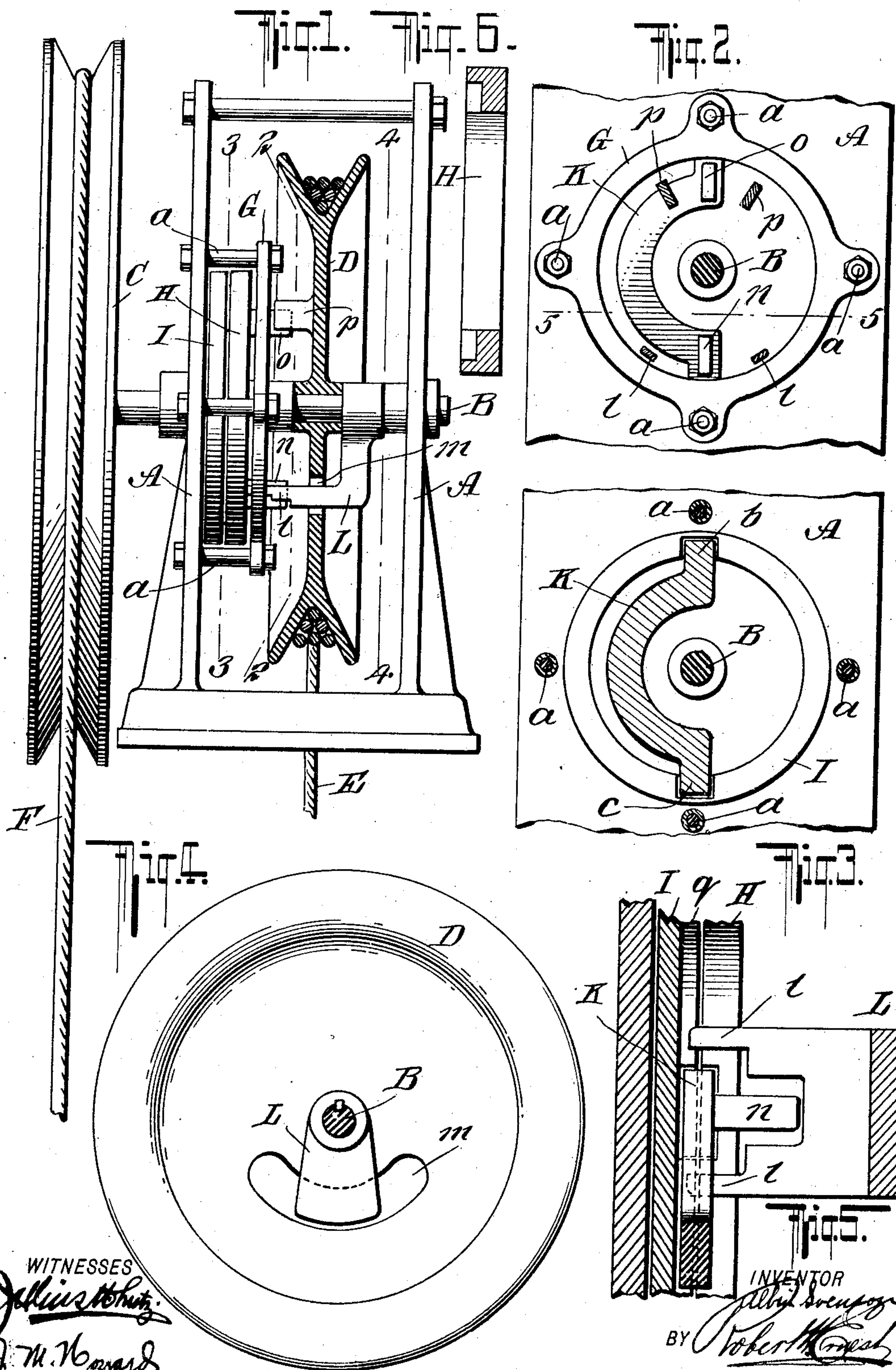
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CLUTCH MECHANISM FOR DUMB WAITERS, &c.

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No. 896,421.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBIN SVENSON, a subject of the King of Sweden, residing at the borough of the Bronx, city of New York, in the county and State of New York, have invented certain new and useful Improvements in Clutch Mechanisms for Dumb-Waiters and the Like, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings and to the reference characters marked thereon.

My present invention has relation to clutch mechanisms for dumb-waiters, especially such as are employed in houses and apartments for domestic uses, but the improvements are equally applicable in connection with similar cars or carriers for other uses. Such apparatus is ordinarily intended to be operated by hand, but power may be applied if so desired.

The principal object of this invention is to simplify and improve the clutch mechanism, to make the parts few and simple and easy of construction, not liable to get out of order and reliable and efficient in use, easily located in place and operative to automatically effect the stopping of the car either in its descent or ascent within its shaft whenever its movements are not under control by the hand-rope or power operating connections.

Subordinate objects of the invention are to simplify the means for releasing the clutch after the car has been automatically arrested by the mechanism therefor, permitting the car to move until again automatically arrested under similar conditions.

To accomplish the above specified objects and to secure other and further advantages in the matters of construction, operation, application, adjustment and use, my improvements involve certain new and useful relative arrangements or combinations of parts, peculiarities of construction and principles of operation, as will be herein first fully described and then pointed out in the claims.

The car, not shown, is usually counterweighted, as is well understood. When the load of the car exceeds the counterweight by too much, the car is liable to rapidly descend in its shaft, causing more or less damage; also, when the counterweight exceeds the weight of the car and its load by too much, the car is liable to ascend rapidly and cause more or

less damage. The clutch mechanism is intended to overcome these difficulties and to check the car as soon as it commences to move too rapidly in either direction.

In the accompanying drawings forming part of this specification, Figure 1 is a vertical view, partly in section and partly in elevation, showing my improved clutch mechanism ready for use. Fig. 2 is a sectional elevation on a plane through line 2—2 of Fig. 1 and at right angles with that figure. Fig. 3 is a section and elevation on a plane through line 3—3 of Fig. 1. Fig. 4 is a sectional elevation on a plane through line 4—4 of Fig. 1; and Fig. 5 is a horizontal view of a fragment partly in plan and partly in section on a plane through line 5—5 of Fig. 2. Fig. 6 is an axial section and elevation of the inner friction disk detached from the other parts, the same being in the form of a ring.

In all these figures like reference characters, wherever they occur, are employed to indicate corresponding parts.

A, A are the standards of any suitable frame or other support for the clutch mechanism. This frame may be of any size and form and it sustains the operating shaft, B, on which is keyed the hand rope wheel, C, or other medium for applying power to move the shaft; and on the shaft B is also mounted, loosely, a pulley D, usually in the form of a grooved wheel for application of the car rope.

E is the car rope and F the power rope.

Within the frame and between one of its side plates A and the pulley D is a ring, G, sustained at a proper distance from the side plate A by suitable bolts, nuts and sleeves, as at *a, a*, by which the ring G may be adjusted to the required distance and rigidly held in place.

Loosely mounted upon the shaft B are two friction disks H and I, and these are located between the ring G and the frame and are forced into contact with the ring and the frame respectively when it is necessary to produce the friction requisite for arresting the movement of the car. The disk H, in the form shown, is in the shape of a flat ring, its central part being open. Between the two disks is a bow, K, of which the extremities, *b* and *c*, may be conveniently located in recesses provided for them in the friction disks, but these recesses are not indispensable.

ble and might be omitted. Ordinarily this bow rides flat between the two friction disks, but when it is tilted or rocked by the mechanism provided for the purpose, the portions 5 *b* and *c* bear upon the friction disks and force them away from each other and against the ring *G* and the side plate *A*, causing sufficient friction to arrest the car.

To rock the bow *K*, a suitable yoke, as *L*, 10 is secured upon the shaft *B*, its arms, *l*, *l*, in the form shown, passing through an opening *m*, in the pulley *D* and straddling a lug or projection, *n*, on the bow *K*. As the shaft and thereby the yoke *L* turns in one direc- 15 tion one of the arms *l* will strike the projection *n* and rock the bow *K* accordingly, the opposite side of the yoke bearing against the margin of the opening *m* in pulley *D* to cause the latter to turn with the shaft. At 20 *o* is another projection or lug on the bow *K*, and on the pulley *D* are two lugs or projections, *p*, *p*, one on either side of the projection *o* and both calculated to contact therewith.

25 At *q* is a rim on the disk *I*, but this rim might be omitted.

When the bow is rocked and the friction disks thereby brought into operation, one of the projections *p* of the pulley *D* comes in 30 contact with the projection *o*, and this causes the pulley *D* and of course the car connected therewith to be arrested or at least only permitted to move very slowly, the then connected friction mechanism acting as a brake. 35 To start the car again it will be necessary to apply power in the opposite direction, which is accomplished by pulling back upon the hand rope wheel or otherwise reversing the power. Then the car may be permitted 40 to continue its movement being suitably controlled by the movement of the power wheel. The above refers chiefly to the downward movement of the car. A rapid movement of the car in the upward direc- 45 tion, the parts being in operative relation, would be similarly checked but with less powerful effect, as the bow would not tilt so far. When the power wheel is reversed to release the car, the other of the projections 50 *p* strikes the projection *o* and rocks the bow back slightly or to its normal position, thus relieving the pressure on the friction disks.

The two projections *o* and *n* are similar and located diametrically opposite each 55 other so that the yoke *L* may be shifted to engage with either one or the other as may be preferred, thus providing for a right or left hand arrangement of the dumb-waiter operating mechanism. The projections *o* 60 and *n* are rigidly applied on the bow *K* and the projections *p* and *p* are similarly applied on the pulley *D*, the former, *o* and *n*, extending through the central opening in disk *H*, as indicated in Figs. 1 and 3.

Being constructed and arranged for oper- 65 ation substantially in accordance with the foregoing explanations, the improved device is of few and simple parts, not liable to become disarranged or to get out of order, easily regulated to compensate for any pos- 70 sible wear, and is found to answer all the purposes or objects of the invention herein before alluded to.

Having now fully described my invention what I claim as new herein and desire to se- 75 cure by Letters Patent is:

1. In a device of the character herein set forth, the combination of the shaft, a rope pulley mounted on said shaft, friction disks movable independently of the shaft, sta- 80 tionary friction surfaces, a bow located between the disks for forcing said disks apart and against the friction surfaces, and a fork secured on the shaft for applying the force of the friction to the rope pulley, substantially 85 as and for the purposes set forth.

2. In a device of the character herein set forth, the combination of the shaft, the rope pulley mounted on said shaft, friction disks movable independently of the shaft, sta- 90 tionary friction surfaces, a bow located between the friction disks and arranged to rock to force said disks apart and against the friction surfaces, a yoke secured upon the shaft and arranged to rock the bow, and a 95 projection on the bow for arresting the rope pulley, substantially as and for the purposes set forth.

3. The combination of the shaft, rope pulley having projections thereon, stationary 100 friction surfaces, movable friction disks located between said surfaces, a rocking bow located between the friction disks and provided with projections, and a yoke having 105 arms for contact with one of said projections, said yoke being secured on the shaft, substantially as and for the purposes set forth.

4. In a device of the character herein set forth, the combination with the shaft and 110 rope pulley mounted thereon, of a yoke having two arms passing through an opening in the rope pulley, friction disks, a rocking bow mounted between said disks and provided with a projection for contact with the arms 115 of the yoke, substantially as and for the purposes explained.

5. The combination with the shaft, a rope pulley mounted thereon and provided with projections, a yoke having projecting arms, 120 friction disks, and a rocking bow located between said disks and having diametrically opposite projections for contact with the arms of the yoke and with the projections on the rope pulley, substantially as and for 125 the purposes set forth.

6. The combination of the shaft, a rope pulley mounted thereon and provided with

an opening and with projections, a yoke having projecting arms passing through the opening in the rope pulley, movable friction disks, stationary friction surfaces, a rocking
5 bow located between the friction disks and having diametrically opposite projections for contact with the arms of the yoke and with the projections on the rope pulley, the

parts being arranged substantially as shown and described.

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