(No Model.) 2 Sheets—Sheet 1.

J. D. WRIGHT.

MECHANISM FOR CHECKING OR STOPPING THE ACTION OF MACHINERY.

No. 297,330. Patented Apr. 22, 1884.

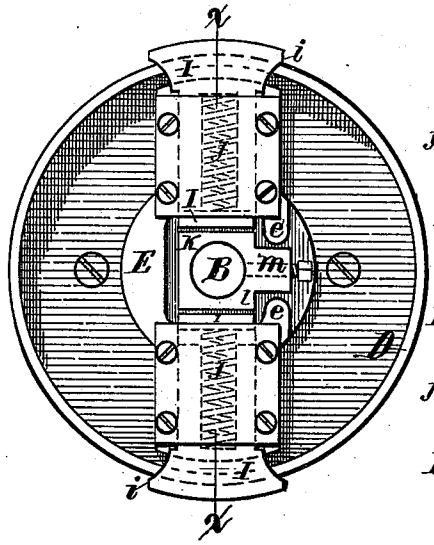


FIG. 1

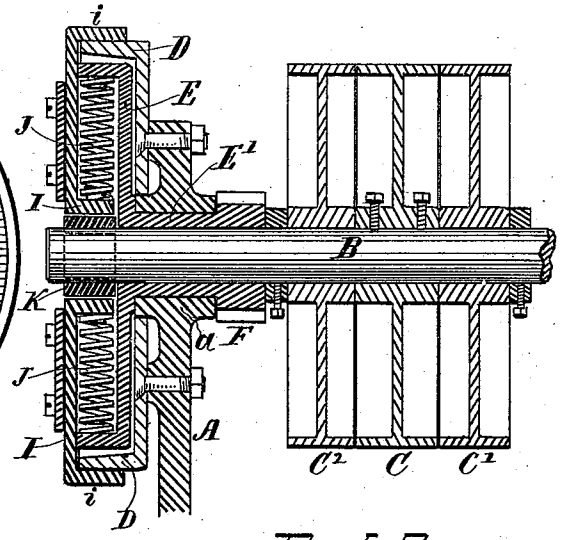


FIG. 2

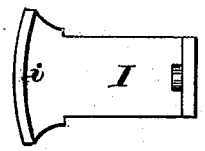


FIG. 3

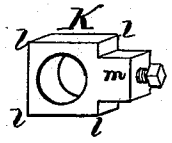


FIG. 4

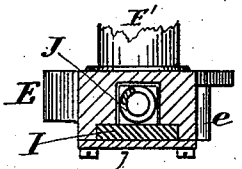
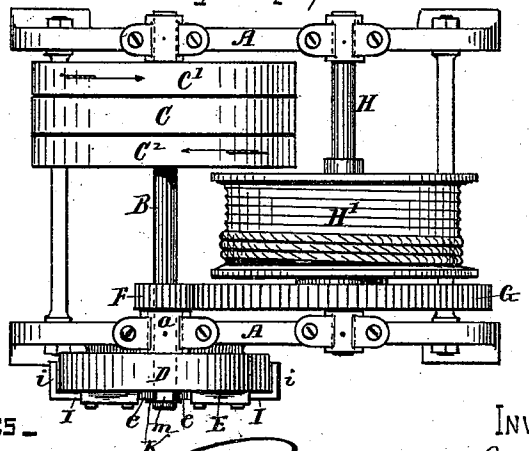


FIG. 6

FIG. 7



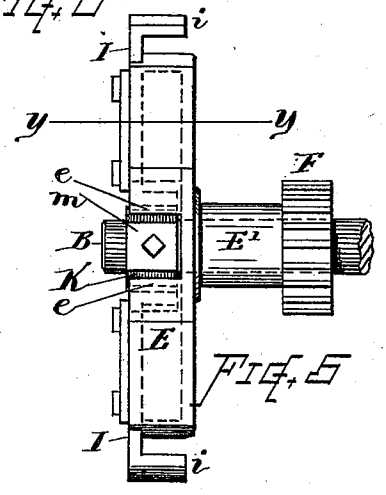


FIG. 5

WITNESSES—

Geo. M. Rice

S. R. Baton

INVENTOR—

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By Chas. H. Burleigh

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N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. D. WRIGHT.

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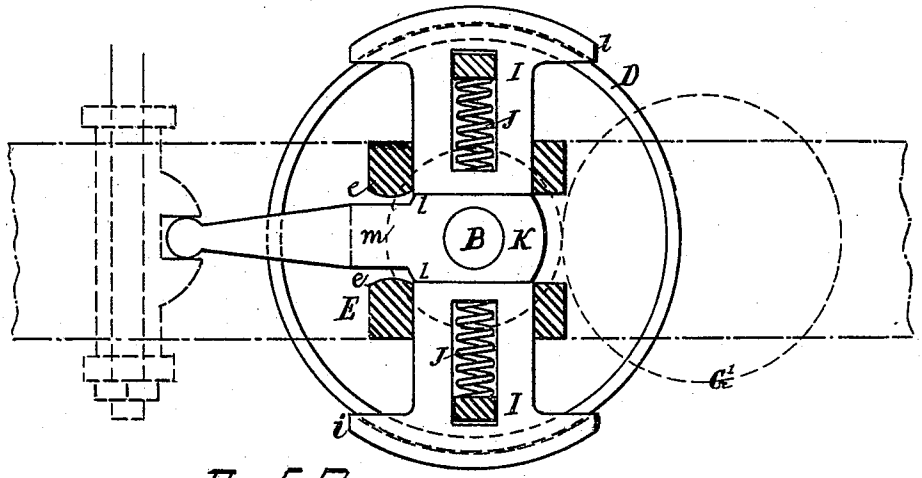


FIG. 8

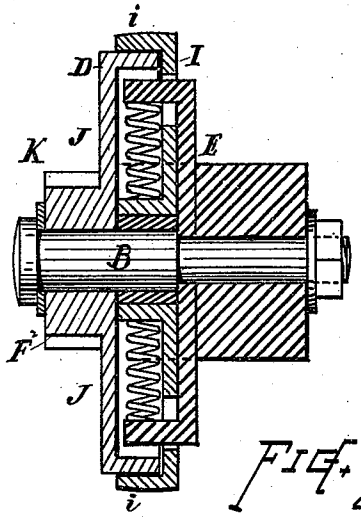


FIG. 9

WITNESSES —

Geo. M. Rice

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UNITED STATES PATENT OFFICE.

JACOB D. WRIGHT, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE WRIGHT MACHINE COMPANY, OF SAME PLACE.

MECHANISM FOR CHECKING OR STOPPING THE ACTION OF MACHINERY.

SPECIFICATION forming part of Letters Patent No. 297,330, dated April 22, 1884.

Application filed December 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, JACOB D. WRIGHT, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Mechanical Movements; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to provide a simple, practical, and efficient mechanism for checking or stopping the action of machinery when the driving belt or motor is shipped off, reversed, or disconnected; also, for retaining the operated mechanism at any position of its action where desired when the operating forces have ceased to act for moving the machinery. I attain these objects by mechanism the nature, construction, and operation of which is illustrated in the drawings and explained in the following description, the particular subject-matter claimed being hereinafter definitely specified. This mechanical movement is adapted for use in hoisting machinery and the machinery of elevators, and is herein shown and described as applied to a machine of that class. I do not, however, desire to confine the employment of my invention to any particular class of machinery or purpose of use, as it may be employed with advantage in different situations and in various classes of machinery.

In the drawings, Figure 1 is a front view of my improved mechanical movement. Fig. 2 is a section of the same at line *x x*. Fig. 3 is a view of one of the slide-pieces separate from the other parts. Fig. 4 is a perspective view of the operating-hub. Fig. 5 is a side view of the mechanism without the rim or flange plate. Fig. 6 is a cross-section of one of the arms at line *y y;* and Fig. 7 is a plan view, showing my mechanical movement applied for use in hoisting apparatus or elevator machinery. Fig. 8 illustrates a modification in construction, wherein the rim or flange is made revoluble and the arm or disk fixed in position. Fig. 9 is a vertical section of the same.

In the drawings, A denotes the supporting-frame, which may be of any suitable construction for supporting the operating parts.

B indicates a revoluble shaft mounted in suitable bearings on the frame, and provided with a tight pulley, C, and two loose pulleys, C′ and C², for driving belts to turn the shaft B to the right or left, respectively, according as one or the other of the belts is shifted onto the pulley C.

D indicates a rim, plate, or flange rigidly connected to the frame A, and having a suitable surface for receiving the grip of friction-pads or clutch-jaws.

E is a disk, cross-head, or arm rigidly fixed upon one end of a sleeve, E′, mounted loose upon the shaft B, and supported to turn in the bearing *a* of the frame A. Said sleeve E′ has rigidly fixed to its opposite end the driving pinion or wheel F, by which movement is transmitted to the gear G on the winding-drum shaft H, or to such other machinery as it is desired to operate.

I I indicate jaws or slide-pieces, which are mounted on the disk or cross-head E and arranged in suitable guideways for radial reciprocative action. Said slides are provided at their outer ends with friction-pads *i*, that match and embrace the friction surface of the rim or plate D, and in connection therewith form a clutch for retaining the head E at any position of the circle. Springs J are arranged in connection with the slides I and head E, for forcing the pads *i* against the flange D with the desired degree of pressure.

K indicates a rectangular hub or block rigidly secured to the shaft B and located between the inner ends of the radial slide-pieces I, which are made of proper shape to receive the action of the hub K, as hereinafter explained.

The hub K is furnished with a radial projection or arm, *m*, that engages with lugs *e e*, formed upon the disk E, and by means of which said disk or cross-head E is revolved when motion is imparted to the shaft B. A suitable amount of space or lateral play is allowed between the projection *m* and lugs *e* to permit of the shaft B and hub K moving for a limited distance before the projection *m* en-

gages the lug *e*, such movement being sufficient to change the position of the square part of the hub to a diagonal direction in relation to the inner ends of the slides I, and thus, by bringing the projecting angles *l* of the hub K to bear against said inner ends, to overcome the force of the springs J, so as to effect a radial movement of slides, causing the friction-pads *i* to be raised or disengaged from the surface of the stationary rim D, leaving the head E free to revolve when the projection *m* strikes the lug *e*. The contact of the projection *m* is with one of the lugs *e* when the shaft B is turned to the right and with the other lug *e* when the shaft is turned to the left.

Any equivalent engaging devices may be employed in lieu of lugs *m* and *e*, if preferred.

In the operation of the mechanism, the shaft B being revolved by the driving belt on the pulley C, the pressure of the projection *m* against the lug *e* carries around the head E and driving-pinion F, thereby operating the gear G and winding-drum H′ or other machinery that may be connected with said head E or its gear F. When the driving power or force exerted for revolving shaft B ceases to act, by reason of the shifting of the belt from the pulley C, or from any cause, accidental or otherwise, the springs J, being no longer resisted or overcome by the counter action of said driving force, immediately act to return the parts to normal position, bringing the friction-pads *i* again into contact with the stationary rim D, and these pads, by their clutch upon the rim, check the revolution of the head E and pinion F, and retain the operated mechanism at a fixed position until rotary action is again imparted to the shaft B and hub K. The action is substantially the same whether the shaft B is revolved to the right or to the left.

The pads *i* are herein shown as taking bearing upon the exterior surface of the rim D; but said pads could be arranged to bear upon said rim in other position, as the side face or inner surface, if desired, their movement and action being effected in equivalent manner to that described above.

It will be understood that the mechanism shown and herein described can be combined with any class of machinery for which it is adapted to transmit or arrest motion, and that instead of using the pinion F the connection with such machinery can be made in any convenient manner, according to the requirements in each particular case.

In lieu of making the hub K rectangular in form, it may be made of any other suitable shape, whereby the slides or jaws I will be operated for relieving the clutch, in the manner hereinbefore set forth.

As a modification in the construction of the mechanism, in lieu of making the part D stationary and the parts E revoluble, the reverse order may be availed of, and the flange or rim may be the revoluble part, and the cross-bar, disk, or part E may be fixed stationary, the hub K being operated independently of the flange, as illustrated in Fig. 8.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The revoluble head or disk E, provided with lugs *e*, and carrying radially-moving friction-pad slides I, with recoil-springs J, in combination with a stationary concentric friction-flange, D, and a centrally-located operating-hub, K, having a projection, *m*, for engaging said disk, and provided with angles *l*, for moving said slides when the hub is turned to the position of engagement with said disk, substantially as set forth.

2. The combination, substantially as hereinbefore described, of the shaft B, having the hub K fixed thereon, the head or disk E, mounted loose on said shaft, and carrying the driving-pinion F, the radially-moving slides I, carrying friction-pads *i*, the springs J, the stationary friction-rim D, and means for effecting engagement between said hub and disk, and for moving said slides by action of the hub, as set forth.

3. The combination of the following elements, viz: a central shaft, stud, or axis, a frictional surface concentric therewith, frictional pads for engaging said surface mounted on guiding-slides, in connection with a support plate or disk concentric with or centered upon said axis, and provided with springs for forcing the pads against said frictional surface, and a central hub or device adapted for counteracting said springs and relieving the frictional contact when the motive force is applied for starting and operating the machinery.

4. A head or disk carrying slides or friction-pads operated by springs, and a friction flange or plate, either of which may be stationary and the other revoluble, in combination with a suitable device for operating the friction-pads against the action of the springs when the motive power is brought into action, substantially as set forth.

5. The friction-slides, with their pads and springs, and the friction-flange, in combination with means for automatically relieving the friction and permitting the operation of the mechanism when power is applied to the revoluble shaft by the action of the propelling force exerted through said shaft.

Witness my hand this 21st day of November, A. D. 1883.

JACOB D. WRIGHT.

Witnesses:
CHAS. H. BURLEIGH,
J. WALTER SMITH.