

(No Model.)

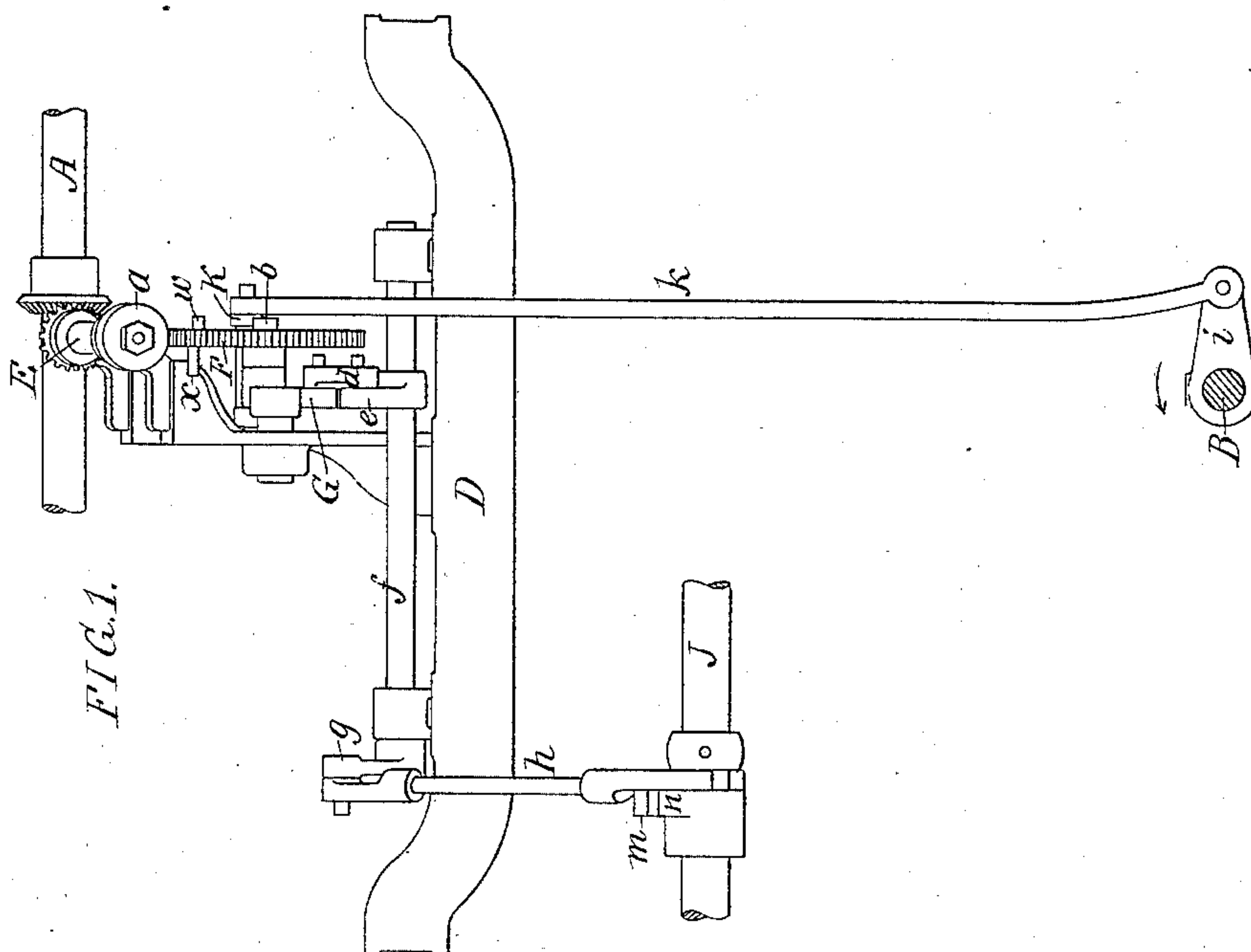
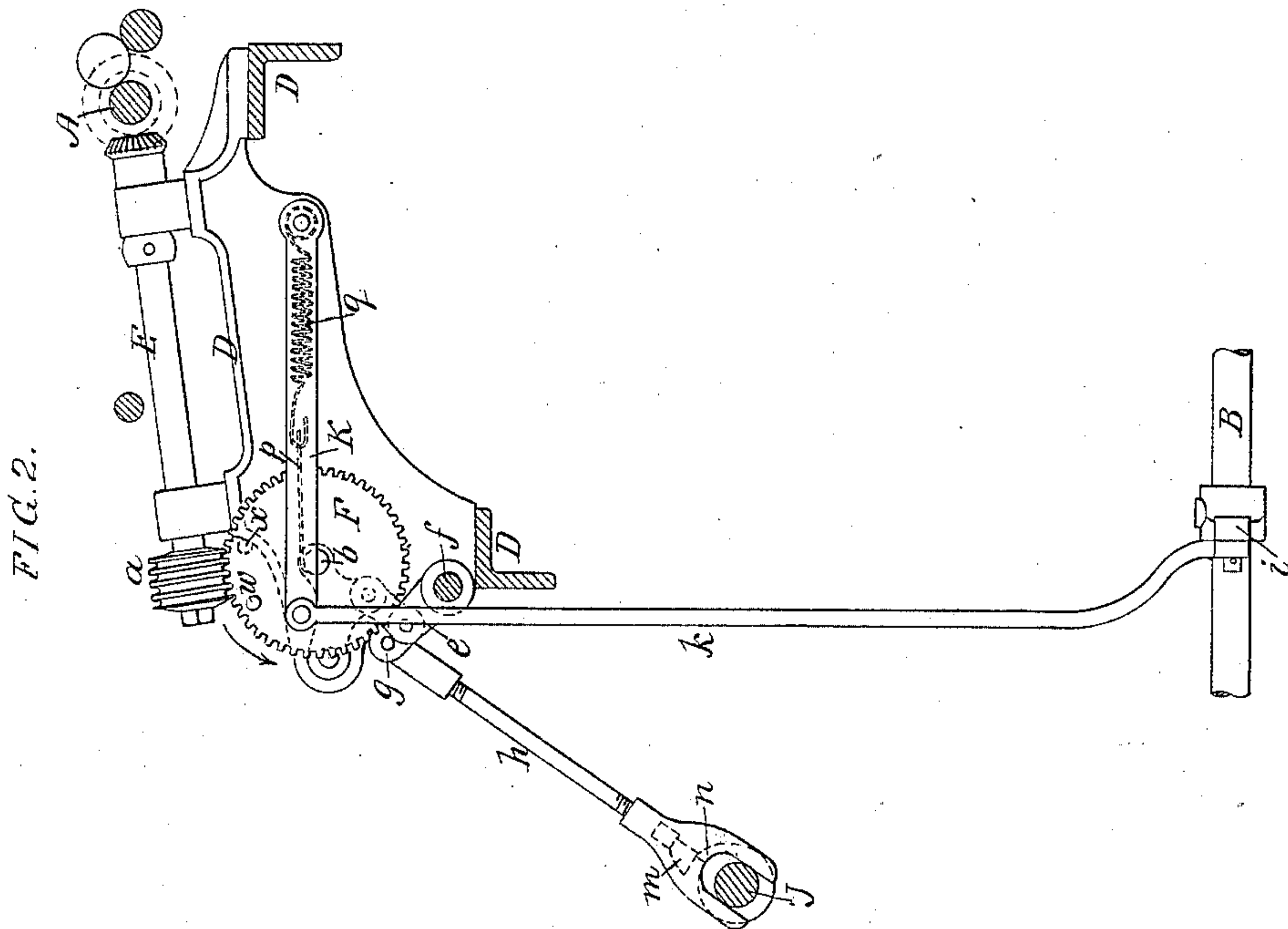
2 Sheets—Sheet 1.

I. W. HUCKINS.

MECHANICAL MOVEMENT DEVICE.

No. 277,733.

Patented May 15, 1883.



WITNESSES:

James J. Tobin.
Harry L. Ashenfelter

INVENTOR

Irving W. Hackens
by his Attorneys
Howson and Sons

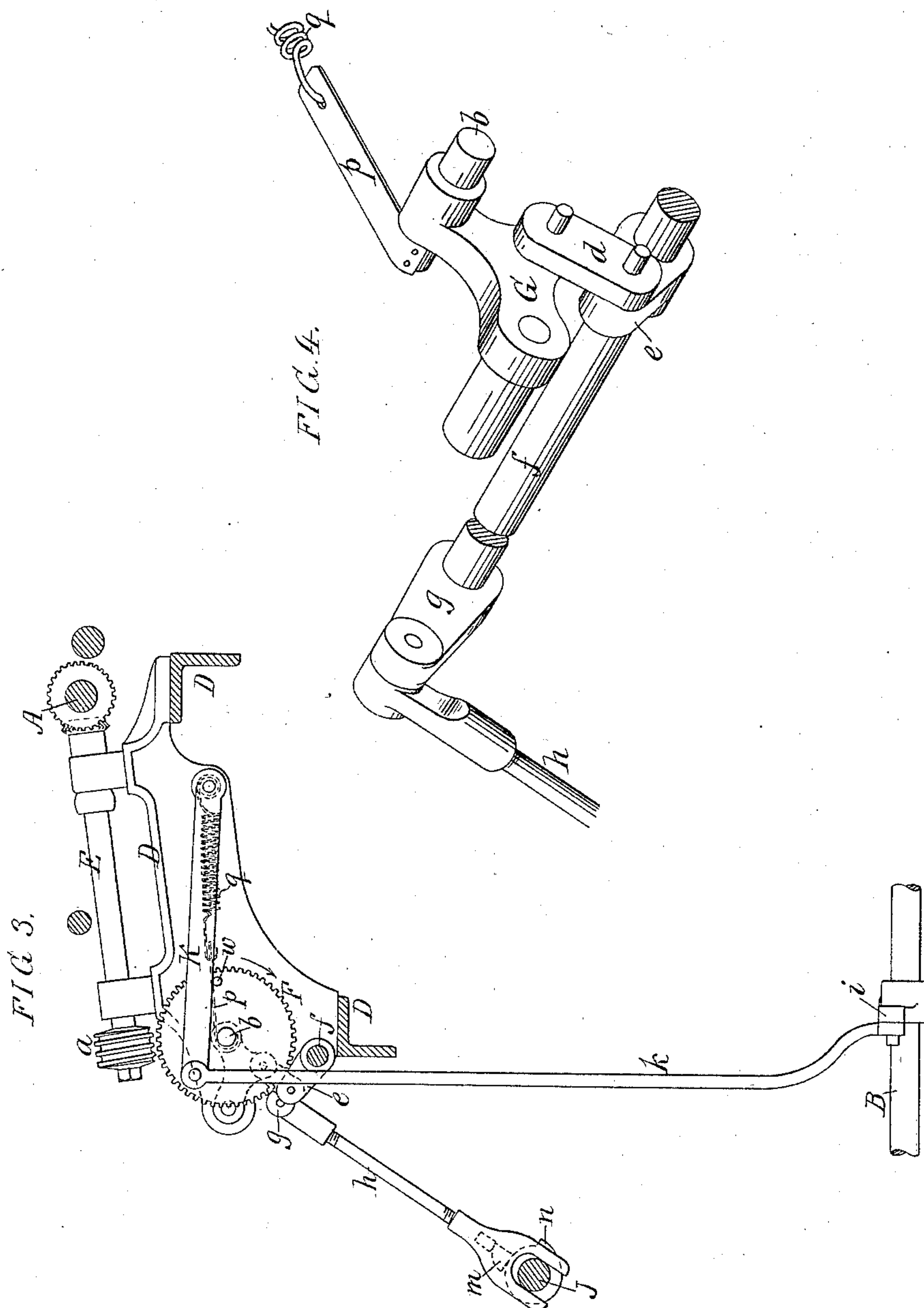
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UNITED STATES PATENT OFFICE.

IRVING W. HUCKINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
JAMES SMITH WOOLEN MACHINERY COMPANY, OF SAME PLACE.

MECHANICAL-MOVEMENT DEVICE.

SPECIFICATION forming part of Letters Patent No. 277,733, dated May 15, 1883.

Application filed March 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, IRVING W. HUCKINS, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented a
5 Mechanical-Movement Device, of which the following is a specification.

My invention relates to a device whereby a shaft can be stopped after having made a certain predetermined number of revolutions, the
10 object of my invention being to accurately govern the stoppage of the shaft, and to vary the extent of movement permitted as circumstances may suggest.

In the accompanying drawings, Figure 1,
15 Sheet 1, is a front view of the device; Fig. 2, a side view; Fig. 3, Sheet 2, the same with some of the parts in a different position, and Fig. 4 a perspective view of part of the device.

20 A is the shaft the movement of which is to be governed, this shaft being combined with suitable clutching-gear, whereby it may be thrown into or out of action, the unclutching devices being under control of a rock-shaft, B,
25 in such manner that when the shaft A is started it will continue to rotate until there is a movement of the shaft B, whereupon the shaft A may be thrown out of gear.

As the construction of the clutching and unclutching gear forms no part of my invention, I have not illustrated it. I may say, however,
30 that gearing similar to that shown in H. L. Moulton's patent, No. 270,096, dated January 2, 1883, may be used.

35 To bearings on a frame, D, is adapted a shaft, E, connected at one end by a bevel-gearing to the shaft A, and having at the opposite end a worm, *a*. A worm-wheel, F, is secured to a spindle, *b*, which has a bearing in a lever, G, hung
40 to the frame D, and said lever is connected by a link, *d*, to an arm, *e*, on a shaft, *f*, another arm, *g*, on which is connected to one end of a rod, *h*, the opposite end of the latter being forked, so as to embrace a shaft, J, and having
45 a lug, *m*, adapted to be acted upon by a cam, *n*, on said shaft.

To the spindle *b* of the worm-wheel F is connected one end of a strap, *p*, the opposite end of which is connected to a spiral spring, *q*,
50 hung to a pin on the frame D, and to said pin

is also hung an arm, K, the outer end of which is connected by a rod, *k*, to an arm, *i*, on the rock-shaft B.

To any one of a number of openings in the face of the wheel F is adapted a pin, *w*, and
55 from the back of said wheel projects a pin, *x*, as shown in Fig. 1.

The operation of the device is as follows: When the parts are in the position shown in
Figs. 1 and 2 the shaft A has just been thrown
60 into gear, the shaft J being retained in the position shown, so that the cam *n*, acting through the lever G and the connections described, serves to hold the worm-wheel F in gear with
65 the worm *a*. The consequence of this is a rotation of the wheel in the direction of the arrow and the winding of the strap *p* on the spindle of the wheel, so as to expand the spring *q*. This movement continues until the pin *w*
70 strikes the arm K and elevates the same, the movement of the arm being transmitted to the rock-shaft B, and thence to the unclutching device, whereby the shaft A is thrown out of
75 gear and its movement stopped. At the same time the shaft J has a partial rotation imparted to it, so as to withdraw the cam *n* from the support of the rod *h*, in consequence of which
80 the lever G is permitted to fall, and the worm-wheel F is withdrawn from the worm *a*, as shown in Fig. 3. As soon as the wheel is free
85 from the control of the worm the spring *q*, acting on the spindle *b* of the wheel through the medium of the strap *p*, causes a backward movement of said wheel until such movement
90 is arrested by the contact of the pin *x* with the frame D, the parts being then in proper position for the wheel to be again lifted into gear with the worm on the next movement of the shaft A.

By adjusting the pin *w* any desired extent
95 of movement of the wheel F may be permitted before the arm K is operated and the shaft A thrown out of gear.

The shaft J is preferably so timed in respect
100 to the shaft A that the wheel F will be thrown into gear with the worm *a* as soon as said shaft A commences to rotate; but this is not essential, as the shaft A may, if desired, be permitted to rotate for a certain time before the stop-motion devices are thrown into action.

The details of the above device may be modified in various ways without departing from the main feature of the invention. For instance, the rod *h* may be connected directly to the lever *G*, and the spindle of the wheel *F* may be acted upon by a strap and weight instead of by a spring, or a coiled spring may act directly upon the spindle without the intervention of a strap; and in some cases the pin *w* may act directly upon a lug or projection on the rod *h*, instead of through the medium of the arm *K*, and where I may allude to the "arm *K*" the latter term is to be understood as including any equivalent device whereby the movement of the pin *w* can be transmitted to the unclutching-gear.

Other means than those described may also be employed for gearing the wheel *F* to the shaft *A*, bevel-gearing being used instead of the worm and worm-wheel, for instance, and in some machines such a relation of the wheel *F* to the shaft *A* may be permissible that said wheel may be geared directly to the shaft.

As shown in the drawings, the shaft *A* forms one of a number of feed-rolls, and the device is intended for use in connection with a spinning-mule or other piece of machinery in which such feed-rolls are employed; but it may be used in connection with any shaft as a stop-motion device therefor.

I claim as my invention—

1. The combination of a shaft, *A*, a wheel, *F*, driven therefrom, and having a pin, *w*, and mechanism, substantially as described, whereby said pin is caused to actuate a clutch and throw the shaft *A* out of gear, as set forth.

2. The combination of the shaft *A*, the wheel *F*, driven therefrom, the arm *K*, connected to the clutching mechanism of the shaft *A*, and the pin *w*, adjustable on the wheel *F* and adapted to act upon said arm *K*, as set forth.

3. The combination of the shaft *A*, the wheel *F* and its pin *w*, the arm *K*, means for moving

the wheel *F* into and out of gear with the shaft *A*, and a spring or equivalent device for retracting the wheel when it has been moved out of gear with the shaft, as set forth.

4. The combination of the shaft *A*, the wheel *F* and its pin *w*, the arm *K*, means for moving the wheel *F* into and out of gear with the shaft *A*, a spring for retracting the wheel, and a stop-pin, *x*, as set forth.

5. The combination of the shaft *A*, the shaft *E* and its worm *a*, the worm-wheel *F* and its pin *w*, the arm *K*, the lever *G*, to which the wheel *F* is hung, and means, substantially as described, whereby the said lever is actuated so as to carry the wheel into and out of gear with the worm, and whereby the wheel is retracted when out of gear, as set forth.

6. The combination of the shaft *A*, the wheel *F* and its clutch-controlling pin *w*, gearing whereby the said wheel *F* can be driven from the shaft *A*, a shaft, *J*, having a cam, *n*, and mechanism, substantially as described, whereby said cam is caused to throw the wheel *F* into and out of gear with the shaft *A*, as set forth.

7. The combination of the shaft *A*, the shaft *E*, driven therefrom, and having a worm, *a*, the worm-wheel *F*, having a pin, *w*, the arm *K*, the shaft *J*, having a cam, *n*, the lever *G*, the shaft *f*, with its arms *e* and *g*, and the rod *h*, the strap *p*, and the spring *q*, as set forth.

8. The combination of the shaft *A*, the wheel *F*, driven therefrom, and having a pin, *w*, the clutch-operating shaft *B* and its arm *i*, the arm *K*, and the rod *h*, as set forth.

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

IRVING W. HUCKINS.

Witnesses:

HARRY L. ASHENFELTER,
HARRY SMITH.