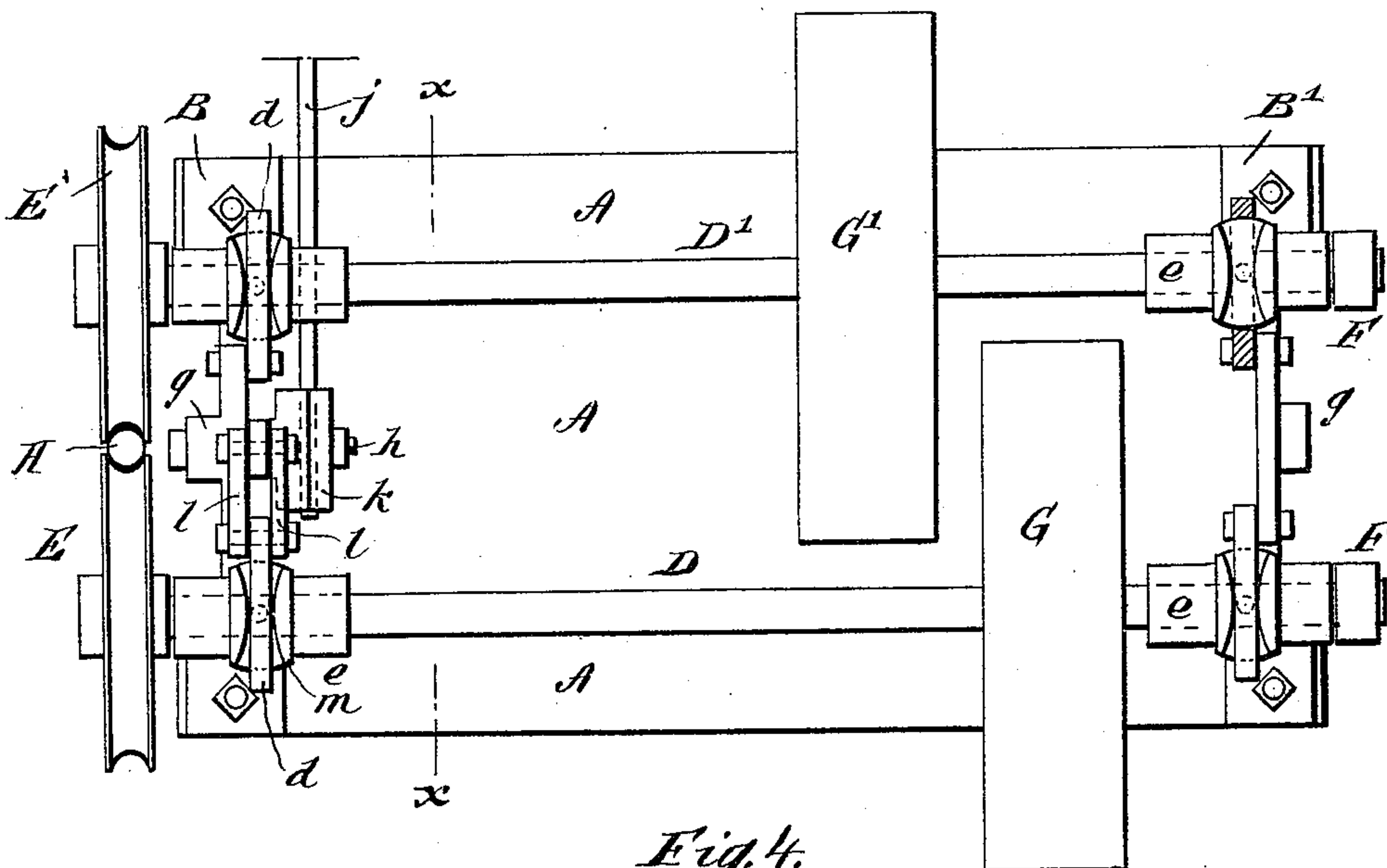
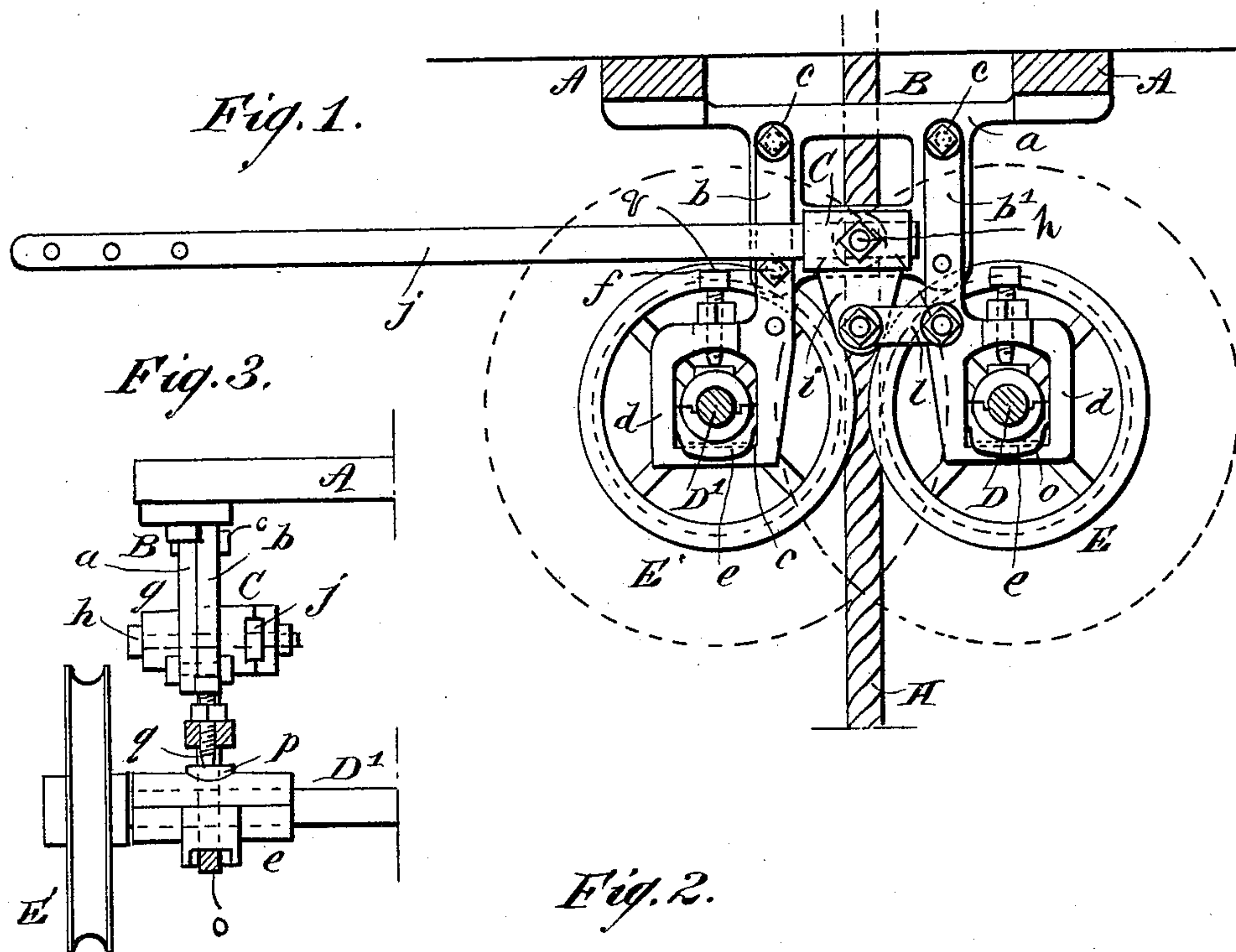


(No Model.)

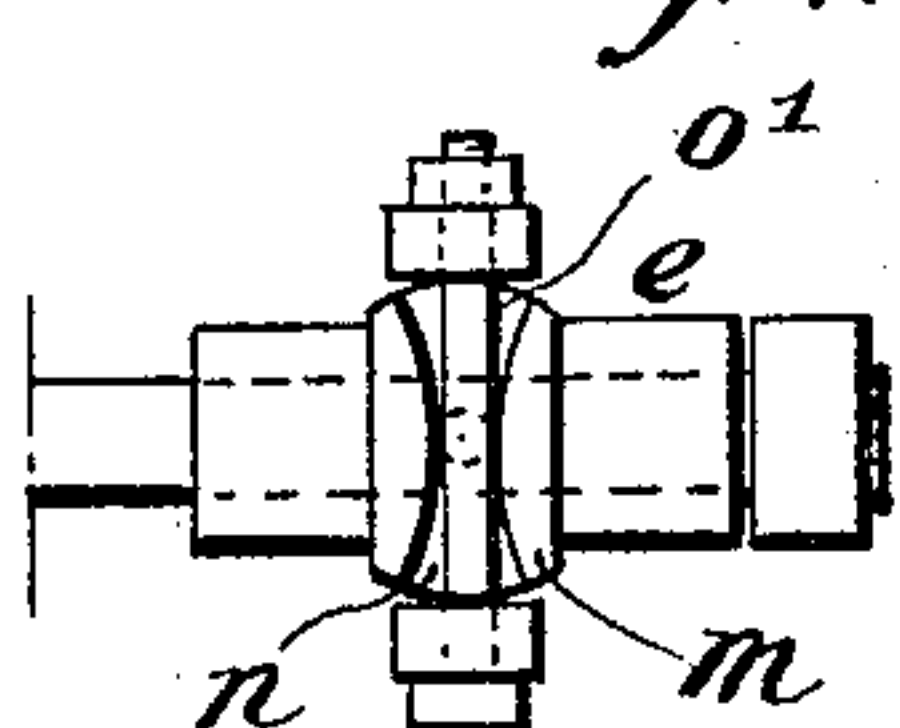
J. ARTHUR.  
HOISTING MACHINE.

No. 459,986.

Patented Sept. 22, 1891.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JAMES ARTHUR, OF JERSEY CITY, NEW JERSEY.

## HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,986, dated September 22, 1891.

Application filed January 10, 1891. Serial No. 377,337. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES ARTHUR, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Hoisting-Machine, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical transverse section of my improved hoisting-machine, taken on line *x x* in Fig. 2. Fig. 2 is an inverted plan view, partly in section. Fig. 3 is a side elevation, partly in section, of one of the hangers for supporting the shafts; and Fig. 4 is an inverted plan view of one of the hangers.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to construct a power hoisting-machine for application to the ordinary hand-hoist.

My invention consists in a pair of shafts, one fixed, the other movable, each carrying a grooved sheave for gripping the rope, said shafts being provided with pulleys for receiving driving-belts; also, in the combination, with the movable shaft, of a pivoted hanger and a lever for moving the hanger, so as to cause the sheaves to bite the rope.

It also further consists in a novel construction of the swiveled hanger-box, whereby the movable shaft is allowed to move without binding in its bearings.

The invention also further consists in an interchangeable arrangement of the hangers and lever, whereby one or the other of the hangers and shafts may be made movable, and by which in either case the operating-lever may be arranged to be lifted or depressed from either side of the machine to adapt it for use in any locality, all as will be hereinafter more fully described.

To the timbers *A A* are secured the double hangers *B B'*. The hangers *B B'* each consist of a body or base piece *a*, which is bolted to the timbers *A* and extends perpendicularly from the timbers, and two arms *b b'*, pivotally connected with the base-piece *a* by bolts *c*. The lower ends of the arms *b b'* are provided with frames *d*, which are oppositely arranged with respect to each other, and in these frames are placed the journal-boxes *e*, presently to be described.

In the arms *b b'* and base-piece *a* are formed holes for receiving the bolt *f*, which may be inserted in either of the arms *b b'*, as circumstances may require. In the present case it is inserted in the arm *b* and in the base-piece *a*, rendering the said arm *b* rigid, while the other arm *b'* is secured to the base-piece by the bolt *c* only, thus rendering the said arm *b'* movable. The base-piece *a* is furnished with a boss *g*, in which is inserted a bolt *h*, upon which is pivoted the short arm *i* of the hoist-operating lever *C*. The said short arm of the operating-lever is grooved transversely for receiving the longer arm *j* of the said lever and is furnished with a grooved cap *k*, which fits over the arm *j*, and which is held in place by the nut upon the bolt *h*. The shorter arm *i* of the lever *C* is connected in the present case with the movable arm *b'* by links *l*; but the arm *b* may be made movable by taking out the bolt *f*, and the arm *b'* may be fixed by means of the bolt *f*, when the links *l* may be transferred to the arm *b*, and the said arm *b* will become the movable arm.

With the lever and links arranged as shown in Fig. 1 the longer arm *j* of the lever *C* must be pulled upward in order to operate the hoist; but when the links are transferred to the arm *b* the hoist will be operated by the downward pulling of the arm *j* of the lever *C*.

The hanger *B'* at the opposite end of the timbers *A*, for convenience in construction, is the same as that already described, except that both the arms *b b'* are fixed.

In the journal-boxes *e* of the hangers *B B'* are placed the shafts *D D'*, each furnished at one end with a grooved sheave *E* and at the opposite end with a collar *F*, and upon the said shafts *D D'* are mounted pulleys *G G'*, which receive straight and cross belts (not shown) for turning the shafts in opposite directions and causing the sheaves *E* to roll upon the hoisting-rope. Motion being imparted to the shafts *D D'* in the manner described, an upward movement of the longer arm *j* of the lever *C* swings the arm *b'* and carries the sheave *E* on the shaft *D* against the hoisting-rope, pressing against the sheave *E* on the shaft *D*, thereby causing the sheaves *E* to impart motion to the said hoisting-rope and thus operate the hand-hoist.

It is obvious that my improved hoist may



be attached to the ceiling, as shown in Fig. 1, or inverted and placed upon the floor, and it may be placed at either side of the elevator-shaft, as may be required.

5 The journal-box *e* may be made in a single piece or in halves, as shown. The center of the box is provided upon its under surface with a lug *m*, having a transverse groove *n*, the side walls of which are made inwardly  
10 convex, thus making it wider at the ends than at the middle. The central portion of the groove *n* is of sufficient width to receive the lower cross-bar *o* of the frame *d* of the arms *b b'* or the bolt *o'*, extending across the lower  
15 part of the hanger and serving the same purpose as the cross-bar *o*. The lug *m* is extended up the side of the hanger-box and made outwardly convex to allow the box to turn in the hanger, at the same time prevent-  
20 ing undue lateral motion of the box. The upper part of the box *e* is furnished with a concaved cup *p*, which receives the end of a screw *q*, extending through the upper part of the frame *d* of the hanger and serving to hold  
25 the upper portion of the box in place.

I have described the lug *m* as being upon

the bottom of the box and the cup *p* as being on the cover of the box; but the journal-box may be inverted without interfering with its working.

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

1. In a reversible hoisting-machine, the combination of a hanger-base, two journal-  
35 box-supporting arms pivotally connected to the base, means for fixing either of the pivoted arms, and a lever for operating the movable journal-box-supporting arm, substantially as specified.

2. A shaft-hanger formed of a supporting-frame furnished with a retaining-screw, a  
40 box having convex sides and provided with a lug having a transverse groove having inwardly-convex walls and furnished with a  
45 cup for receiving the retaining-screw, substantially as specified.

JAMES ARTHUR.

Witnesses:

HERBERT COOPER,  
WM. MCAUSLAN.