

(No Model.)

D. A. JAMES.  
POWER TRANSMITTING DEVICE.

No. 561,953.

Patented June 9, 1896.

Fig. 1

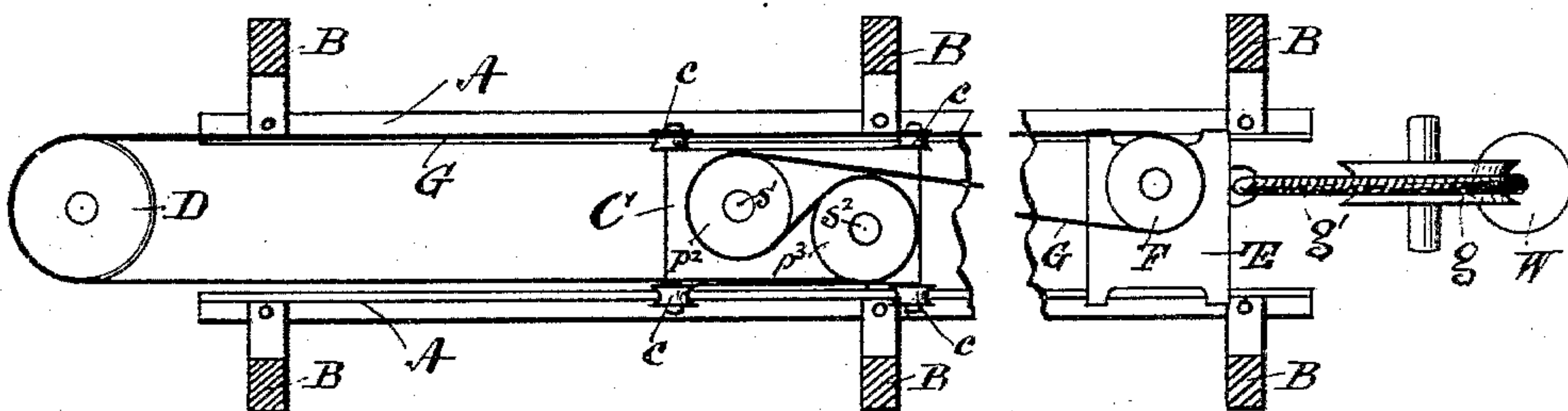


Fig. 2

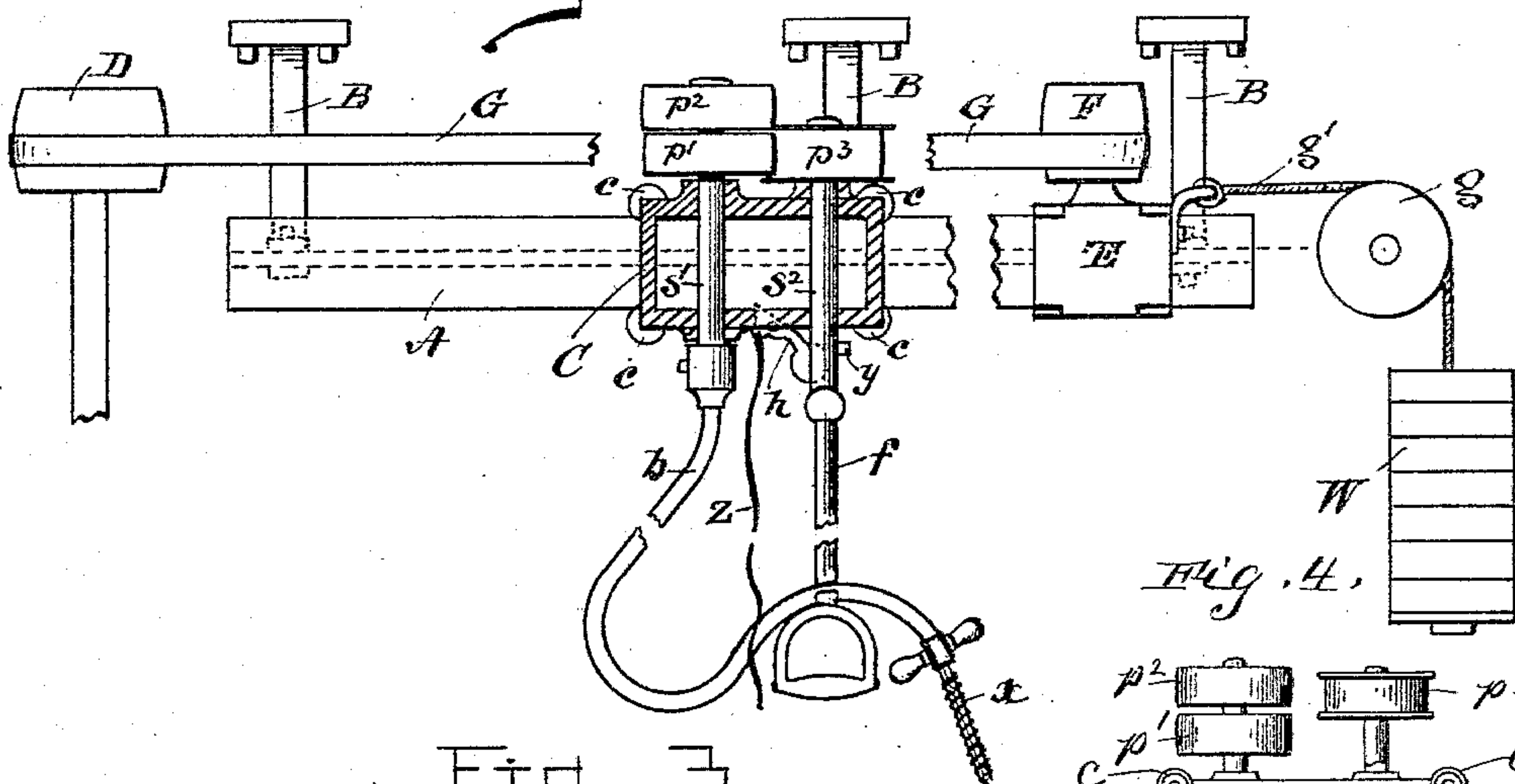
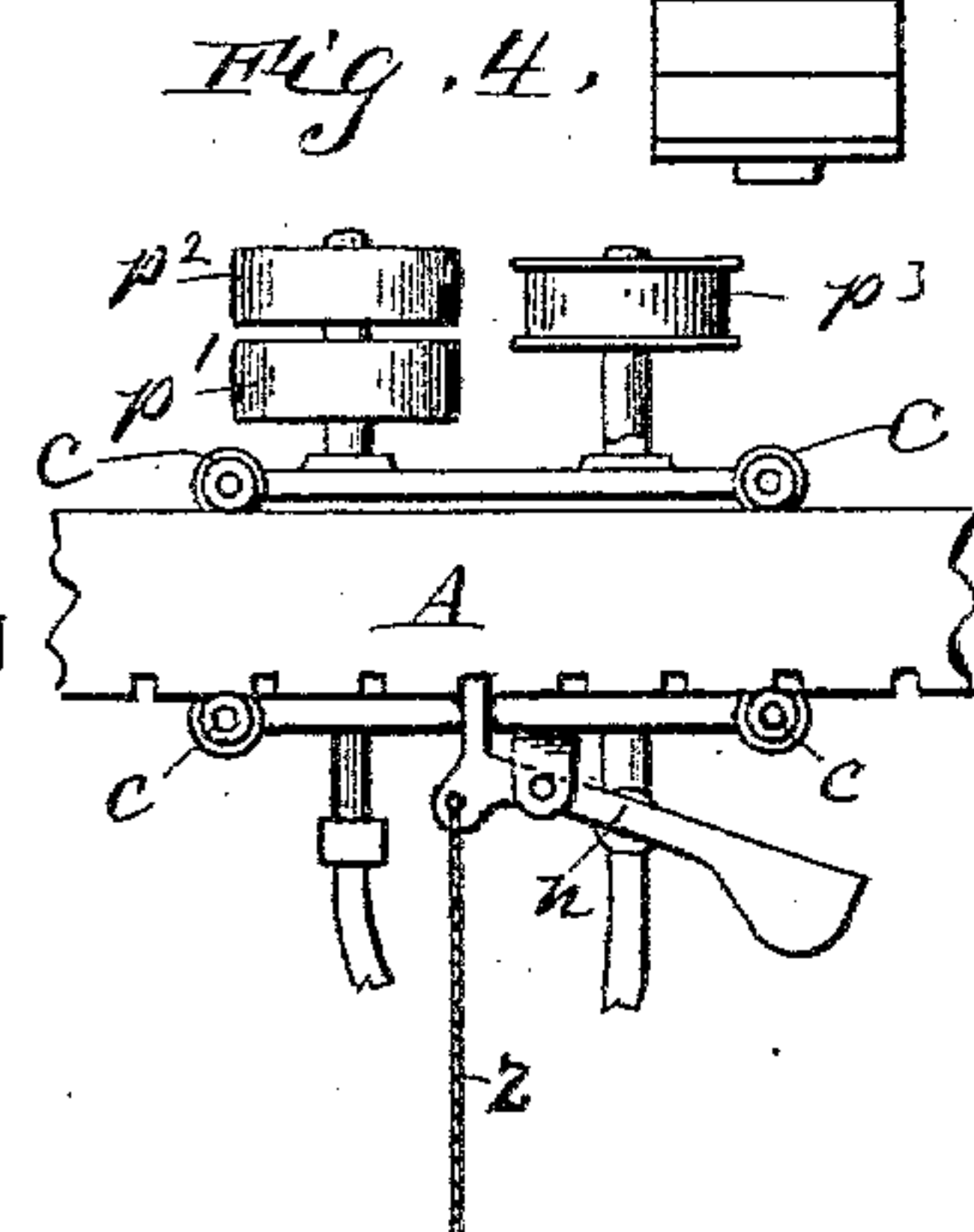
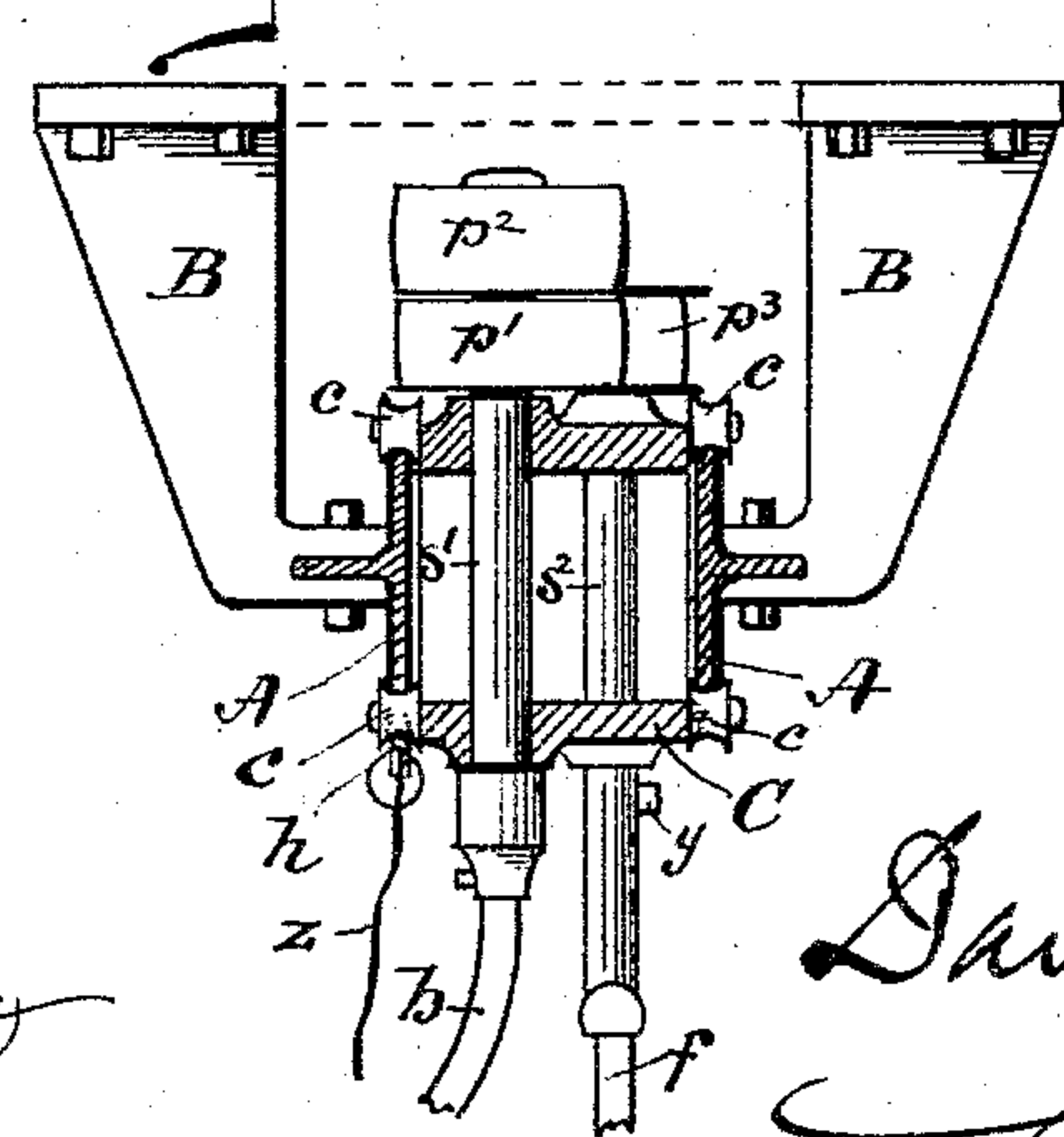


Fig. 3



Witnesses:

*Frank R. Borman*  
*D. H. Thrasher*

*David A. James*

Inventor,

by *L. M. Hoes*  
att'y.



# UNITED STATES PATENT OFFICE.

DAVID A. JAMES, OF LAWRENCEBURG, INDIANA.

## POWER-TRANSMITTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 561,953, dated June 9, 1896.

Application filed October 7, 1895. Serial No. 564,837. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID A. JAMES, a citizen of the United States, residing at Lawrenceburg, Indiana, have invented new and useful Improvements in Power-Transmitting Devices, of which the following is a specification.

My invention relates to movable power-transmitting devices, having reference to an apparatus whereby power may be transmitted to a number of points successively in series from a given source as occasion requires.

To this end it consists in the apparatus hereinafter described, wherein a shaft-carriage movable upon supporting-ways and adapted to be shifted at will to any desired position thereon is maintained in rotative relation with a driving-pulley, engaged or disengaged, as desired.

It consists, further, in the certain constructive features whereby the apparatus may be moved to and retained in any desired position and thrown into or out of operation as required.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view, and Fig. 2 a partial side elevation, of my improvement as adapted to a factory or workshop where power is required alternately at a series of work-benches. Fig. 3 is a cross-section of the trackway and shaft-carriage, showing structural features. Fig. 4 is a detail view of the catch device attached to the carriage.

Referring now to the drawings, A A designate the parallel rails of a supporting-trackway suspended from a ceiling or side wall by brackets B, and C a carriage traveling on and between the tracks, upon which it may be carried and held by friction-rollers *c c*. In the carriage, which is simply a bearing-frame of any convenient construction, a vertical shaft *s'* is journaled in relatively permanent bearings and is provided with a fixed pulley *p'* and a loose pulley *p<sup>2</sup>* adjacent, both carried on an extension of the shaft above the carriage C. To the lower end of the shaft *s'* is attached an extension—such, for example, as a “flexible” shaft *b* or any other means of transmitting the power adapted to the occasion. In the present case a drill *x* is shown

attached to the terminal of the shaft *b* to be used for boring at the bench. A second vertical shaft or stud *s<sup>2</sup>* is also journaled in the carriage, adapted to be moved vertically, and carries a loose pulley *p<sup>3</sup>* at its upper end above the carriage and is provided at its lower terminal with a handle *f*, by which it may be elevated, carrying the pulley *p<sup>3</sup>* with it. To sustain it in its elevated position, the shaft *s<sup>2</sup>* is provided near its lower end with a radial projection *y*, and the aperture in the lower wall of the carriage through which it passes is provided with a correspondingly radial enlargement, so that by elevating the shaft, passing the radial projection through the enlargement, and giving the shaft a partial rotation the projection rests on the lower wall of the carriage and sustains the shaft in its elevated position. A reversal of this operation lowers it. The object of this construction will be presently explained.

At one end of the trackway is journaled a driving-pulley D, (which may be upon the ordinary line-shaft of a factory,) and on the trackway near the opposite end is a movable tension-carriage E, from which projects upwardly a vertical stud or spindle carrying a belt-pulley F. The carriage is held by a cord or chain *g'*, passing outward over a fixed sheave *g*, and carrying a weight W at its outer terminal to keep the carriage under constant stress in that direction.

An endless belt G from the driving-pulley D passes at one side of the carriage C directly to and around the pulley F upon the tension-carriage E, and at the other is carried in a reverse “bight” first around the pulley *p<sup>3</sup>* and thence around the pulley *p'*, thence to the pulley F, thus communicating the driving power to the pulley *p'* and its shaft *s'*.

It may now be explained that upon elevating the shaft or stud *s<sup>2</sup>*, with its pulley *p<sup>3</sup>*, the belt is carried to the loose pulley *p<sup>2</sup>* and the shaft *s'* no longer operated, the pulley *p<sup>3</sup>* having the double function of an idler for changing the direction of the belt *b* to bring it into proper relations with the pulley *p'* and also as a belt-shifter to discontinue the application of power when not required.

In order to move the carriage C with convenience, I attach to the under side of the



carriage C, in position to engage through a suitable opening or recess in the carriage with notches at the under side of the trackway, a pivoted dog or catch *h*, provided with a weight or spring at the outer end, and to overbalance the same and bring its head or shorter end into notches suitably provided at the under side of the trackway. In lieu of notches the head may be provided with a cam-surface to engage the under side of the trackway by wedging friction. A cord or chain *z*, attached to the short end of the dog, hangs down within convenient reach of the attendant and furnishes a means for disengaging the dog and drawing the carriage to any convenient point, and upon its release the dog automatically engages and retains the carriage in position.

The mode of operation is as follows: The shifter-pulley  $p^3$  stands normally in its elevated position, with the belt *G* operating the loose pulley  $p^2$ . The carriage C is moved to the desired position by the cord or chain *z*, whereupon the handle *f* is manipulated to lower the pulley  $p^3$ , so that the belt engages the shaft *s'*, and the power is transmitted thence by the flexible shaft to the tool *x* or other device to be operated. When the object of use is accomplished, the handle *f* is again manipulated to elevate the pulley  $p^3$ , and the belt is shifted to the loose pulley  $p^2$ , thereby discontinuing the rotation of the shaft *s'*. The flexible shaft *f* may be then, for convenience, hung upon the handle *f*, as shown in the drawings, and the carriage allowed to stand or be moved out of the way until a new occasion for use arises. The tension device always keeps the belt taut upon the pulleys.

I may instead of giving the pulley  $p^3$  the function of a shifter by its vertical adjustment employ any ordinary belt-shifting device.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. The movable power-transmitting apparatus, embodying a trackway, attached to a permanent support; a shaft-carriage movable thereon, and means for moving and securing the same; two shafts provided with pulleys and carried upon the shaft-carriage; an end-

less belt operating normally parallel with the trackway and carried upon pulleys at opposite ends of the trackway and in opposite bights around the pulleys upon the carriage; and a transmitting device attached to one of the vertical shafts of the carriage, substantially as set forth.

2. In a power-transmitting device of the character indicated, the combination of a carriage carried upon a supporting-trackway, a shaft vertically journaled therein carrying a fast and a loose pulley, a second shaft or stud upon the carriage and carrying an idler-pulley, an endless belt carried upon pulleys at opposite ends of the trackway and in opposite bights around the shaft-pulleys of the carriage, and means for shifting the belt while in operation from the fast to the loose pulley or vice versa, substantially as set forth.

3. In a power-transmitting device of the character indicated, the combination of a carriage carried upon a supporting-frame, a shaft vertically journaled therein carrying a fast and loose pulley, a second shaft or stud upon the carriage and carrying an idler-pulley, an endless belt carried upon pulleys at opposite ends of the trackway and in opposite bights around the shaft-pulley of the carriage, and means for elevating or depressing the flanged pulley of the carriage to shift the belt to the fast or loose pulley of the first-mentioned shaft, substantially as set forth.

4. In a movable power-transmitting device, the combination of a trackway, a driving-pulley at one end of the same, a tension-pulley near the opposite end provided with means for holding it away from the driving-pulley, an endless belt carried around the tension and driving pulleys, a shaft-carriage movable upon the trackway between the driving and tension pulleys, a shaft and pulley, and an adjacent idler upon the carriage, carrying the belt in a reverse bight, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID A. JAMES.

Witnesses:

L. M. HOSEA,  
FRANK K. BOWMAN.