

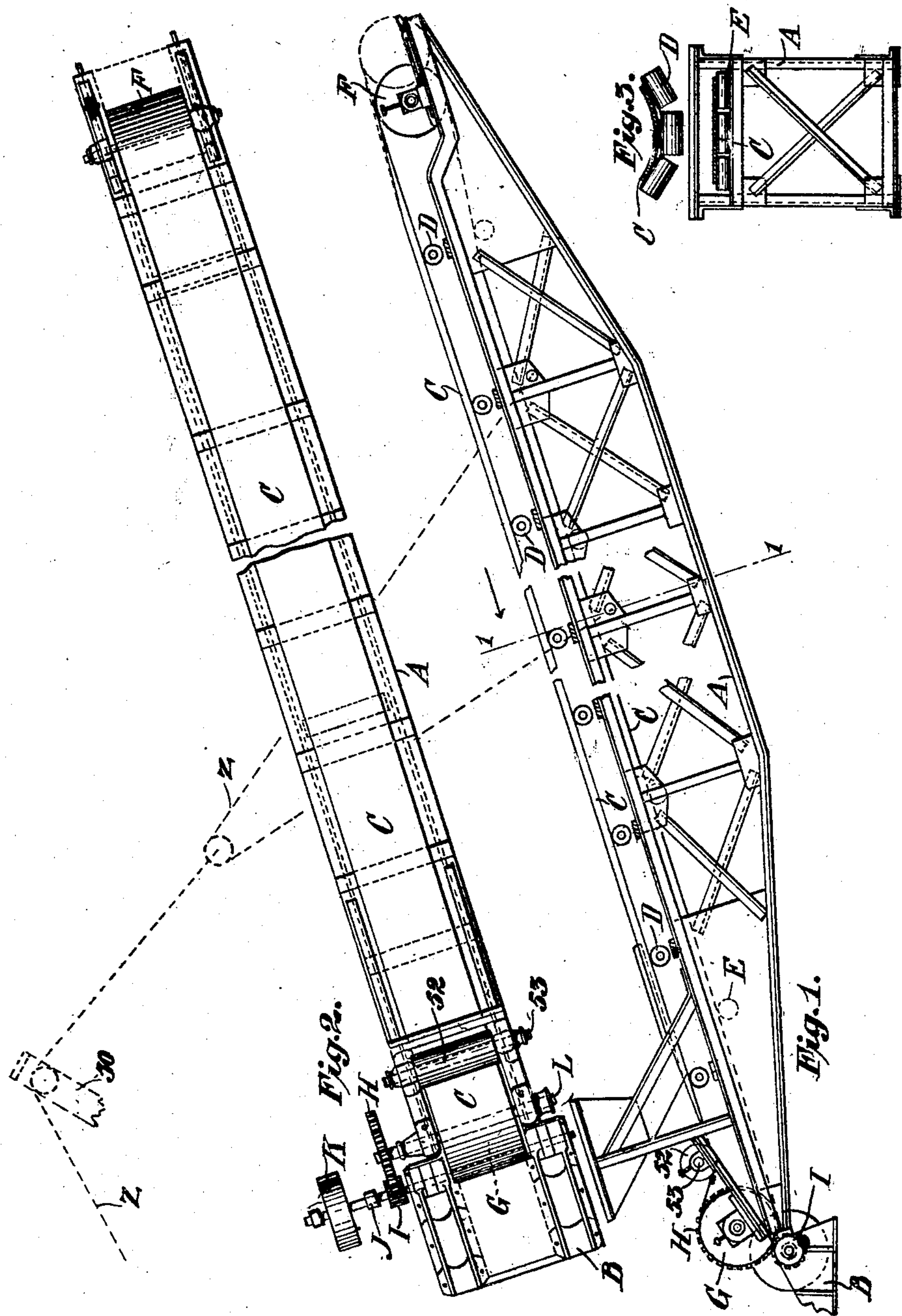
No. 828,296.

PATENTED AUG. 14, 1906.

C. K. BALDWIN.
CONVEYER.

APPLICATION FILED MAR. 18, 1903.

2 SHEETS—SHEET 1.



Witnesses
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Raegen & Birney
attys

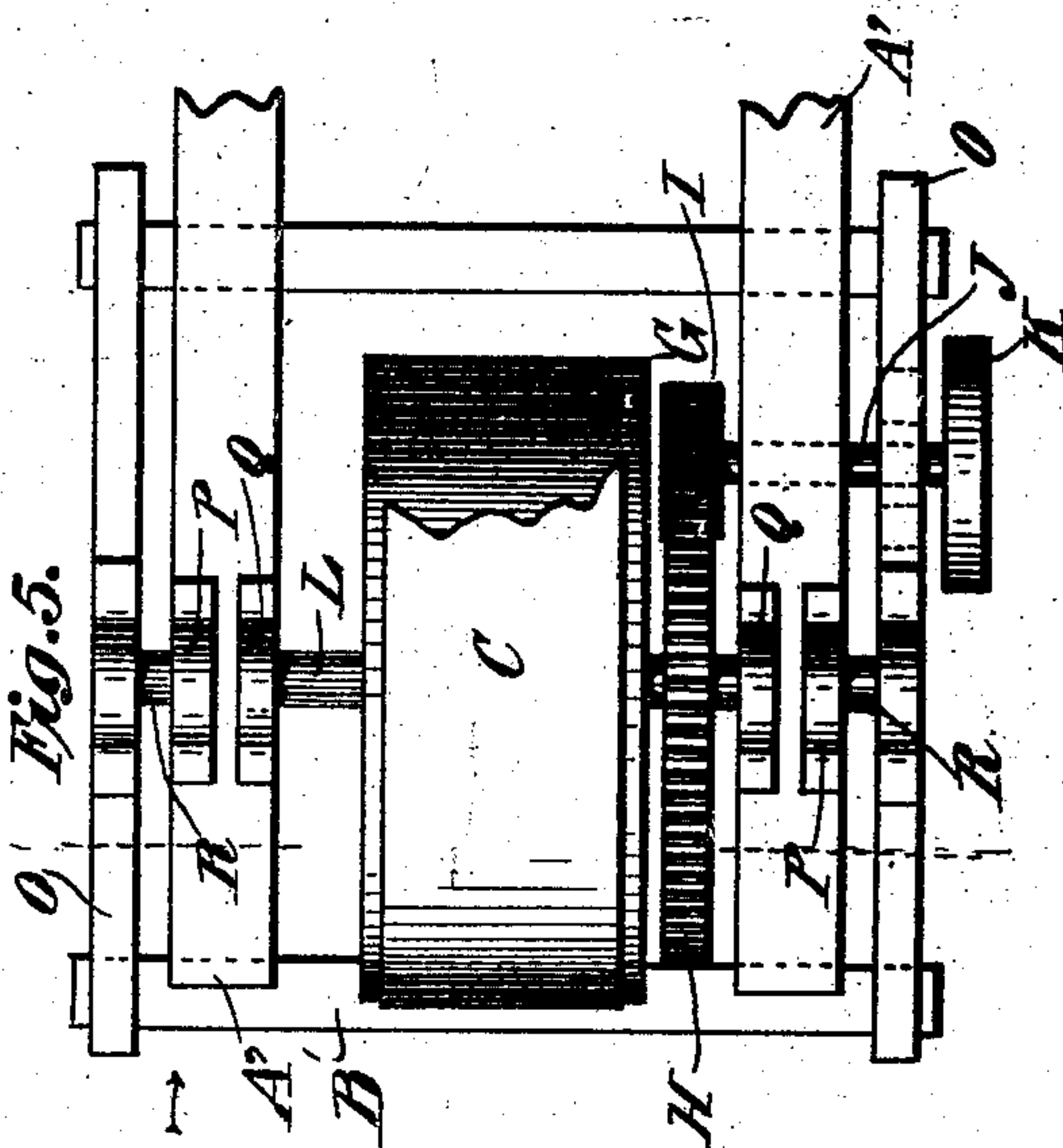
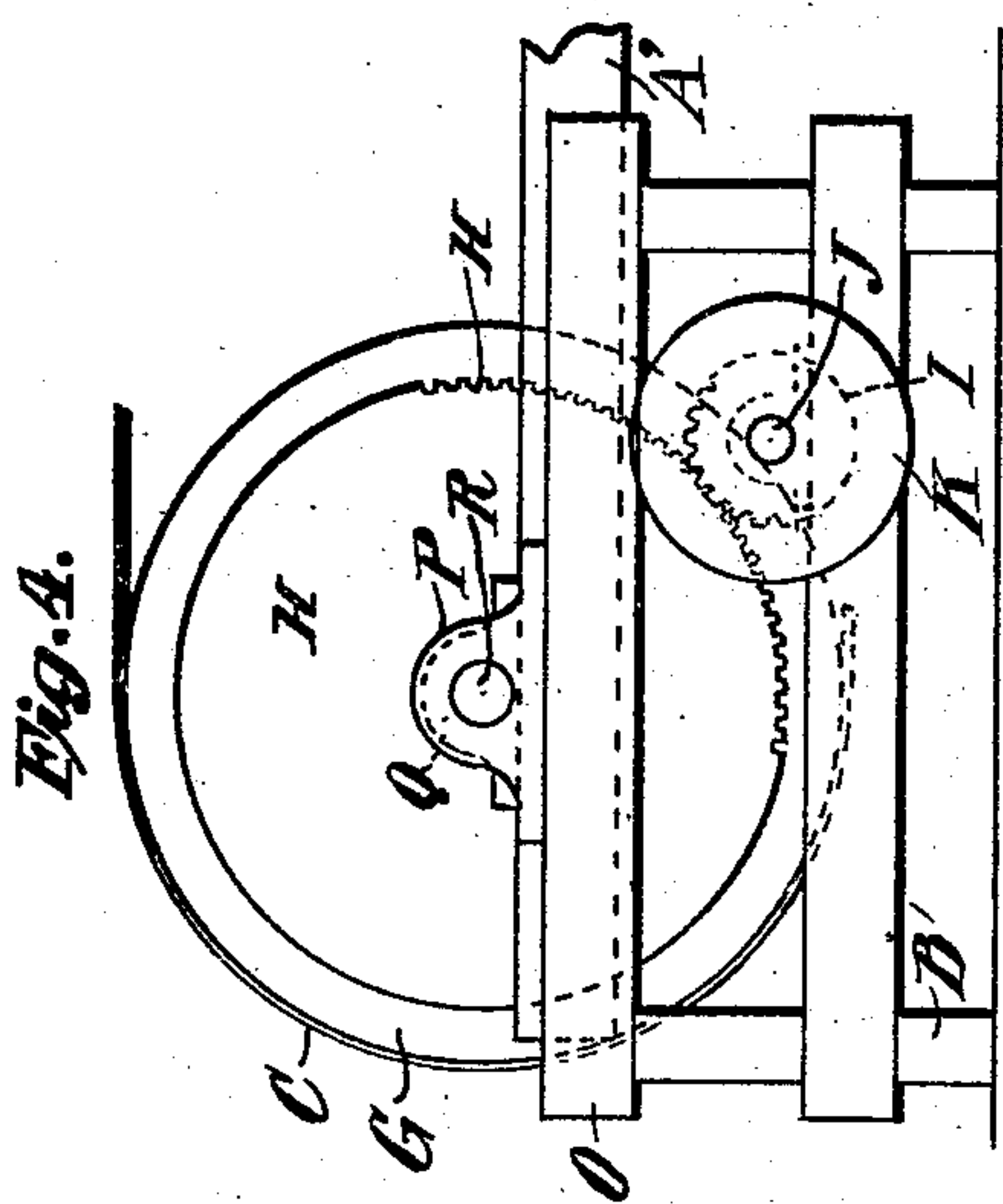
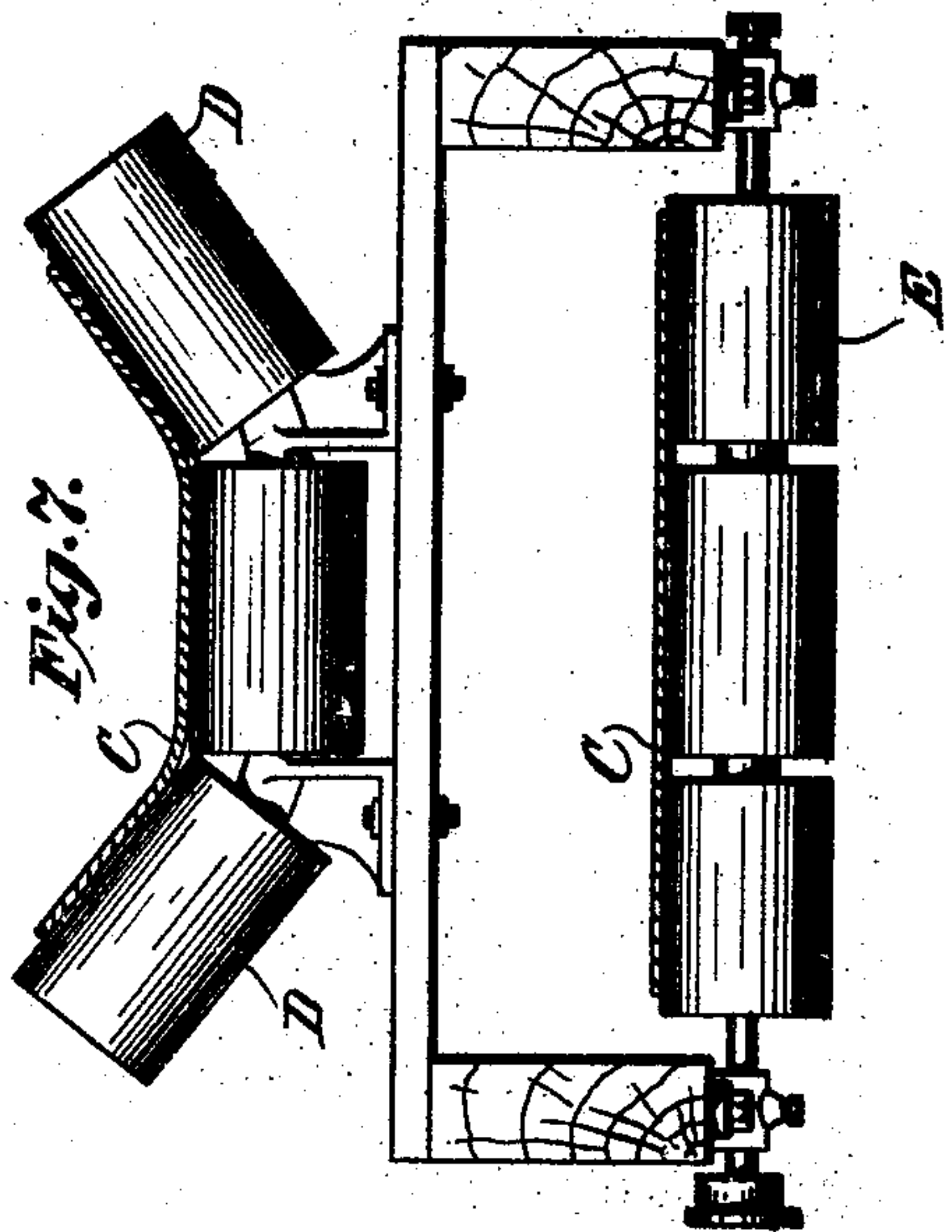
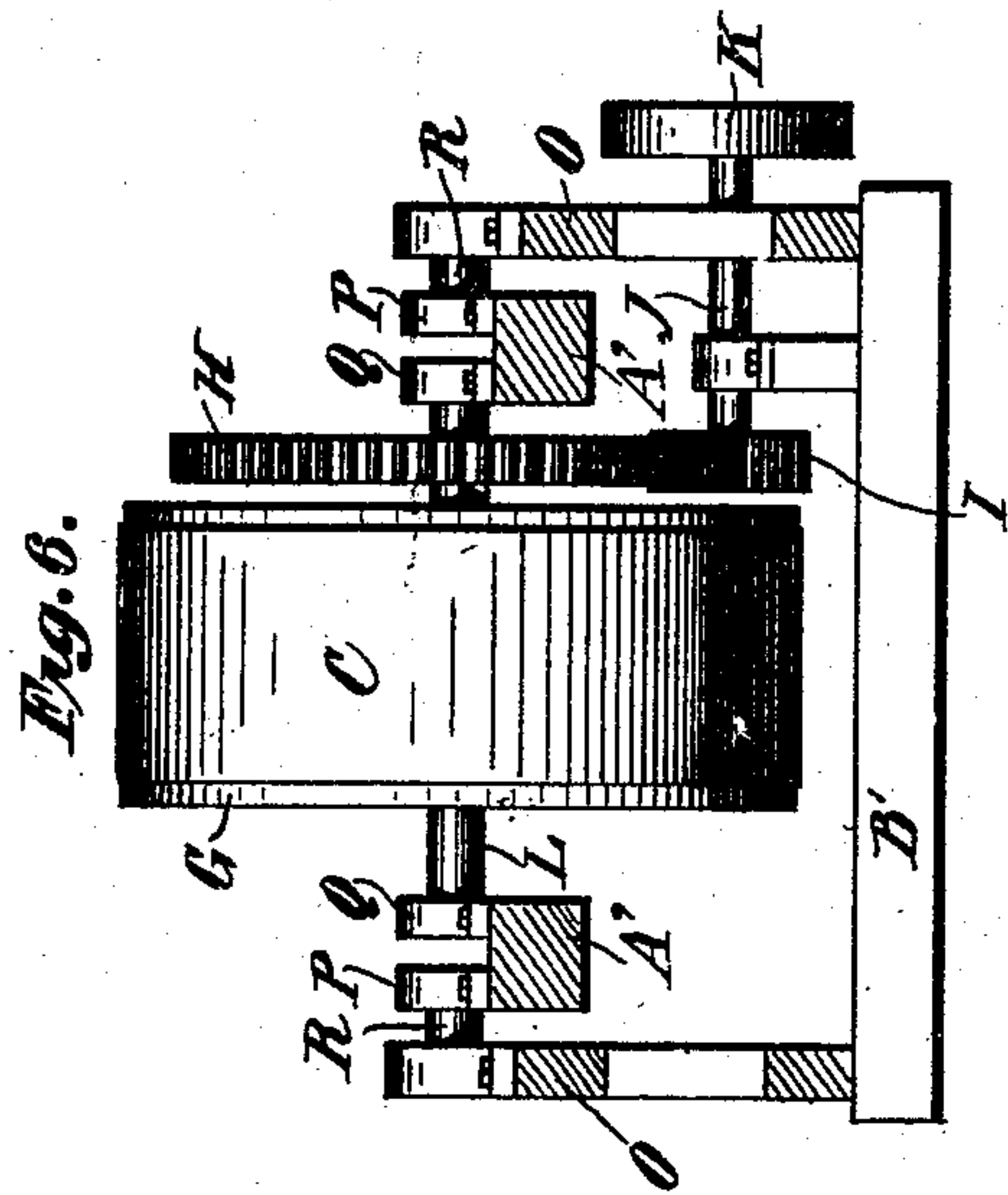
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2 SHEETS—SHEET 2.



Witnesses
Comitell
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UNITED STATES PATENT OFFICE.

CLARENCE KEMBLE BALDWIN, OF NEW YORK, N. Y., ASSIGNOR TO THE
ROBINS CONVEYING BELT CO., A CORPORATION OF NEW JERSEY.

CONVEYER.

No. 828,296.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed March 18, 1903. Serial No. 148,352.

To all whom it may concern:

Be it known that I, CLARENCE KEMBLE BALDWIN, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Conveyers, of which the following is a specification accompanied by drawings.

My invention relates to conveyers, but more particularly to the class known as "continuous-belt" conveyers, in which there is a continuous traveling belt supported upon a suitable frame which may be either fixed or movable.

The primary object of my invention is to enable the frame of a conveyer-belt to be moved relatively to its support without changing the operativeness of the driving mechanism for the belt, a part of which mechanism is supported upon the frame and the remainder or prime mover upon the support.

Further objects of my invention will hereinafter appear; and to these ends my invention consists of apparatus for carrying out the above objects embodying the features of construction, combinations of elements, and arrangement of parts substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a conveyer embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional view on the line 1 1 of Fig. 1. Fig. 4 is a side view of a modified form of apparatus. Fig. 5 is a plan view of the modification shown in Fig. 4. Fig. 6 is a transverse sectional view of the apparatus shown in Fig. 4 on the line $x\ x$ of Fig. 5; and Fig. 7 is an enlarged sectional view of the conveyer-belt and its frame, showing the arrangement of idle pulleys for the belt.

Referring to the drawings, the conveyer-frame A is movable relatively to the support B and in this instance carries a continuous traveling conveyer-belt C, although I do not limit myself to a belt conveyer, as any other form of conveyer may be utilized. The belt may be of any suitable character, but is shown in this instance as a conveyer-belt passing over a series of upper and lower idler-pulleys D and E and the head-pulley F and tail-pulley G, it being understood that the

head-pulley is that pulley upon the frame at the end of which the material is carried by the movement of the belt, while the tail-pulley is at the end of the frame from which the material is being carried. The idler-pulleys D, as shown, are adapted to impart a trough shape to the carrying-surface of the conveyer-belt.

The conveyer-frame A is suitably pivoted to the support B or, as shown in Fig. 4, to the support B', and in this instance the belt is driven from the tail end, as shown, the tail-pulley or driven pulley G being connected to a gear H, meshing with a driving-pinion I on the driving-shaft J. The driving-shaft J may be driven by power transmitted to the pulley K, which may be connected directly to the shaft J or connected to drive the same by any suitable means.

I am not to be understood as limiting myself to the driving mechanism described for operating the conveyer-belt, as any other suitable connections may be provided, either mechanical or electrical, and in each instance shown in the drawings, and according to my invention the driving mechanism referred to is constructed to afford provision for moving the conveyer-frame A or A' relatively to the support B or B' without changing the operativeness of the driving mechanism. In other words, according to the construction shown in the drawings the angle of the conveyer-frame relatively to the support to which it is pivoted may be changed without disturbing the driving mechanism or changing its operativeness. In order to accomplish these ends, the conveyer-frame may either be pivoted about the same center as the driving-shaft J, as shown in Figs. 1 and 2, or it may be pivoted for movement about the same center as the shaft L of the tail-pulley G, as shown in Figs. 4 and 5. In either instance it will be seen that the gear H will roll upon the pinion I as the frame A or A' is moved about its pivot, and the operativeness of the driving mechanism will not be changed or disturbed.

In Figs. 4 and 5 the axis of rotation of the conveyer-frame A' is coincident with the axis of the pulley G, one suitable form of my invention being illustrated. In the drawings the fixed support B' is provided with the frame O, and the frame A' is provided with bearings P for the studs R, connected to the

frame O, and it is also provided with bearings Q for the pulley-shaft L, the shaft L and studs R being upon the same axis. According to this construction there will be no binding in the bearing of the continuously-rotating shaft L and the thrust will come entirely upon the studs R.

In the operation of the apparatus suitable means are provided for raising and lowering the conveyer, the end of a mast 50 being shown broken away, with suitable connectors Z, as chains or ropes, connected to move the conveyer about its pivot.

According to my construction I arrange an idle or snub pulley 52 upon the upper side of the belt C and adjacent the tail-pulley G. According to the construction of apparatus described the lower side of the belt is in tension while the upper side of the belt is the loose side, and by arranging the snub-pulley 52 in the position described and shown there is no harmful bending over the snub-pulley and no consequent strain on the snub-shaft 53 and bearings and damage to the belt. The slack of the conveyer-belt is pushed under the snub-pulley 52, which is of material advantage in the operation of the conveyer.

Obviously some features of my invention may be used without others, and my invention may be embodied in widely-varying forms.

Therefore, without limiting myself to the construction shown and described nor enumerating equivalents, I claim, and desire to obtain by Letters Patent, the following:

1. In a belt conveyer, the combination with a suitable support and a frame for the conveyer pivoted thereon, of end pulleys over which the belt runs, idler-pulleys arranged between the end pulleys adapted to impart a trough shape to the carrying-surface of the conveyer-belt, and mechanism mounted upon said support for driving the conveyer, said mechanism being independent of the pivotal connections between the conveyer-frame and the said support, for substantially the purposes set forth.

2. In a belt conveyer, the combination with a suitable support and a frame for the conveyer pivoted thereon, of end pulleys over which the belt runs, one of said end pulleys being the driving-pulley for the conveyer-belt, an idler-pulley arranged in contact with the belt adjacent said driving-pulley for increasing the area and tension of belt contact thereon, and mechanism mounted upon the support for driving the conveyer, said mechanism being independent of the pivotal connections between the conveyer-frame and the said support, for substantially the purposes set forth.

3. In a conveyer, the combination with a suitable support and a frame for the conveyer, one end of the frame being pivoted on said support, end pulleys over which the belt runs, idler-pulleys arranged between the end pulleys adapted to impart a trough shape to the carrying-surface of the conveyer-belt of mechanism mounted upon the support for driving the conveyer, said mechanism being independent of the pivotal connections between the conveyer-frame and the said support, and means located above the plane of the conveyer-frame for supporting its free end, for substantially the purposes set forth.

4. In a conveyer, the combination with a suitable support and a frame for the conveyer pivoted on stationary members of said support, end pulleys over which the belt runs, idler-pulleys arranged between the end pulleys adapted to impart a trough shape to the carrying-surface of the conveyer-belt of a driven pulley for driving the conveyer, a shaft for said pulley in line with but independent of the pivots of the conveyer-frame, a jack-shaft supported in bearings on stationary members of the conveyer-support, and means for transmitting power to drive the conveyer from the jack-shaft to the driving-pulley, for substantially the purposes set forth.

5. In a conveyer, the combination with a suitable support of a driving-shaft journaled on stationary members of said support, a frame for the conveyer pivoted on said support, a shaft mounted on said frame concentric with the pivotal axis of the frame, but independent of said pivotal axis a pulley on said shaft for driving the conveyer, and power-transmitting connections between the driving-shaft and the shaft bearing the pulley for driving the conveyer, the operativeness of said connections being unaffected by pivotal movement of the conveyer-frame, for substantially the purposes set forth.

6. The combination with a conveyer-belt and the two end pulleys over which the belt passes, of an idle pulley arranged to contact throughout its surface with the upper and conveying length of the belt adjacent the pulley to which power is imparted to drive the belt, whereby the area and tension of belt contact on said pulley is increased, for substantially the purposes set forth.

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

CLARENCE KEMBLE BALDWIN.

Witnesses:

THOMAS CHRISTI,
EMIL CHAS. EGER.