

947,408.

W. T. HENRY.
BELT DRIVING MECHANISM.
APPLICATION FILED OCT. 22, 1907.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.

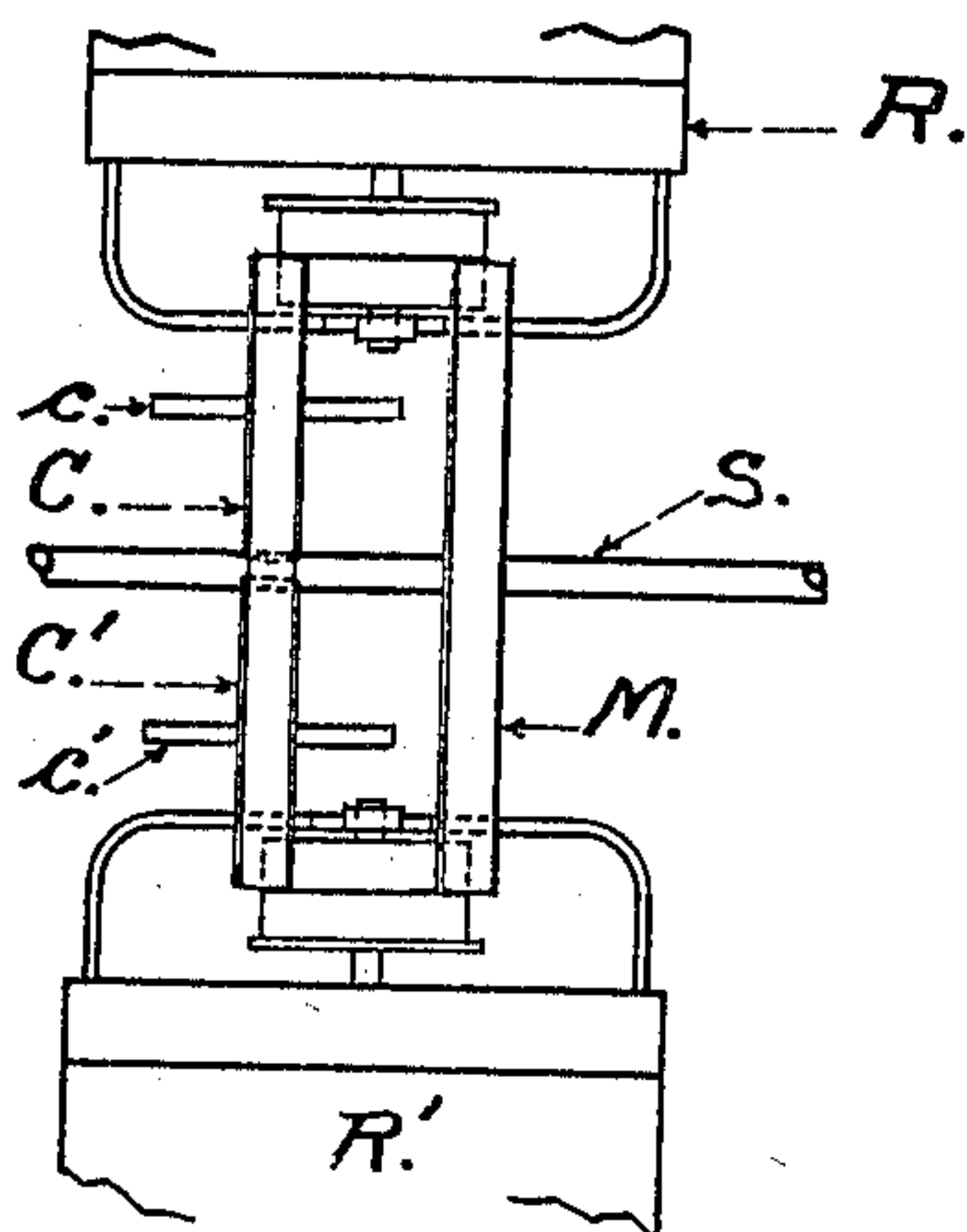


Fig. 3.

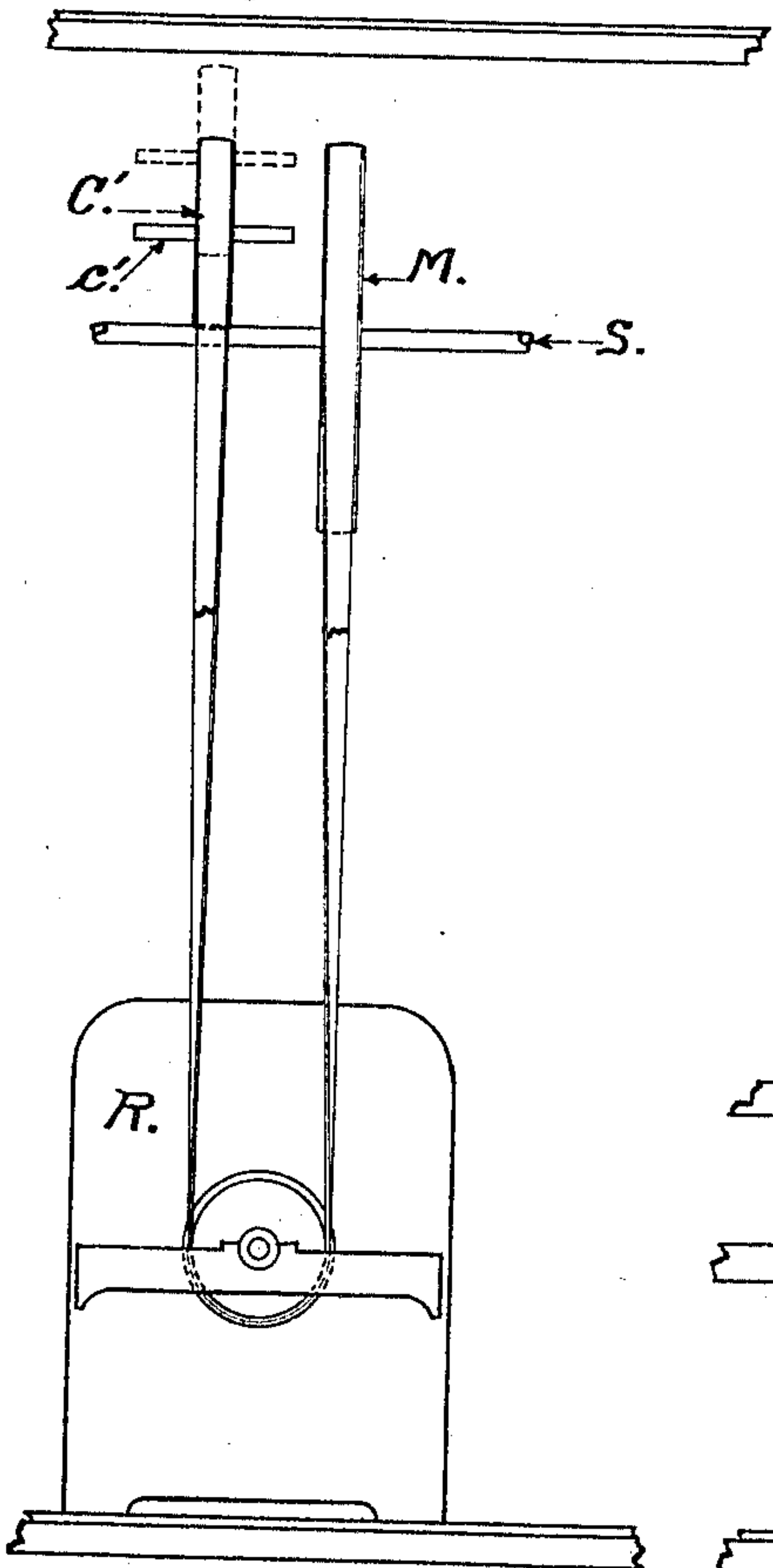


Fig. 2.

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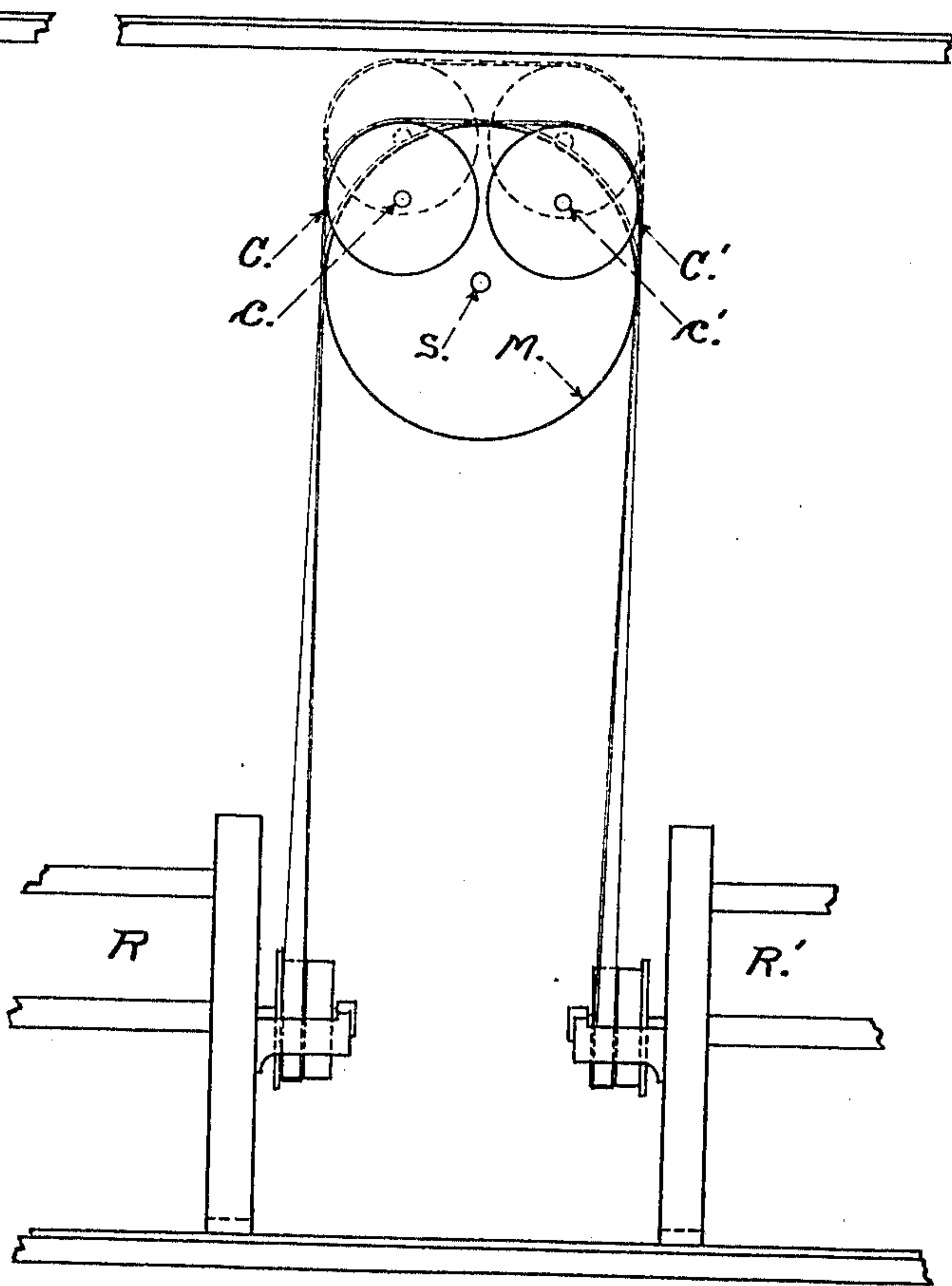


Fig. 1.

William T. Henry Inventor
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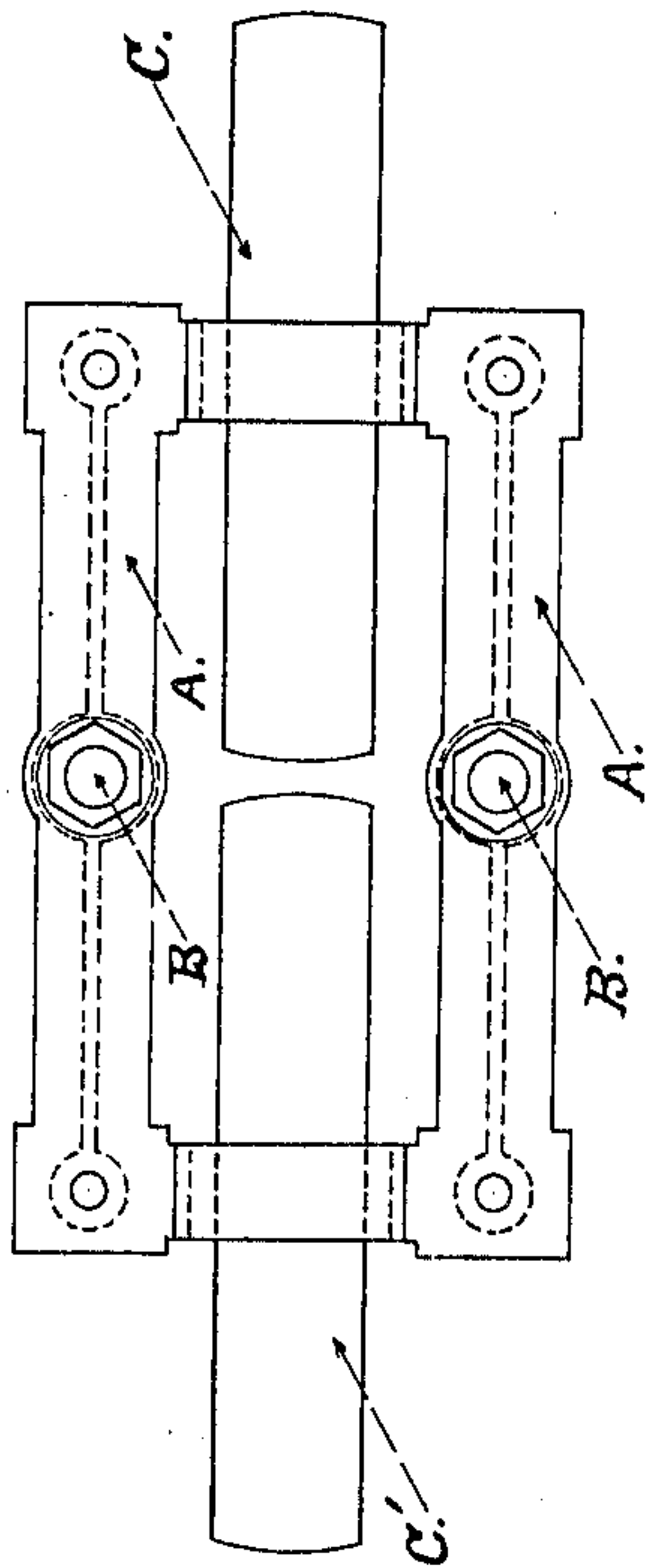


Fig. 4.

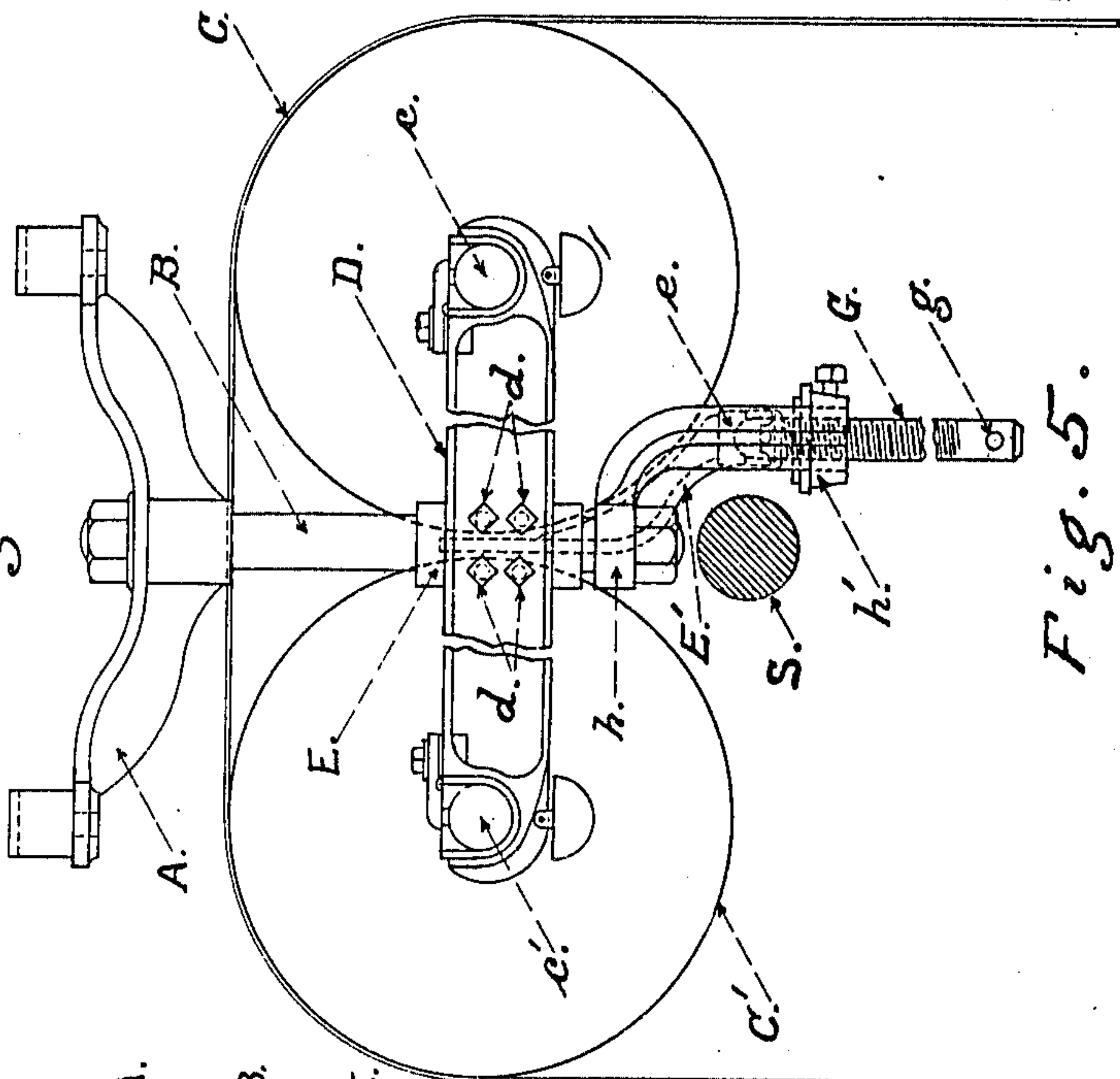


Fig. 5.

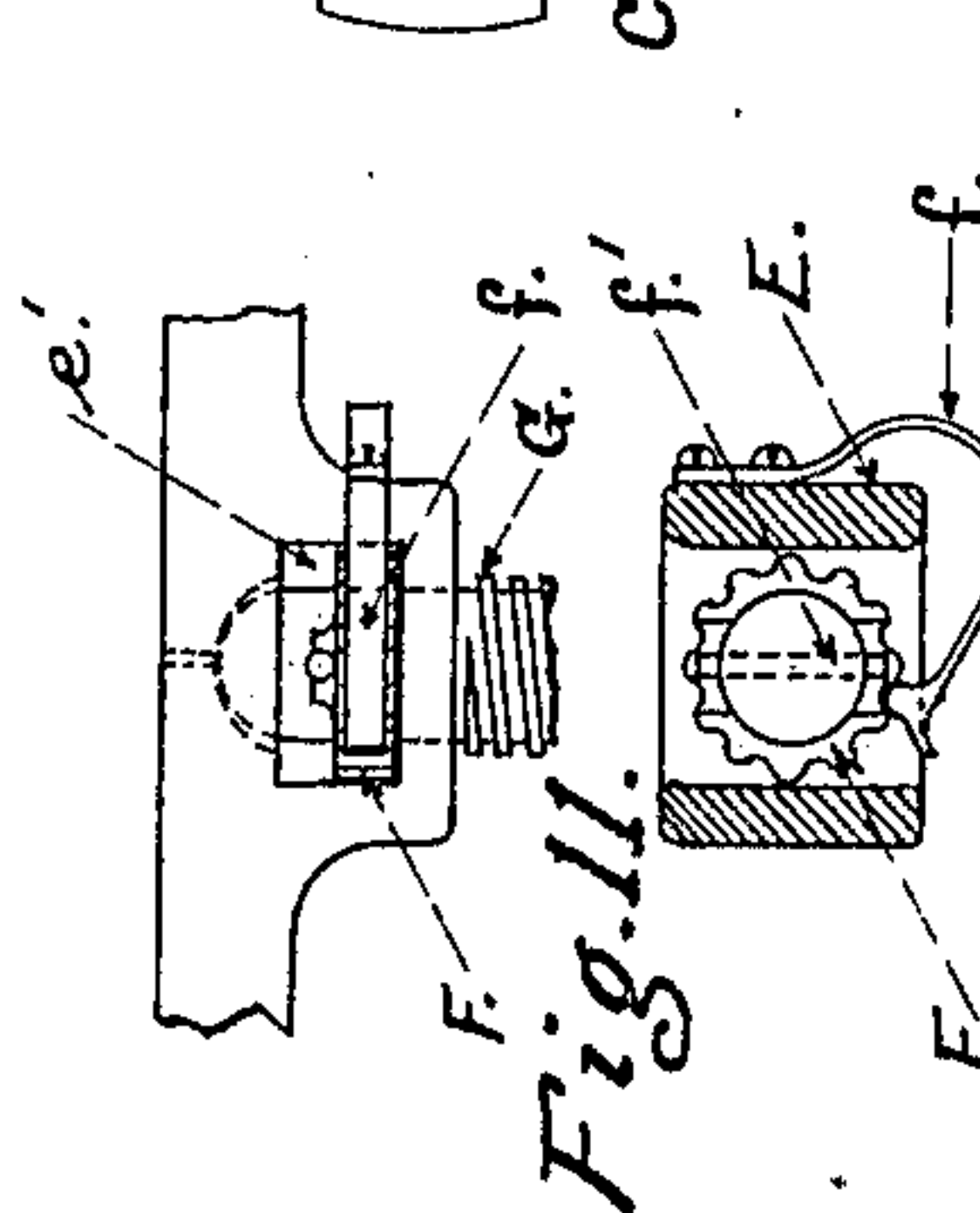


Fig. 10.

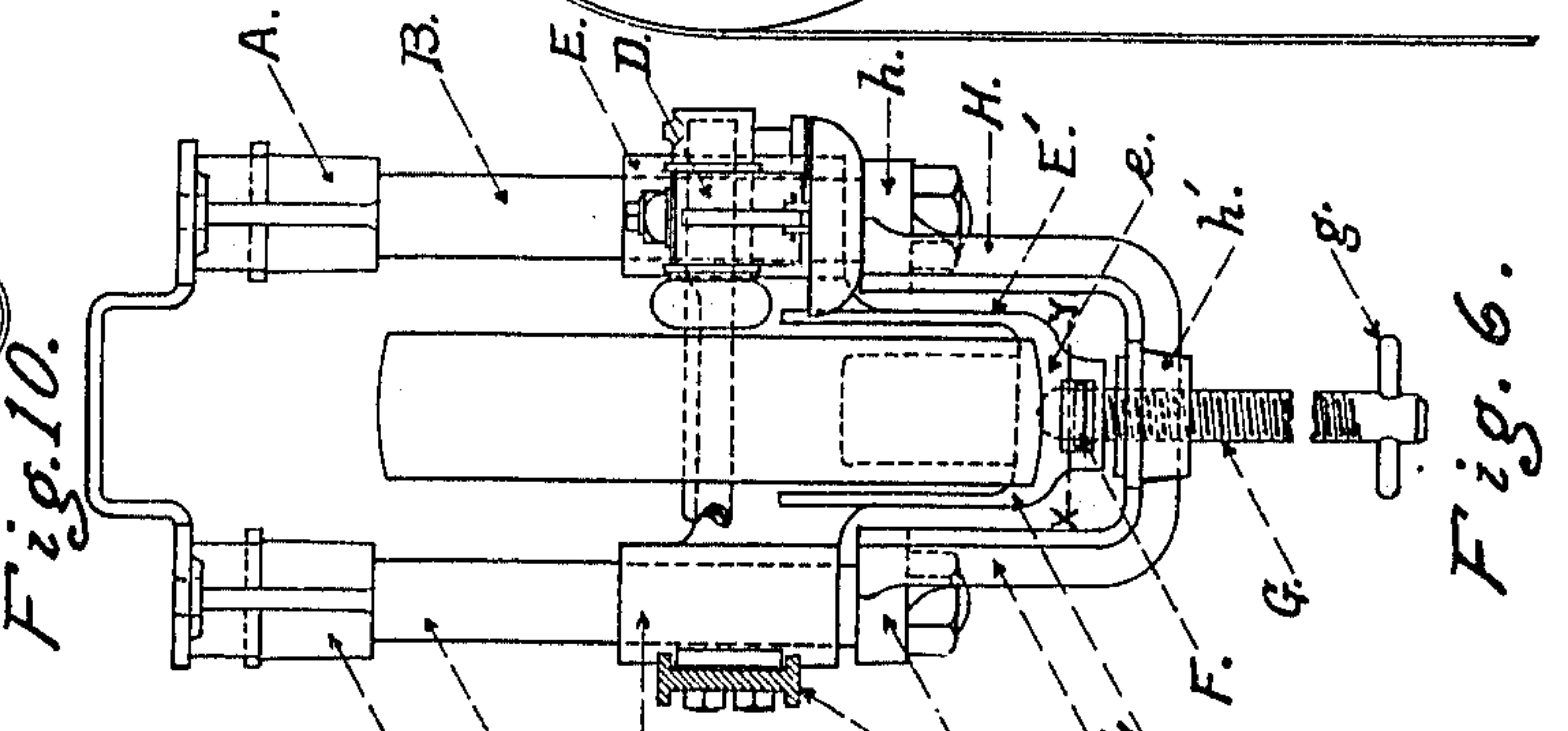


Fig. 6.

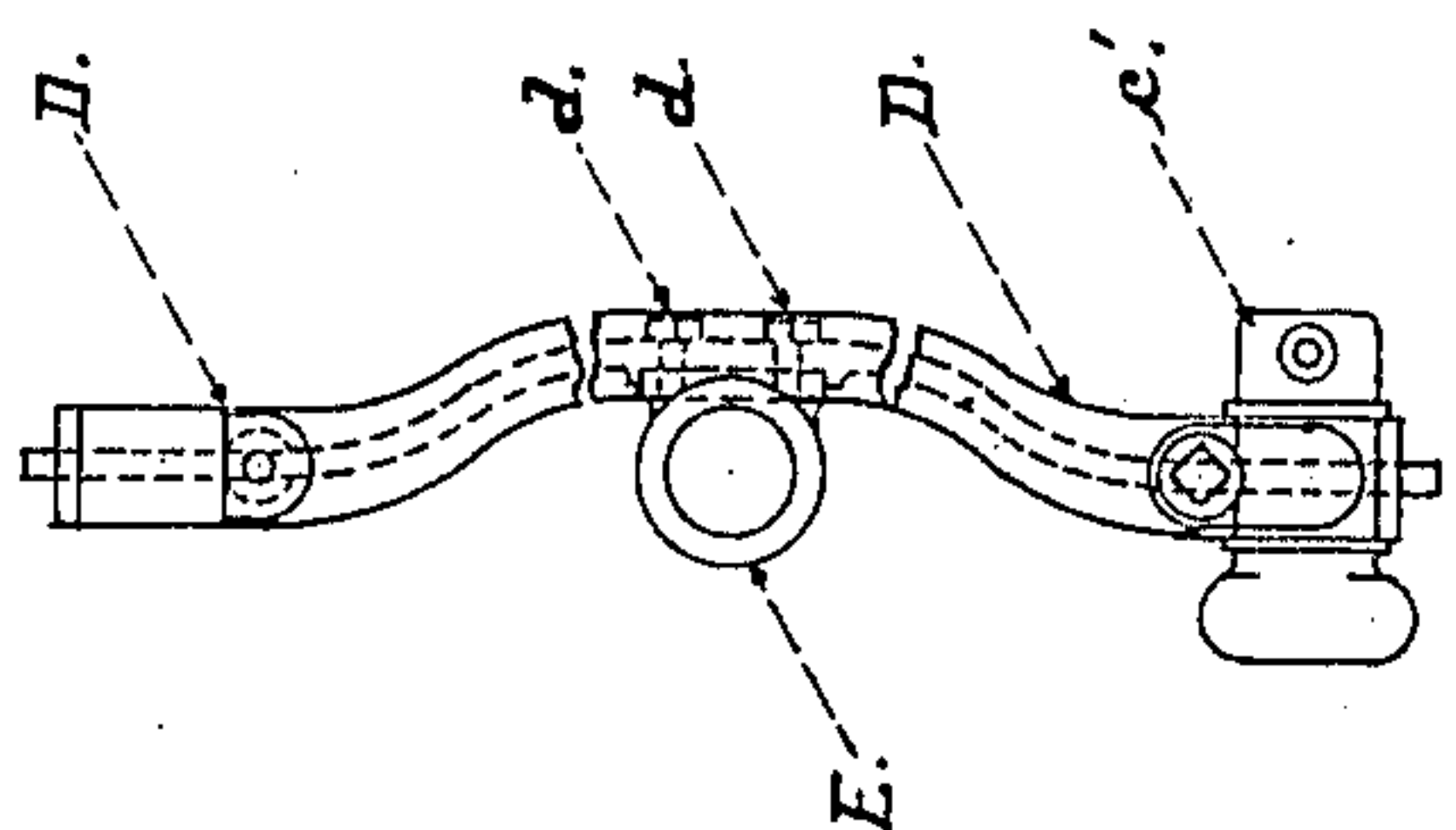


Fig. 9.

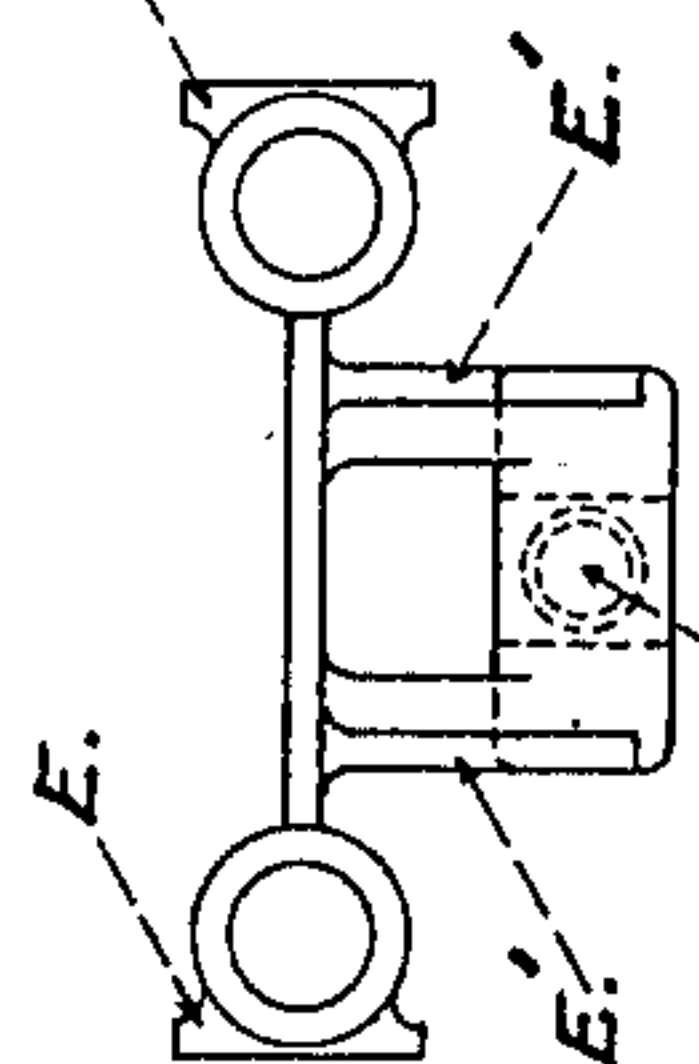


Fig. 8.

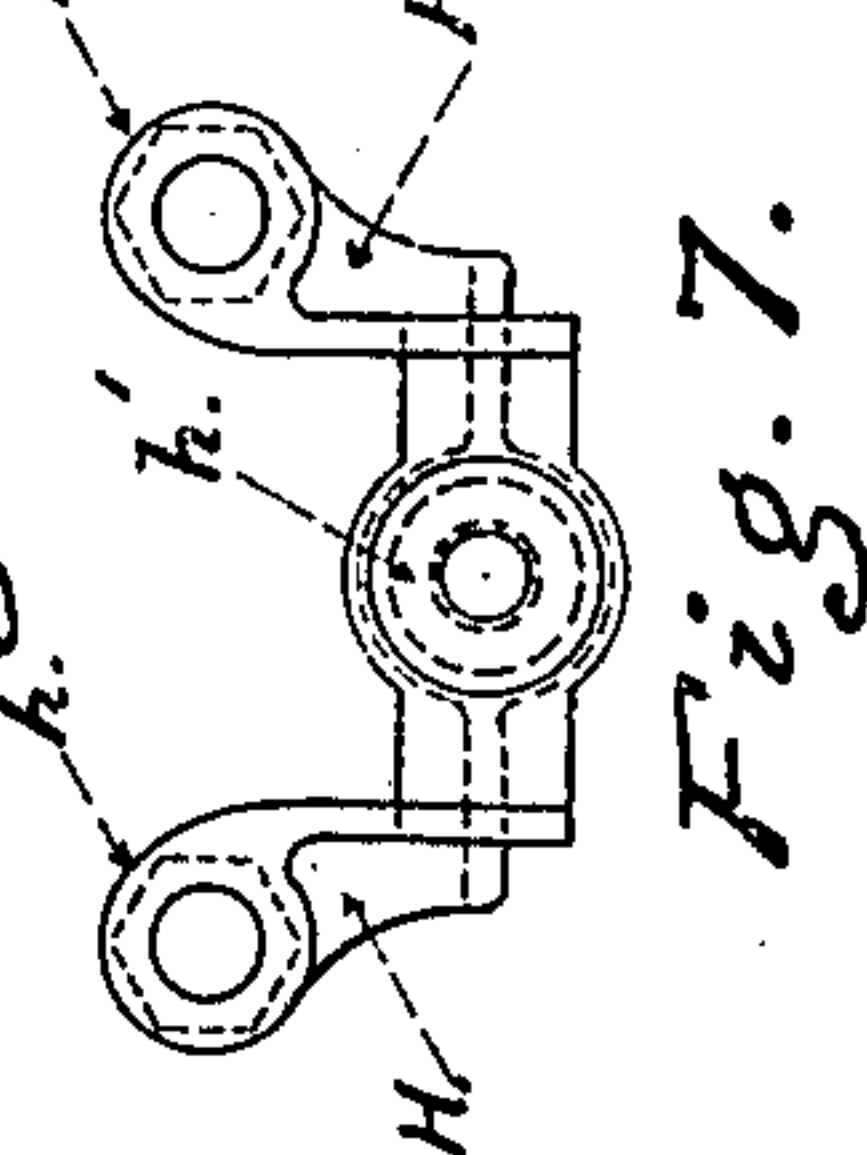


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM T. HENRY, OF FALL RIVER, MASSACHUSETTS.

BELT-DRIVING MECHANISM.

947,408.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed October 22, 1907. Serial No. 398,667.

To all whom it may concern:

Be it known that I, WILLIAM T. HENRY, of Fall River, in the county of Bristol and Commonwealth of Massachusetts, have invented an Improvement in Belt-Driving Mechanisms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to belt driving mechanisms and is especially adapted for use in cotton mills or other manufactories where a number of similar machines are driven from lines of shafting. It is shown applied to spinning frames. A spinning frame runs at a rotative speed greatly in excess of the driving shaft. This excess is customarily obtained by the use of a pulley on the driving shaft of much larger diameter than the driven pulley on the spinning frame. The belt has high linear velocity and must be kept tight to prevent slipping.

The object of my invention is to provide simple means for driving two machines with a single belt, and for adjusting the tension of this belt.

In the annexed drawing Figure 1 shows an end view of my driving mechanism applied to two spinning frames, looking along the line of the driving shaft. Fig. 2 shows a side view of said mechanism, Fig. 3 a top view thereof. Fig. 4 shows a top view of the idler pulleys; Fig. 5 a side view of the idler pulleys, showing the tightening mechanism; Fig. 6 an end view of the idler pulleys, showing the tightening mechanism; Fig. 7 a top view of the yoke; Fig. 8 a top view of the carrier slide; Fig. 9 a top view of one of the pulley arms; Fig. 10 a section through the lower part of the carrier slide on line X Y Fig. 6 showing the means for retaining the adjustment; and Fig. 11 a side view of said means of adjustment.

Referring to Figs. 1, 2 and 3, the driving pulley M is keyed to the driving shaft S. The idler pulleys C C' revolve on independent shafts *c c'* which are carried in the pulley-arms D D and are capable of vertical adjustment. R R' are two spinning frames. The belt passes over the driving pulley, thence under and around the pulley on frame R, thence up and over the idler pulleys C C', thence down, under and around the pulley on frame R' and thence

up and over the driving pulley M. The tension of the belt is regulated by raising or lowering the idler pulleys C C'. The mechanism by which said vertical adjustment of the idler pulleys is obtained is shown in Figs. 4 to 11 inclusive. The sole-plate A is fastened to some permanent support. It carries the rigid guide-posts B B. On these guide-posts, slide the sleeves E E which carry the pulley arms D D. Near the ends of D D are the bearings for the shafts *c c'* which carry the idler pulleys. Attached to the lower end of the guide rods B B is the yoke H carrying the adjusting screw G. This yoke is offset to one side in order to clear the driving shaft S. The tension screw G engages the carrier slide E' at the seat *e*. The screw seat *e* and the carrier slide E' are integral with the sleeves E E to which are affixed the pulley arms D D by the bolts *d*. A transverse pin *g* is passed through the screw G near the end thereof to furnish a hold for the wrench.

The adjustment of the screw G is retained by the device shown in Figs. 10 and 11, Fig. 11 being a side view thereof, and Fig. 10 a horizontal cross section on line X Y Fig. 6. Near the upper end of the screw G is fastened by the pin *f'* a corrugated wheel F. F is engaged by the spring-pawl *f* and the screw G is thereby restrained from jarring loose. The yoke H has ears *h* which engage the guide rods B B. The threaded portion of H in which the screw G works is shown at *h'*.

The operation of the device is as follows: When the belt needs tightening, the screw G is screwed upward engaging and carrying with it the carrier slide E' and the integral sleeves E E. The pulley arms D D are carried upward with E E thereby increasing the distance of the idler pulleys C C' from the driven pulleys on the spinning frames as shown in dotted lines in Figs. 1 and 2. This adjustment can be and preferably is made while the machine is running.

Having thus described my invention, I claim:—

1. A belt driving mechanism consisting of a sole plate carrying rigid guide posts, a slide engaging said guides and movable thereon, twin pulley arms carried by said slide, twin idler pulleys carried by said pulley arms, a yoke engaging said guide posts, a screw carried by said yoke and acting on

said slide in combination with a driving pulley, two driven pulleys, and an endless belt.

2. In a belt driven mechanism, guide
5 posts, a slide engaging said guide posts and movable thereon, pulley arms carried by said slide and at right angles to said guide

posts, twin pulleys carried by said pulley arms, and means to move said slide along said guide posts.

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