

No. 629,953.

Patented Aug. 1, 1899.

J. P. COLEMAN.
SWITCH MECHANISM.

Application filed Apr. 27, 1899.

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

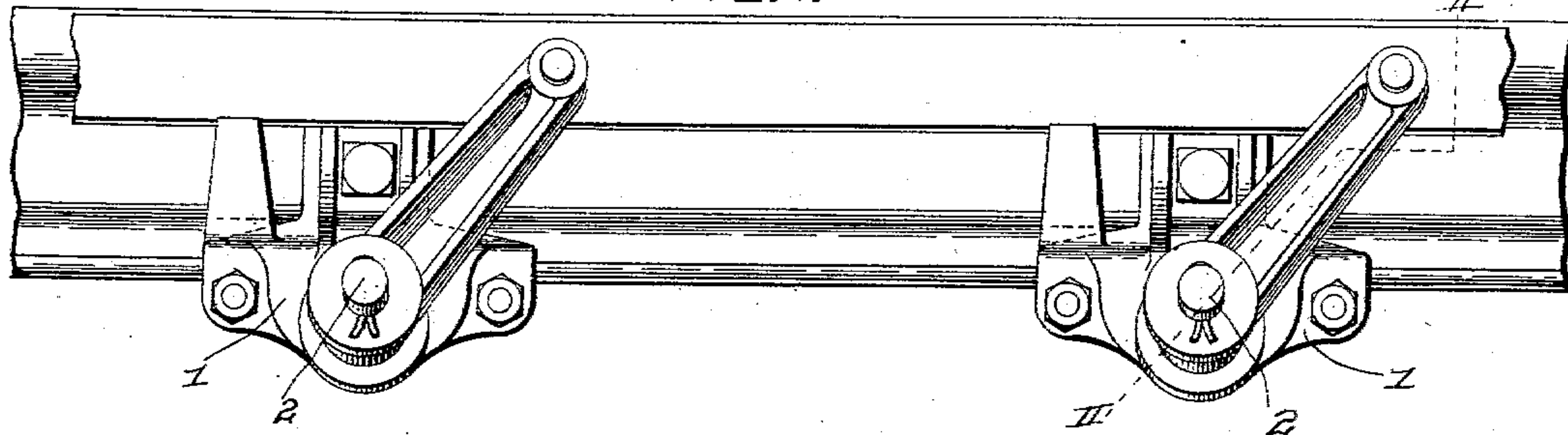


FIG. 2.

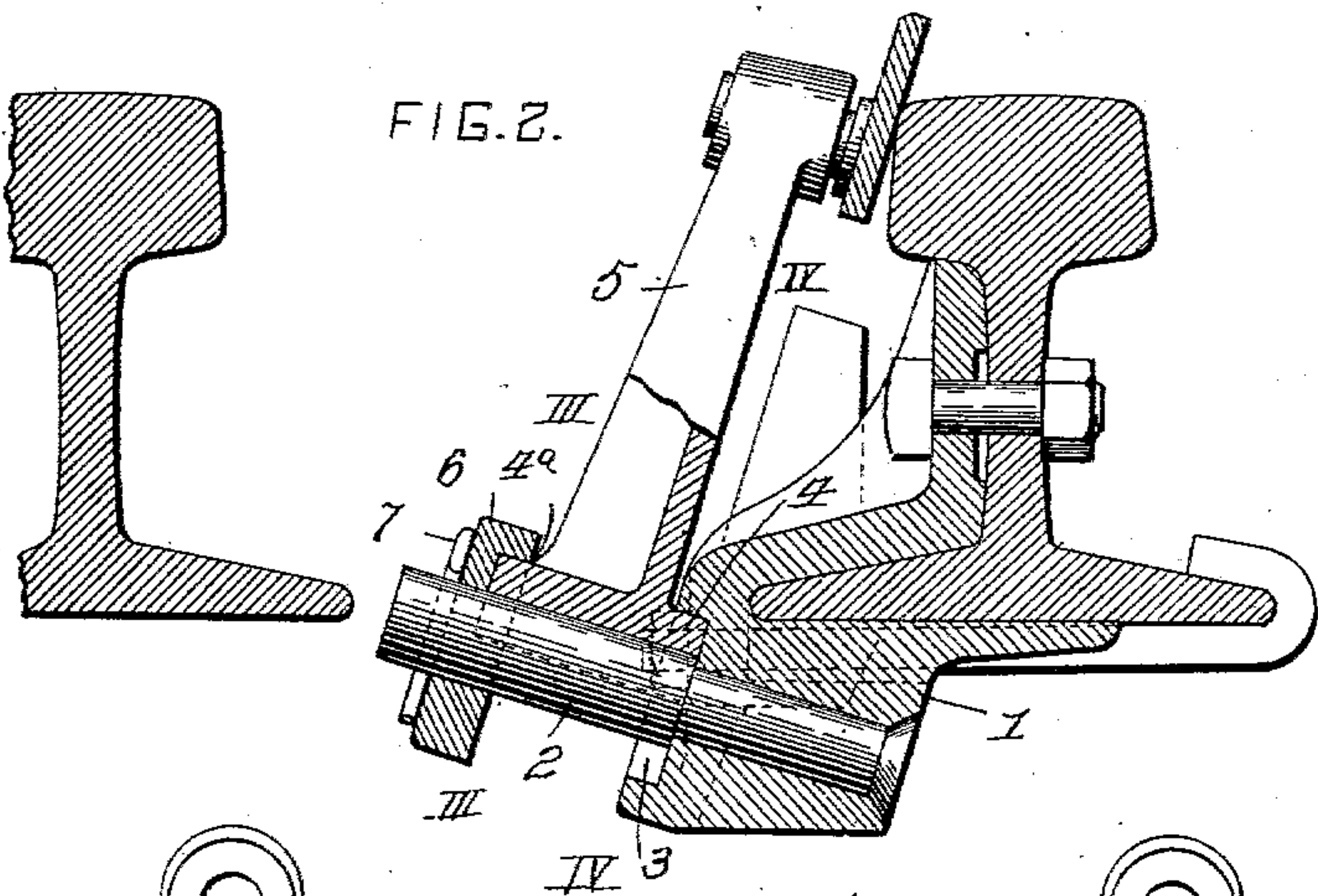


FIG. 3.

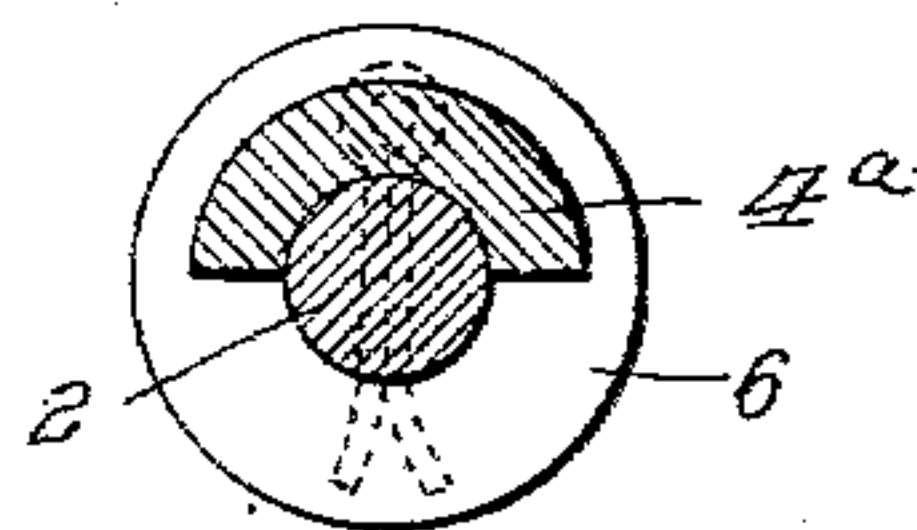


FIG. 4.

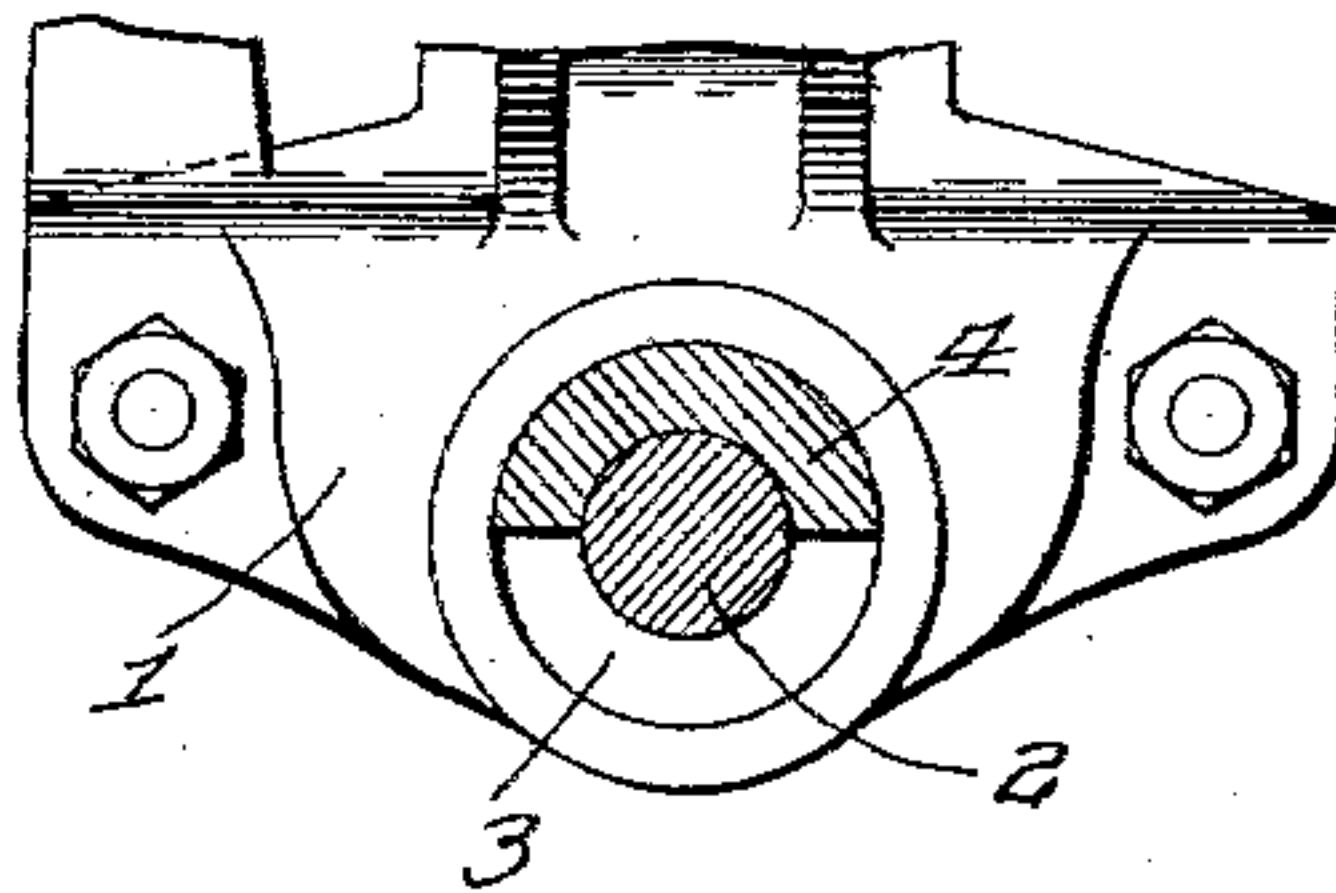


FIG. 6.

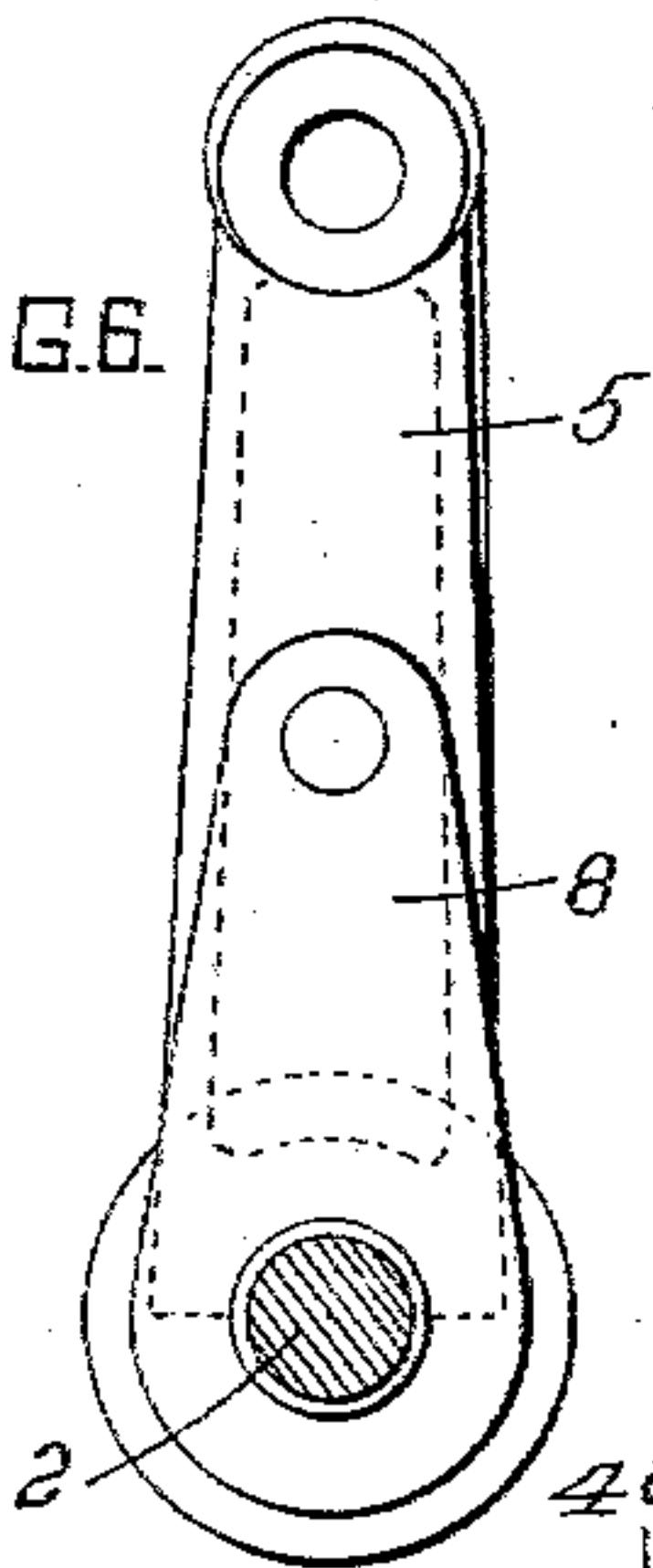


FIG. 5.

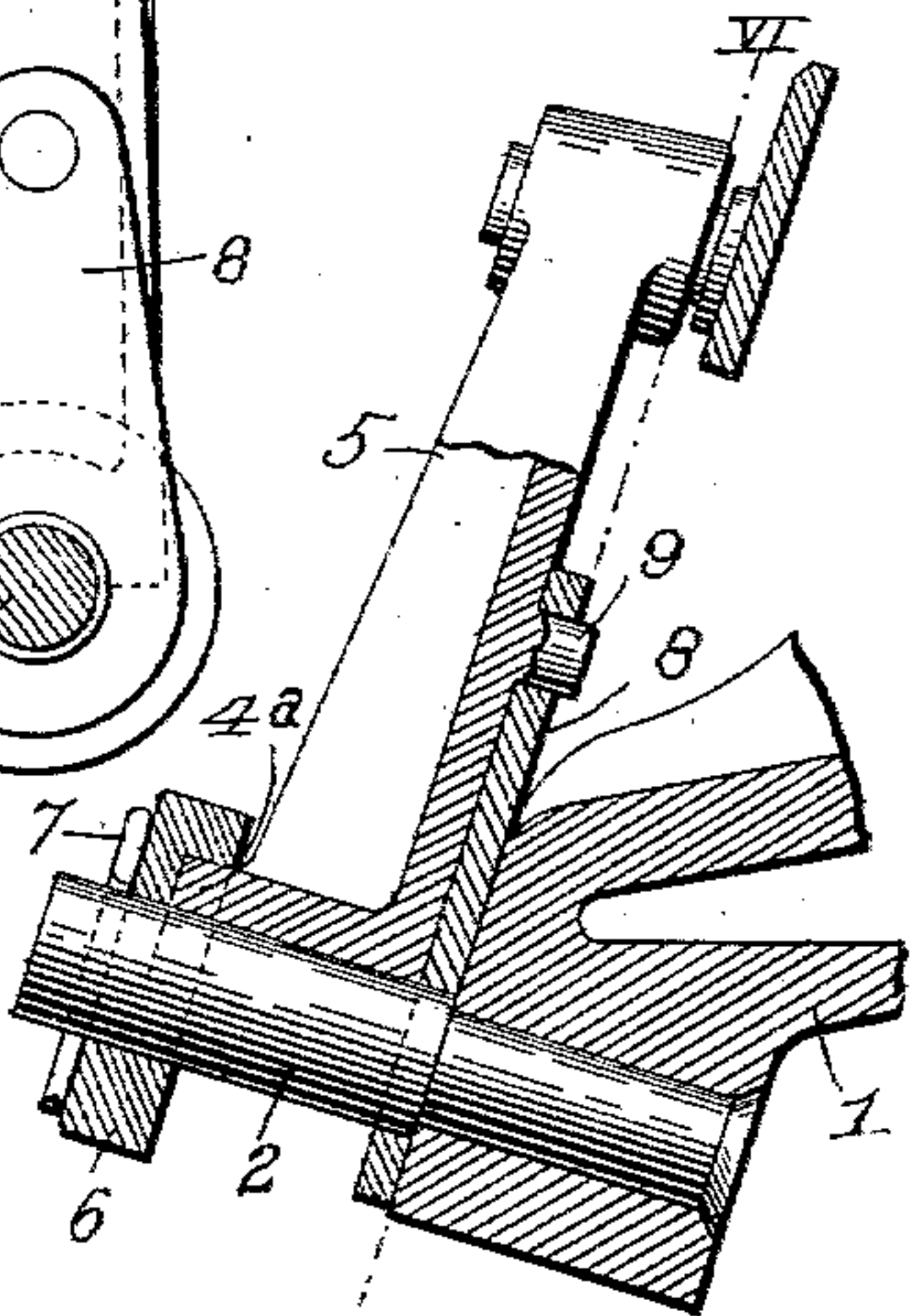


FIG. 8.

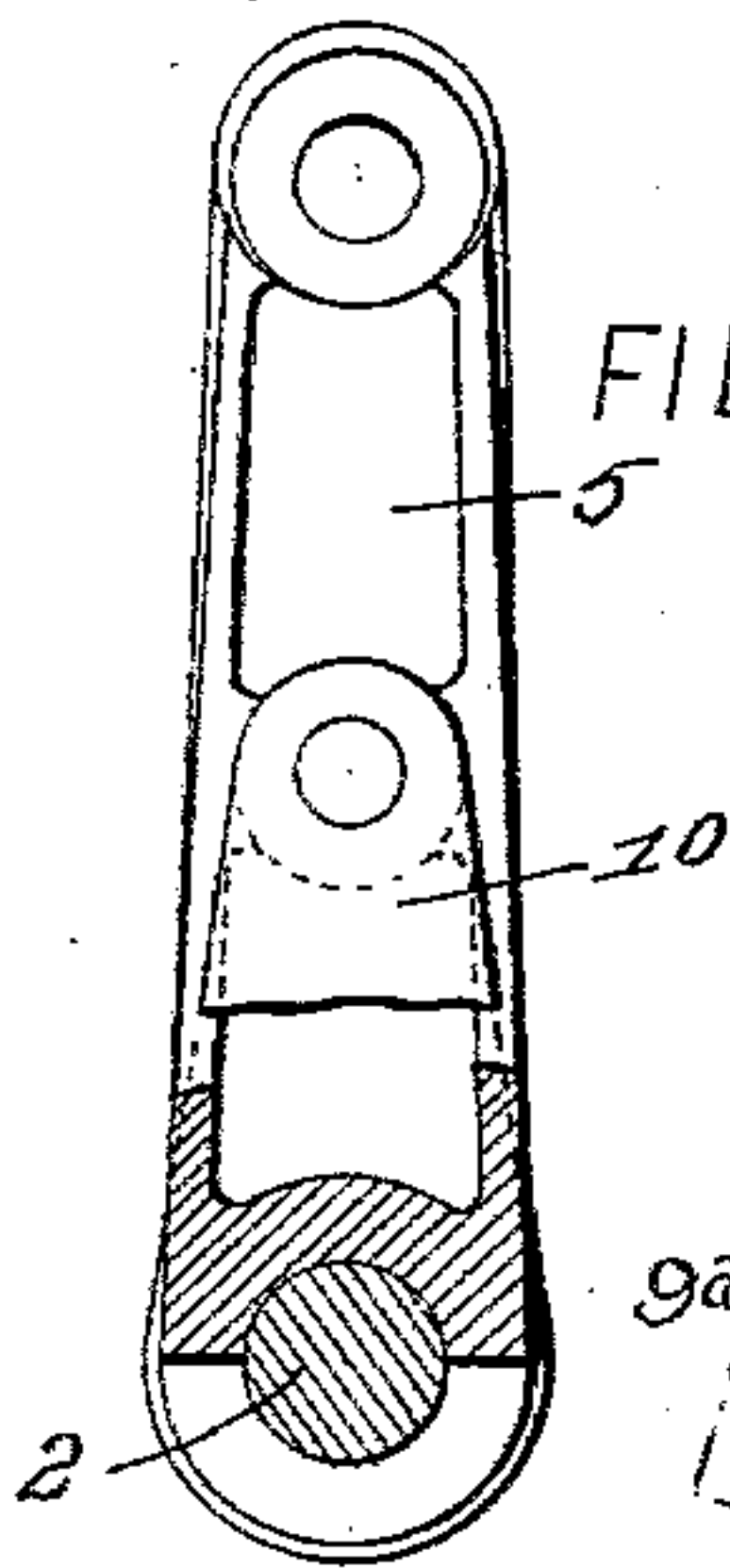
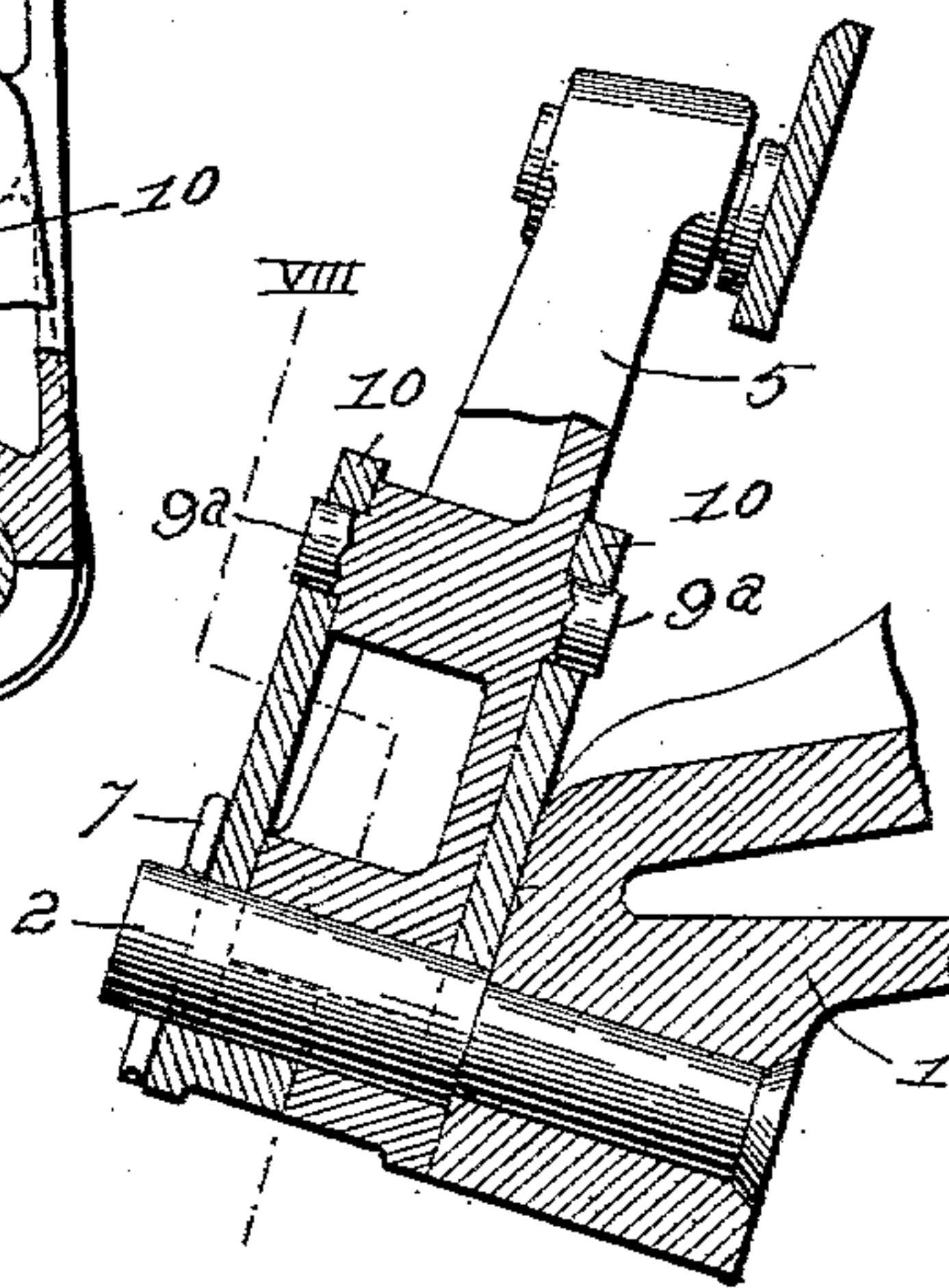


FIG. 7.



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FIG. 9.

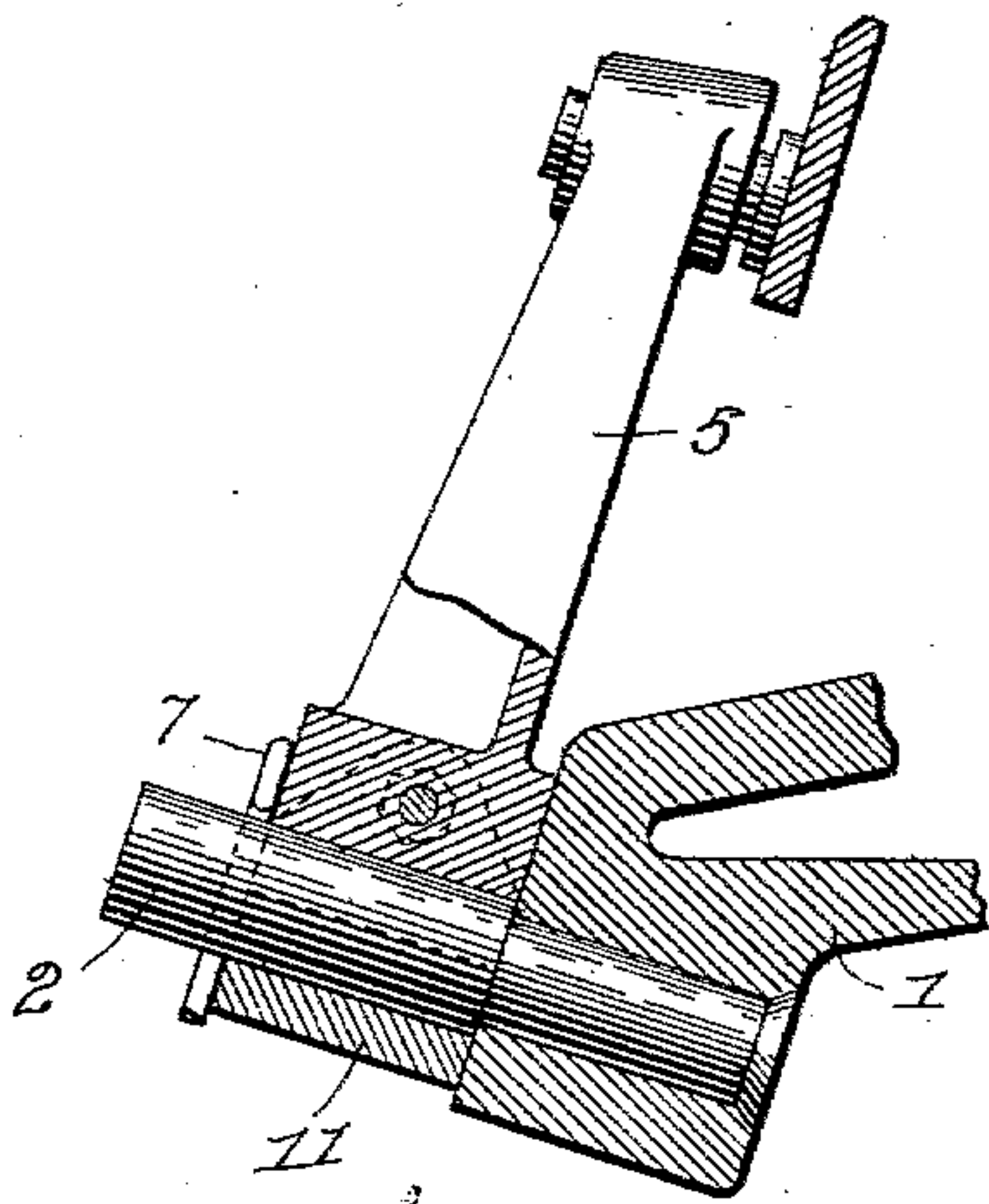


FIG. 10.

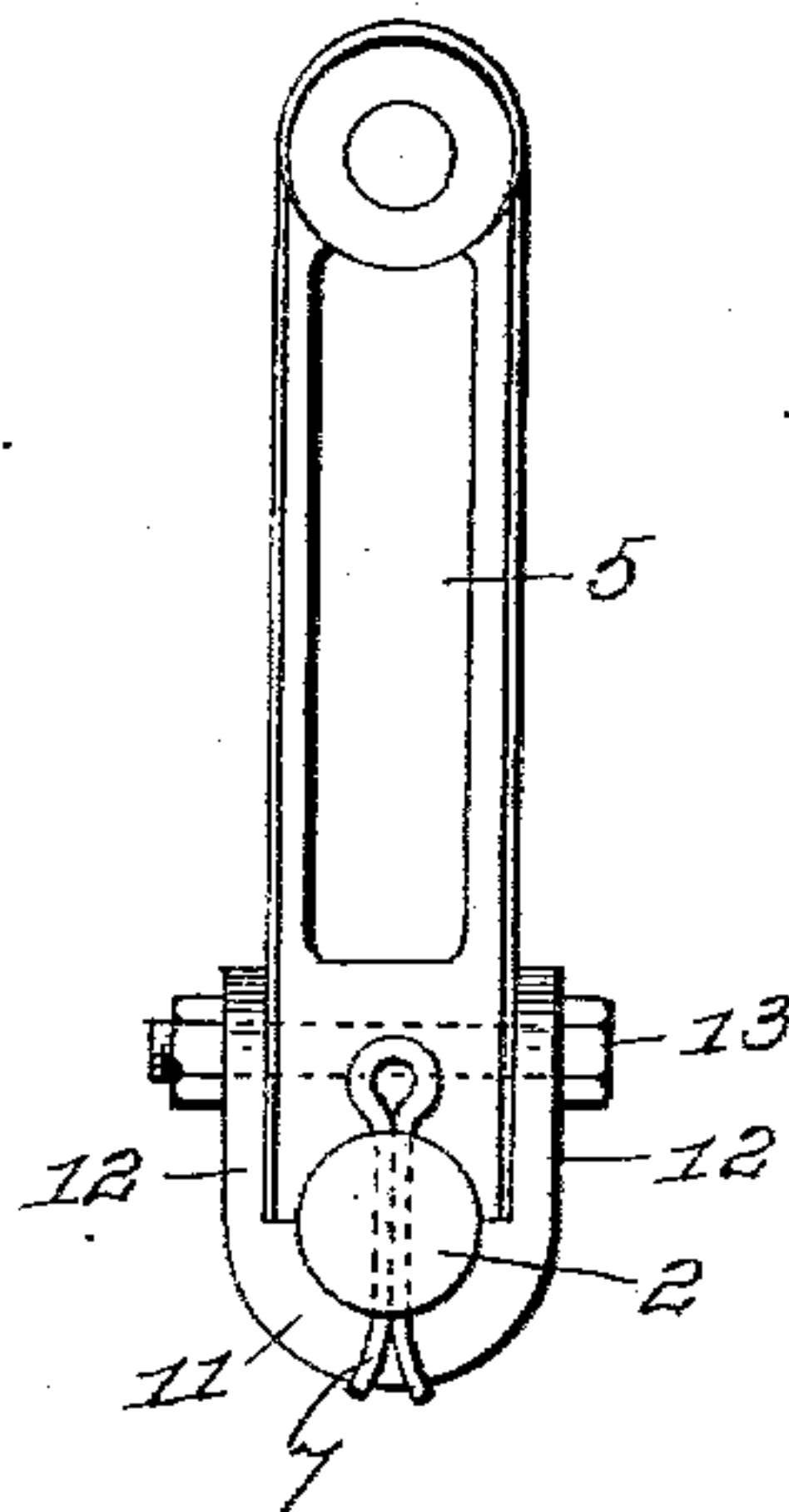


FIG. 11.

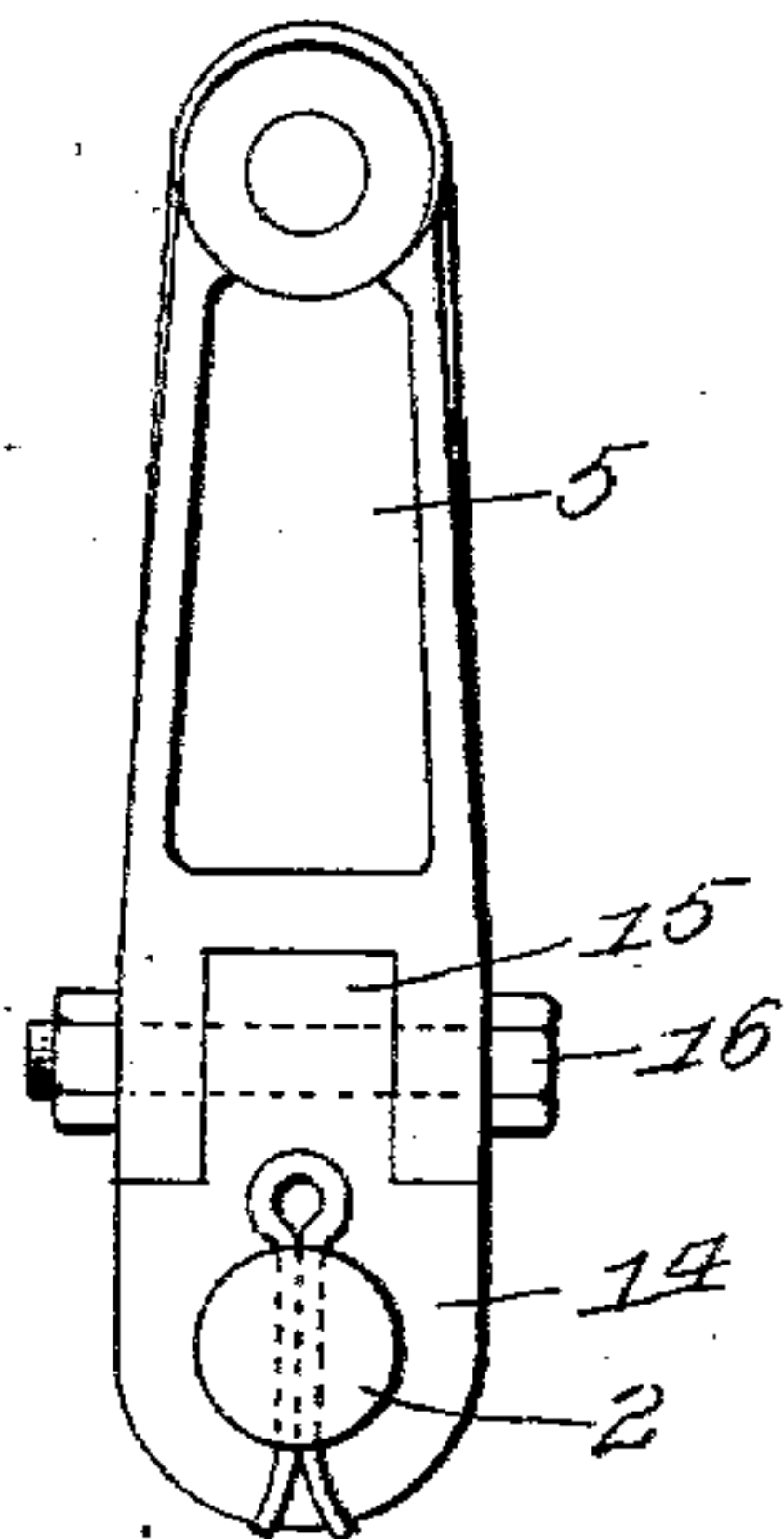
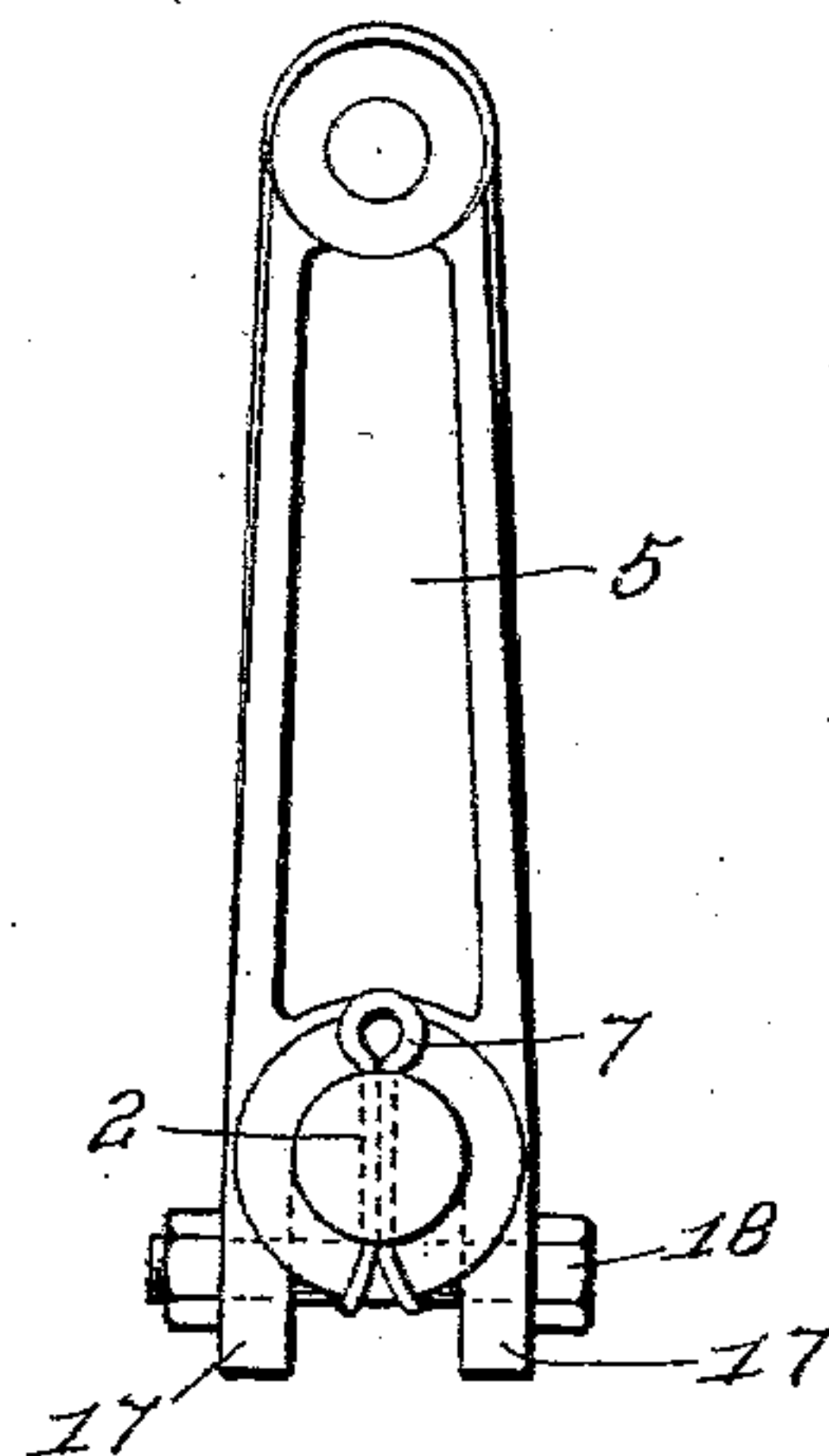


FIG. 12.



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UNITED STATES PATENT OFFICE.

JOHN PRESSLEY COLEMAN, OF SWISSVALE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO THE UNION SWITCH AND SIGNAL COMPANY, OF SAME PLACE.

SWITCH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 629,953, dated August 1, 1899.

Application filed April 27, 1899. Serial No. 714,648. (No model.)

To all whom it may concern:

Be it known that I, JOHN PRESSLEY COLEMAN, a citizen of the United States, residing at Swissvale, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Switch Mechanism, of which improvements the following is a specification.

The invention described herein relates to certain improvements in the manner of connecting detector-bars to rails. These detector-bars are generally secured to the upper ends of links which have their lower ends pivotally mounted on pins or studs projecting from clips secured to the flange of the rail. These parts are so arranged that the bar may by suitable mechanism be swung up, so that its upper edge will project above the tread of the rail. The mechanism for operating these detector-bars is so connected to or interlocked with the mechanism for shifting the switches as will necessitate the raising of the detector-bars above the rail before the switch can be moved. Hence it is impossible to throw a switch when a car is in such position as to prevent the upward movement of the detector-bars. In interlocking plants it is customary to arrange the detector-bars along the stock-rails of the switches and of necessity at such point along the stock-rail as to render it difficult to apply the clips and place the links on the pivotal studs on account of the proximity of the flange of the switch-rail. This is clearly shown in Figure 2 of the drawings. As shown in said figure, it would be impossible to remove a link of the old construction—i. e., one provided with an eye at its lower end for the reception of the stud—and hence when renewals or repairs are required the clips themselves must be removed.

The object of the present invention is to provide for the removal of the links from their supporting studs or pins without any material lateral movement of the links.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Fig. 1 is a view in side elevation showing my improvements applied to the stock-rail of a switch. Fig. 2 is

a transverse section of the same, the plane of section being indicated by the line II II, Fig. 1, and showing also, merely for purposes of illustration, the main rail of the track. Figs. 3 and 4 are sectional views, the planes of section being indicated by the lines III III and IV IV, Fig. 2. Figs. 5 and 6 are views in section and elevation, illustrating a modified form of my improvement. Figs. 7 and 8 are similar views of a further modification. Figs. 9, 10, 11, and 12 illustrate additional modifications.

In the structure illustrated in Figs. 1 to 4, inclusive, the clips 1, which may be attached to the rail in any suitable manner and may be of any desired construction, have secured thereto studs or pins 2, projecting laterally from the clips. A circular recess 3 is formed in the clip around the pin or stud 2 for the reception of a semicircular flange 4, formed on the lower end of the link 5, as shown in Figs. 2 and 4. On the opposite side of the link is formed a similar flange 4^a, and over this is slipped a washer 6, provided with a recess semicircular in contour and adapted to receive the flange 4^a and also having an opening therethrough for the passage of the stud or pin 2. In placing the detector-bar in position the links, constructed as stated—i. e., having semicircular seats at the lower ends—are placed on the studs or pins and then moved laterally until the flanges 4 project into the recesses 3 in the clips. The washers 6, which may be placed on the studs before the clips are secured to the rails, are then slid along the studs until the flanges 4^a project into the recesses in the inner faces of the washers. These latter are held in operative relation to the links by means of pins or cotters 7. When it is desired to remove one of the links, it is only necessary to withdraw the cotter-pin and move the washer 6 out a distance approximately equal to the combined widths of the flanges 4 and 4^a and then move the links slightly laterally to free the flange, as 4, from the recesses 3, thus permitting the links to be moved vertically or longitudinally from the studs or pins. While it is preferred to employ a recessed washer for securing the outer end of the seat of the link to the stud, such washer is not necessary for the reason that

the detector-rail bears against the head of the main rail, and hence the outer end of the link-seat would have no tendency to leave the pin or stud, it being only necessary to insure the engagement of the flange 4 with the recess 3, and this may be effected by a plain washer and a cotter-pin or other suitable means.

As shown in Figs. 5 and 6, the shoulder 4 and recess 3 may be omitted, and a plate 8, having an opening therethrough for the reception of the pin or stud 2, may be slid on the stud prior to placing the link in position and the link secured to the plate by any detachable means—such, for example, as a projection 9 on one of the parts engaging an opening in the other part. The outer end of the seat of the link may be held in position by the washer 6, or any suitable means may be employed for maintaining the locking of the plate 8 with the link 5.

In the construction shown in Figs. 7 and 8 the link is held in position on the pin or stud by means of plates 10, having openings therethrough, so as to fit over the pin or stud 2, and detachably connected to opposite sides of the link 6 by pins 9^a in the links or plates projecting into its other part. By the removal of the cotter-pin 7 all the outer plates can be moved out sufficiently far to permit its disengagement with the link and permit the disengagement of the link from the other plate, whereupon the link can be removed vertically from the pin or stud.

In the construction shown in Figs. 9 and 10 the link is held in position on the pin or stud by means of a yoke 11 fitting under the pin or stud and provided with arms 12, passing up on opposite sides of the link and connected thereto by a bolt 13. The removal of this bolt will permit the longitudinal withdrawal of the link.

In the construction shown in Fig. 11 a bearing-block 14 is loosely mounted on the pin or stud 2 prior to the placing of the clip upon the switch-rail, and on this bearing-block is formed a tongue 15, adapted to project into a slot in the lower end of the link, which is held on the bearing-block by a bolt 16.

In the construction shown in Fig. 12 the lower end of the link is formed with a U-shaped seat, the sides 17 of such seat being made of sufficient length to project below the pin or stud, and the link is held in position by means of a bolt 18 passing through the sides of the seat below the pin or stud.

While I have shown and described several different forms or modifications of my improvement, many other modifications will readily suggest themselves to the skilled mechanic, and such modifications are expressly included within the broad terms of the claims. It is characteristic of my improvement that the link is so constructed and connected to the supporting-pin or stud that it can be removed therefrom by a movement at an angle to the axis of the pin or stud and without any material lateral shifting thereof.

I claim herein as my invention—

1. In a railway-switch mechanism, the combination of a clip adapted to be secured to a rail, a pin or stud carried by the clip, and a link removable from the pin or stud at an angle to the axis of the latter, substantially as set forth.

2. In a railway-switch mechanism, the combination of a rail, a detector-bar, pivotally connected to the rail, and removable from its pivotal support in a vertical direction and said pivotal support remaining stationary, substantially as set forth.

3. In a railway-switch mechanism, the combination of a rail, a detector-bar, links pivotally connected to the rail and detector-bar, the pivotal connections of the links with rails being separable by a substantially vertical movement of the links that portion or portions of said pivotal connection carried by the rails remaining stationary, substantially as set forth.

4. In a railway-switch mechanism, the combination of a stationary pin or stud, a link provided at its lower end with a concave seat, and means for detachably holding the link on the stud, substantially as set forth.

5. In a railway-switch mechanism, the combination of a clip adapted to be secured to a rail, a pin or stud secured to the clip, a curved recess formed in the clip around the pin or stud, a link provided at its lower end with a seat for the reception of the pin or stud and having a flange adapted to engage the recess in the clip, and means for holding the flange in such engagement, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN PRESSLEY COLEMAN.

Witnesses:

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JOSEPH A. McDONOUGH.