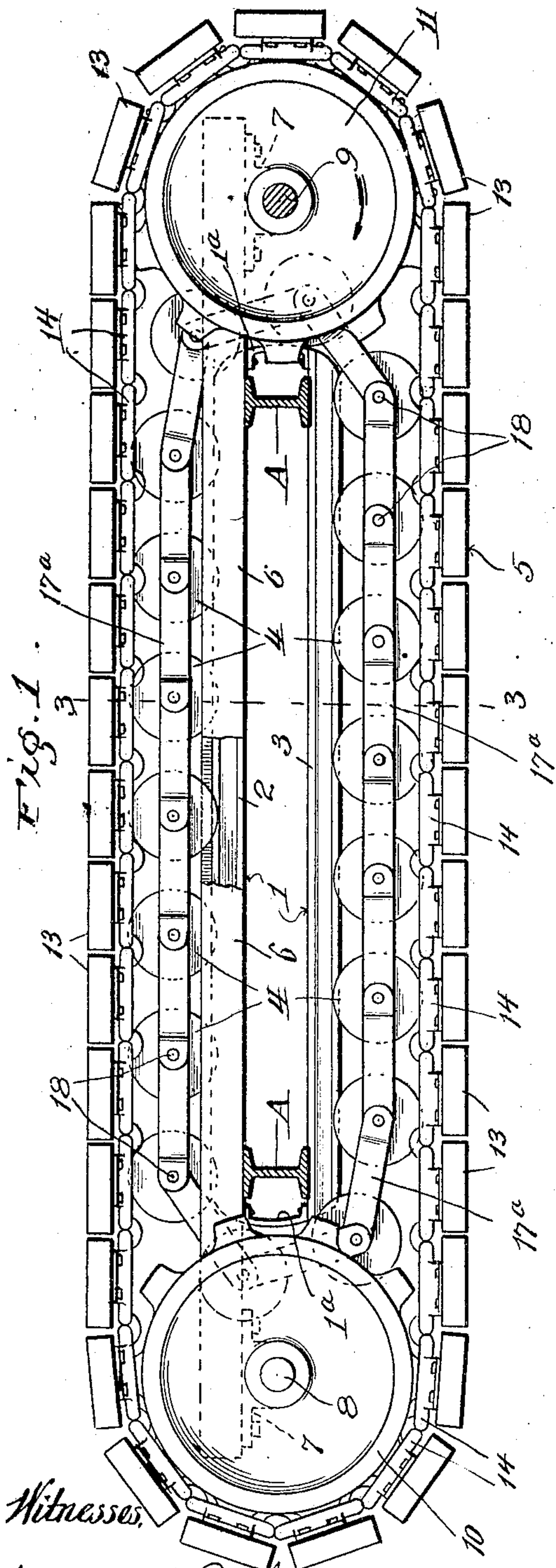


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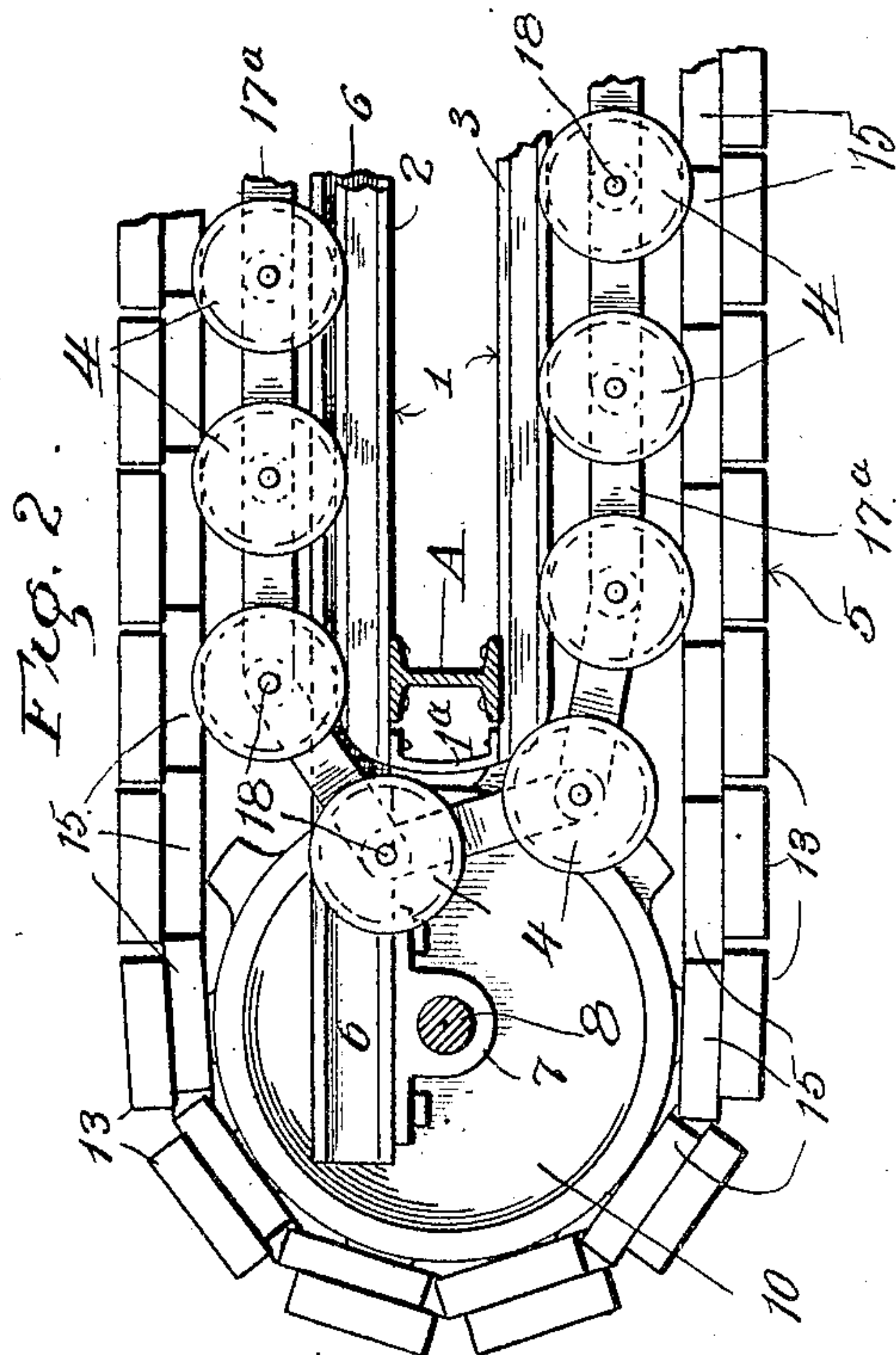
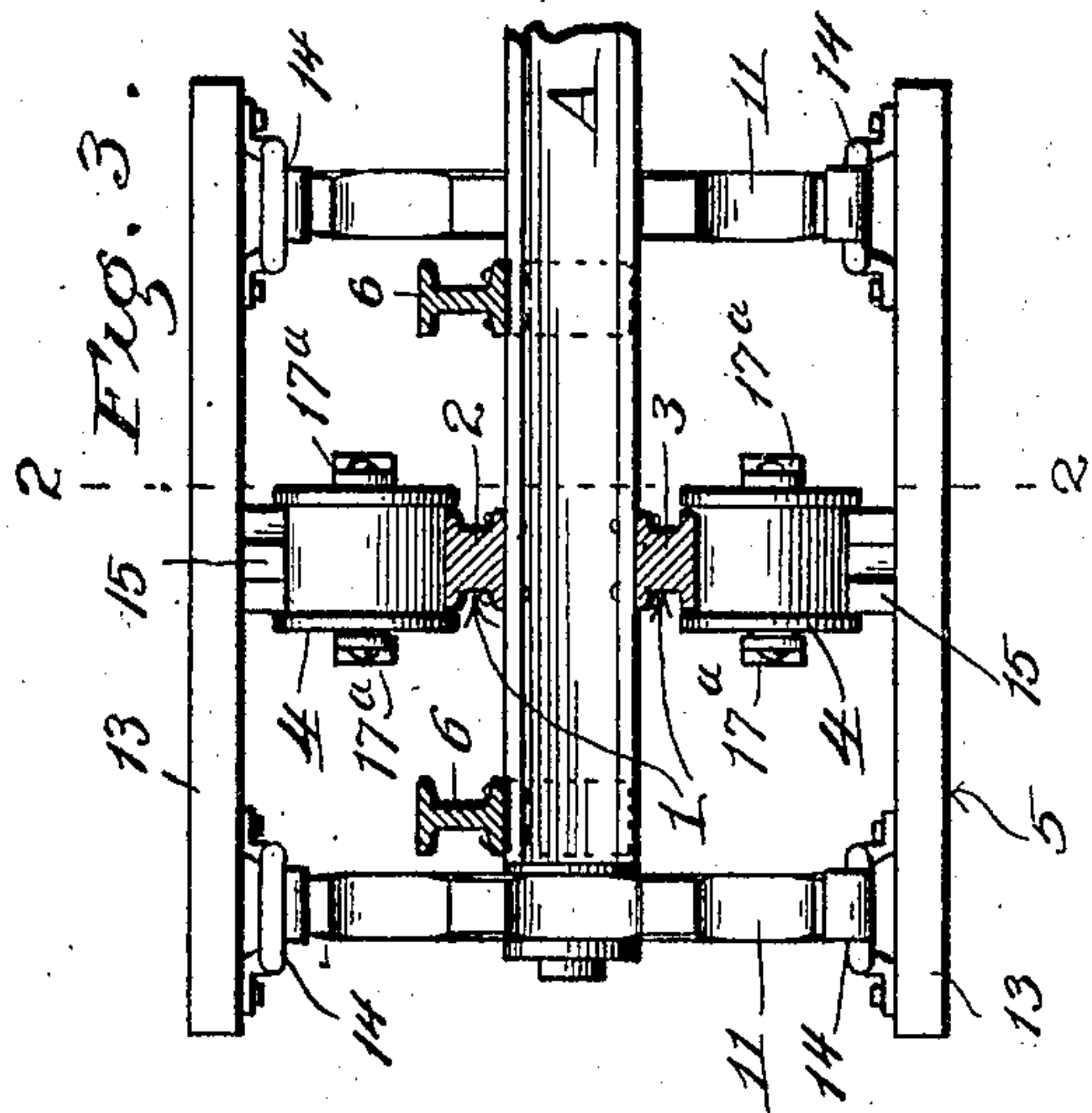
Patented May 4, 1909.

2 SHEETS—SHEET 1.



Witnesses,

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Inventor:

Edward W. Wickes,
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E. W. WICKEY.
TRACTION DEVICE.
APPLICATION FILED AUG. 3, 1908.

920,510.

Patented May 4, 1909.

2 SHEETS—SHEET 2.

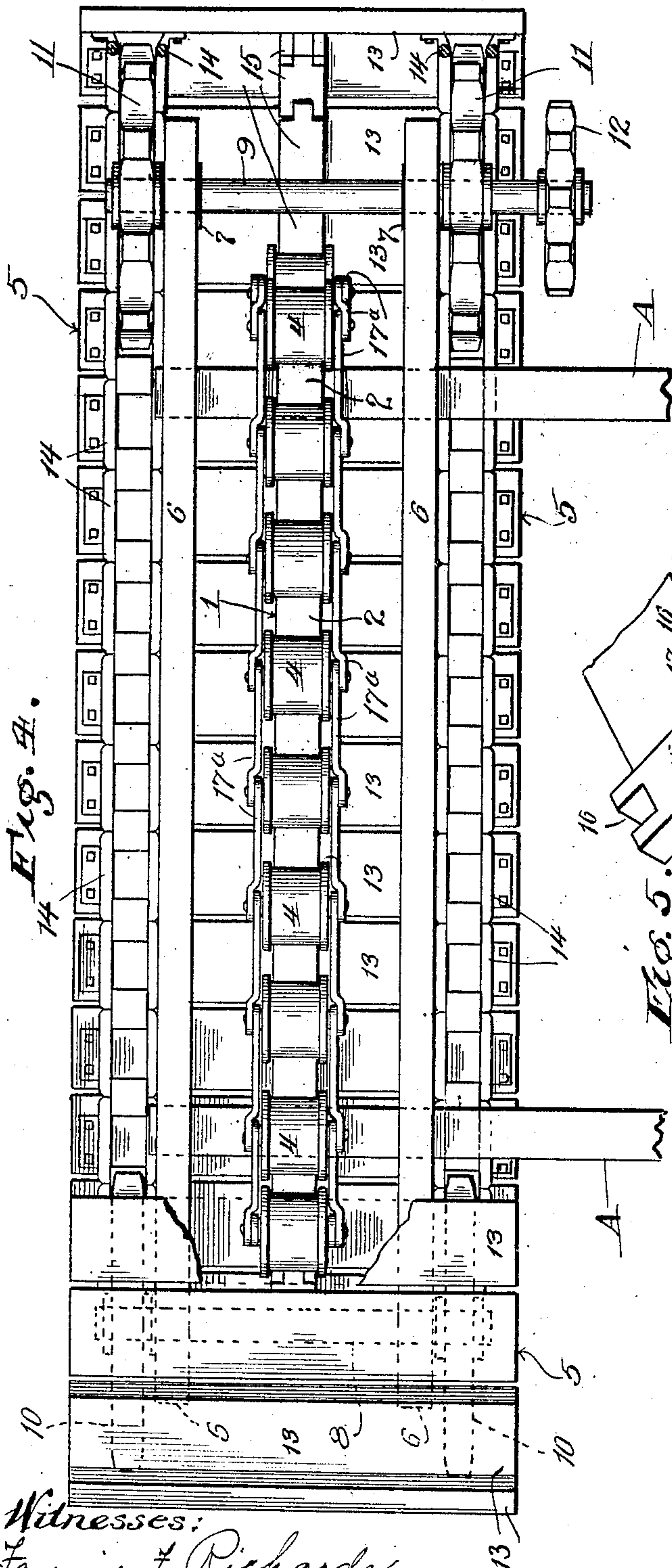


Fig. 4.

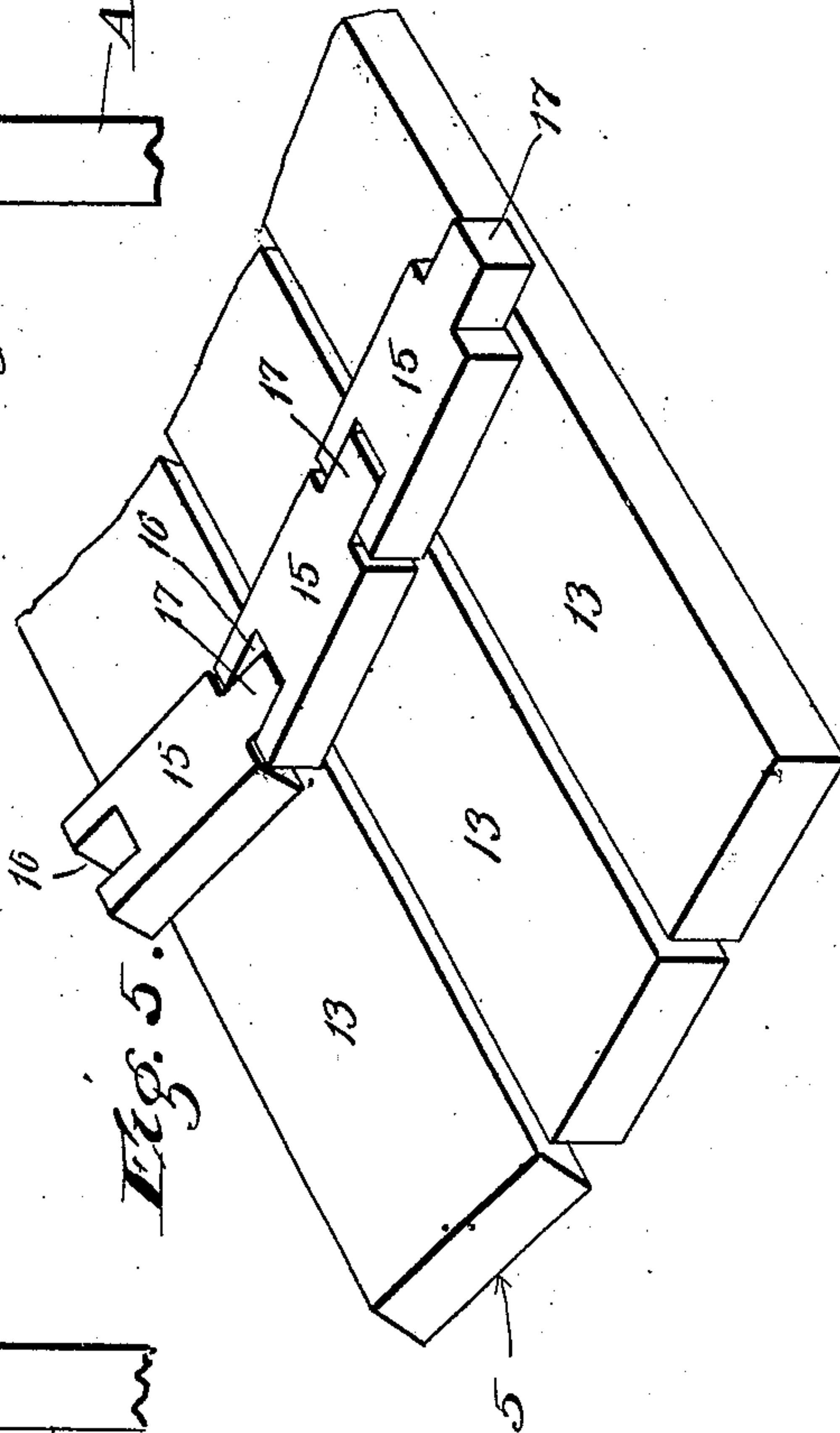


Fig. 5.

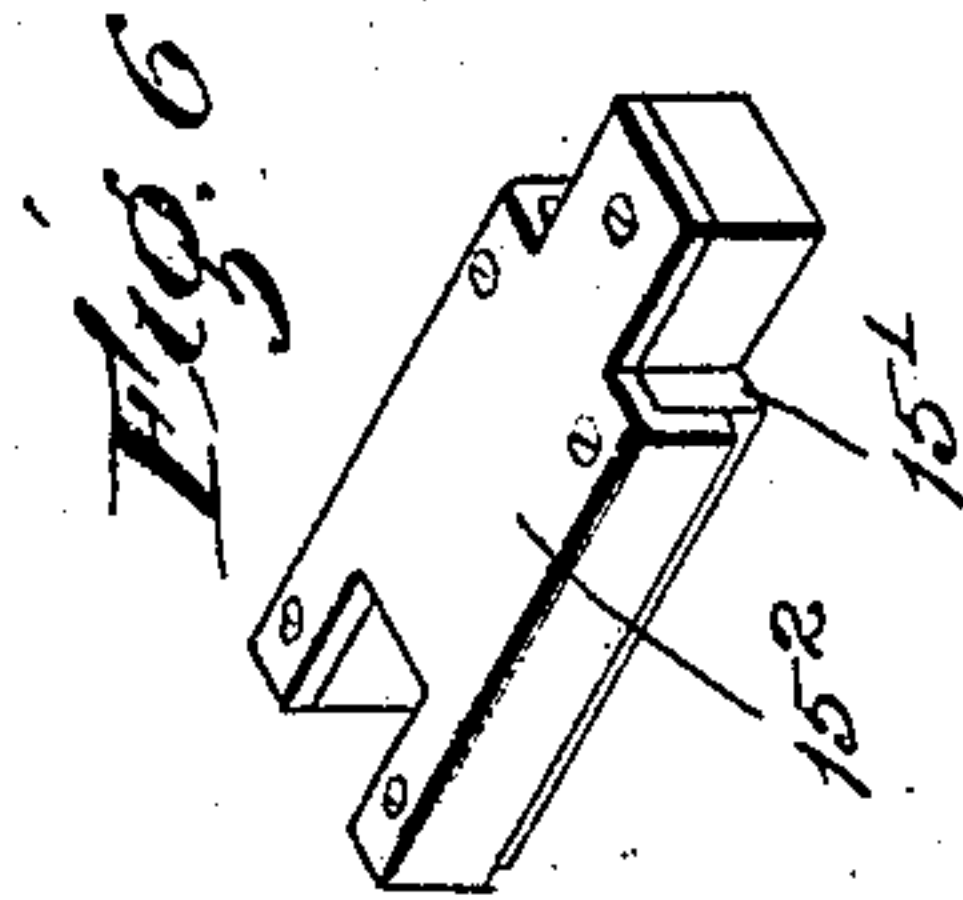


Fig. 6.

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UNITED STATES PATENT OFFICE.

EDWARD W. WICKEY, OF EAST CHICAGO, INDIANA.

TRACTION DEVICE.

No. 920,510.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed August 3, 1908. Serial No. 446,753.

To all whom it may concern:

Be it known that I, EDWARD W. WICKEY, a citizen of the United States, residing at East Chicago, in the county of Lake and State of Indiana, have invented new and useful Improvements in Traction Devices, of which the following is a full, clear, and exact description.

This invention relates to improvements in traction devices and designs to provide a traction device of improved construction.

It relates more particularly to improvements in that class of traction devices in which endless traveling aprons or tracks are substituted for the traction wheels of excavating machinery, traction engines, agricultural machinery and the like, where the desideratum is to have a long, flat bearing surface for traveling upon low, marshy soil.

One of the objects of this invention is to increase the sustaining powers of such device, to reduce friction, to minimize the danger of breakage of the parts, to strengthen and otherwise improve upon structures of this class.

Another object is to provide an anti-friction device between the endless apron and the supporting frame whereby the load may be transmitted from said frame directly through the body of the anti-friction device to the endless apron.

To such end this invention consists in the several novel features of construction and arrangement which are fully described in this specification and definitely pointed out in the claims appended hereto.

The invention is clearly illustrated in the drawings furnished herewith, in which—

Figure 1 is a side view of the traction device embodying my improvements with the main cross beams and driving shaft of the structure in cross section. Fig. 2 is a vertical longitudinal section taken on the line 2—2 of Fig. 3. Fig. 3 is a vertical cross section taken on the vertical line 3—3 of Fig. 1. Fig. 4 is a plan view of the device with a portion of the apron broken away to illustrate parts which would otherwise be hidden from view. Fig. 5 is a perspective view of a fragment of the endless apron and Fig. 6 is a perspective view of a rail block of slightly modified form.

In these views A A are the two main cross beams of the structure which it is desired to support and propel by means of traction device and these beams form the supports for

the platforms upon which is carried the operating machinery etc. of the structure. It is obvious that any sort of machinery and operating devices can be carried by said beams. The drawing shows only one of the traction devices, but it is evident that one or more may be used upon either side of the structure to be carried thereby. The cross beams A, support two track bars 2, 3, which form a track frame 1, upon which the entire load of the structure is carried. The track bar 3, rests directly upon a series of rolling elements, preferably in the form of anti-friction rollers 4, and said rollers travel upon the endless apron 5, as clearly shown in Fig. 2 of the drawings, the weight being transmitted from the track frame to the endless apron directly through the bodies of the rolling elements 4. The ends of the track bars 2, 3, are rounded off to permit the rolling elements to pass around the ends thereof and if desired guide strips 1^a, may be secured between the ends of the upper and lower track bars to form a continuation of the track from bar to bar.

Two longitudinally extending bars 6, are supported upon the cross beams A, and carry journal boxes 7, at points adjacent to their ends in which boxes are journaled shafts 8, 9, which bear apron carrying wheels 10, 11, which are preferably formed with teeth upon their peripheries. One of the shafts carries a sprocket wheel 12, which may be geared to any suitable source of motive power by means of which said sprocket wheel 12, may be turned to revolve the wheels 11.

The endless apron comprises a series of connected ties 13, which are mounted upon and carried by the wheels, 10, 11, and driven thereby. As shown in the drawings each tie has secured upon it a link 14, which links are joined together in the manner of the ordinary link belt chain and pass around the wheels 10, 11. It is quite evident that rotation of the toothed wheel 11, in one direction will cause the endless apron to unfold from its lower edge and move around the two toothed wheels, thus propelling the structure along the ground.

The rolling elements 4, are preferably flanged as shown and travel upon a rail which is secured on the endless apron. As shown, this rail consists in a series of aligned blocks 15, secured upon the inner face of the endless apron. One end of each of said blocks is preferably notched out 16, to re-

ceive a tongue 17, formed on the end of the adjacent block. This arrangement is provided to bridge the gap between the ties so as to make an even smooth track for the rolling elements. These blocks may be constructed of wood or metal, or as shown in Fig. 6 may compose wooden bodies 15¹, having metal faces 15², to take up the wear occasioned by the rolling of the rolling elements over them. The rolling elements are preferably connected, as by links 17^a, which are fulcrumed upon trunnions 18, that extend out from the rolling elements and said rollers are so connected as to form an endless band or chain of rolling anti-friction devices. This endless band passes around the track frame 1, as clearly shown in Figs. 1 and 2, and the upper series of rollers carries the upper bight of the endless apron while the lower series of rollers transmits the load from the frame directly to the apron.

The advantages of this construction are readily apparent. The load is transmitted from the track frame to the endless apron directly through the body of the rolling elements which avoids the necessity of supporting the structure on the axles of the rollers, the axles forming mere connecting pins for the links 17^a. The danger of snapping of the small axles of rollers is thus done away with, thereby greatly improving the machinery and increasing its strength and durability. The rolling elements are wholly independent of the frame or apron except that they are interposed between them to transmit the load from the frame to the apron. They roll upon the frame and upon the apron and move bodily with respect to both in their movement around the frame 1.

I am aware that various alterations and modifications of this device are possible without departing from the spirit of this invention, and I do not therefore desire to limit myself except as may be necessitated by the state of the prior art.

I claim as new and desire to secure by Letters Patent:

1. In a device of the class described, the combination of a frame, an endless apron comprising cross ties having rail blocks secured thereon and a chain connecting said ties, wheels carrying said apron, and flanged, traveling, rolling elements interposed between said frame and apron and arranged to bear directly upon the frame and apron and arranged to bear directly upon the frame and rail blocks of the apron, whereby the load from the frame may be transmitted diametrically through the rolling elements to the apron.

2. In a device of the class described, the combination of a track frame, apron carrying

wheels supported upon said frame, an endless apron surrounding said track frame and carried by the wheels and comprising a series of cross ties having rail blocks secured thereon and link belt chains connecting the cross ties, and a series of connected, flanged, rollers interposed between said track frame and rail blocks of the endless apron and arranged to form a rolling connection between said track frame and apron.

3. In a device of the class described, the combination of a track frame, two toothed wheels carried by said frame one of which wheels is a driving wheel, an endless apron surrounding said track frame and carried by the toothed wheels and comprising cross ties having rail blocks secured thereon and a chain connecting said ties, and a series of guide rollers between said track frame and rail blocks adapted to form a rolling connection between the track frame and apron.

4. In a device of the class described, the combination of main cross beams, wheel supporting bars and a track frame comprising upper and lower track bars carried by said main cross beams, apron carrying wheels journaled on said wheel supporting bars, an endless apron comprising cross ties having rail blocks secured thereon and a chain connecting said ties, and a series of traveling, connected rolling elements interposed between said track bars and rail blocks and arranged to form a rolling connection between said track frame and apron.

5. In a device of the class described, the combination of a track frame supporting toothed wheels, sprocket chains, cross ties secured to said sprocket chains, rail blocks secured upon said cross ties and connected traveling rollers interposed between said track frame and rail blocks, forming rolling elements between the track frame and apron.

6. In a device of the class described, the combination of a track frame, toothed wheels supported thereby, an endless apron comprising sprocket chains, cross ties and rail blocks carried by said toothed wheels, a series of traveling rollers interposed between the track frame and rail blocks and arranged to form a rolling connection between the track frame and endless apron, and links connecting said rollers.

In witness whereof I have executed the above application at East Chicago, county of Lake, and State of Indiana, this 22nd day of July 1908.

EDWARD W. WICKEY.

Witnesses:

A. OTTENHEIMER,
NELLIE SCOTT.

It is hereby certified that in Letters Patent No. 920,510, granted May 4, 1909, upon the application of Edward W. Wickey, of East Chicago, Indiana, for an improvement in "Traction Devices," an error appears in the printed specification requiring correction, as follows: In lines 55 and 56, page 2 the words "and apron and arranged to bear directly upon the frame" should be stricken out; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 18th day of May, A. D., 1909.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.