

No. 886,897.

PATENTED MAY 5, 1908.

G. H. TRISCH.  
RAILROAD FROG.

APPLICATION FILED SEPT. 17, 1907.

2 SHEETS—SHEET 1.

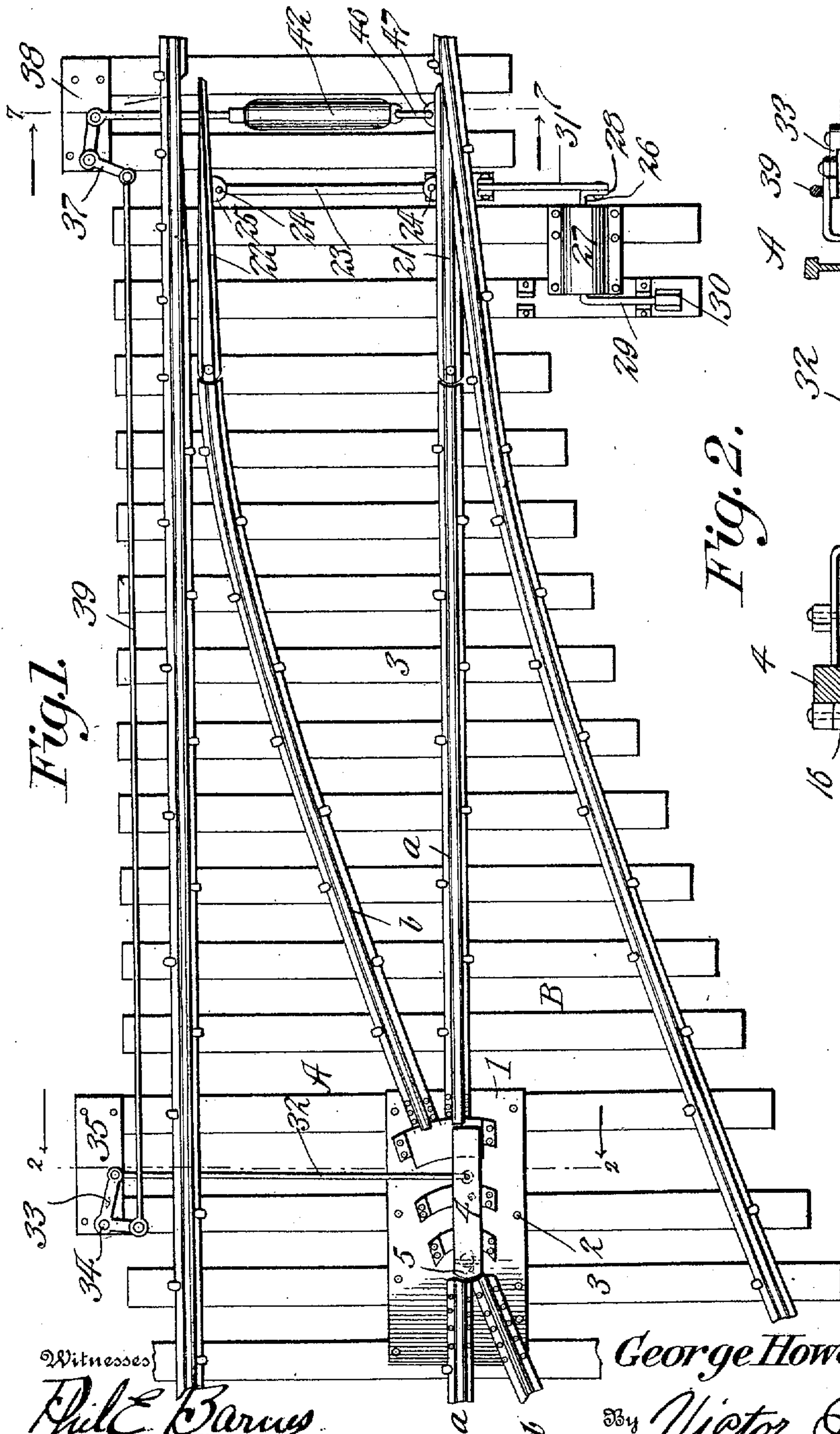


Fig. 1.

Fig. 2.

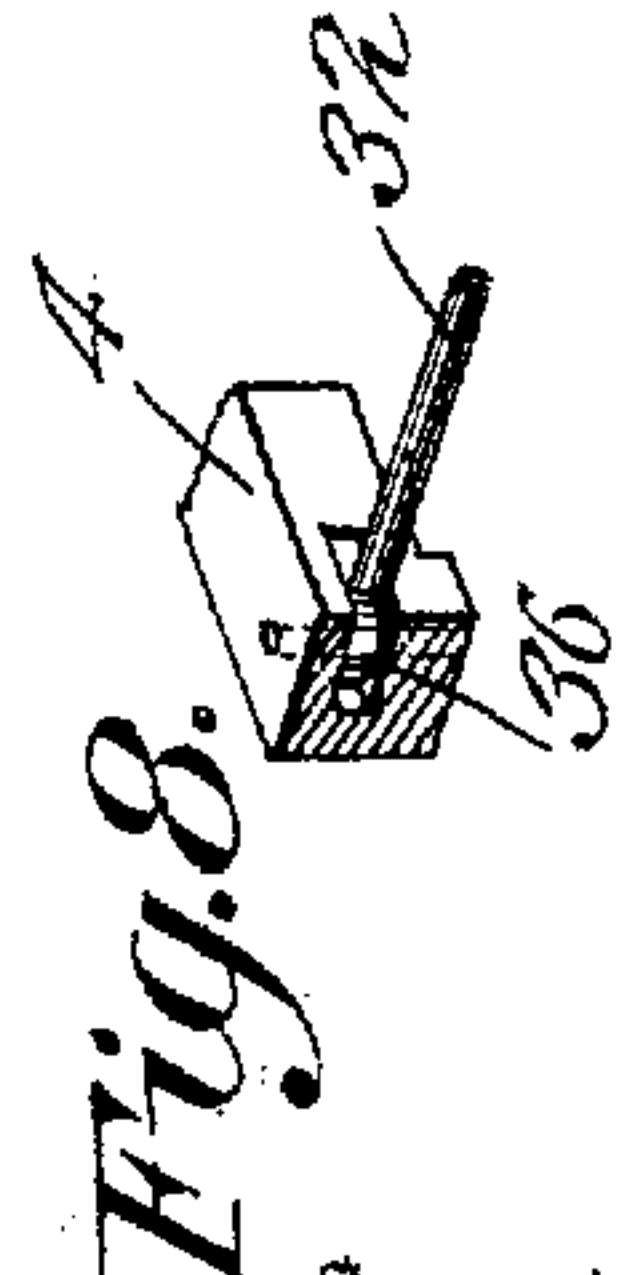
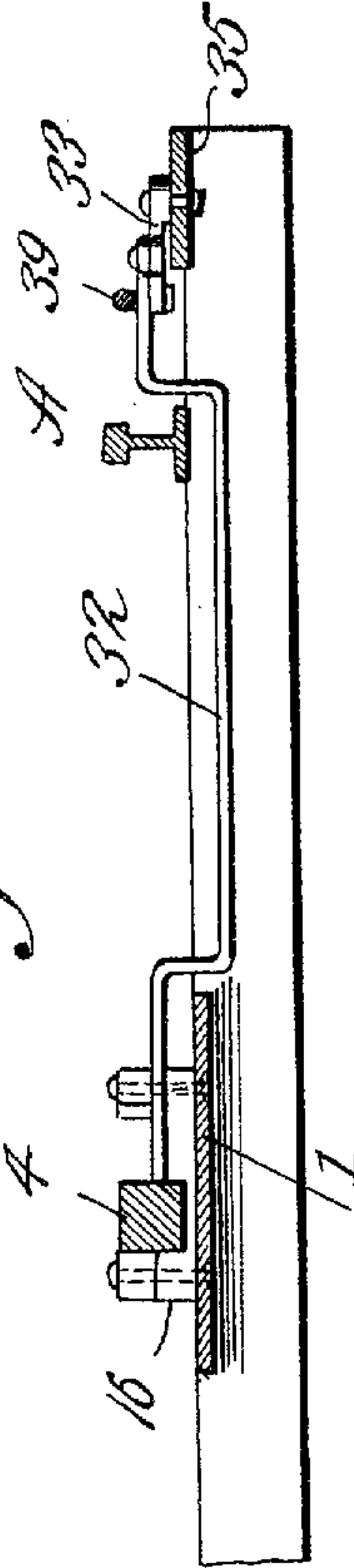


Fig. 8.

Witnesses

Phil E. Barnes  
J. W. Garner

George Howard Trisch.

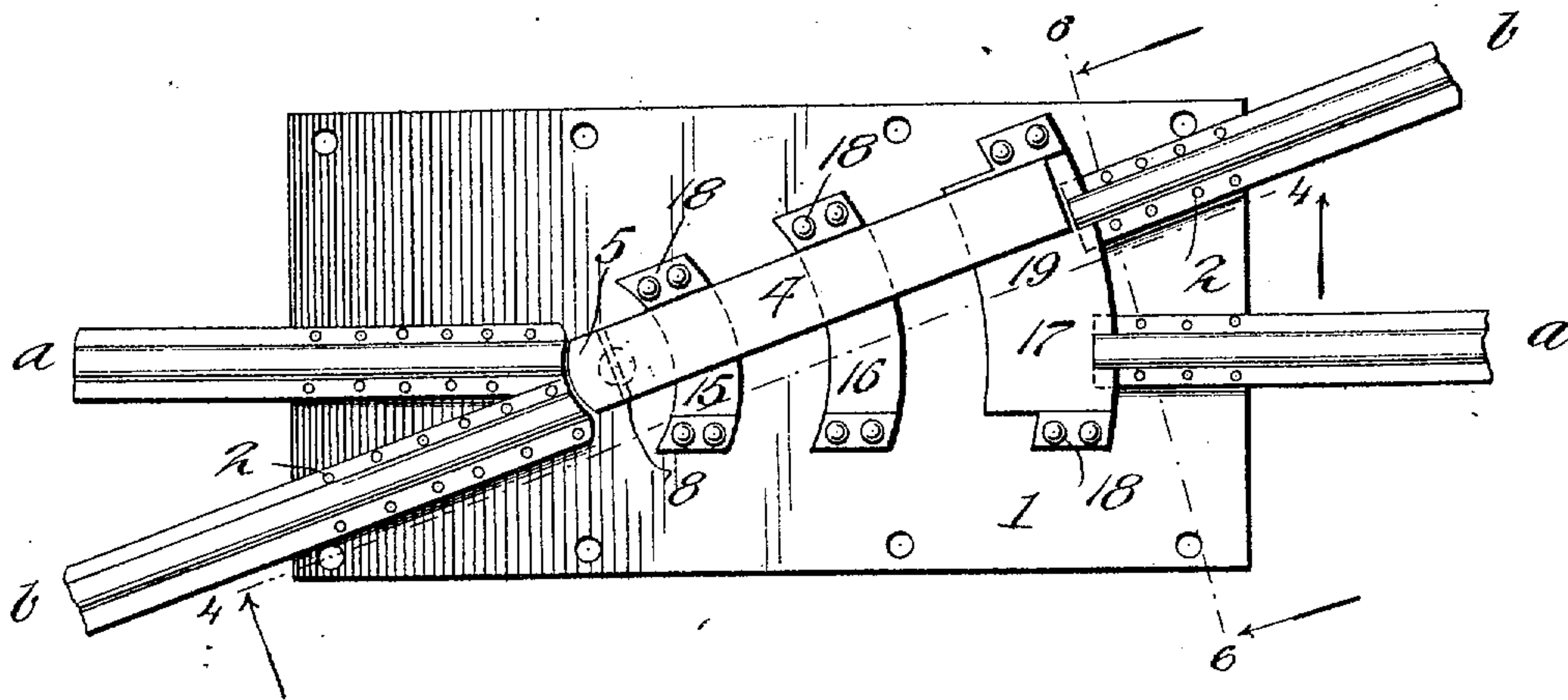
Victor J. Evans

Attorney

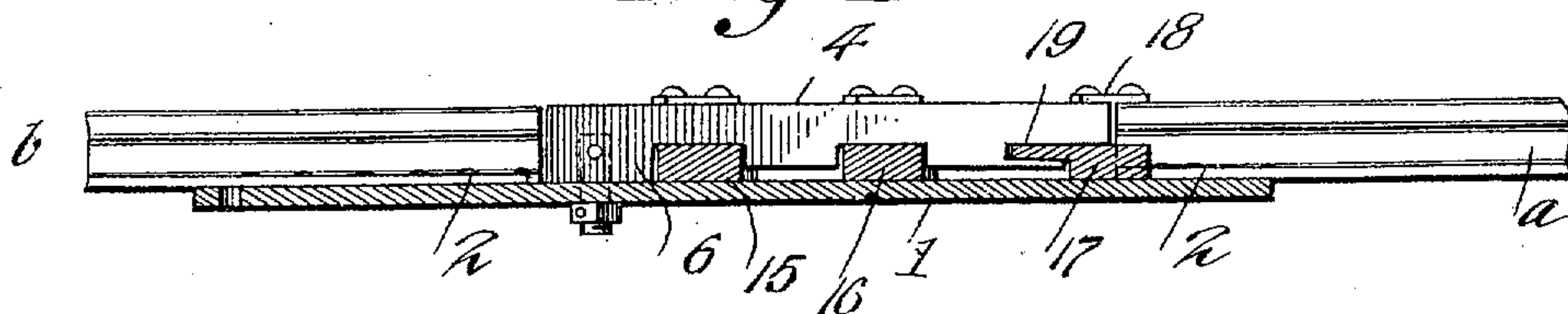
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2 SHEETS—SHEET 2.

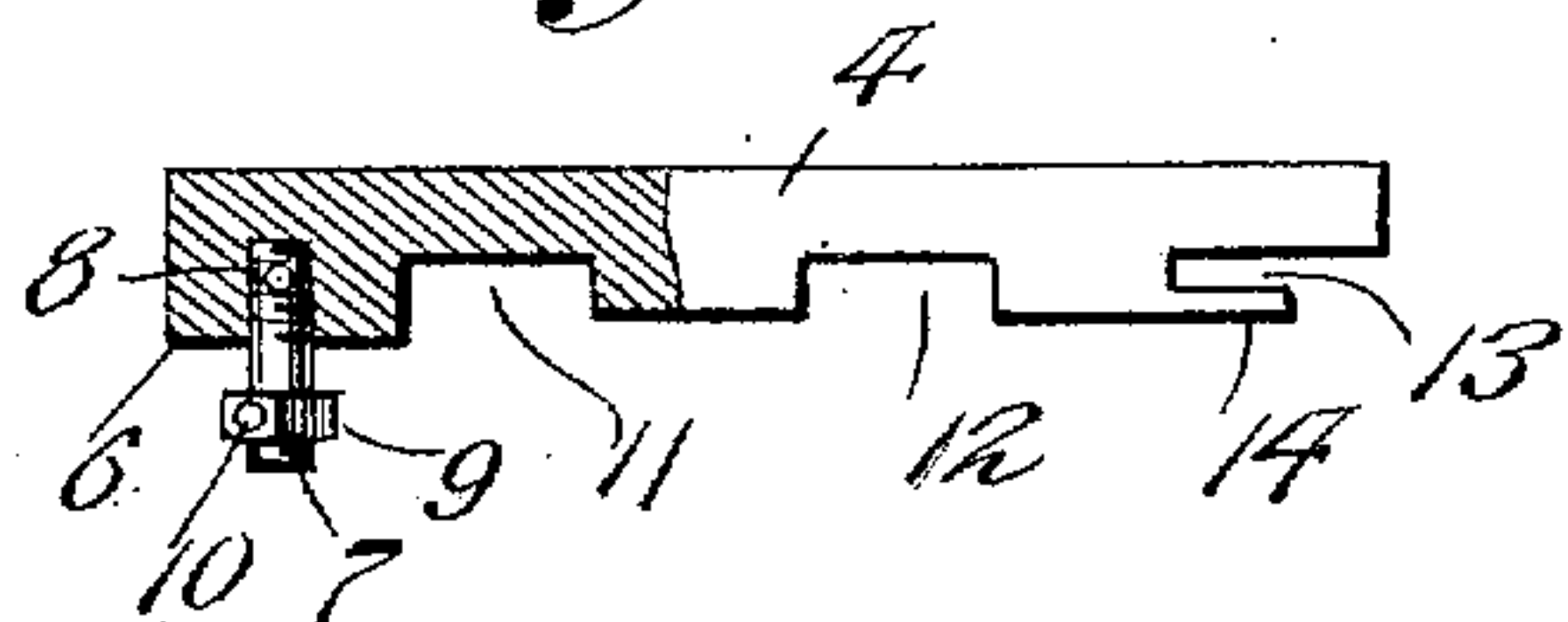
*Fig. 3.*



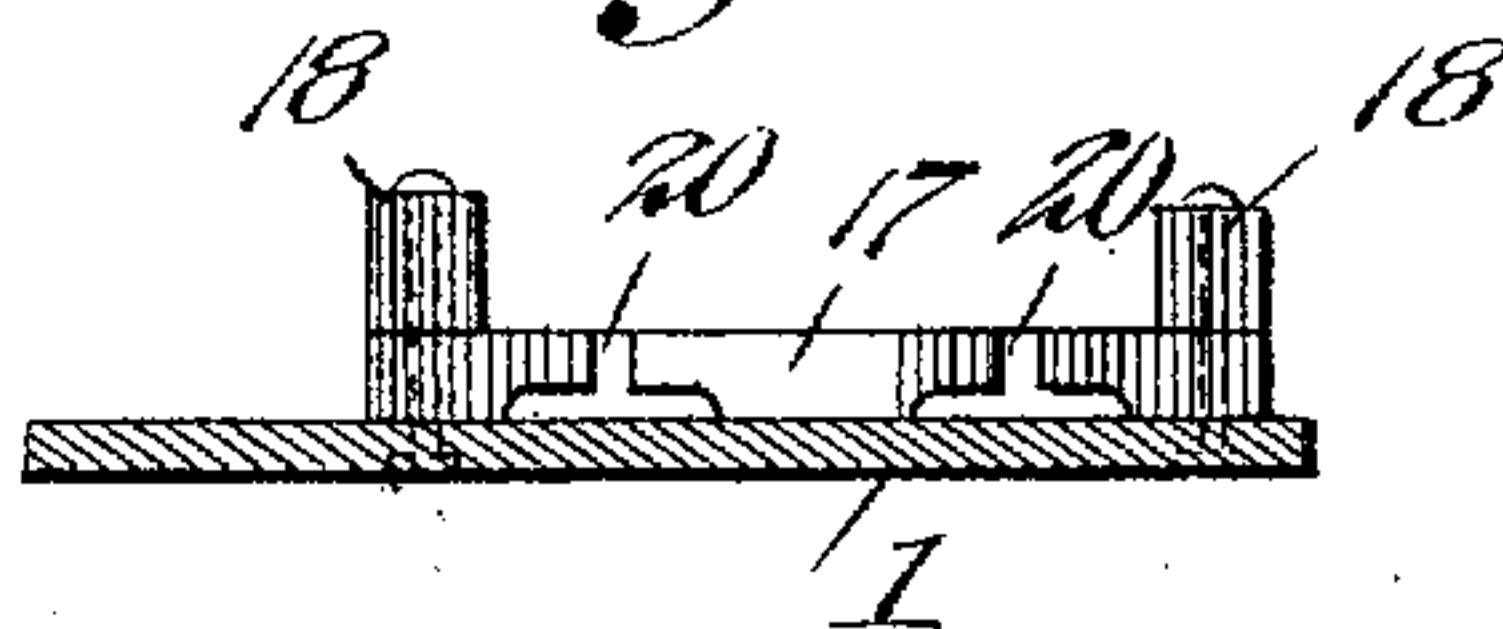
*Fig. 4.*



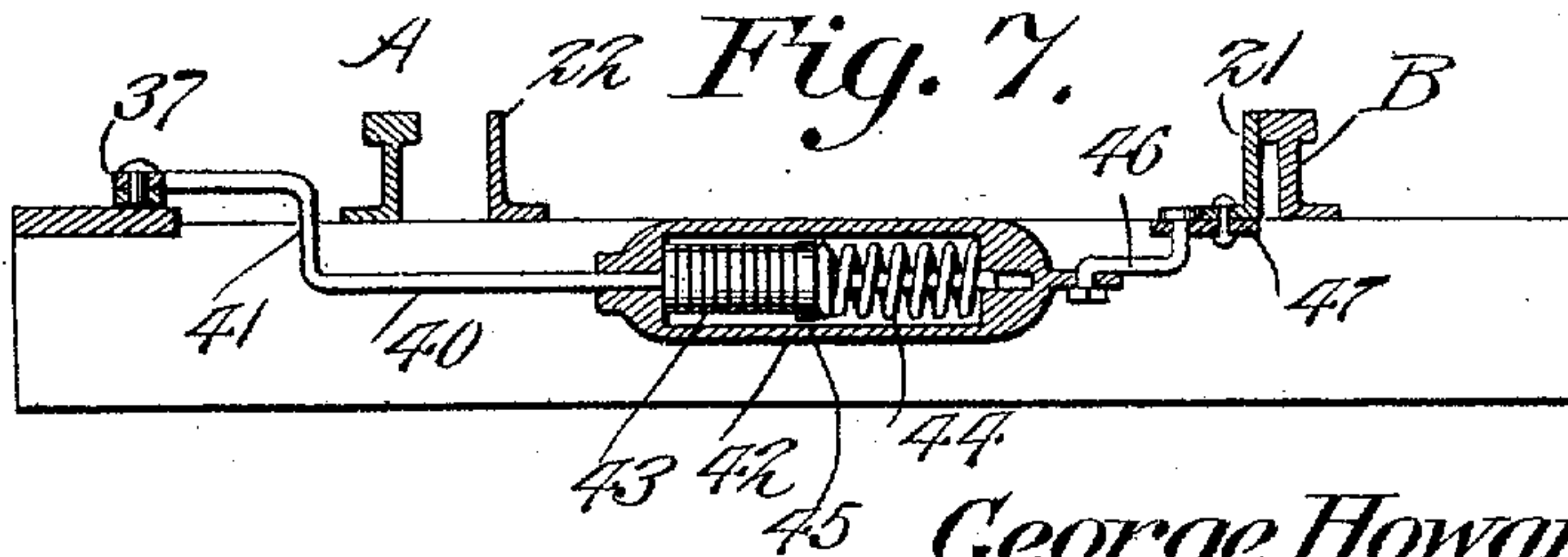
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



Witnesses

*Phil E. Barnes*  
*J. W. Garner*

Inventor

*George Howard Trisch*

By

*Victor J. Evans*

Attorney



# UNITED STATES PATENT OFFICE.

GEORGE HOWARD TRISCH, OF LLOYDELL, PENNSYLVANIA.

## RAILROAD-FROG.

No. 886,897.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed September 17, 1907. Serial No 393,312.

*To all whom it may concern:*

Be it known that I, GEORGE H. TRISCH, a citizen of the United States of America, residing at Lloydell, in the county of Cambria and State of Pennsylvania, have invented new and useful Improvements in Railroad-Frogs, of which the following is a specification.

This invention relates to improvements in railway switches, particularly with reference to the construction of the frog and means for moving the frog latch simultaneously with the switch points and for locking the frog latch and switch points in position, and the said invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a railway switch constructed in accordance with my invention. Fig. 2 is a detail transverse sectional view of the same, taken on the plane indicated by the line 2—2 of Fig. 1. Fig. 3 is a detail top plan view of the frog. Fig. 4 is a sectional view of the same, taken on the plane indicated by the line 4—4 of Fig. 3. Fig. 5 is a detail elevation partly in section of the frog latch. Fig. 6 is a detail transverse sectional view of the frog plate. Fig. 7 is a transverse sectional view taken on the plane indicated by the line 7—7 of Fig. 1. Fig. 8 is a detail perspective view, partly in section, of a portion of the frog latch, showing the connecting rod attached thereto.

In accordance with my invention, I provide a frog to be located at the intersection of two tracks at the point where one track rail crosses another. In Fig. 1 of the drawings, tracks A, B are indicated and my improved frog is shown disposed in the angle between the rails *a*, *b* of such intersecting tracks. The frog plate 1 is of suitable size to receive the proximate ends of the rails *a*, *b* thereon, the said rails being secured on the said frog plate by having their base flanges riveted or bolted thereto, as at 2. The said frog plate bears on and is spiked or otherwise suitably secured to certain of the cross ties 3. On the said frog plate is the frog latch or bar 4, one end of which is rounded as at 5 and is disposed opposite the concaved ends 2 of the converging rail ends *a*, *b*. The said end of the frog latch is provided with a downwardly extending boss 6 which bears on the frog plate 1 and is connected thereto by a pivotal bolt 7 the upper end of which is screwed in a

threaded opening in said end of the frog latch or bar and is further secured therein as by means of a cross or key pin indicated at 8. The lower portion of the said pivot bolt passes through an opening in the frog plate and a nut 9 is screwed on the lower end of said pivot pin and is secured thereto by means of a key pin 10. That portion of the frog latch formed by the boss 6 bears on the frog plate, the remaining portion of the said frog latch being spaced above the frog plate and the said frog latch is provided in its under side with transverse recesses 11, 12 and at its free end under its underside with a slot 13 providing a tongue 14 on the under side thereof, the said tongue terminating short of the free end of the latch bar, as shown in Figs. 4 and 5.

On the frog plate are secured concentrically arranged segmental supporting arms 15, 16 and 17 which respectively engage the recesses 11, 12 and 13 so that the said supporting bars serve to support the free portion of the frog latch and enable the latter to be moved angularly as may be required to dispose it in line either with the rail *a* or the rail *b*. The width of the said frog latch exceeds that of the heads of the said rails and is such that when said latch is in line with the rails its inner side will aline with the inner sides of the heads of said rails and, when such latch is in line with the rails *b*, its outer side will aline with the inner sides of such rails *b*. The said supporting bars 15, 16 and 17 are provided at their ends with upstanding stop blocks 18 which are bolted thereon by the same bolts which are employed to bolt said supporting bars on the said frog plate, the said stop blocks being so related as to limit the extent of angular movement of the frog latch and hold the latter in the required position in alinement with either the rails *a* or the rails *b*, according to the position in which such frog latch is disposed. The free end of the frog latch bears on the bar 17 and such bar is provided on its inner side with a horizontally disposed web 19 which enters the slot 13 of the frog latch, so that the tongue or arm 14 under the free end of the frog latch bears against the underside of such web or flange 19 and coacts therewith and with the pivotal bolt connection between the frog latch and the frog plate to hold the frog latch in a perfectly horizontal position under all conditions, with its upper side level with the heads of the contiguous rail ends. The said sup-



porting bar 17 is furthermore provided at its outer edge with inverted T-shaped recesses 20 for the reception of the web and base flanges of the ends of the rails *a*, *b* between which the free end of the frog latch operates. It will be observed that the said ends of the said rails and the said bar 17 mutually brace and strengthen one another so that such ends of the rails are prevented from yielding or springing vertically, and the same is also true as to the said bar 17.

The switch points 21, 22 of the rails *a*, *b*, respectively, are connected together by a rod 23, the ends of which are pivotally connected as at 24 to plates 25 which are bolted or otherwise secured to the undersides of such switch points near their free ends. A rock shaft 26 is mounted in a bearing 27 which is secured on the projecting ends of certain of the cross ties and said rocking shaft has a rock arm 28 and a lever arm 29, the latter provided at its outer end with a weight 30 to hold such lever arm in a horizontal position after it has been moved in either direction and cause it to lie close to the cross tie over which it plays. The arm 28 of the said rock shaft is connected as by means of a rod 31 to the plate 25 which is attached to the switch point 21, hence the switch points may be moved simultaneously in either direction by means of the rock shaft and its connections to cause the switch points to aline either with the track A or the track B.

The frog latch 4 is connected by a rod 32 to one arm of a bell crank 33 which is pivotally mounted as at 34 on a plate 35 which is secured on the projecting ends of certain of the cross ties, the said rod being pivotally connected to the frog latch as at 36 and being also pivotally connected to the said bell crank. A bell crank 37 which is similar to the bell crank 33 and is mounted at one side of the track *a* at a point opposite the free ends of the switch point on a plate 38, has one of its arms connected to one arm of the bell crank 33 by a rod 39 on the outer side of and parallel with the track A. The other arm of the bell crank 37 is pivotally connected to a rod 40. The said rod has an off-set portion 41 whereby it is enabled to pass under the outer rail of the track A and under the switch point 22, the free end of the depressed portion of said rod extending into and being free to move longitudinally to some extent in a tubular link 42 which forms stops for the outer ends of a pair of counter-acting coiled cushioning springs 43, 44, the inner ends of

which bear against opposite sides of a stop flange 45 which is fixed on said rod. One end of the said tubular link 42 is connected by a rod 46 to a plate 47 which is bolted to the under side of the base flange of the switch point 21, said rod 46 being pivotally connected to such plate and to such end of the tubular link, as shown in detail in Fig. 7.

It will be understood from the foregoing description that when the switch lever 29 is thrown to move the switch point 21, 22 in either direction, the connections including the elements 40, 42, 43, 44, 45 and 46 between the switch point 21 and the bell crank 37, will cause the latter to be turned and hence cause the rod 39 to communicate like motion to the bell crank 33 and the rod 32 to move the frog latch to the required position so that the frog latch and the switch points are connected together and to the switch lever and such frog latch and switch points are moved simultaneously by the operation of such lever. When the tubular link 42 is moved in either direction with and by the switch point 21, it compresses one of the springs 43, 44 as the frog latch 4 is moved against the stop blocks 18 at either side thereof and hence said springs exert constant tension on such frog latch to lock the latter in the position in which it is set and prevent the frog latch from being moved casually from such position.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

1. A railway frog comprising a base plate and segmental concentrically disposed supporting bars thereon, one of said supporting bars having a flange on its inner side, a frog latch pivotally mounted on said base plate having recesses on its under side to clear the said supporting bars and provided at its outer end and its under side with a tongue bearing against the under side of the flange of the flanged supporting bar and stops to limit the angular movement of said frog latch.

2. A railway frog comprising a base plate, a frog latch pivotally mounted thereon, and supporting bars for such frog latch on such base plate and having stop blocks to limit the angular movement of such frog latch.

In testimony whereof, I affix my signature in presence of two witnesses.

GEORGE HOWARD TRISCH.

Witnesses:

GEORG GRESKO,  
JOHN SISARICK.