

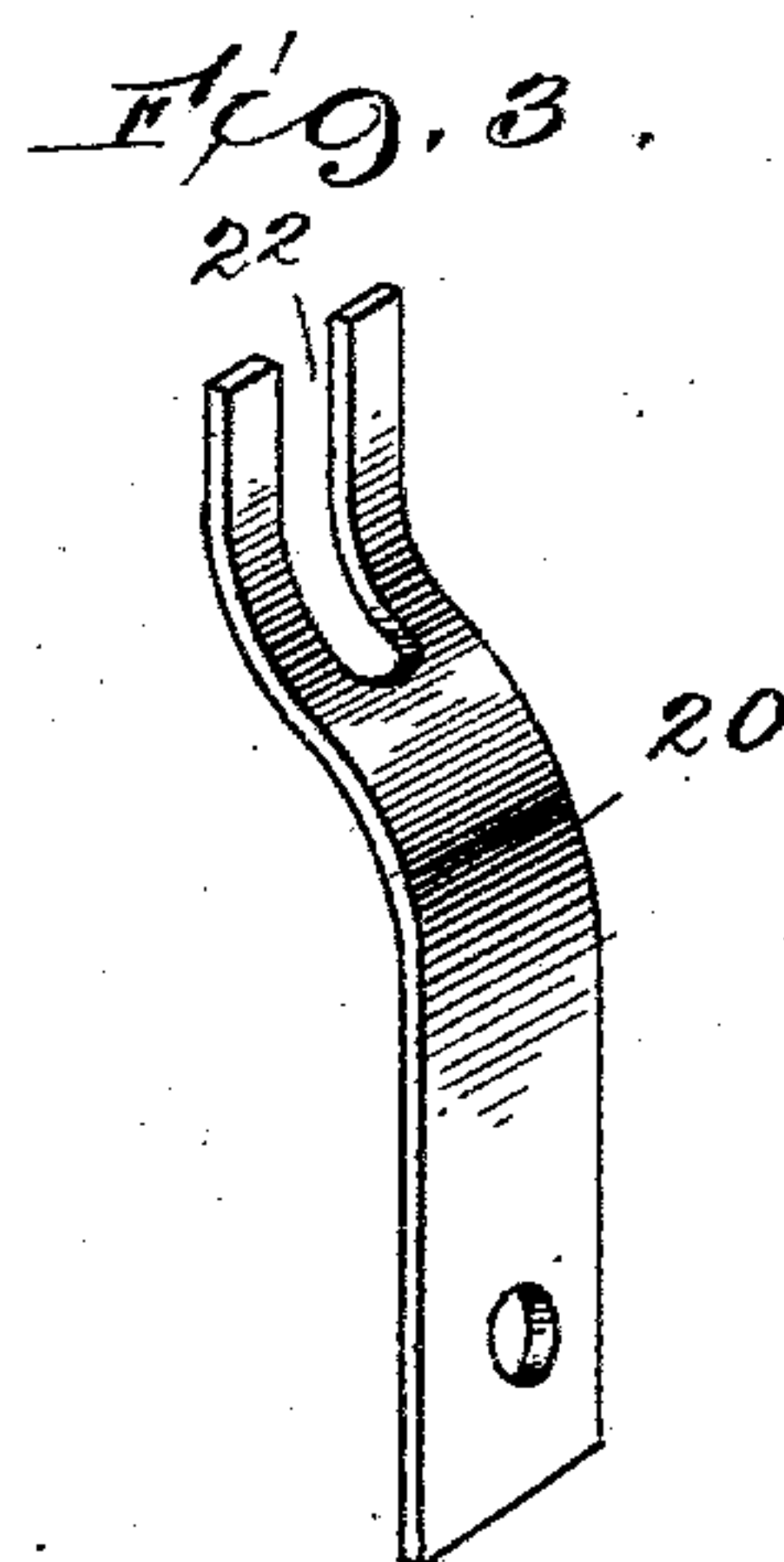
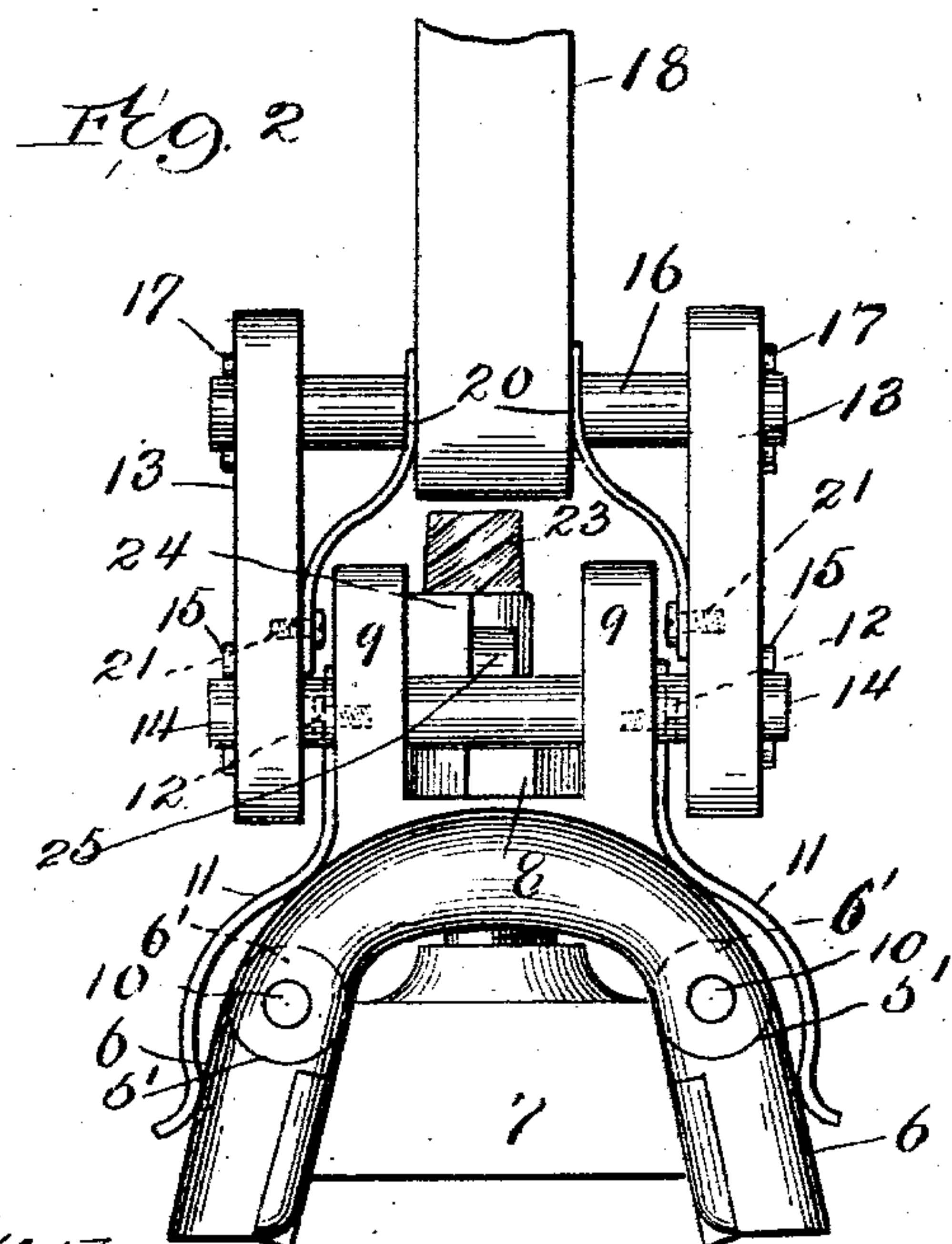
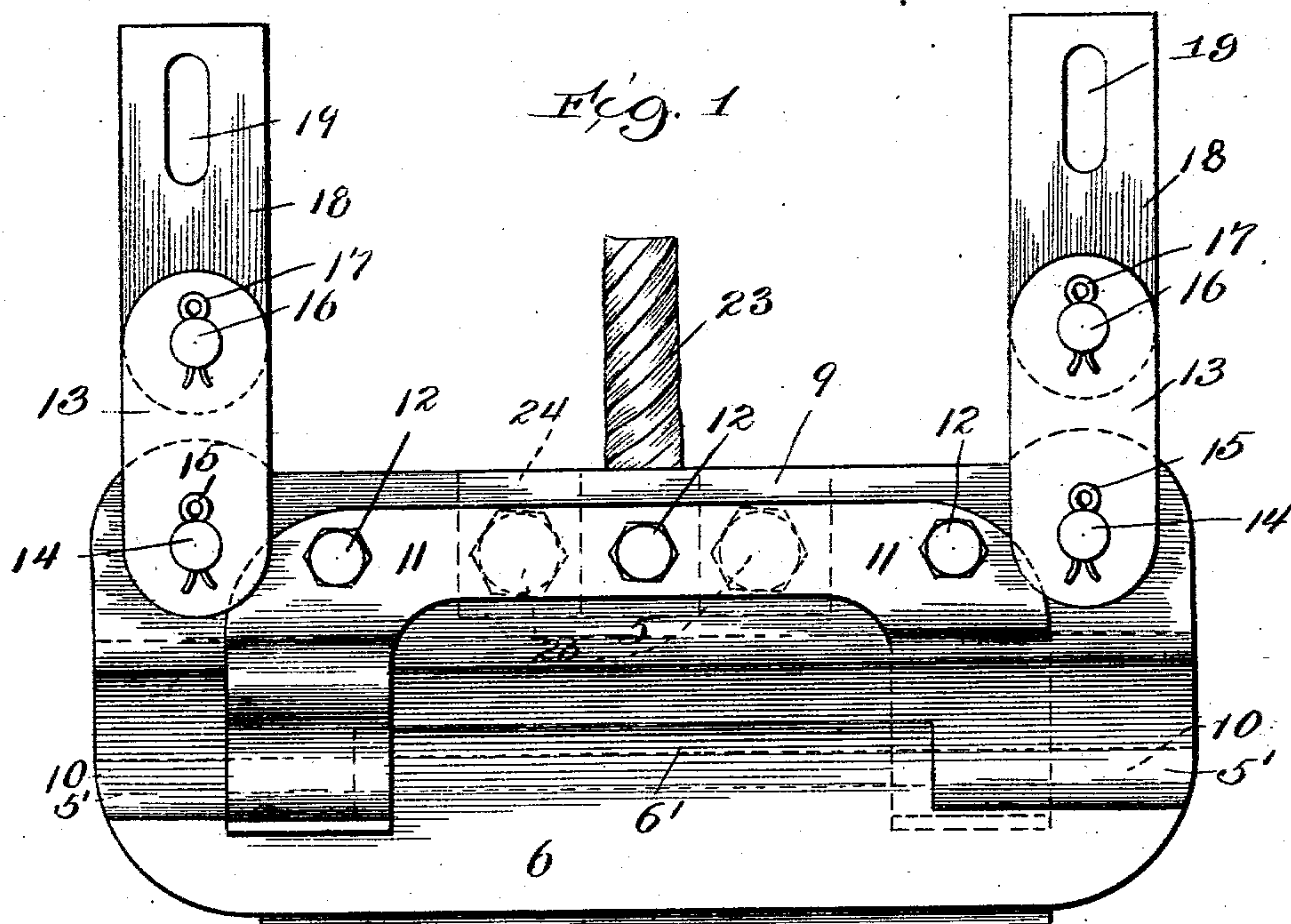
No. 751,974.

PATENTED FEB. 9, 1904.

G. W. BRADY & L. R. JONES.  
RAIL CONTACT SHOE AND SUPPORT THEREFOR.

APPLICATION FILED APR. 13, 1903.

NO MODEL.



Witnesses  
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By Jones & Bain Attys.



# UNITED STATES PATENT OFFICE.

GEORGE W. BRADY AND LAWRENCE R. JONES, OF WHEATON, ILLINOIS.

## RAIL CONTACT-SHOE AND SUPPORT THEREFOR.

SPECIFICATION forming part of Letters Patent No. 751,974, dated February 9, 1904.

Application filed April 13, 1903. Serial No. 152,292. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE W. BRADY and LAWRENCE R. JONES, of Wheaton, in the county of Dupage and State of Illinois, have  
5 invented certain new and useful Improvements in Rail Contact-Shoes and Supports Therefor; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.  
10

Our invention has for its primary object to provide a rail contact-shoe and support therefor for use on third-rail electric railways adapted for and capable of automatic adjustment  
15 relative to the rail and car to compensate for varying conditions encountered in its use.

In the use of an elongated third-rail contact-shoe adapted to straddle and partly embrace the head of a third rail it is found that in spanning an arc of a curve in the rail such strain  
20 is thrown upon the straddling sides as to fracture them; and it is with a view to providing a structure adapted to overcome this difficulty as one object that our invention is designed.

Again, it is found desirable in order to maintain proper contact of the shoe with its rail at all times that the shoe should be so suspended from the car that it is capable of movement  
25 in all directions relative thereto while normally definitely related to the car; and our invention further has for an object the provision of means for attaining this desideratum.

With a view to attaining these and further objects which will become apparent to those skilled in the art our invention consists in the features of construction and arrangement of parts hereinafter more fully described, and  
35 specified in the claims.

In the drawings, Figure 1 is a side elevation of a contact-shoe and support embodying our invention. Fig. 2 is an end elevation of the same. Fig. 3 is an enlarged detail of one of the frame-adjusting springs detached.  
40

In the drawings, wherein like numerals of reference refer to like parts, we have illustrated our invention as embodied in a structure including some of the features of invention set forth and described in our pending application, filed January 20, 1903, serially  
45 numbered 140,468, and reference is made there-

to for details of construction of the shoe proper; but it will be apparent that our invention might be embodied in other forms of shoes than the specific one herein illustrated for purposes of full disclosure, and we do not  
55 desire to be understood as limiting ourselves to such specific form.

5 indicates the yoke portion of a contact-shoe body, having depending sides 6, preferably slightly divergent and adapted to straddle the head of a conductor-rail, said parts together forming an elongated member of substantially inverted-U shape in cross-section.  
60

7 is a contact-block arranged between the depending sides 6 of the shoe-body, above the lower edges thereof, and adjustably supported  
65 in position by screws 8.

9 9 indicate parallel longitudinal ribs extending, preferably, the entire length of the shoe and projecting from the top thereof.  
70

In order to render the shoe proper yielding to the strains imposed thereon in rounding curves and the like, one or both of the sides thereof are made movable and are held in normal position under spring tension. We have  
75 herein illustrated both of the depending sides 6 6 as so constructed; but, if preferred, only one side might be so arranged.

5' and 6', Fig. 1, indicate complementary hinge-joint portions of the yoke part 5 and side 6, traversed longitudinally by a pivot-pin 10. Suitable spring devices are interposed between the pivoted sides and the relatively stationary yoke, such devices being illustrated by a spring 11, of general U shape, suitably  
80 secured to the web 9 of the part 5 of the shoe by bolts 12. The springs 11 are arranged to exert a constant pressure upon the outside surfaces of the hinged side portions 6 of the shoe, tending to maintain them at their inward  
85 limit of movement. Suitable stop devices are provided to limit the inward movement of the sides, in the present instance the contact-block 7 serving the purpose of the stop. It will be apparent that under conditions which  
90 impose strains upon the sides of the shoe tending to separate the same, as in rounding curves, one or both of the said side pieces will yield outwardly against the tension of the springs to prevent the breakage of the shoe and that  
100



as soon as the strain is removed the sides will return to normal position under the spring tension.

13 13 indicate pairs of companion links connected in parallelism to the opposite ends of the respective ribs 9 by transverse pivot-pins 14, secured by suitable cotter-pins 15.

16 16 indicate transverse pivot-rods connecting the upper extremities of the pairs of pivoted links 13, said rods being suitably secured in position relative to the links, as by cotter-pins 17.

18 18 are supporting-links in the lower ends of which the rods 16 are slidably mounted and at their upper ends provided with elongated slots 19, whereby they are adapted for adjustable connection with a suitable part of a car or car-truck or body. (Not herein shown.)

Suitable springs, such as the leaf-springs 20 20, are interposed between the link 18 and the side links 13, tending to maintain the parts in a definite relation, but arranged to yield in either direction. The leaf-springs 20 are illustrated as secured at their lower ends to the opposing links 13 by suitable screws 21, said springs converging upwardly to bear against the opposite sides of suspension-links 18. The upper ends of the springs 20 are preferably longitudinally slotted, as indicated at 22 in Fig. 3, the bifurcated ends being arranged to straddle the rods 16.

23 indicates a fragment of conducting-cable suitably connected to the shoe, as by clips 24, secured to one of the webs 9 by bolts 25.

The construction above set forth renders the shoe self-adjustable to varying conditions of use. Any side swing of the car carrying with it the suspension-links 18 causes said links to slide upon the rods 16, compressing the springs 20 upon the side toward which said links move relative to the shoe. As soon as the car returns to normal position relative to its conductor-rail the compression-springs 20 return the suspension-links 18 to normal position, as will be well understood. Further, the parallel link connections set forth enable the shoe to be swung forward and back and up and down with reference to the pivots 16, so that any inequalities in the height of the conductor-rail and any normal vertical movement of the car on its springs are compensated for.

Numerous other advantages incident to the use of a flexible connection herein described

will be apparent to those skilled in the art and need not be expressed in detail.

While an operative embodiment of our invention is herein described in some detail, it will be apparent that many equivalent structures differing more or less in construction from that herein set forth might be devised without departing from the spirit and scope of our invention, and we do not desire to be understood as limiting ourselves to the exact construction herein disclosed.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a rail contact-shoe, a horizontally-arranged body portion, depending sides pivoted to the lateral edges of said body, and a contact-block having divergent side faces arranged below the said body portion with its side faces disposed to limit the inward movement of the pivoted sides of the shoe.

2. In a rail contact-shoe, a horizontally-arranged body portion, depending sides pivoted thereto, springs arranged to press said sides inward, and a contact-block carried by said body portion disposed between the pivoted sides and arranged to limit their inward movement.

3. In combination, a rail contact-shoe, parallel pairs of links pivoted to the opposite ends thereof, pivot-rods connecting the upper extremities of said links in pairs, suspension-links wherein said rods are slidably mounted, and springs normally holding said parts in predetermined relative positions under yielding tension.

4. In combination, a rail contact-shoe, parallel pairs of links pivoted to the opposite ends thereof, pivot-rods connecting the upper extremities of said links in pairs, suspension-links wherein said rods are slidably mounted, and springs interposed between said pivoted links and said suspension-links, yieldingly holding said parts in definite relation.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

GEORGE W. BRADY.  
LAWRENCE R. JONES.

In presence of—

RICHARD WINDE,  
ANDREW J. CHRISTIE.