

906,544.

B. J. MORGAN.  
RAILWAY FROG.  
APPLICATION FILED MAY 9, 1908.

Patented Dec. 15, 1908  
2 SHEETS—SHEET 1.

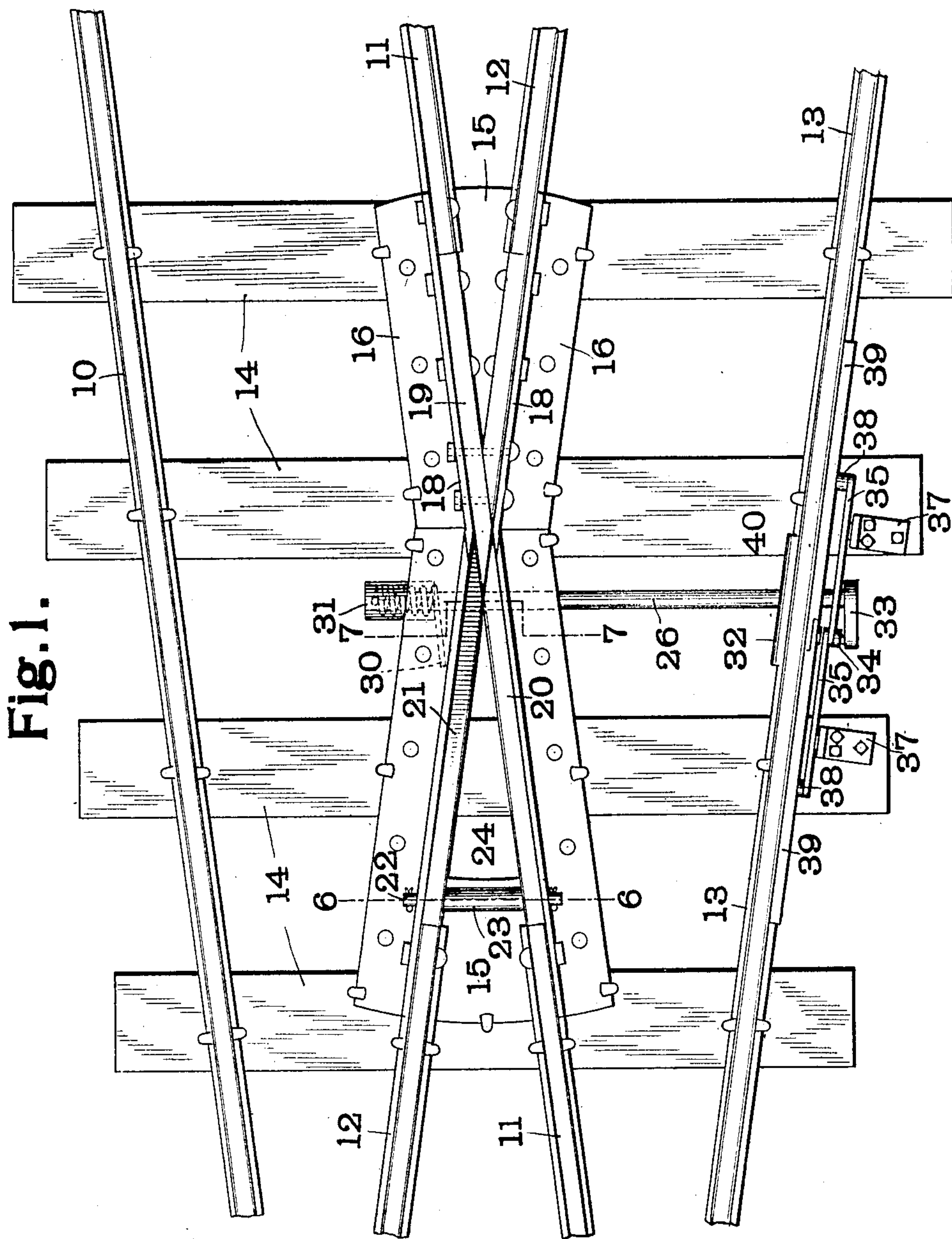


Fig. 1.

WITNESSES:

L. L. Mead.  
W. A. Alexander.

INVENTOR

B. J. Morgan

BY

*Lawrence H. Brown*  
ATTORNEY

B. J. MORGAN.

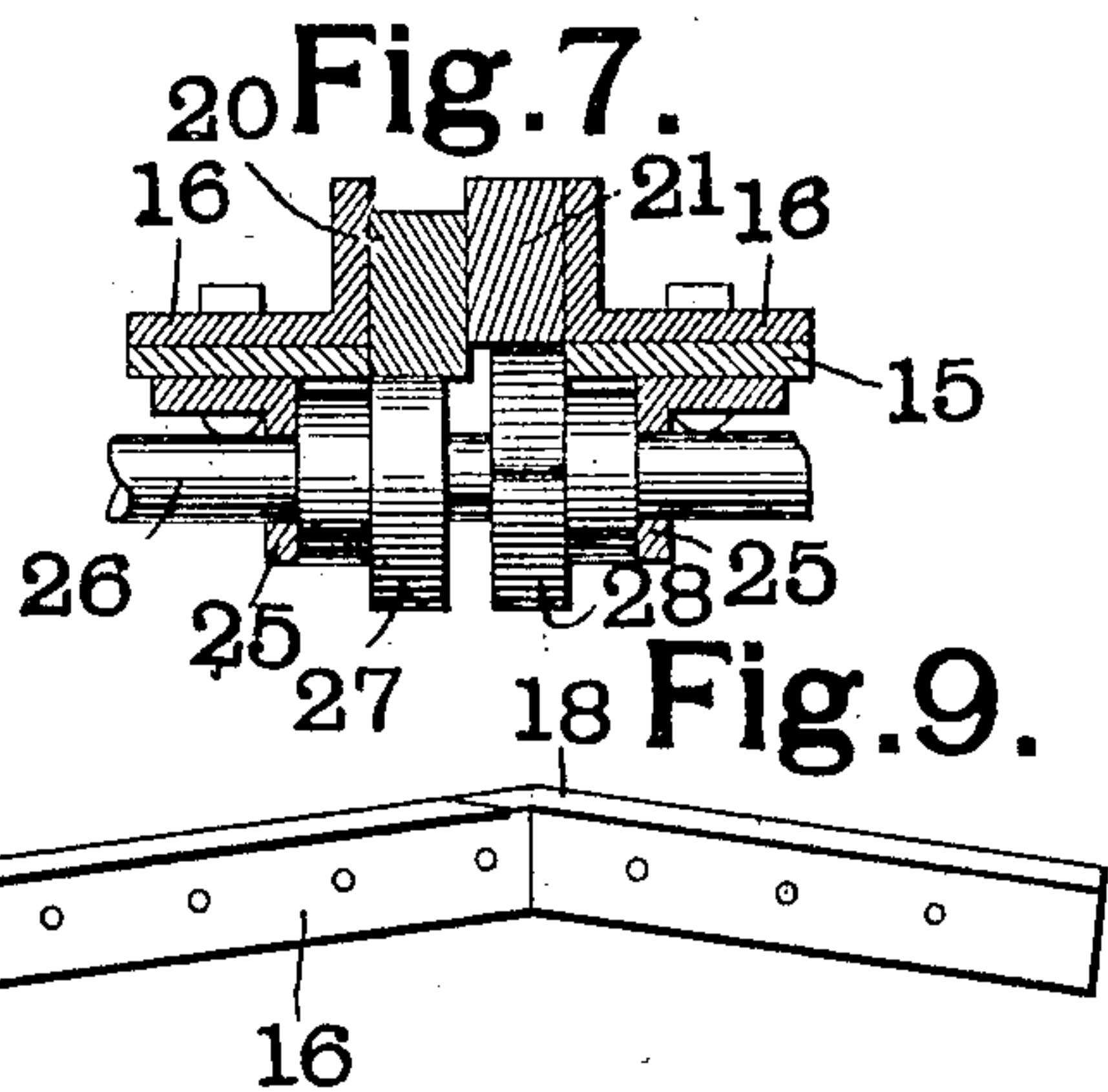
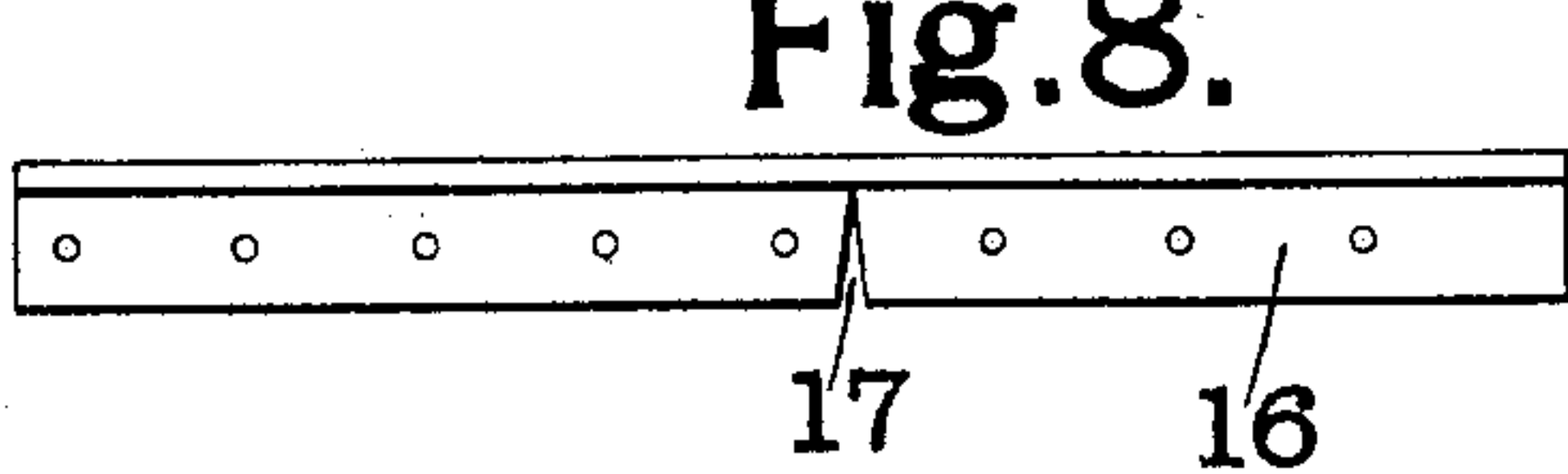
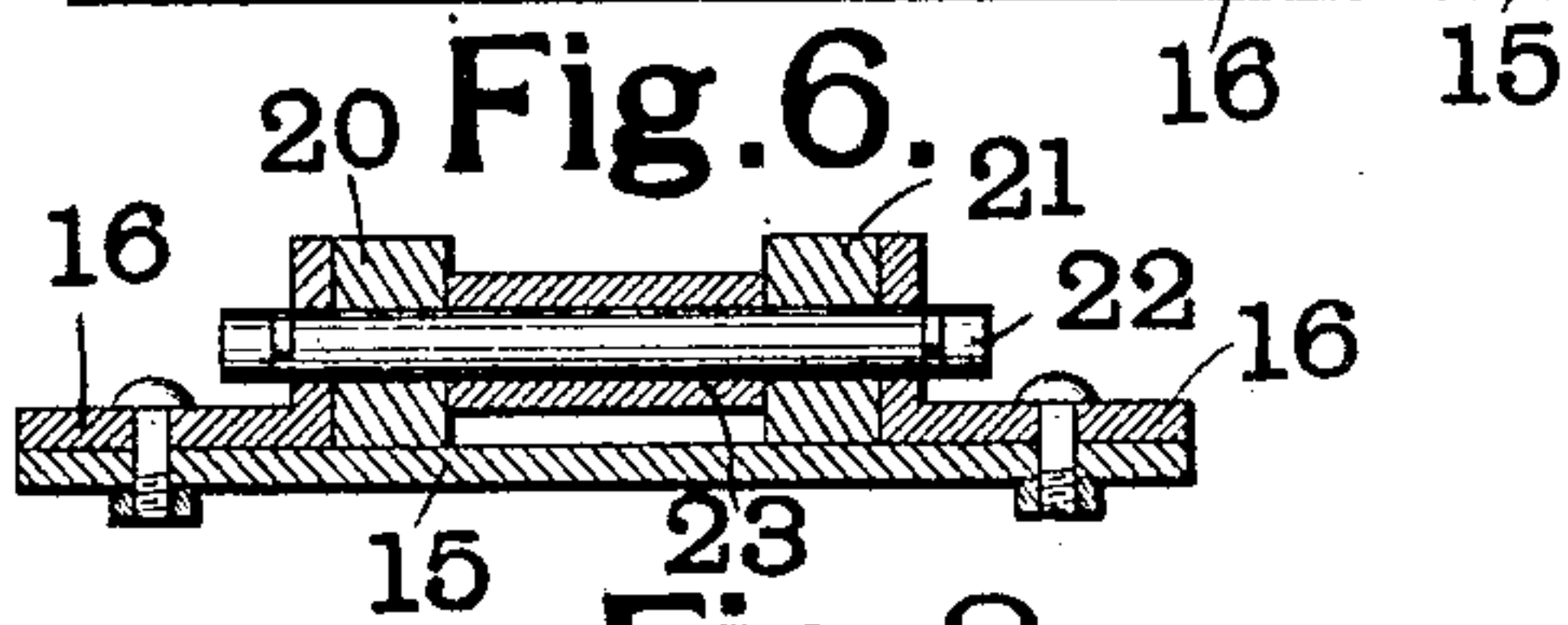
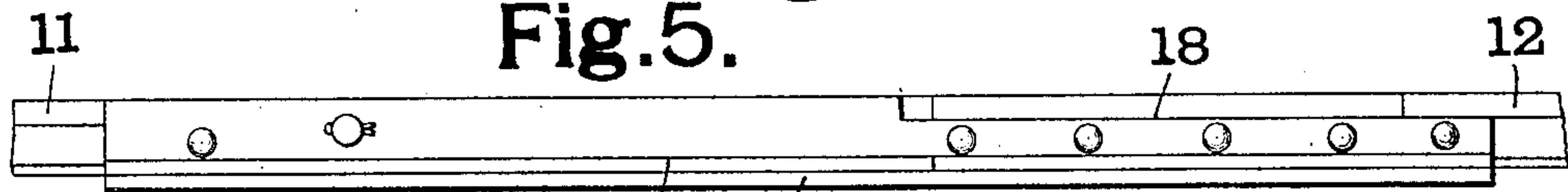
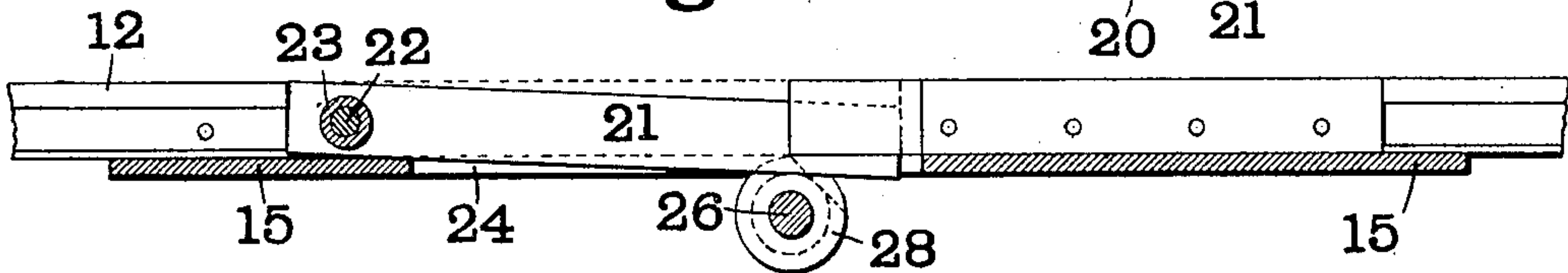
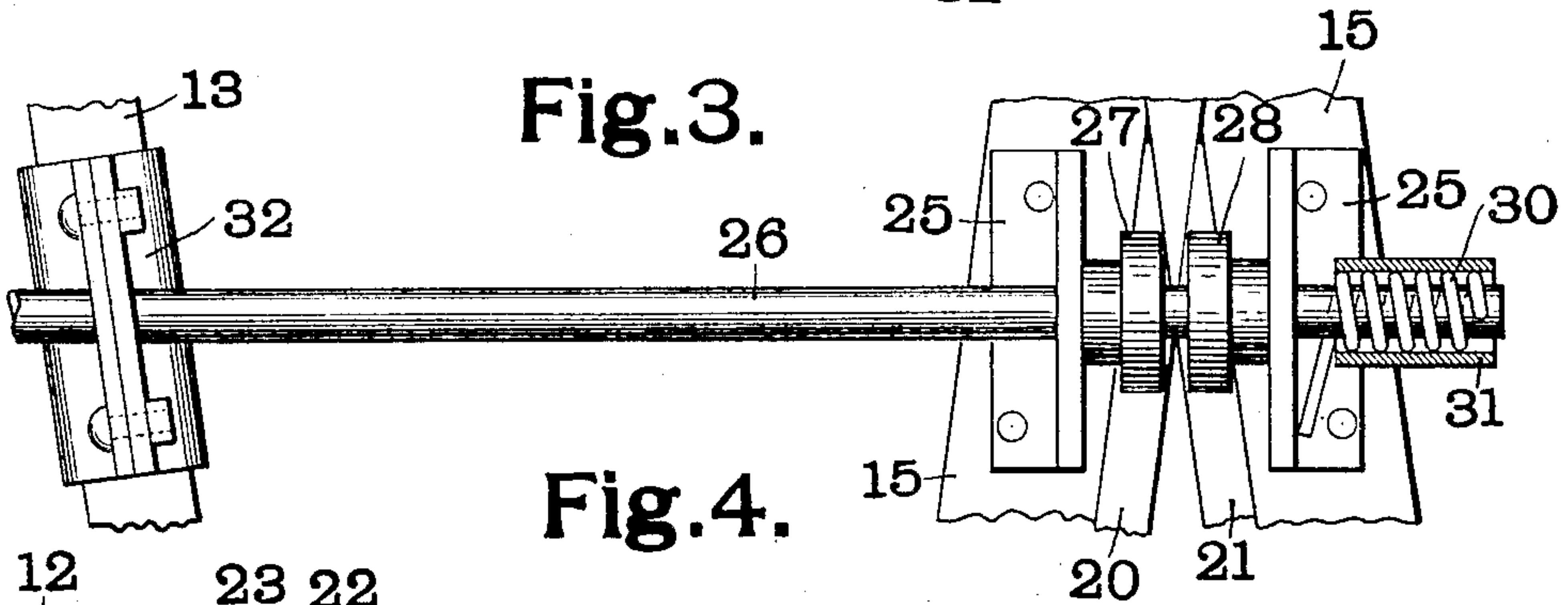
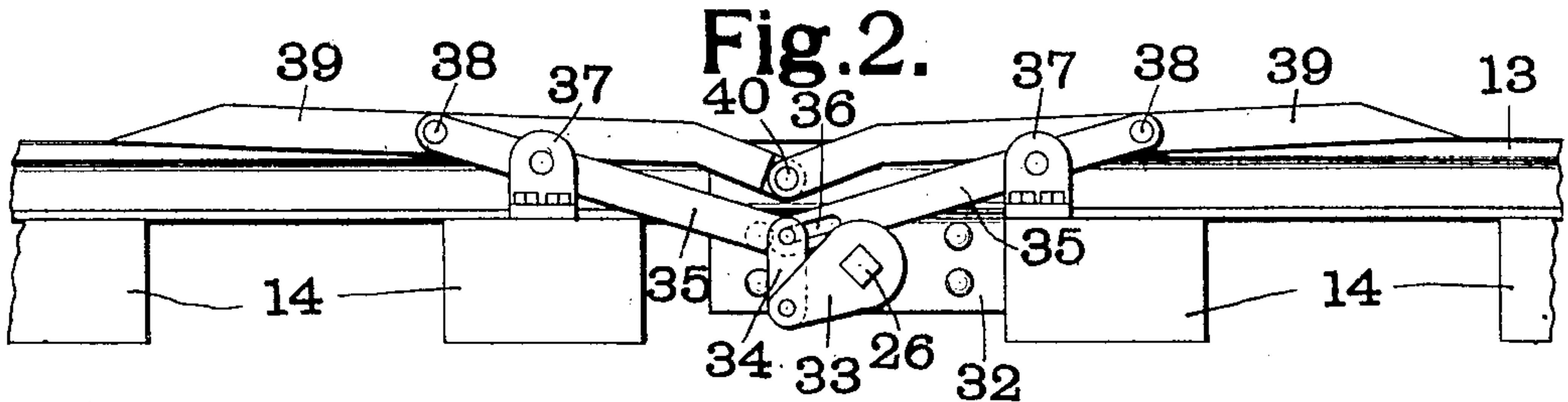
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L. L. Mead.  
W. A. Alexander.

INVENTOR

B. J. Morgan.

BY *Frank H. Bryan*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

BENJAMAN J. MORGAN, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO FRANK M. RUMBOLD, OF ST. LOUIS, MISSOURI.

## RAILWAY-FROG.

No. 906,544.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed May 9, 1908. Serial No. 431,825.

*To all whom it may concern:*

Be it known that I, BENJAMAN J. MORGAN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a certain new and useful Railway-Frog, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of railway frogs in which a pair of vertically movable bridging members are arranged to be brought alternately into position so as to form a continuous track at the point of crossing of a pair of rails, either in a switch or railway crossing.

The object of my invention is to improve the construction of such a frog and also to provide automatical means by which the bridging members are operated from the wheels of the cars passing over the frog.

In the accompanying drawings which illustrate one form of frog made in accordance with my invention and applied to a railway switch, Figure 1 is a top plan view; Fig. 2 is a side elevation showing the actuating means; Fig. 3 is an enlarged bottom view of a portion of the device; Fig. 4 is a vertical section; Fig. 5 is a side elevation of the frog; Fig. 6 is a section on the line 6—6 of Fig. 1; Fig. 7 is a section on the line 7—7 of Fig. 1, and Figs. 8 and 9 are detailed views of the angle iron supports for the frog.

Like marks of reference refer to similar parts in the several views in the drawings.

10 and 11 represent the rails of the main track and 12 and 13 the rails of the side track. These rails are secured to ties 14 in the usual manner. The rails 11 and 12 are cut away at the central portion of the device to form the frog. The ends of these rails rest upon the base plate 15. To this base plate 15 is secured a pair of angle iron supports 16. One of these angle iron supports 16 bears against the inner side of the rail 12 and the outer side of the rail 11, and the other bears against the outer side of the rail 12 and the inner side of the rail 11, as shown in Fig. 1. These supports 16 are formed by cutting a V-shaped portion 17 from the horizontal web of an angle iron

as shown in Fig. 8, and bending the same into position as shown in Fig. 9.

The vertical flanges of the supports 16 are cut away at 18 where the said supports bear against the inner side of the rails 11 and 12 so as to allow for the passage of the flanges of the wheels. Secured between the vertical flanges of the supports 16 is a V-shaped frog point 19 which forms a continuation of the rails 11 and 12. Between this V-shaped frog point 19 and the other end of the rails 11 and 12 are arranged the two vertically movable bridging members 20 and 21. These bridging members 20 and 21 are pivoted to the vertical flanges of the supports 16 by means of a pin 22 and are separated by a sleeve 23 surrounding the said pin between the two members.

The bed plate 15 is cut away at 24 so as to allow of the downward movement of the forward ends of the bridging members 20 and 21, as best shown in Fig. 4. Secured to the lower face of the bed plate 15 are a pair of brackets 25 in which is journaled a rock shaft 26 provided with cams 27 and 28 engaged with the bridging members 20 and 21 respectively. Secured to the rock shaft 26 is a coil spring 30 arranged to hold the rock shaft normally in such position that the cam 27 will raise the bridging point 20 and the cam 28 will lower the bridging point 21, as shown in Fig. 1 of the drawings. This spring 30 may be protected by a tubular member 31, as shown in Figs. 1 and 3. The opposite end of the shaft 26 is pivoted in a clamp 32 attached to the rail 13 and has secured to it an arm 33. This arm 33 is pivoted to a link 34 which in turn engages with a pair of levers 35, one of which is slotted at 36. These levers 35 are pivoted to brackets 37 carried on the ties 14. The levers 35 are in turn pivoted at 38 to levers 39 which are pivoted at 40 to the clamp 32.

The operation of my frog is as follows: When a car passes over the main track composed of the rails 10 and 11, the bridging member 20 is in its raised position and forms a continuous track between the two bars of the rail 11, thus obviating the jar and noise attendant upon the crossing of an ordinary frog. When, however, the car passes along the side track formed by the rails 12 and 13, the action of the wheels upon the levers 39 will rotate the rock shaft 26 and cause the



bridging point 21 to be raised and the bridging point 20 to be lowered so that the rail 12 of the side track is now continuous. In order that this may be properly accomplished the levers 39 are of such length that the rear wheel of the truck will bear upon one of these levers as the front wheel bears on the forward end of the bridging member while the forward wheel of the truck will bear upon the other of the levers 39 when the rear wheel of the truck bears upon the bridging member. It will thus be seen that the track is rendered continuous either over the main track or over the side track and this is automatically accomplished by the wheels of the car itself without any regard to the position of switch points or to any auxiliary devices carried by the car.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States of America, is:

1. In a railway frog, the combination with a pair of crossing rails, of a pair of vertically movable pivoted bridging points, and means actuated by the wheels of the car for operating said bridging points.

2. In a railway frog, the combination with a pair of crossing rails, of a pair of vertically movable bridging points, a pair of pivoted levers adapted to be actuated by the wheels of the car, and connections between said levers and said bridging points for operating the latter.

3. In a railway frog, the combination with a pair of crossing rails, of a pair of angle iron supports connecting said rails, a pair of bridging members pivoted between said supports, and means for actuating said bridging members.

4. In a railway frog, the combination with a pair of crossing rails, of a pair of angle iron supports, a pair of vertically movable bridging points arranged between said sup-

ports, and means operated by the wheels of the car for actuating said bridging members.

5. In a railway frog, the combination with a pair of crossing rails, of a pair of angle iron supports, each bearing against the inner side of one rail and the outer side of the other, the vertical flanges of said supports being reduced adjacent to the inner sides of said rails, a pair of vertically movable bridging members between said supports, and means for actuating said bridging members.

6. In a railway frog, the combination with a pair of crossing rails, of a pair of angle iron supports, a pair of bridging members arranged between said supports, a pivot pin passing through said supports and bridging members, and a sleeve surrounding said pin between said bridging members.

7. In a railway frog, the combination with a pair of crossing rails, of a pair of angle iron supports each provided with an integral vertical flange and bearing against the inner side of one of said rails and the outer side of the other, a pair of bridging members pivoted between said supports, and means actuated by the wheels of the car for operating said bridging members.

8. In a railway frog, the combination with a pair of crossing rails, of a bed plate beneath said rails, a pair of angle iron supports resting on said bed plate, a pair of vertically movable bridging members between said supports, said bed plate being provided with an opening below said bridging members, and means for operating said bridging members.

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

BENJAMAN J. MORGAN. [L. s.]

Witnesses:

W. A. ALEXANDER,  
ELIZABETH BAILEY.