

No. 762,898.

PATENTED JUNE 21, 1904.

H. J. GEHR.

DEVICE FOR PROPELLING RAILROAD OR TRAM CARS BY HAND.

APPLICATION FILED JUNE 8, 1903.

NO MODEL.

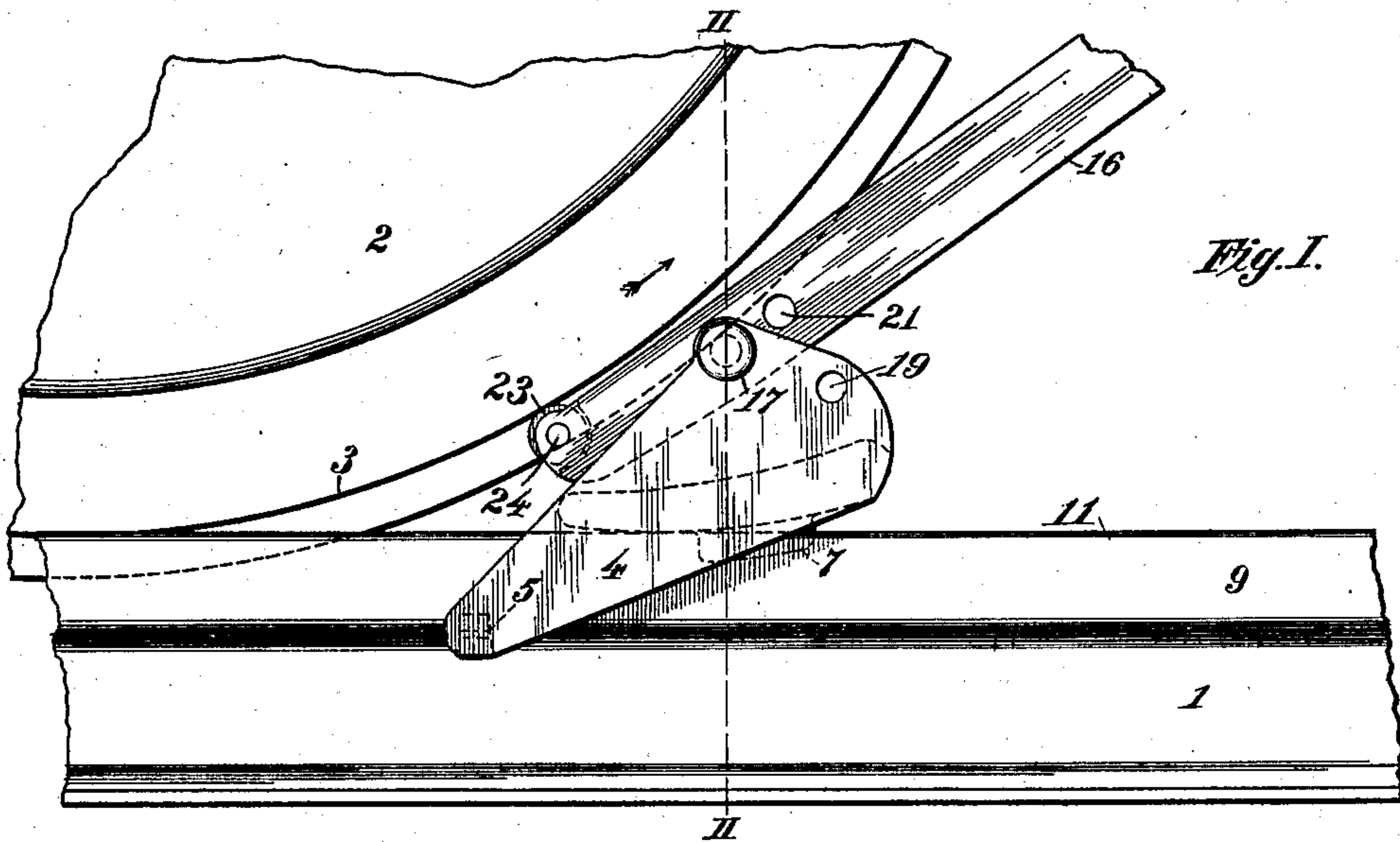


Fig. I.

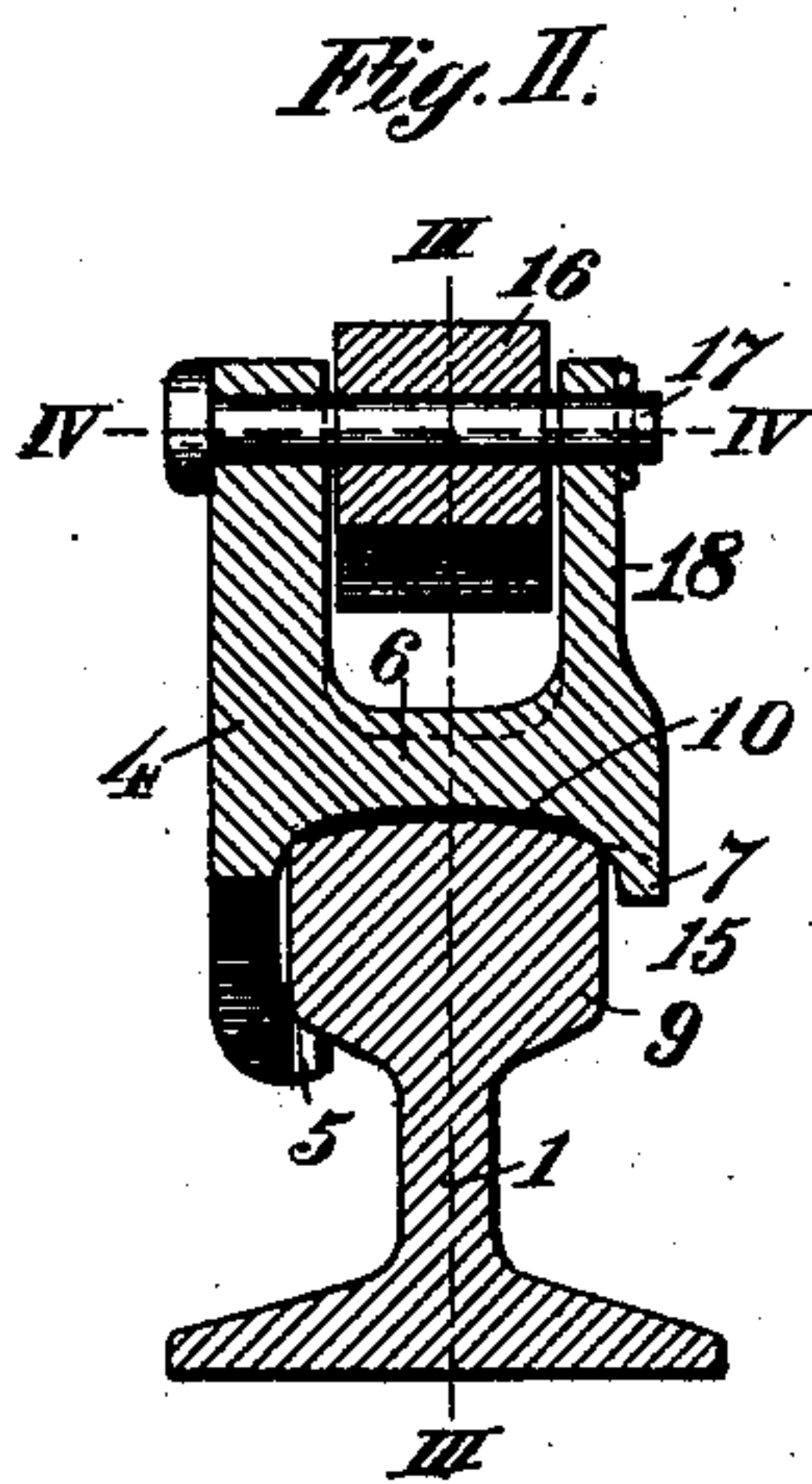


Fig. II.

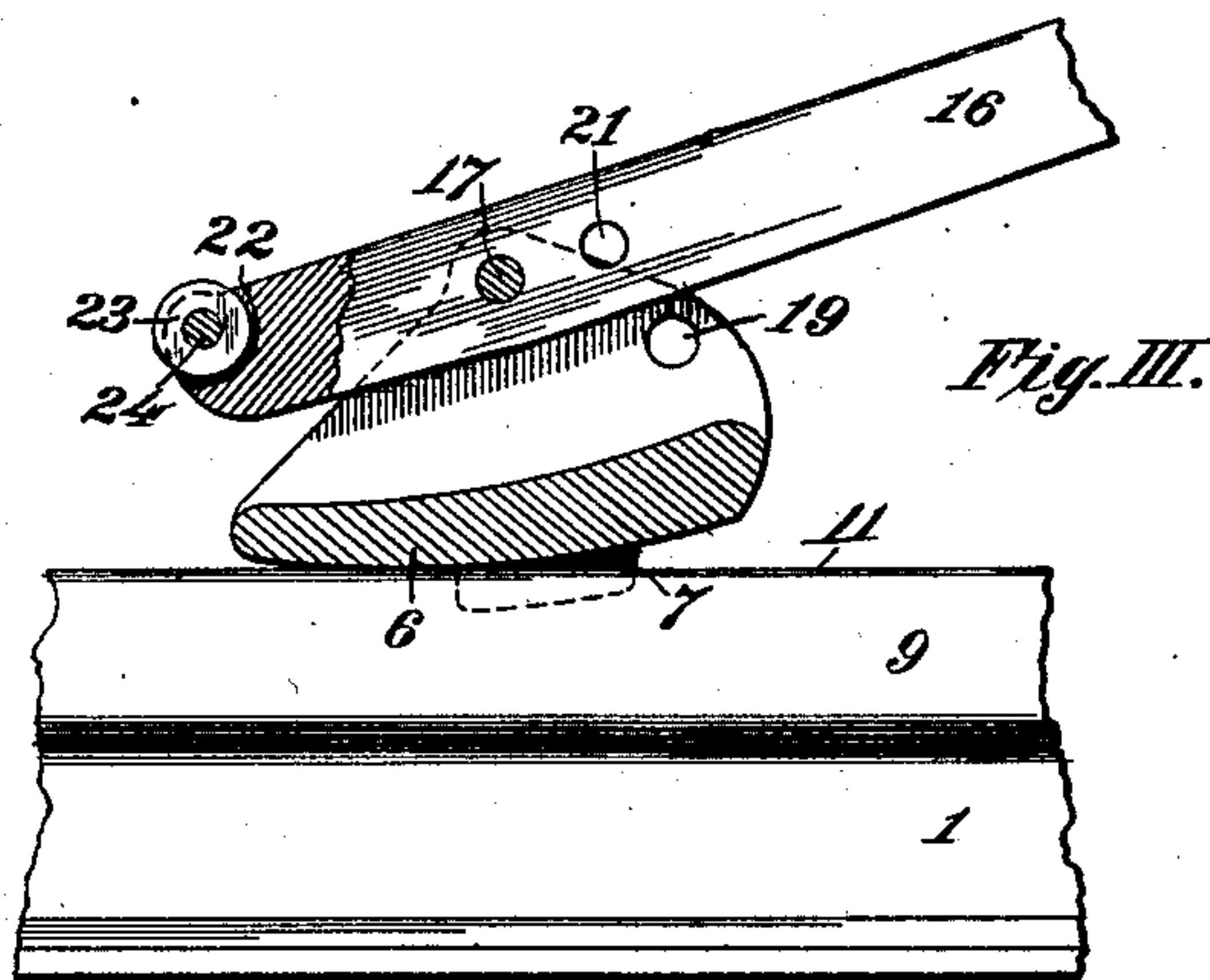


Fig. III.

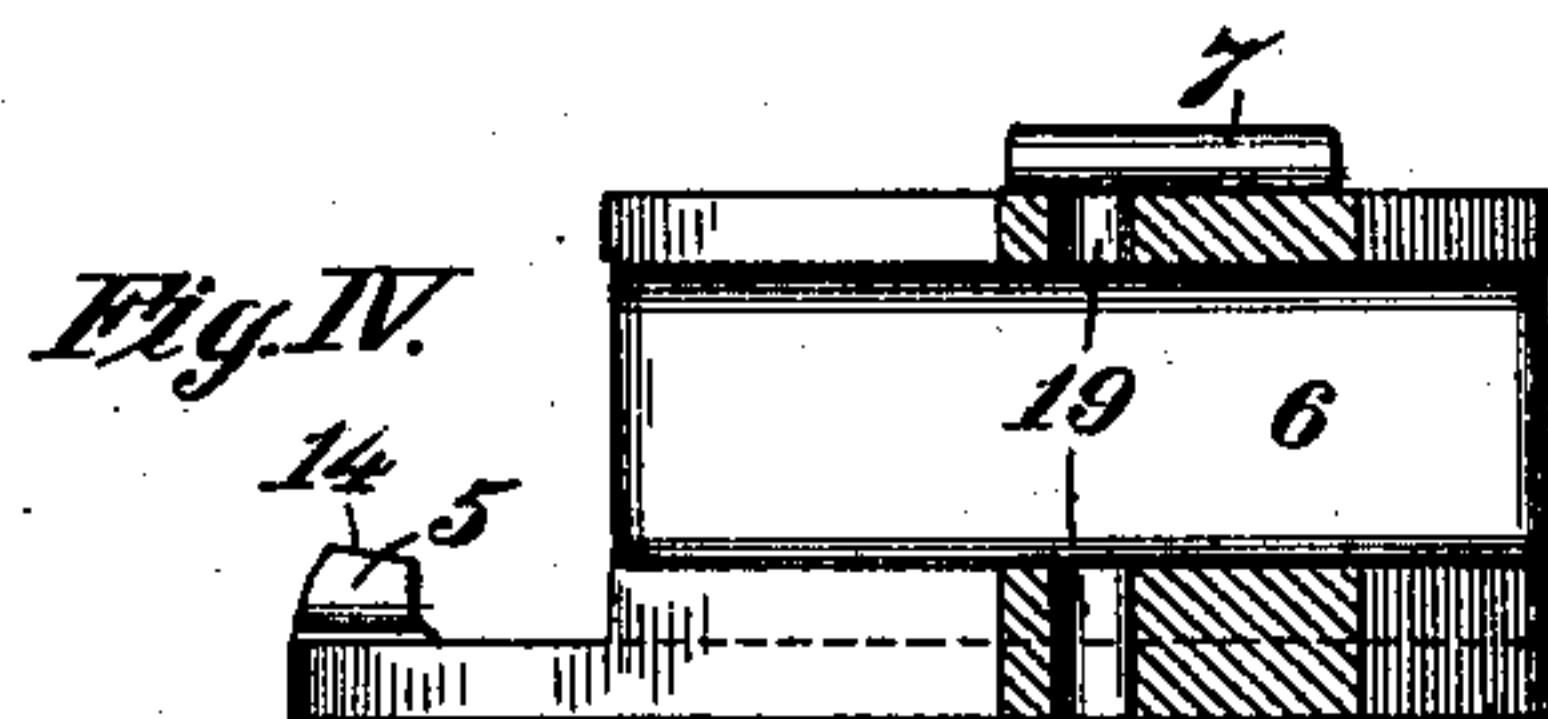


Fig. IV.

Witnesses

H. S. Austin.

Frank J. Neut

Inventor:

Harvey J. Gehr

By

Joseph T. Atkins

Attorney.

UNITED STATES PATENT OFFICE.

HARVEY JOHN GEHR, OF WAYNESBORO, PENNSYLVANIA.

DEVICE FOR PROPELLING RAILROAD OR TRAM CARS BY HAND.

SPECIFICATION forming part of Letters Patent No. 762,898, dated June 21, 1904.

Application filed June 8, 1903. Serial No. 160,527. (No model.)

To all whom it may concern:

Be it known that I, HARVEY JOHN GEHR, of Waynesboro, in the county of Franklin, State of Pennsylvania, have invented certain new and useful Improvements in Devices for Propelling Railroad or Tram Cars by Hand, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce in a device for propelling cars through the instrumentality of a hand-lever means for facilitating the operation through the movement of said lever and also means for facilitating the advance of the position of the fulcrum which operatively supports the lever, wherein said fulcrum is caused automatically to grip a rail whenever and at whatever position along the top of the rail the lever is operated.

In the accompanying drawings, Figure I is a side elevation of a fragment of a rail, a portion of a car-wheel thereon, and my device applied as in the initial position for operation, the operating-lever of said device being partly broken away. Fig. II is a section on the line II II of Fig. I, the car-wheel being omitted. Fig. III is a section on the line III III of Fig. II, but with the rail and the greater part of the lever in elevation. Fig. IV is a section on the line IV IV of Fig. II with the pin and lever omitted.

Referring to the numerals on the drawings, 1 indicates a fragment of a rail, and 2 a portion of a car-wheel whose tread 3 rests thereon.

4 indicates the cheek-plate of the fulcrum-piece of my device, made of a shape and size to conveniently accommodate an inwardly-projecting lug 5, a transverse plate 6, and a downwardly-projecting lug 7, located upon the side of the plate 6 opposite to the cheek-plate 4 and cooperating with the lug 5. The plate 6 is designed to span the head 9 of a rail, against the opposite faces or corners of which the lugs 5 and 7 in practice bite. The tread of the plate 6 is formed in a concave curve 10 (see Fig. II) to conform substantially to the face 11 of the rail. The tread is also of curvilinear shape substantially from end to end, as clearly shown, for instance, in Fig.

III, to render it automatically operative in the performance of its function of gripping the rail-head 9.

To permit horizontal movement of the plate 6 angular to the longitudinal axis of the rail in order to enable the fulcrum-piece to pass a rail-splice in practice, I provide the lug 5 with an inclined face 14 (see Fig. IV) and the lug 7 with a corresponding inclined face 15. (Shown in dotted lines in Fig. IV.)

16 indicates an actuating-lever which is pivotally united to the cheek-plate 4, as by a pin 17, carried in opposite apertures in the cheek-plate and the strut 18, which is preferably provided to assist the cheek-plate in carrying the pin. The cheek-plate and strut are preferably provided with a plurality of pairs of apertures for the accommodation of the pin 17, one empty pair being shown in Figs. I and III collectively and in Fig. IV and therein numbered 19. By reason of the endwise curvature of the plate 6 a weight applied to the fulcrum-piece at any point above the plate 6 when the latter is operatively applied upon a rail will cause the fulcrum-piece to rock upon said plate, and thereby to grip the rail-head 9 between the lugs 5 and 7, and so to fixedly clamp the fulcrum-piece upon the rail and to constitute thereby a firm support for the lever 16.

The clamping action of the fulcrum-piece upon the rail-head specified in the last sentence will be exerted with a force proportionate to the leverage gained through the point of application of the weight upon the fulcrum-piece. It is for that reason that a plurality of pairs of apertures corresponding to the apertures 19 is employed, because by shifting the pin 17, with its lever 16, from one pair of apertures to another the grip-exerting leverage of the fulcrum-piece may be increased or diminished. Such shifting of the pin 17, with its lever 16, affects the available leverage also of the lever 16; but in order to change the leverage of the lever 16 without affecting the grip-exerting leverage of the fulcrum-piece I provide also in the lever 16 a plurality of apertures 21 for the reception of the pin 17. The fulcrum-piece being adapted, as specified, to automatically grip the rail-

head 9 when weight is applied upon the fulcrum-piece above the plate 6, it is obvious that that result is reached whenever the long arm of the lever 16 is depressed and its short arm is brought into engagement with a body—for example, the tread 3 of the wheel 2. The fulcrum-piece by such engagement being gripped to the rail, force applied upon the lever 16 to depress the long arm thereof tends to drive the wheel 2 in the direction of the arrow, or, in other words to propel it along the track 1. To reduce frictional resistance at the point of engagement, I provide in or upon the extremity of the short arm of the lever a box 22 and within the box an antifriction-roller 23, mounted as upon a pin 24, secured in the opposite side walls of the box 22.

An additional advantage results from the employment of a plurality of apertures 9 in the fulcrum-piece on account of the facts that thereby the height at which the roller 23 engages with the tread 3 of the wheel is caused to vary and that the velocity of a point moving in a cycloid changes with its position in the cycloid.

The operation of my device having been referred to in the foregoing specification does not appear to require further description at length, except to specify that the gripping action of the lugs 5 and 7 is exerted while the fulcrum-piece is passing a rail-splice, through the twisting tendency of the fulcrum-piece to aline itself with the rail and the consequent engagement of the inclined faces 14 and 15 of said lugs against the surfaces of the fish-plate of the rail-splice.

What I claim is—

1. The combination with a fulcrum-piece provided with a lever and means integral with the fulcrum-piece for positively gripping the fulcrum-piece to a rail.

2. The combination with a fulcrum-piece provided with a transverse plate and coöperative rail-engaging member integral therewith, of a lever operatively secured to the fulcrum-piece.

3. The combination with a fulcrum-piece provided with an endwise curvilinear plate, of a rail-engaging member below the plate and a lever secured to the fulcrum-piece above the plate.

4. The combination with a fulcrum-piece, transverse plate and opposite vertically non-alined rail-engaging lugs, of a lever operatively secured to the fulcrum-piece.

5. The combination with a fulcrum-piece, transverse plate and opposite vertically non-alined rail-engaging lugs, said lugs having inclined faces, of a lever operatively secured to the fulcrum-piece.

6. The combination with a fulcrum-piece and means for securing it to a rail, of a lever and means upon the fulcrum-piece and lever respectively for adjustably securing the lever to the fulcrum-piece.

7. The combination with a fulcrum-piece provided with a lever, of means integral with the fulcrum-piece for gripping the top and bottom of a rail-head, and thereby constituting a firmly-adjustable support for the lever.

8. The combination with a fulcrum-piece provided with a lever, of means integral with the fulcrum-piece for gripping the top and bottom of a rail-head, and thereby constituting a firmly-adjustable support for the lever, and lateral engaging members.

9. The combination with a non-tilting fulcrum-piece provided with a lever, of means for positively and fixedly gripping the fulcrum-piece to a rail.

10. The combination with a fulcrum-piece provided with a transverse plate and coöperative rail-engaging member, of means for providing for placing the fulcrum-piece in working position by a sidewise or horizontal movement.

In testimony of all which I have hereunto subscribed my name.

HARVEY JOHN GEHR.

Witnesses:

CHARLES W. HIGH,
IRA BRINDLE.