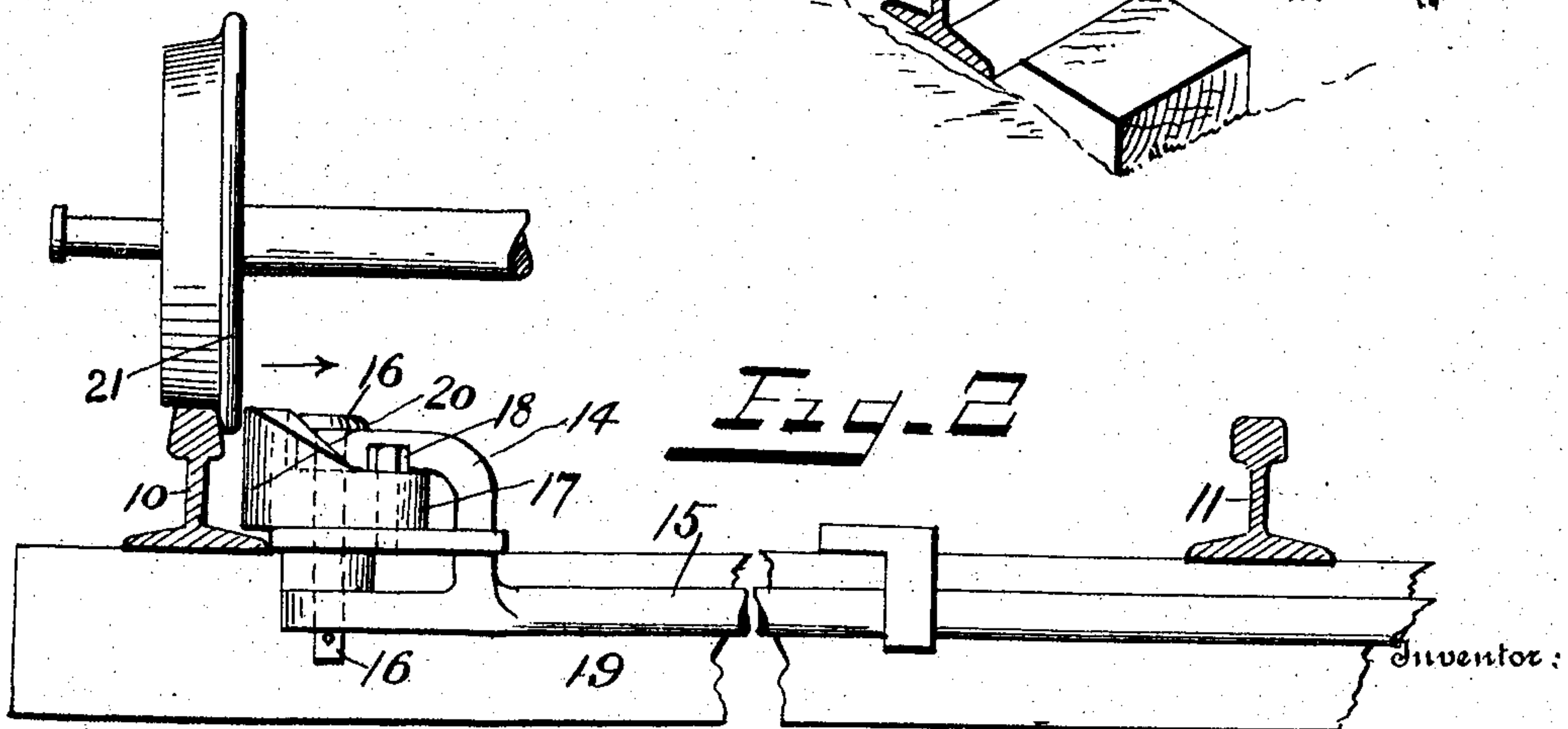
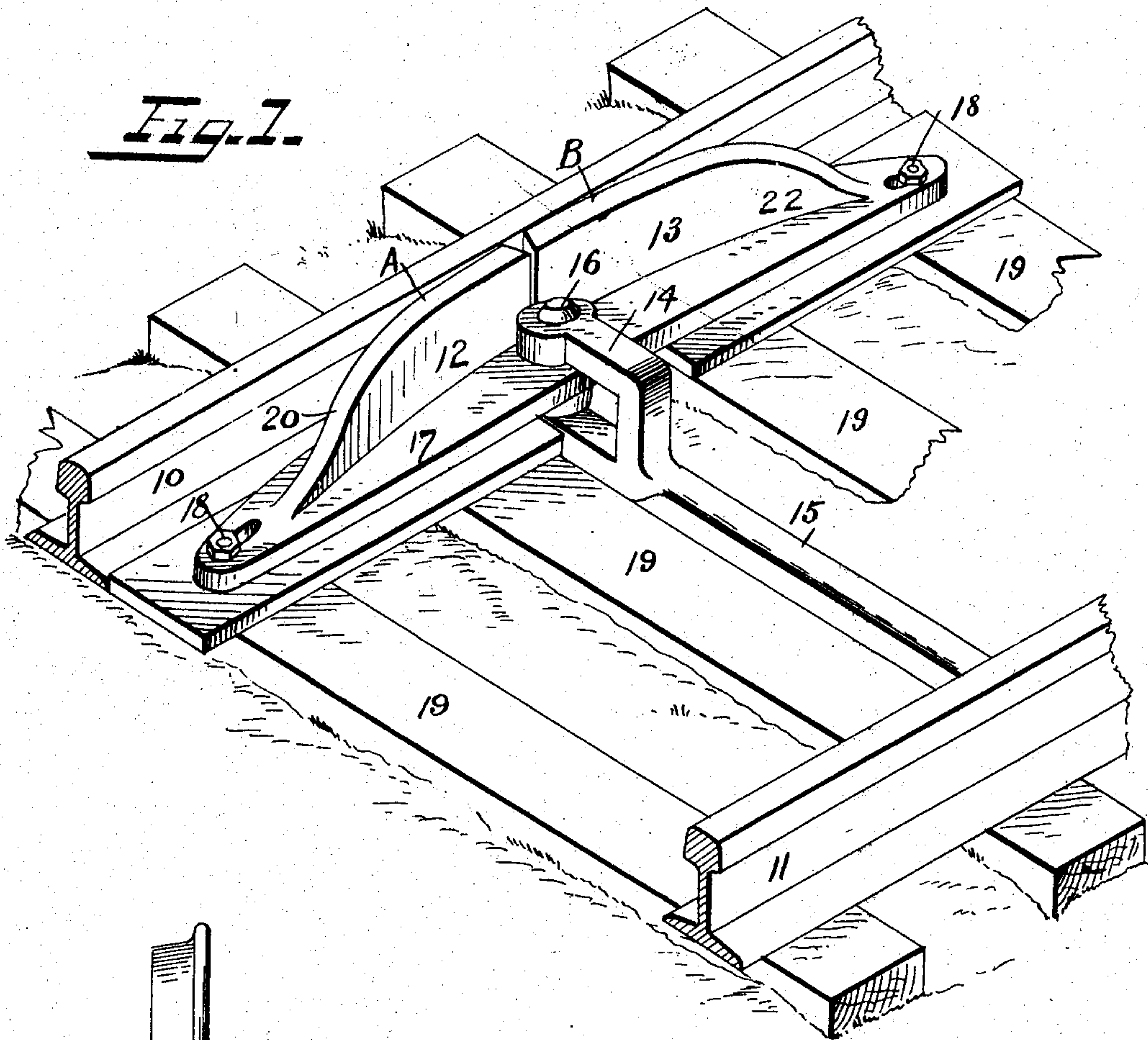


No. 780,833.

PATENTED JAN. 24, 1905.

R. F. STUART.
MOVABLE FLANGE RAIL.
APPLICATION FILED OCT. 1, 1904.

3 SHEETS—SHEET 1.



Witnesses:
Arthur W. Crossley.
L. L. Burket.

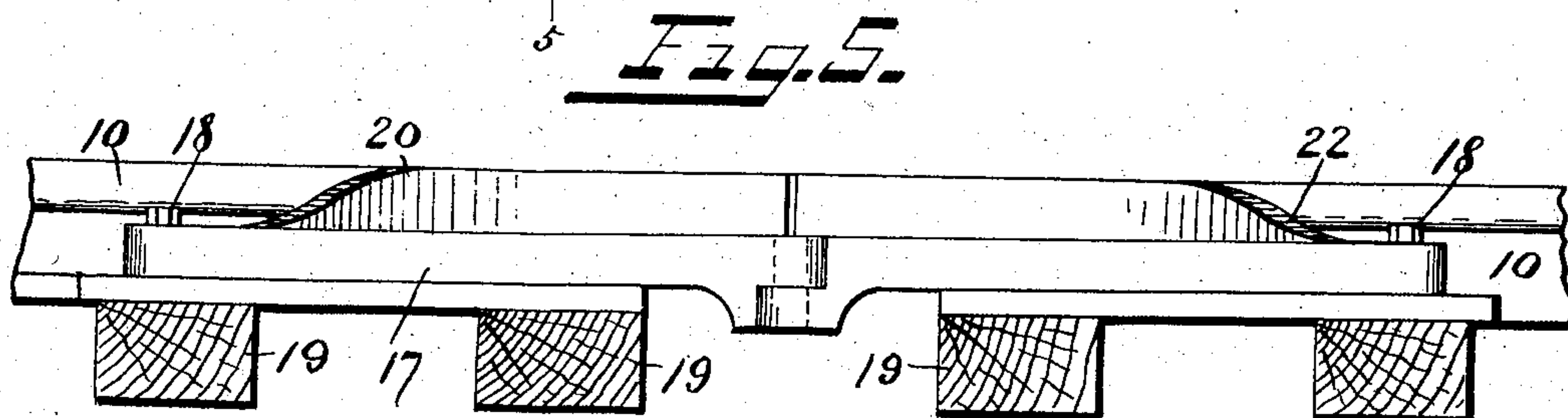
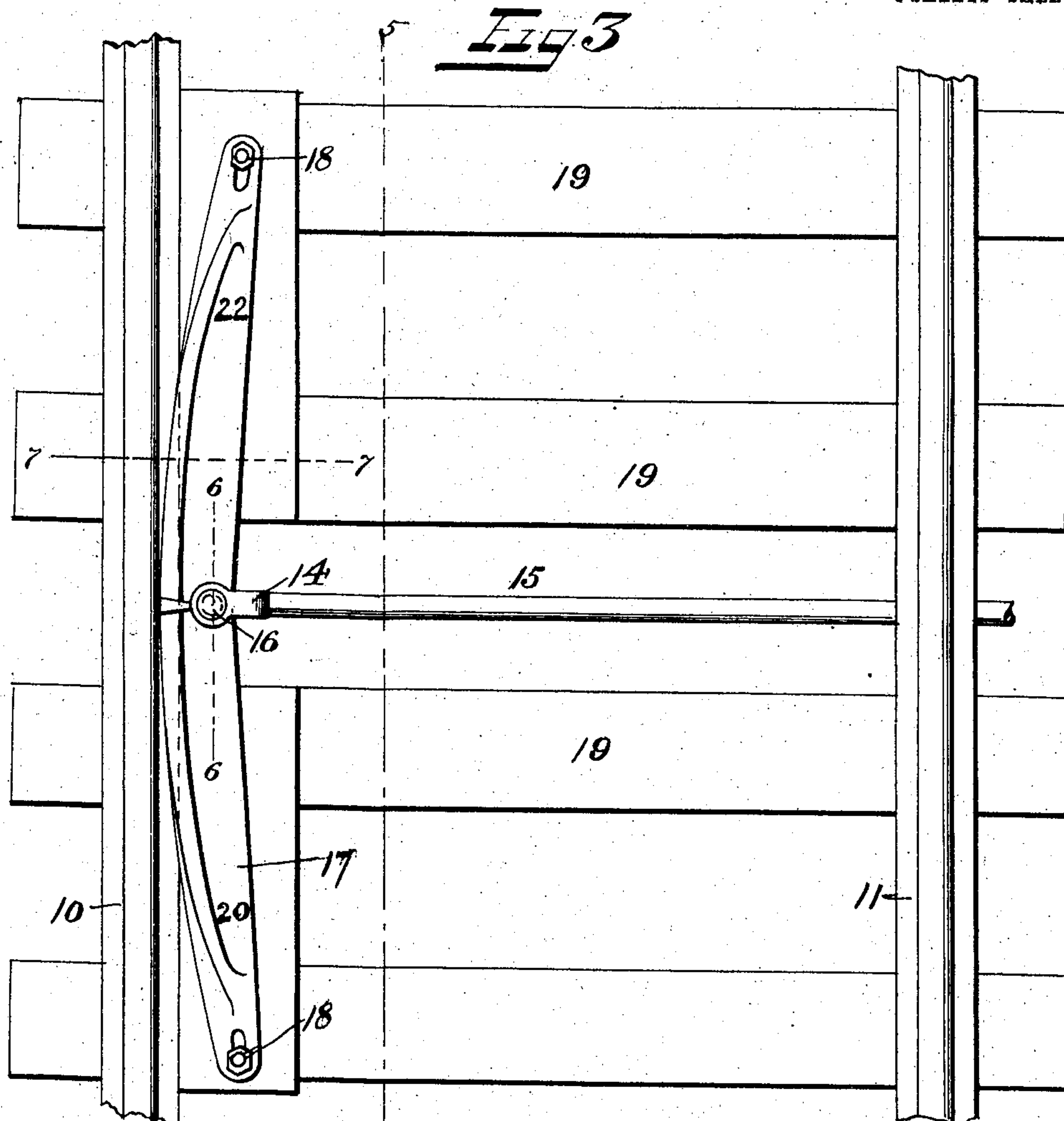
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

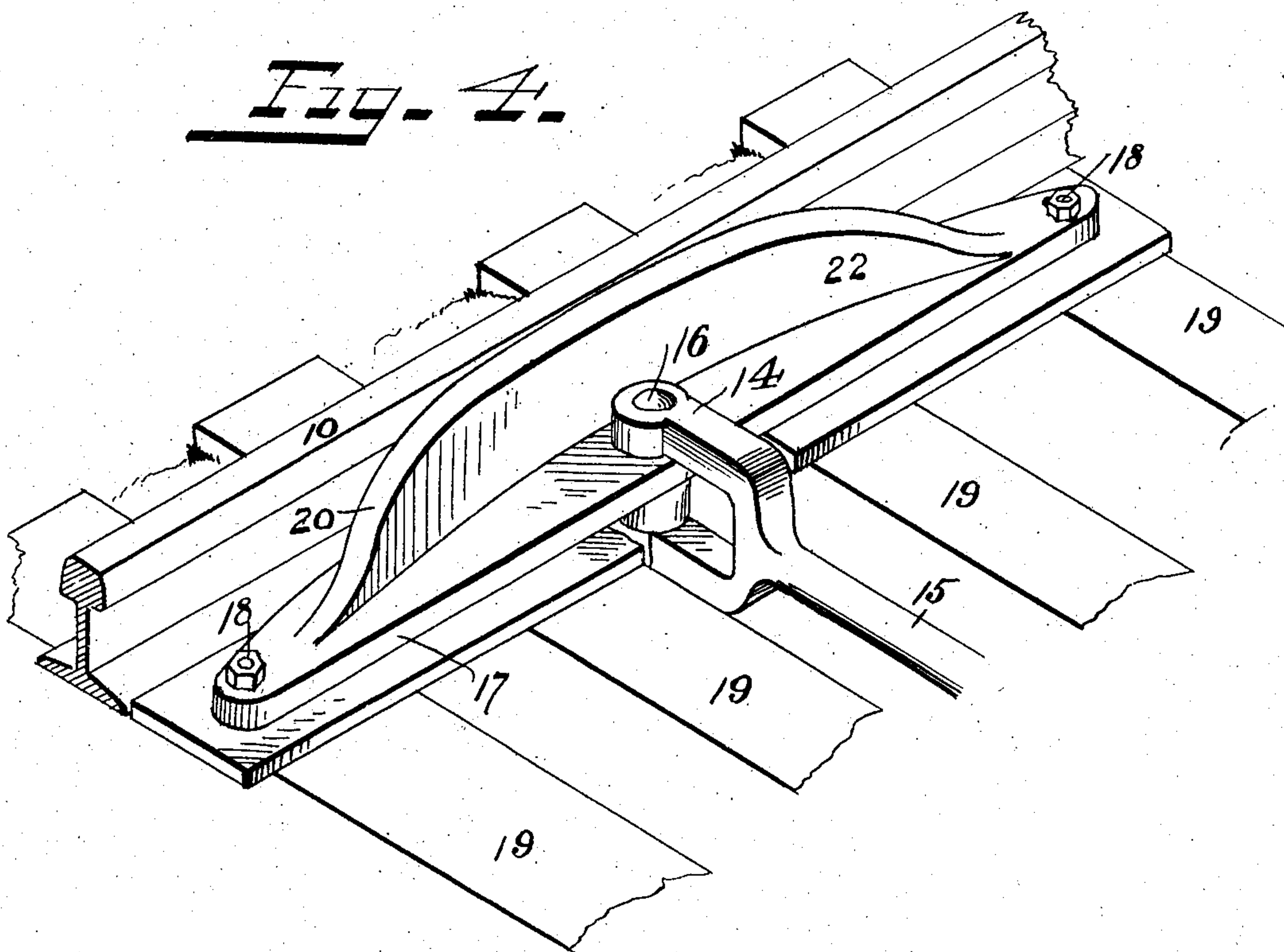


Fig. 6

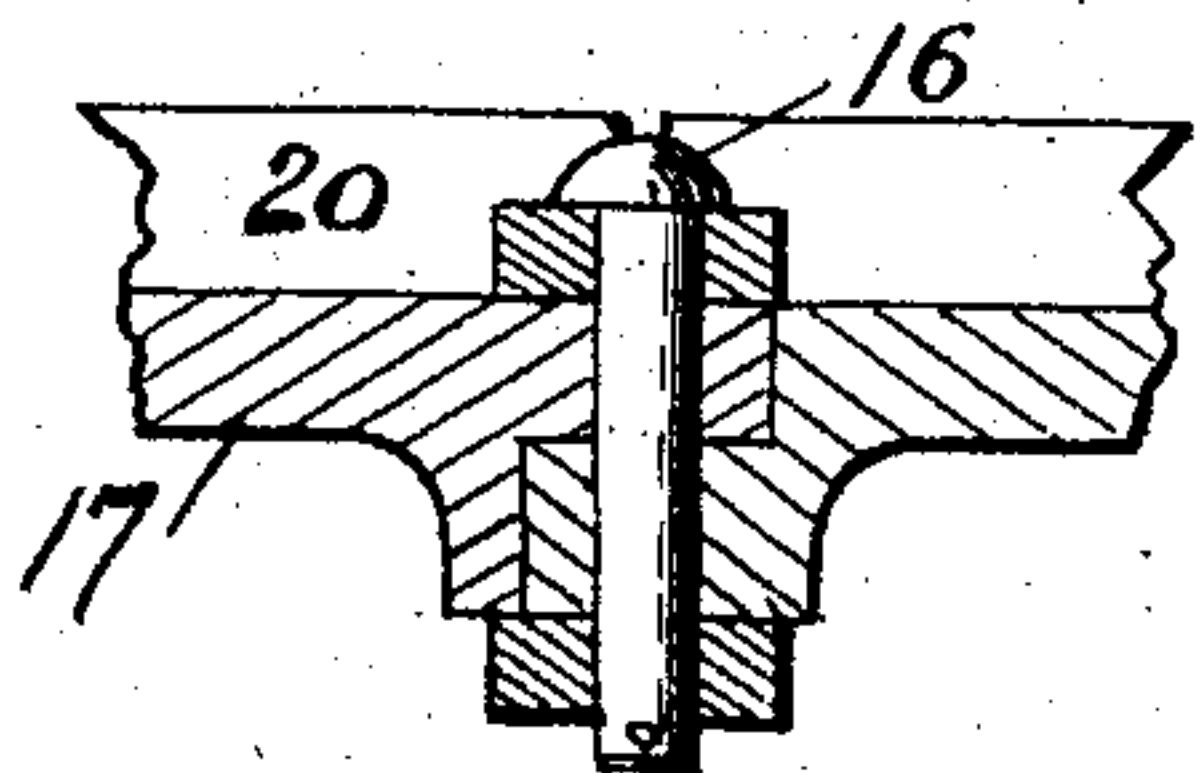
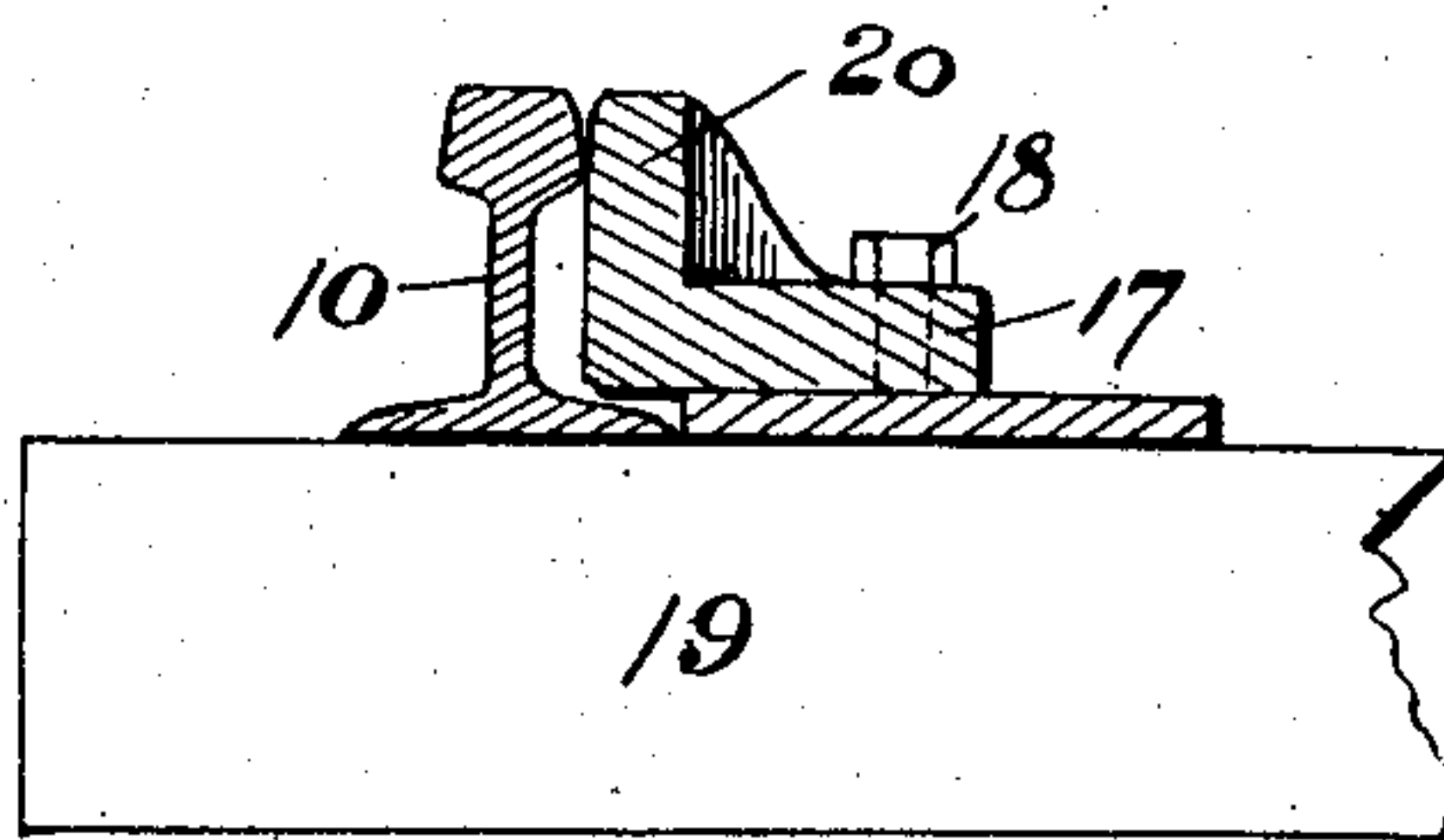


Fig. 7



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UNITED STATES PATENT OFFICE.

ROBERT F. STUART, OF LOGANSPORT, INDIANA.

MOVABLE FLANGE-RAIL.

SPECIFICATION forming part of Letters Patent No. 780,833, dated January 24, 1905.

Application filed October 1, 1904. Serial No. 226,858.

To all whom it may concern:

Be it known that I, ROBERT F. STUART, a citizen of the United States, residing at Logansport, in the county of Cass and State of Indiana, have invented new and useful Improvements in Movable Flange-Rails, of which the following is a specification.

This invention has relation to means for giving the initial impulse or movement to automatically-operated devices for any purpose from or by a passing or moving train. In nearly all cases of this character the operation of automatic means is initiated by the tread of the wheels passing over or striking some object that is higher than the plane of the rails on which the wheels run to draw the train. There are almost innumerable objections to devices that operate vertically—that is, that have to be depressed by the wheels to set them in motion—and the objections are so potent as to condemn them utterly at the very start of the consideration of their usefulness. Among these fatal objections is that where an object extends above the surface of the rail and has to be depressed by the wheels the repeated or accumulated shocks or hammerings will soon break or disintegrate the device and render it useless. Again, as they are almost always necessarily exposed to the elements ice and snow are sure to get under some of the vertically-movable devices, and when this occurs they are not only liable to be broken at the first contact with a wheel, and so made of no account for the purposes for which they were constructed, but become a source of actual danger on the road. In carrying out my invention I have kept in mind these objections and have avoided them entirely and have provided what I term for the purposes of this specification a “flange-rail,” which is completely confined to a lateral movement for giving the initiatory motion to automatically-operated means, as aforesaid. No part or point of the means rises above the tread-surface of the main rail, so that there is nothing to be depressed in the actuation of the devices. My flange-rail is arranged between the two main rails of the track so that the point to be moved laterally may be approached

by a gentle curve and in this way avoid shock of any kind, and the movement effected will be by the flange of the car-wheel horizontally and not vertically or by depression. The entire means is capable of being protected from snow and ice and other action of the elements. It is proposed to make the said improved flange-rail in one part or in two sections pivotally connected at the center. With this preliminary understanding reference may be had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of my invention, showing the flange-rail as made in two sections and as in operative position between two rails of a railway-track. Fig. 2 is an end view of the same with a part of a railway-car wheel on one of the rails. Fig. 3 is a plan view of Fig. 1. Fig. 4 is a perspective view of the invention similar to Fig. 1, but showing the flange-rail as made in one section. Fig. 5 is a sectional detail view taken in the plane 5 5, Fig. 3. Fig. 6 is a sectional detail view taken in the plane 6 6, Fig. 3. Fig. 7 is a sectional detail view taken in the plane 7 7, Fig. 3.

The same symbols of reference designate the same parts or features wherever they occur.

The drawings have been made on an enlarged scale for the purpose of clearly illustrating the invention.

In the drawings, 10 designates one rail, and 11 the other, of a railway-track. My improved flange-rail may be arranged to cooperate with either rail. In the present case I have shown it as acting with rail 10.

Having reference to Figs. 1, 5, and 6, my improved flange-rail is constructed in two parts 12 and 13, connected at the center by an overlap-joint, through which and the yoke end 14 of the rod 15 there passes a pivot-pin 16. The flange-rail consists of a base-plate 17, adapted to be pivoted at its ends, as at 18, upon any suitable means secured to the ties 19 of the road-bed, or it may be connected directly with the ties, as may be found the most convenient. From near one end of the base-plate 17 there rises a flange 20, that swells upwardly and outwardly in a gentle

curve to the center of the device, where it is of substantially the same height as the rail 10, but not higher, and lies close to said rail 10, so that the flange 21 of the car-wheels of a passing train will press the said flange inward in the direction of the arrow, (shown in Fig. 1,) moving the rod 15 in the same direction, and so giving the initiatory movement to any mechanism to be automatically operated, such as a switch, signal, railway-gate, or the like. From where the flange 20 approaches nearest the rail 10 it gradually curves inward again to the point 22, where it disappears and becomes one again with the base-plate.

In some cases it is thought best to make the improved flange-rail in two sections, as stated, dividing it at its center by a lap-joint in such manner that the pivot-pin 16 will pass through each longitudinal half A B, and a portion of each half of V form will be cut away from the outer edge inward to the pivot to allow freedom of movement to the flange-rail and its connected rod 15. In other cases I make the flange-rail sufficiently resilient, as shown in Figs. 4 and 7, to avoid the necessity of jointing it at the center in order to have the necessary degree of longitudinal motion imparted to the rod 15 to have it effect its required functions. In this case I may elongate or enlarge the holes for the pivots 18 at the ends of the plates 17, thus providing for a movement to some degree of said plates 17.

Whether my improved flange-rail is jointed or made in one piece or however it may be secured in place to cooperate with the rail 10 no part thereof will be higher than the rail, so as to be depressed by the wheels of the car. The entire motion given to it will be lateral by means of the flanges 21 of the wheels.

I claim—

1. The combination, with the regular rail of a railway-track, of a flange-rail, its support, consisting of two bed-plates connected with the ties of the road-bed to form a support that may not be depressed and upon which bed-plates the ends of the base-plate rest, the said

base-plate being provided with a flange which curves gradually from near one end upwardly and outwardly and backwardly and downwardly to near the opposite end, the highest point or level of the flange being coincident with the height of the regular rail, and approaching the same laterally, as hereinbefore set forth, said base-plate being adapted to move laterally.

2. The combination, with the regular rail of a railway-track, of a flange-rail, its support, consisting of two bed-plates connected with the ties of the road-bed to form a support that may not be depressed and upon which bed-plate the ends of the base-plate rest, the said base-plate being provided with a flange which curves gradually from near one end upwardly and outwardly and backwardly and downwardly to near the opposite end, the highest point or level of the flange being coincident with the height of the regular rail, and approaching the same laterally, as hereinbefore set forth, said base-plate being adapted to move laterally and a rod provided with a yoke pivoted to the base-plate between the two bed-plates.

3. A flange-rail of the character described consisting of a base and a flange curving gradually from near one end upwardly and outwardly and backwardly and downwardly to near the opposite end, said flange-rail being divided near its center into two parts and pivotally connected.

4. A flange-rail of the character described, consisting of a base, and a flange curving gradually from near one end upwardly and outwardly and backwardly and downwardly to near the opposite end, in combination with a rod pivotally connected at one end to near the center of said flange-rail.

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

ROBERT F. STUART.

Witnesses:

BENJAMIN F. STUART,
R. M. VAN WINKLE.