No. 757,037. PATENTED APR. 12, 1904.

C. C. GRIMES.

RAILWAY TIE.

APPLICATION FILED AUG. 24, 1903.

NO MODEL.

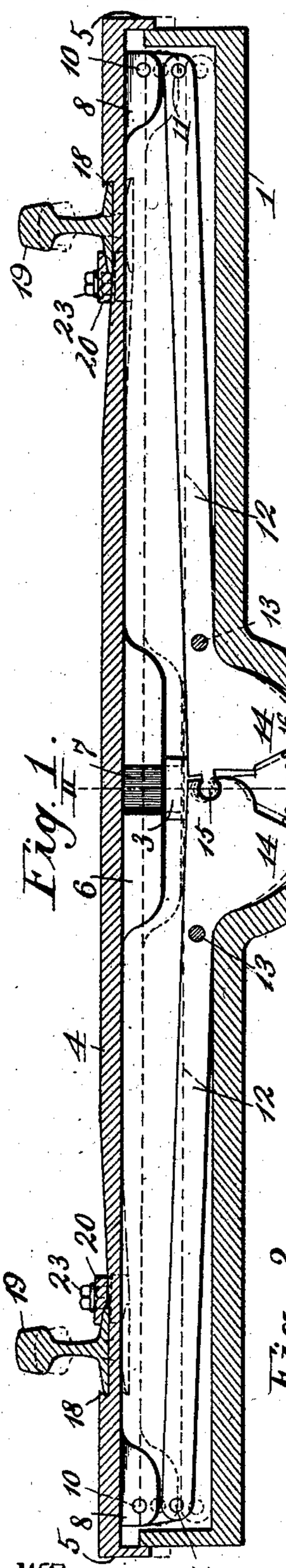

Fig. 1.

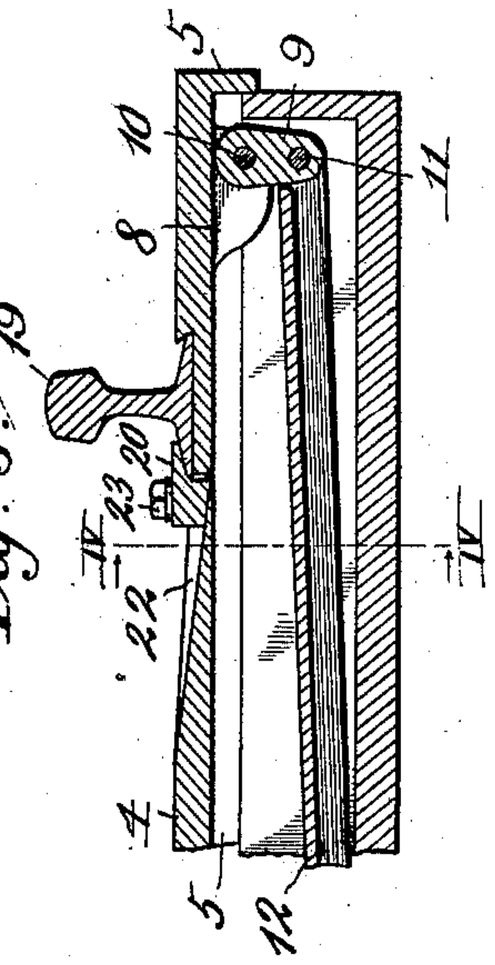

Fig. 3.

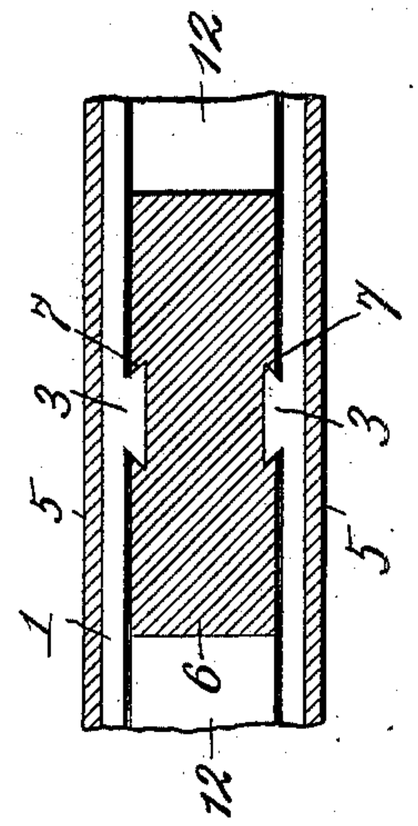

Fig. 5.

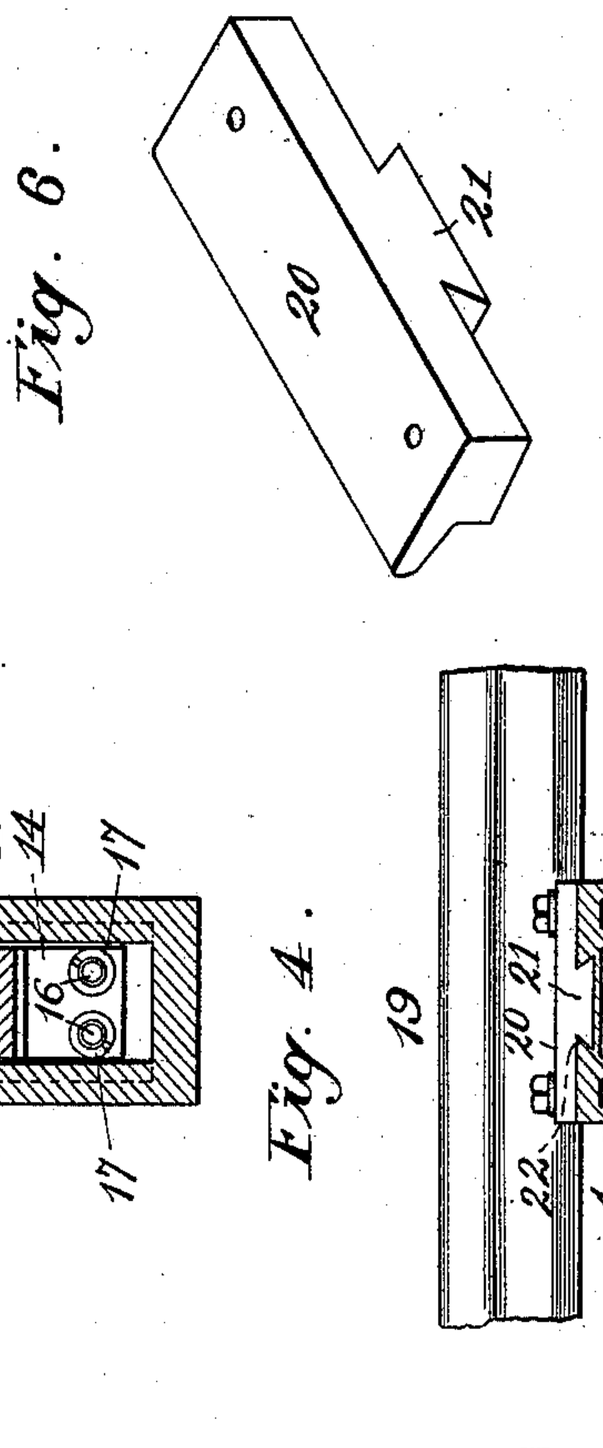

Fig. 6.

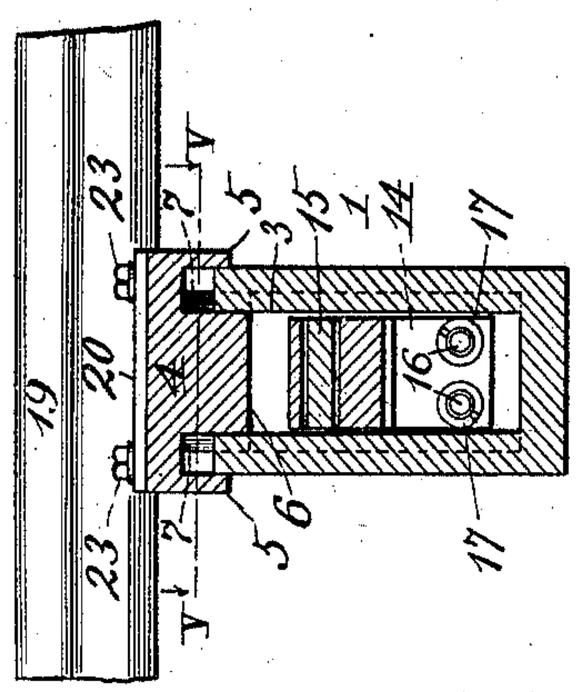

Fig. 2.

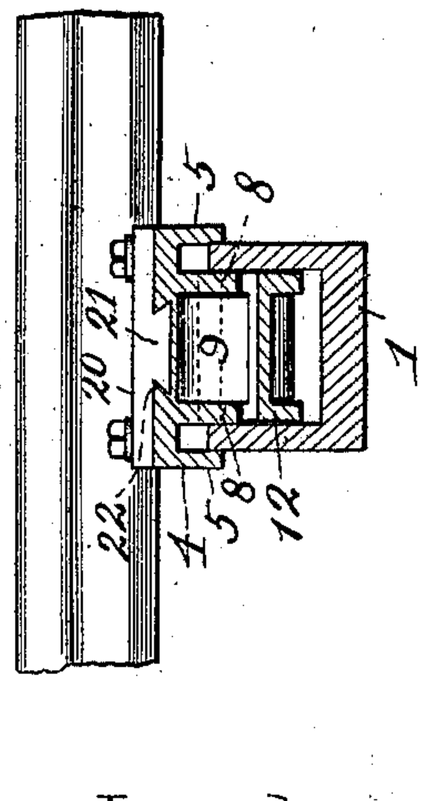

Fig. 4.

Witnesses:
W. C. Lingle.
P. A. Zickey

Inventor:
Curtis C. Grimes
By F. G. Fischer
Atty.

No. 757,037. Patented April 12, 1904.

UNITED STATES PATENT OFFICE.

CURTIS C. GRIMES, OF KANSAS CITY, MISSOURI.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 757,037, dated April 12, 1904.

Application filed August 24, 1903. Serial No. 170,515. (No model.)

To all whom it may concern:

Be it known that I, CURTIS C. GRIMES, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

My invention relates to improvements in railway-ties; and my object is to provide a resilient tie which will absorb the shock caused by a moving train, and thus prolong the life of the rolling-stock, the tie, and the rails.

The principal features of the invention reside in a stationary member, a movable member adapted to operate on the stationary member, and a resilient connection securing the movable member to the stationary member.

The above and other features of the invention will be hereinafter described, and pointed out in the claims, and in order that the invention may be fully understood reference will now be made to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal sectional view of the improved tie. Fig. 2 is a central vertical transverse section of the same, taken on line II II of Fig. 1. Fig. 3 is a broken central longitudinal section of one end of the tie. Fig. 4 is a transverse section taken on line IV IV of Fig. 3. Fig. 5 is broken longitudinal section taken on line V V of Fig. 2. Fig. 6 is an enlarged detail perspective view of one of the clamps employed to assist in securing the rails upon the tie.

In carrying out my invention I employ a stationary member consisting of a rectangular case 1, open at its top and provided with a depressed semicircular central portion 2, which when embedded in the road-bed prevents the tie from shifting endwise. The longitudinal walls of the case are provided with centrally-located vertical dovetail guides 3 for a purpose hereinafter described.

The open upper portion of case 1 is closed by a movable cover 4, provided with a depending marginal flange 5, adapted to fit snugly around the upper portion of the walls of the case, and thus prevent the entrance of dust, water, &c. Said flange also causes the air within the case to act as a cushion for the cover by retarding its escape when said cover is depressed, and thus prevents the latter from violently contacting with the upper edge of the case when subjected to the weight of a train of cars. The under side of the central portion of cover 4 is reinforced by a short longitudinal rib 6, provided at its opposite sides with dovetail grooves 7 for the reception of dovetail guides 3, which assist in retaining the cover in a horizontal position while being depressed and prevent flange 5 from binding against the walls of the case. The under side of the cover is also provided at its opposite ends with depending lugs 8 for the reception of the upper ends of links 9, pivotally secured to the lugs by pins 10. The lower ends of links 9 are pivotally secured by pins 11 to the outer ends of a pair of levers 12, fulcrumed in case 1 on pins 13 and having enlarged segmental adjacent ends 14 arranged in depressed portion 2 and operatively secured together by a hinge 15. The ends of segmental portions 14 are provided with a plurality of lugs 16 for retaining in position the opposite ends of expansion-springs 17, interposed between the adjacent ends of levers 12, for the purpose of normally retaining the opposite ends of the latter and cover 4 in an elevated position and to assist the air-cushion in arresting the downward movement of said cover.

The upper surface of cover 4 is provided near its opposite ends with undercut portions 18, adapted to overlap the outer edge of the base of rails 19, reliably held in contact with the undercut portions by clamps 20, which latter overlap the inner portions of the base of the rails and are provided at their under side with integral dovetail lugs 21, that are removably secured in inclined dovetail recesses 22 in the upper surface of the cover by machine-screws 23. This construction reliably holds the rails in position and eliminates all danger of the latter spreading or turning over.

In practice when subjected to a temporary pressure like that exerted by a moving train springs 17 and the slow escape of the air in case 1 will prevent cover 4 from being depressed into contact with the upper edge of

the case; but when the train comes to a stop the covers on the ties supporting the weight of the train will be slowly depressed until they rest upon the walls of the case, which relieve springs 17 of further compression. Should the springs break from any cause, the cover will be supported by the case, and thus provide a substantial support for the rails, so no accident will occur by reason of the latter being depressed too far. From the manner in which levers 12 are hinged together it is obvious that they must operate simultaneously. Consequently cover 4 will be retained in a horizontal position while being depressed by the load, and thus cause the latter to exert an equal pressure on both ends of the tie.

From the above description it is apparent that I have produced a railway-tie which is comparatively simple in construction, durable, and thoroughly effective for the purpose intended.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A railway-tie consisting of a stationary member, a movable rail-supporting member, and a resilient connection securing the movable member to the stationary member in such a manner that its opposite ends will be depressed alike.

2. A railway-tie consisting of a case, guides secured thereto, a movable cover for said case provided with grooves to receive the guides, and a resilient connection securing the cover to the case.

3. A railway-tie consisting of a case, dovetail guides secured thereto, a movable cover for said case provided with dovetail grooves to receive the guides, and a resilient connection securing the cover to the case.

4. A railway-tie consisting of a case, a movable cover for said case, levers operatively securing the cover to the case, and means for normally retaining the cover in an elevated position.

5. In a railway-tie, a case, a movable cover for said case, levers hinged at their adjacent ends and operatively securing the cover to the case, and means for normally retaining said cover in an elevated position.

6. In a railway-tie, a case having a depressed semicircular central portion, a movable cover for said case, levers hinged together at their adjacent ends and operatively securing the cover to the case, segmental portions at the adjacent ends of the levers adapted to operate in the depressed portion of the case, and one or more springs interposed between the adjacent ends of said segmental portions.

7. A railway-tie consisting of a case having a depressed semicircular central portion, a movable cover for said case, links pivoted to the under side of the cover near its opposite ends, levers fulcrumed in the case and hinged together at their adjacent ends and pivotally secured at their outer ends to the lower ends of the links, segmental portions formed on the adjacent ends of the levers adapted to operate in the depressed portion of the case, and one or more springs interposed between the adjacent ends of said segmental portions.

8. A railway-tie consisting of a case, a movable cover for said case, a resilient connection securing the cover to the case, undercut portions in the upper surface of the cover near its opposite ends to receive one side of the base of the rail, and a clamp suitably secured to the upper surface of the cover for securing the opposite side of the base-rail.

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

CURTIS C. GRIMES.

Witnesses:
T. A. HICKEY,
F. G. FISCHER.