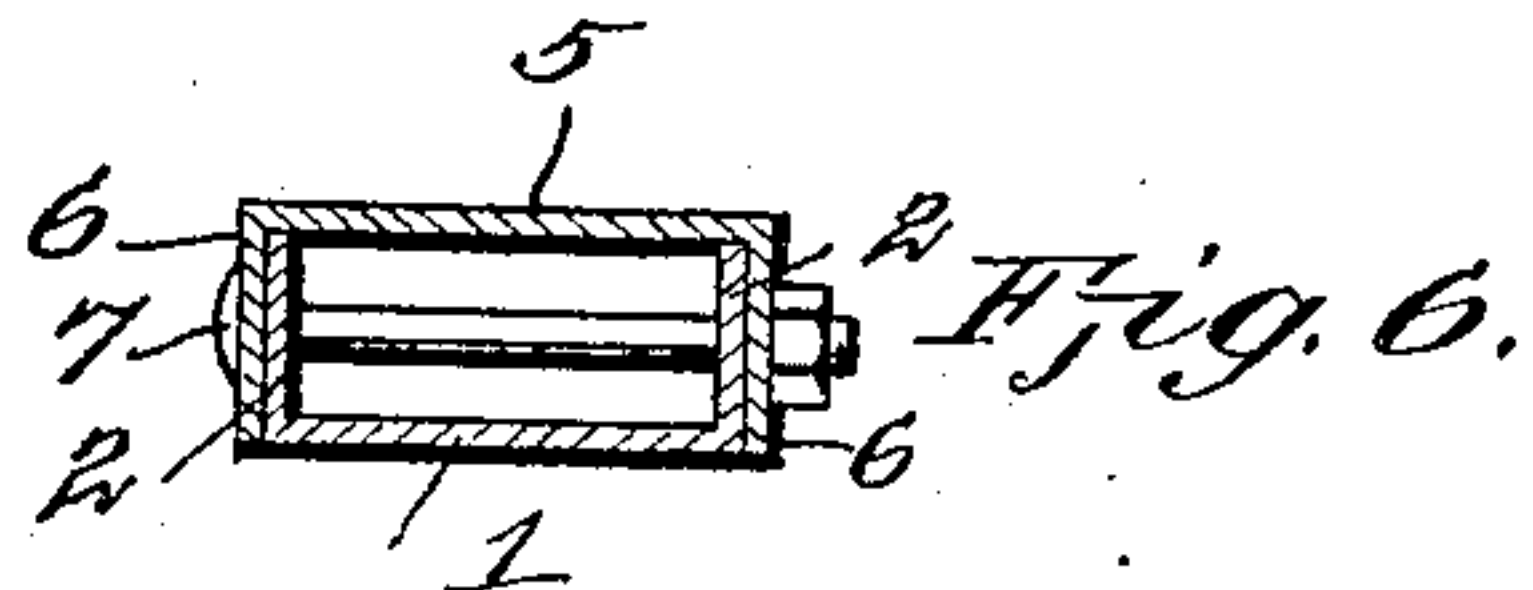
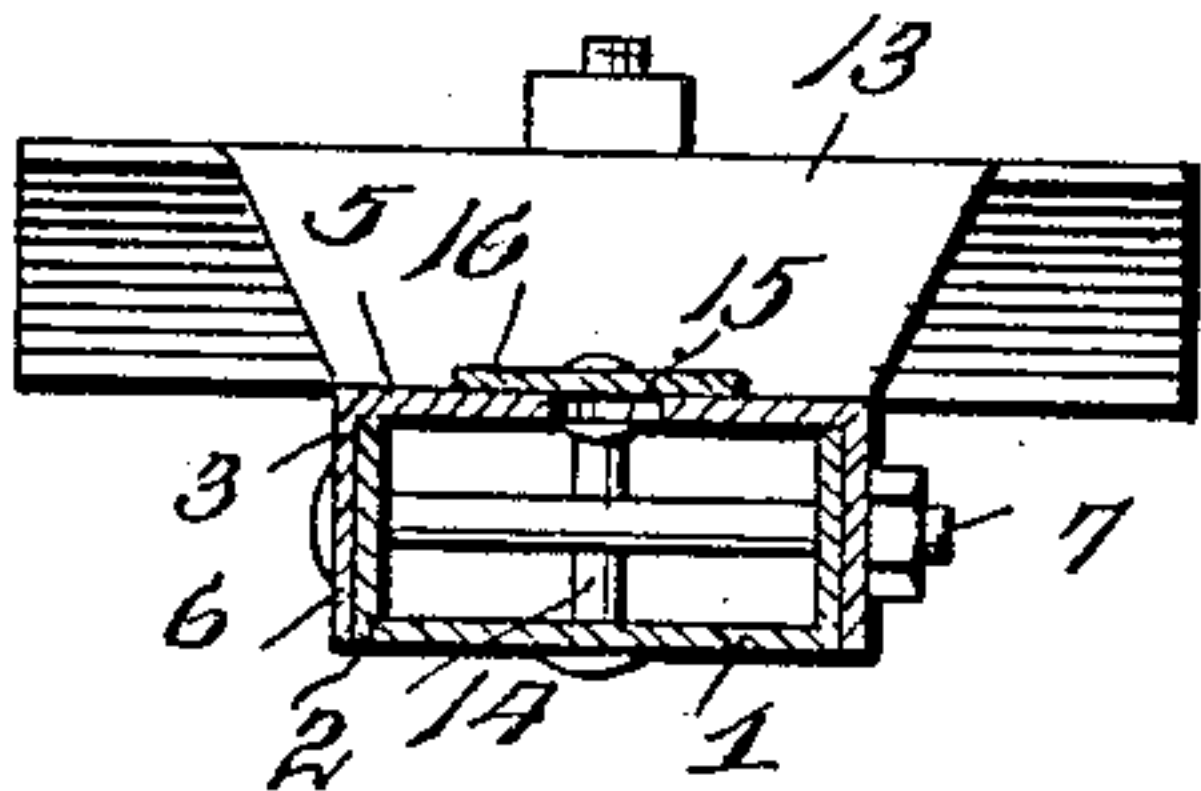
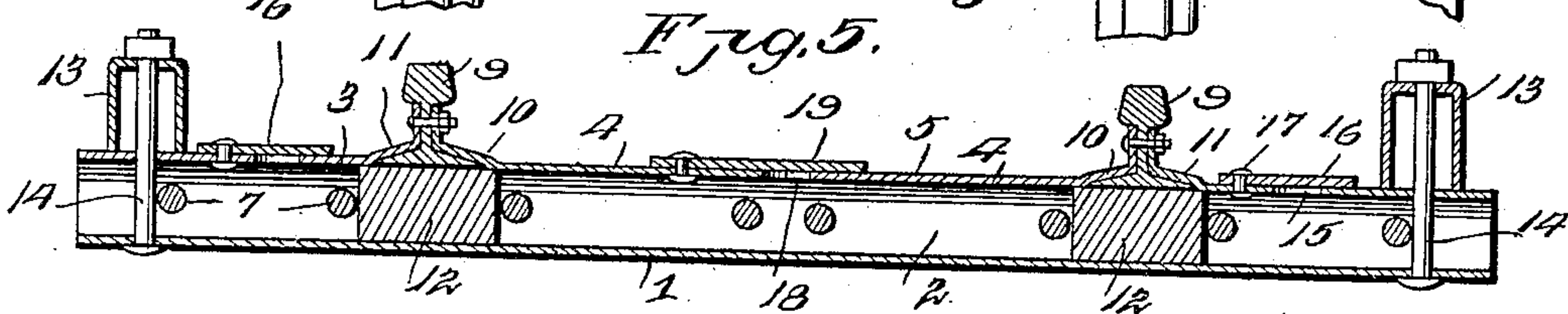
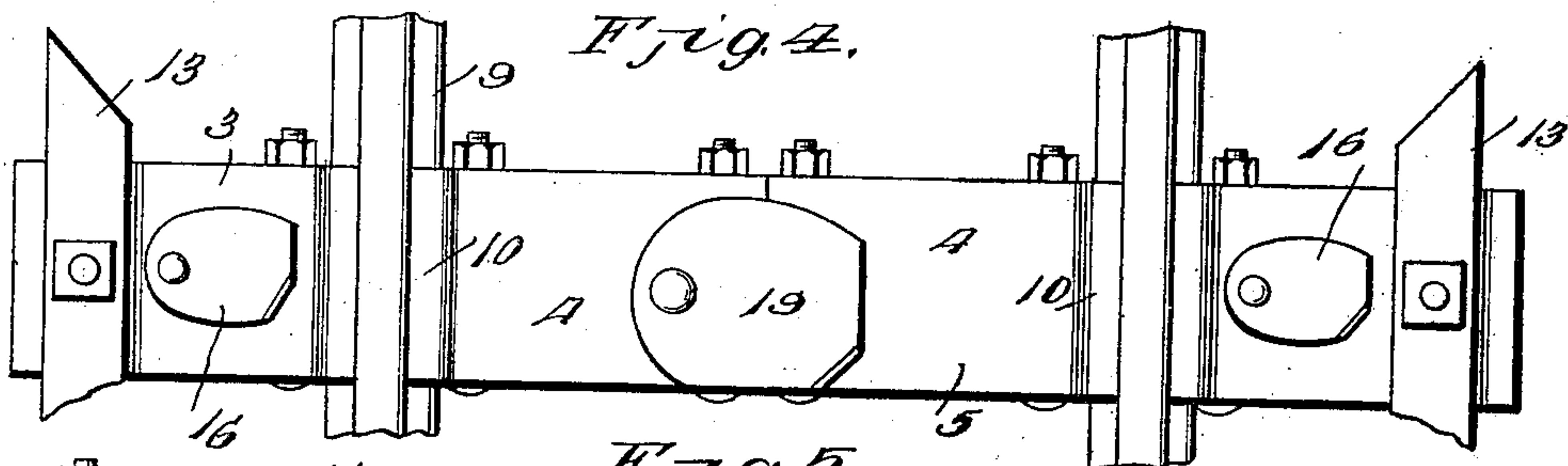
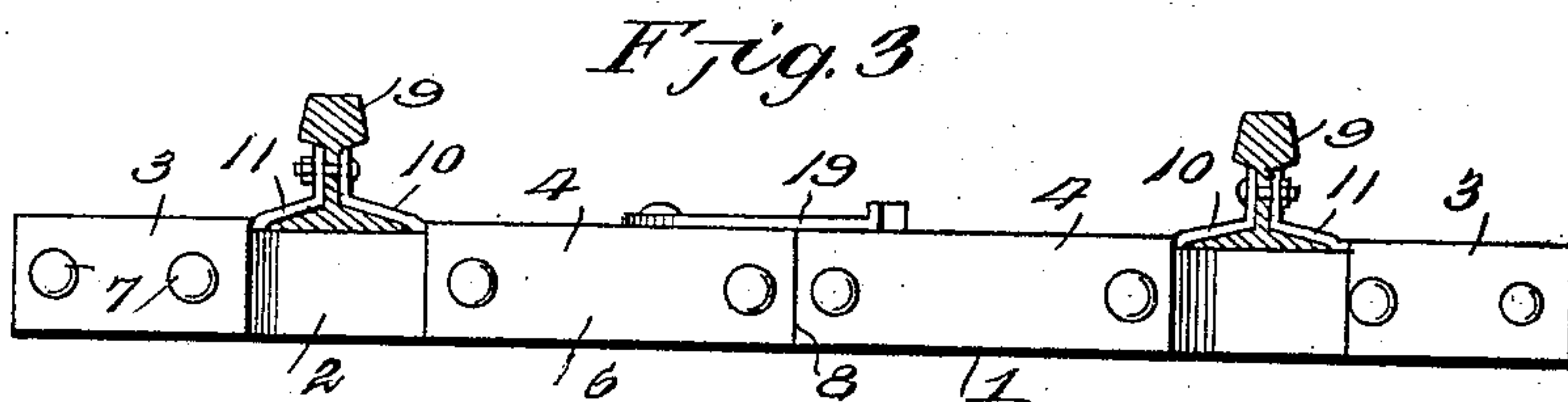
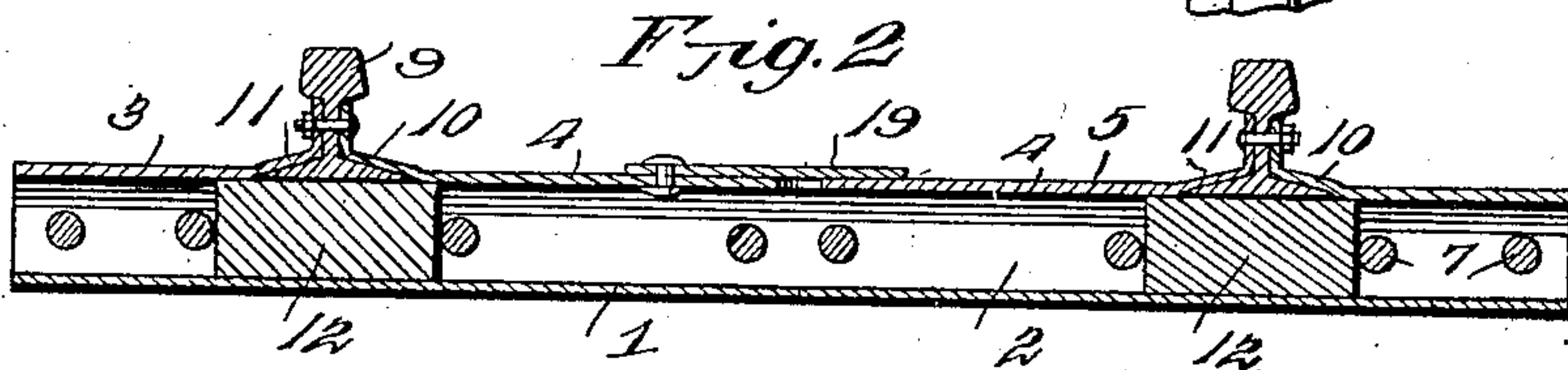
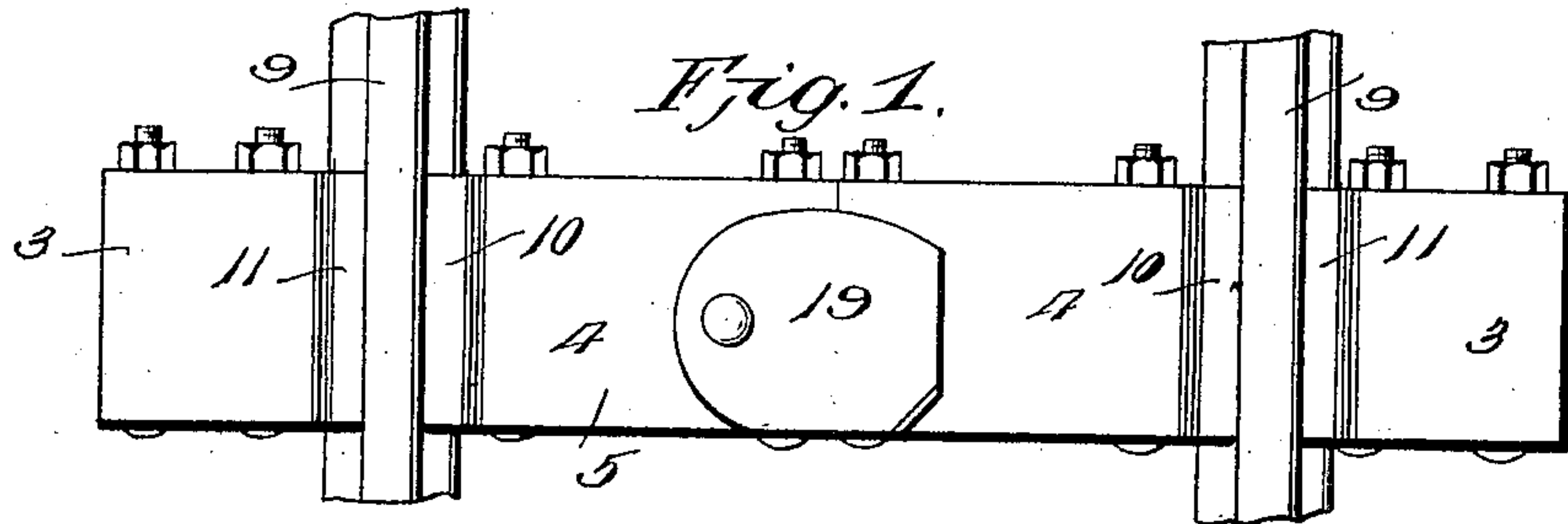


No. 829,870.

PATENTED AUG. 28, 1906.

J. HOWELL.  
RAILWAY TIE.

APPLICATION FILED FEB. 17, 1906.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JOHN HOWELL, OF HOUSTON, ARKANSAS.

## RAILWAY-TIE.

No. 829,870.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed February 17, 1906. Serial No. 301,658.

*To all whom it may concern:*

Be it known that I, JOHN HOWELL, a citizen of the United States, residing at Houston, in the county of Perry and State of Arkansas, have invented new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention relates to railway-ties, the object of the invention being to provide a practical metallic tie of sectional construction with means for securing the sections firmly together, certain of the sections being provided with braces which engage over the base-flanges of the rail and hold the rail securely to the tie.

A further object of the invention is to provide means for absorbing the vibration of the tie and at the same time deadening the noise incident to such vibration; also, to provide means for doing away with a major part of the expansion and contraction of the tie, due to changes in the weather.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a plan view of a tie embodying the present invention. Fig. 2 is a vertical longitudinal section through the same, showing the manner of securing the rails thereto. Fig. 3 is a side elevation of the same, the rails being shown in section. Fig. 4 is a plan view of the tie as adapted to bridges or trestle-work. Fig. 5 is a vertical longitudinal section through the same. Fig. 6 is a cross-section through the tie shown in Figs. 1 to 3, inclusive. Fig. 7 is a cross-section through the tie shown in Figs. 4 and 5, illustrating the guard-rail.

The main body or bed-piece of the tie resembles an ordinary channel-iron, the same, however, being preferably formed out of sheet metal, which is rolled to form an imperforate bottom 1 and upstanding flanges 2, extending along the opposite longitudinal edges of the bottom and upward any desired distance therefrom, forming a box or trough-shaped bed-piece, as shown in Figs. 6 and 7.

In connection with the bed-piece 1 I employ a top or cover of sectional construction, or, in other words, composed of a plurality of sections 3 and 4. Each of these sections comprises an upper plate or top portion 5

and downwardly-extending flanges 6, which are set sufficiently apart to extend downward on opposite sides of the flanges 2 of the bed-piece 1, as clearly shown in Figs. 6 and 7, the cap-pieces or sections 3 and 4 being secured to the main body or bed-piece 1 by means of through-bolts 7.

The cap-pieces 4 meet at the center of the tie, as shown at 8, and extend from such central point outward in opposite directions to the flanges of the rails, (shown at 9,) where they are provided with upwardly-inclining extensions, forming braces 10, which extend over the inner flanges of the rails, as best shown in Figs. 2, 3, and 5.

The cap-sections 3 are located outside of the rails 9 and are of the same cross-sectional formation as the cap-pieces 4, and said outer sections 3 are provided with inwardly-extending braces 11, which engage the outer flanges of the rails, the braces 10 and 11 of the sections 4 and 3 serving to clamp the rails firmly against the tie.

Within the tie and beneath each of the rails 9 there is inserted a cushioning-block 12, of fiber, such as wood or paper, said block filling the space within the tie for a distance greater than the width of the base-flanges of the rail, the said blocks forming seats upon and against which the bottoms of the rails directly bear. The bolts 7 are so disposed that some of such bolts will lie on opposite sides of the blocks 12, as shown in Figs. 2 and 5, and prevent movement or displacement of said blocks.

Where the tie is to be used on bridges or trestle-work to allow for the attachment thereto of guard-rails 13, the tie is made longer, as shown in Figs. 4 and 5, to permit the guard-rails to be secured across the top thereof near the ends and to provide for the reception of vertically-disposed fastening-bolts 14, which pass through the ties and also through the guard-rails, as shown in Fig. 5. Hand-holes 15 are provided in the top of the tie between the rails 9 and the guard-rails 13 to enable the mechanic to manipulate the bolt 14 in securing the guard-rail 13 to the tie. The hand-holes 15 are normally closed by hand-hole covers 16 in the form of plates pivotally connected to the top of the tie, as shown at 17, so that they may be swung over or away from the holes 15.

The tie is also provided centrally and in the top thereof with a hole 18, provided with a pivoted cover 19, whereby water may be in-



roduced into the hollow tie to prevent undue expansion and contraction of the same in sudden changes of the weather.

From the foregoing description it will be seen that the rails are supported directly on the fiber blocks and that they are secured firmly to the body of the tie by means of the sectional top or cover of said tie. In other words, the sections or cap-pieces 3 and 4 not only serve as a protective cover for the bed-piece or body of the tie, but also as a means for securing the rails to the tie as a whole.

The braces 10 and 11 are preferably extended upward to the head or ball of the rail on opposite sides of the web and are secured thereto by through-bolts after the manner of ordinary fish-plates, as shown in Figs. 2, 3, and 5, thus adding materially to the support of the rails.

I claim—

1. A metallic railway-tie comprising a bed-piece in the form of a trough having an imperforate bottom and upstanding longitudinal flanges, and a sectional top or cover for said bed-piece consisting of a plurality of cap-pieces having downwardly-extending flanges which embrace the flanges of the bed-piece and are secured thereto, the said cap-pieces embodying braces which engage the rail-flanges and secure the rails to the tie.

2. A metallic railway-tie comprising an imperforate bed-piece with upstanding longitudinal flanges, fiber blocks inserted between said flanges and forming rail-seats, and a sectional top or cover for the bed-piece of the tie composed of a plurality of cap-pieces fitting over the top of the bed-piece and provided with flanges which extend downward

outside of the flanges of the bed-piece and also provided with projecting braces which extend over the flanges of the rails, and bolts passing through the flanges of the bed-piece and cap-pieces at opposite sides of the seat-blocks.

3. A metallic railway-tie comprising an imperforate bed-piece with upstanding longitudinal flanges, a sectional top or cover composed of a plurality of cap-pieces extending over the top of the tie and provided with depending flanges which embrace the flanges of the bed-piece, seat-blocks located within the body of the tie immediately beneath the rails, and bolts connecting the cap-pieces and bed-piece, said cap-pieces being provided with a hollow and a movable cover for said hole, substantially as and for the purpose described.

4. A metallic railway-tie comprising an imperforate bed-piece having upstanding longitudinal flanges, a sectional top or cover composed of cap-pieces extending over the top of the bed-piece and having depending flanges which embrace the flanges of the bed-piece, means for securing the cap-pieces to the bed-piece, the end cap-pieces being provided with openings in the top thereof and covers for said openings, guard-rails extending across the end cap-pieces, and fastening-bolts passing vertically through the tie and guard-rails, substantially as described.

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

JOHN HOWELL.

Witnesses:

JAMES H. COLE,  
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