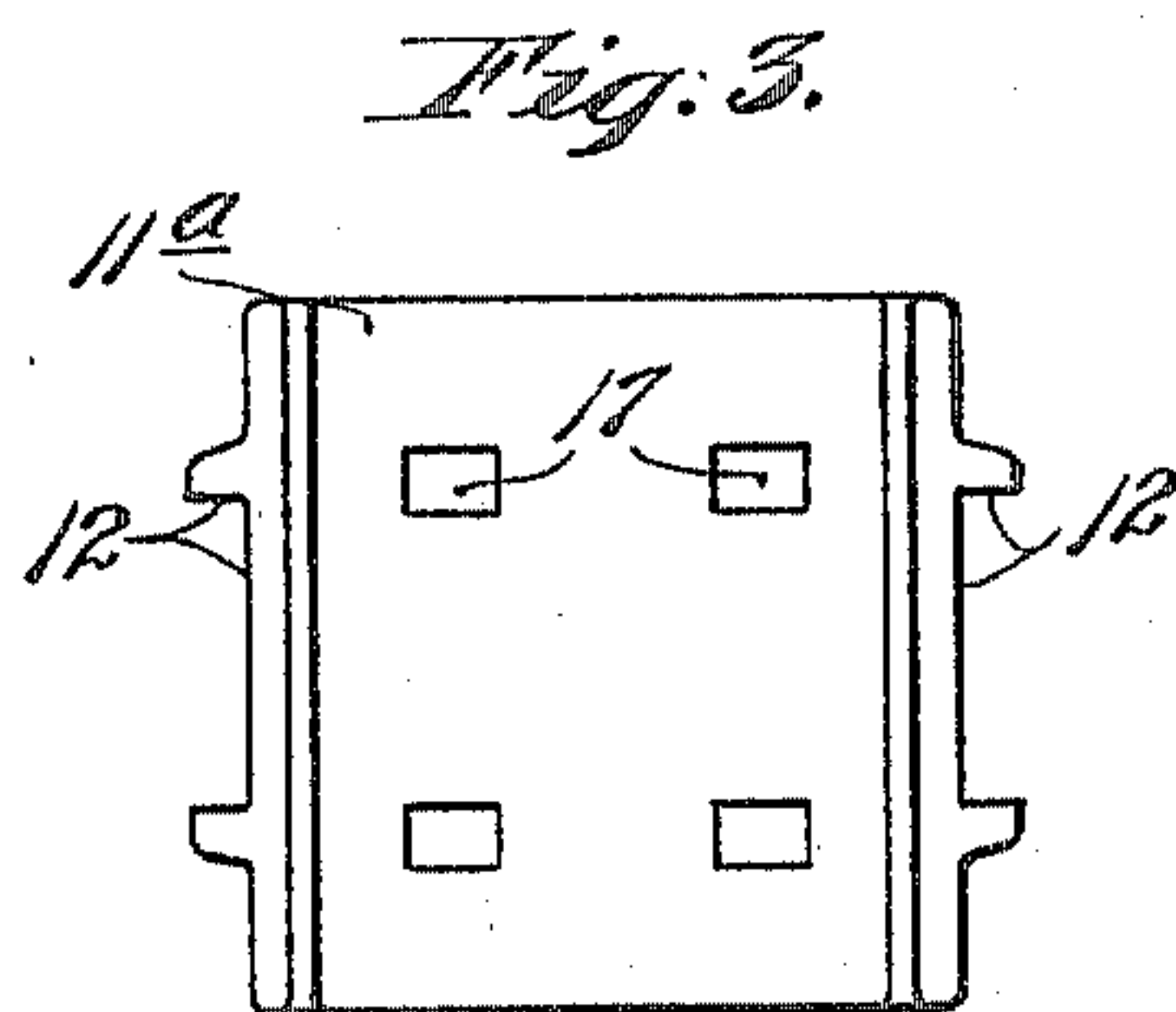
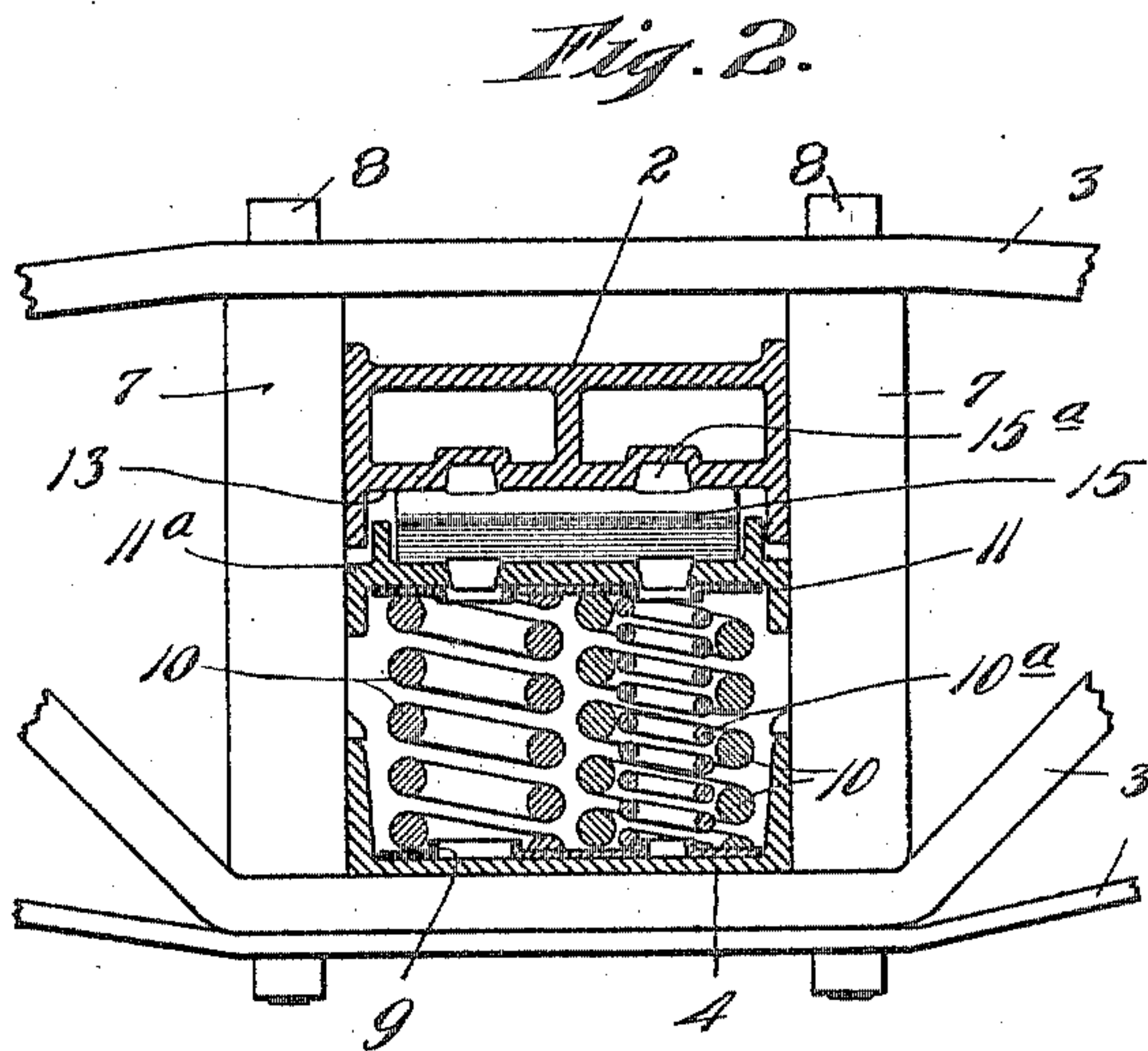
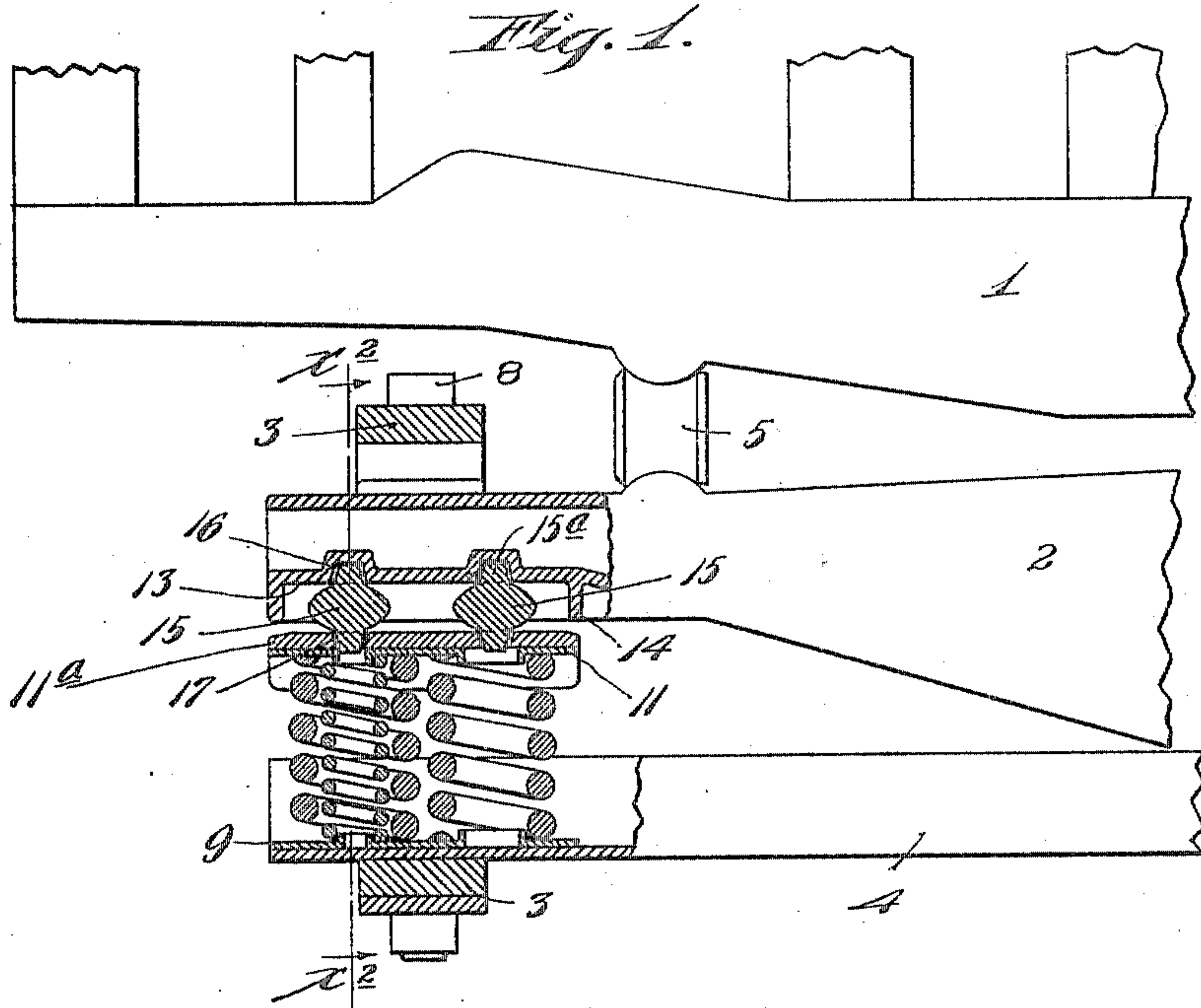


No. 811,677.

PATENTED FEB. 6, 1906.

E. C. WASHBURN.
LATERAL MOTION DEVICE FOR CAR TRUCKS.
APPLICATION FILED MAR. 26, 1906.



Witnesses.
E. W. Jeppesen,
A. H. Opsahl.

Inventor.
Edwin C. Washburn.
By his Attorneys.

William Muchant

UNITED STATES PATENT OFFICE.

EDWIN C. WASHBURN, OF MINNEAPOLIS, MINNESOTA.

LATERAL-MOTION DEVICE FOR CAR-TRUCKS.

No. 811,677.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed March 25, 1905. Serial No. 251,946.

To all whom it may concern:

Be it known that I, EDWIN C. WASHBURN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Lateral-Motion Devices for Car-Trucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to car-trucks, and has for its object to provide an improved lateral-motion device therefor.

To this end the invention consists of the novel devices and the combination of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view, partly in front elevation and partly in vertical section, showing a portion of the car and illustrating one of my improved lateral-motion devices interposed between the truck-bolster and the truck-frame. Fig. 2 is a vertical section taken on the line $x^2 x^2$ of Fig. 1, and Fig. 3 is a plan view showing in detail a so-called combined "spring-cap and roller-base."

Referring to the drawings, the numeral 1 indicates a car-body bolster. The numeral 2 indicates a truck-bolster, the numeral 3 one of the trussed side frames of the truck, and the numeral 4 a channel-like transom which ties together the lower parts of the two side frames. The said parts 1 to 4, inclusive, are shown only in part, but they may be of any suitable construction.

The truck-bolster 2 will of course be pivotally connected by suitable king-bolt to the central portion of the car-bolster 1, and the two bolsters must be free for endwise movements together transversely of the car-truck. As shown, a side bearing 5 is interposed between the bolsters 1 and 2, but this forms no part of my present invention.

Bolster-columns 7 are interposed between the upper and lower portion of the trussed side frame and are rigidly secured thereto in the usual or any suitable way, but preferably by column-bolts 8. The ends of the transom are of course rigidly secured by bolts or rivets or other suitable device both to the lower portions of the columns 7 and to the lower por-

tions of the trussed side frames. Preferably light spring-bases 9 are placed in the channel by ends of the transom 4 and are riveted or otherwise secured thereto in such position that they project both forward and outward on the corresponding side frames of the truck. Coiled springs 10, as shown four in number, rest their lower ends on the spring-base 9. The latter preferably have upturned bosses, which hold the same against lateral displacement. As shown, certain of these springs are reinforced by inner coils 10^a; but these inner coils form no part of my present invention. A so-called "combined spring-cap and roller-base" 11^a rests upon the upper ends of each group of four springs and, as shown, is provided with a supplemental plate-section 11, against which the said springs directly press. At its ends the combined spring-cap and roller-base 11^a is provided with notches 12, that embrace the bolster-column 7 and hold said part 11^a against movement in a horizontal plane by permitting the same to freely move upward and downward on said bolster-column. At these ends the truck-bolster 2 is formed with flat bearing-surfaces 13 and with guard-flanges 14 in rectangular arrangement that depend from said bearing-surfaces 13. Flattened rollers 15—that is, rollers that are elliptical in cross-section—are interposed between the upper surfaces of the combined spring-caps and roller-bases 11^a and the overlying flat bearing-surfaces 13 of the truck-bolster. These flattened rollers 15 are preferably arranged in pairs, one member of each part being located inward and the other outward of the vertical plane, intersecting longitudinally the center portion of the corresponding trussed side frame. These flattened rollers 15 are formed with upwardly and downwardly projecting teeth 15^a, that engage, respectively, with seats 16 and 17, the former in the bolster 2 and the latter in the combined spring-cap and roller-base 11^a. The seats 16 are covered or closed at their upper extremities, while the seats 17 open completely through the members 11^a and 11, so as to permit sand and dirt to be worked outward therefrom. The guard-flanges 14 protect to a considerable extent the rollers 15 and cooperating bearing-surfaces against the accumulation of sand and dirt. The upper and lower teeth 15^a are preferably arranged in laterally-spaced parts, as shown in Fig. 2, thereby disposing the same, so that they have

great efficiency and at the same time do not cover much of the bearing-surfaces of the roller.

With the parts put together as shown in Figs. 1 and 2 it is evident that the truck-bolster 2 and parts carried thereby are free for limited movements transversely of the truck. It is also evident that in view of the flattened or elliptical form of the rollers they will cause the truck-bolster to rise whenever it is moved endwise. Hence gravity will act as a yielding force, tending to maintain the truck-bolster in its intermediate position, as shown in Fig. 1. The teeth of the elliptical rollers cause the same to move over their cooperating bearing-surfaces with a rolling action as distinguished from a sliding action, and, furthermore, they maintain the said parts always in their proper operative relations. This flattened or elliptical form of the roller brings the bearing-surfaces of the truck-bolsters as nearly as possible to the corresponding bearing-surfaces of the combined spring-caps and roller-bases.

The purposes of the lateral motion devices in the car-truck are too well understood to require any special comment.

The device described is very simple and of small cost and, furthermore, is sufficient for the purposes had in view.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a car-truck and a car-bolster, said bolster having flat bearing-surfaces, of bearing members underlying the flat surfaces of said bolster, secured against lateral movements with respect to the truck side frames and provided with flat bearing-

surfaces, and flattened elliptical bearing-rollers interposed between said flat bearing-surfaces and having toothed engagement with both thereof, at points inward of the extremities of said rollers, whereby the engagement between said rollers and said flattened bearing-surfaces is continued outward of said toothed engagement, substantially as described.

2. The combination with a car-truck and a truck-bolster, said bolster having flat bearing-surfaces, of springs supported by the frame of said truck, beneath the flat surfaces of said bolster, combined spring-caps and roller-bases resting on said springs and provided with flat bearing-surfaces, and flattened rollers interposed between said flat bearing-surfaces and having toothed engagement with both thereof, substantially as described.

3. In a car-truck, the combination with trussed side frames having bolster-columns, of a spring-supported bearing-plate guided for vertical movements by said bolster-columns and provided with seats 17, a truck-bolster having the flat bearing-surfaces 13, formed with seats 16, and depending flanges 14, and elliptical rollers 15 interposed between said bearing-plate 11 and the bearing-surfaces 13 of said bolster, and provided with teeth 15^a, engaging said seats 16 and 17, substantially as described.

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

EDWIN C. WASHBURN.

Witnesses:

H. D. KILGORE,
MALIE HOEL.