

No. 872,015.

PATENTED NOV. 26, 1907.

W. G. PRICE.
BOLSTER SWING DAMPER.
APPLICATION FILED AUG. 18, 1906.

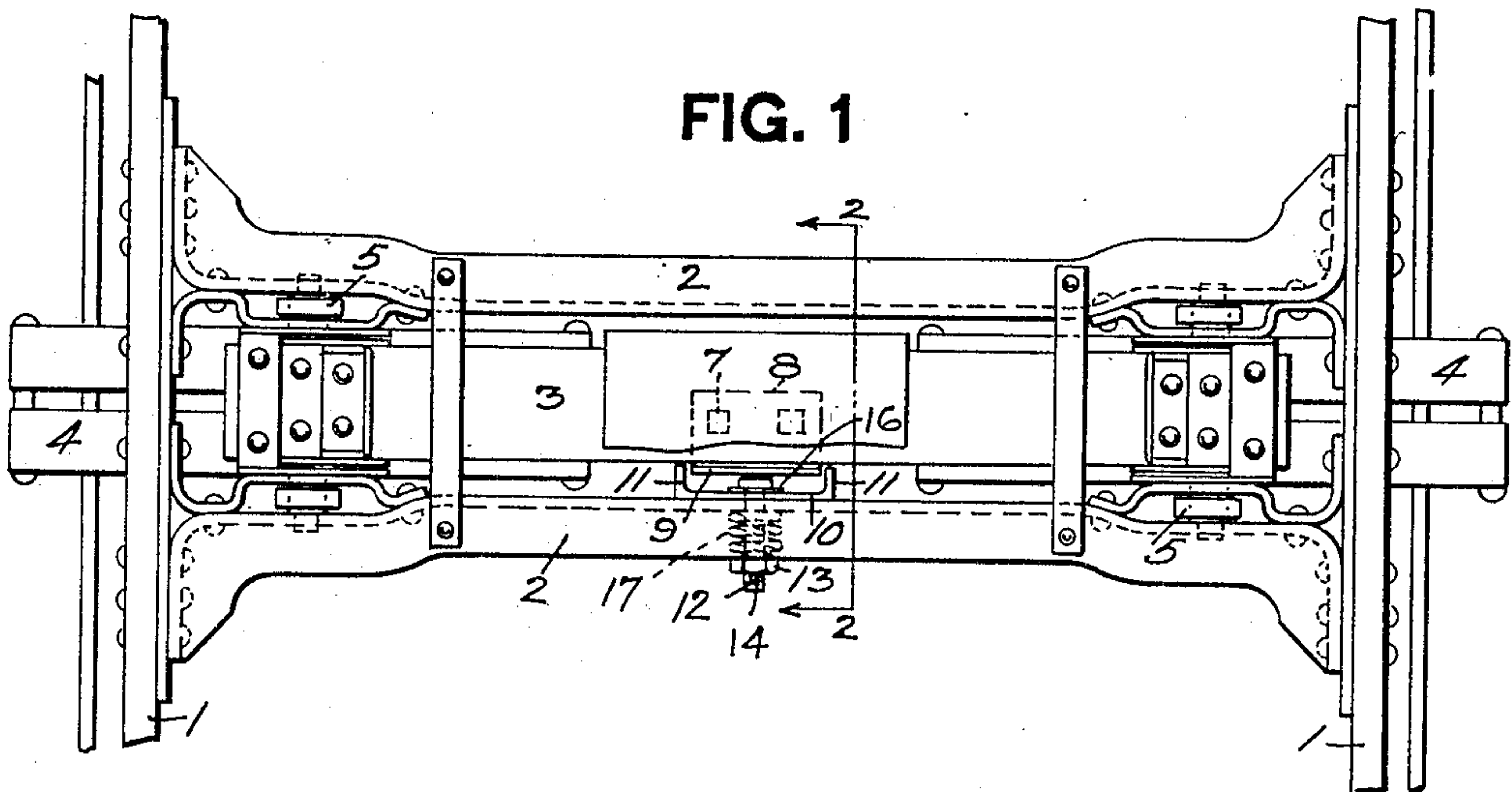


FIG. 3

FIG. 4

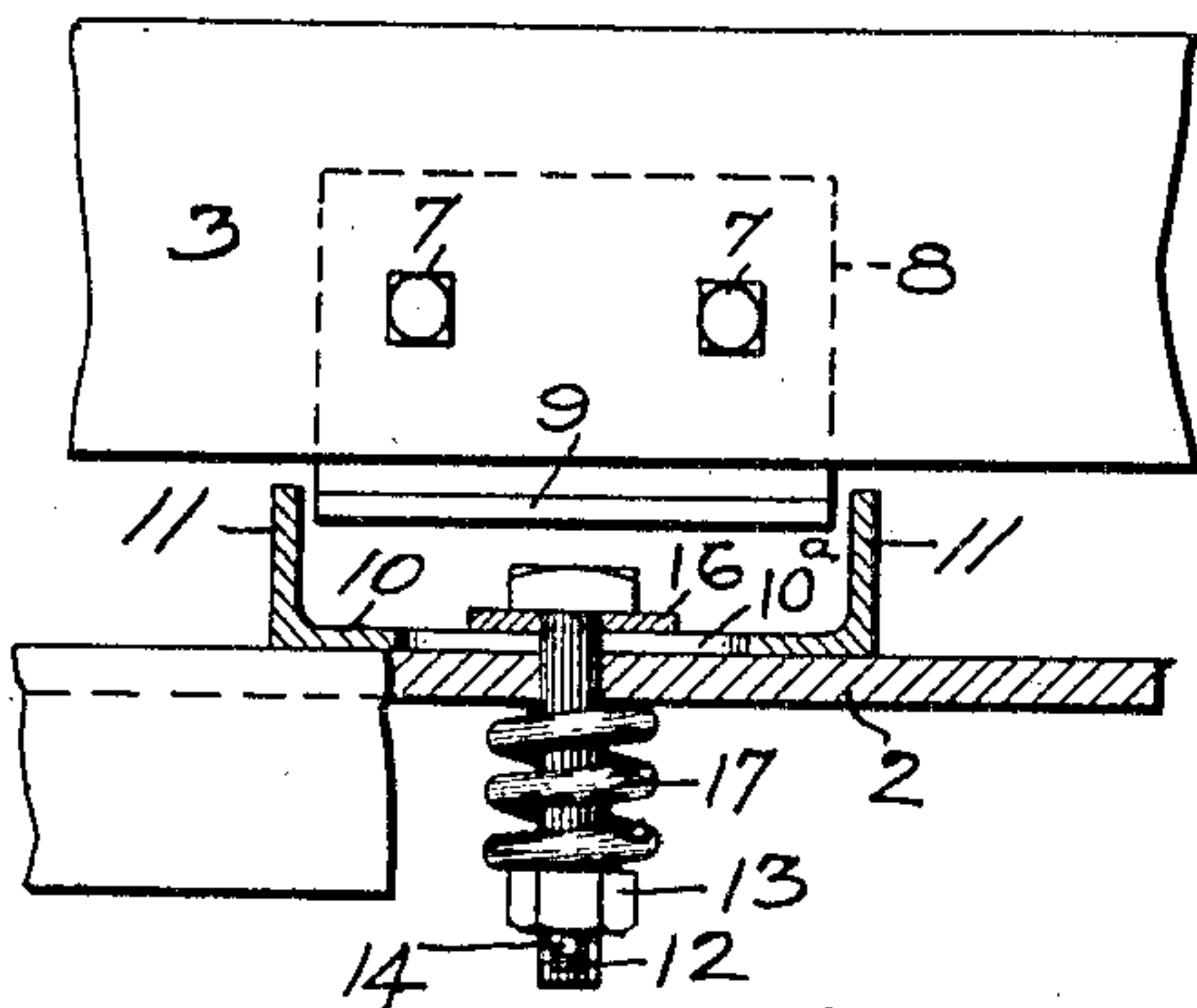


FIG. 2

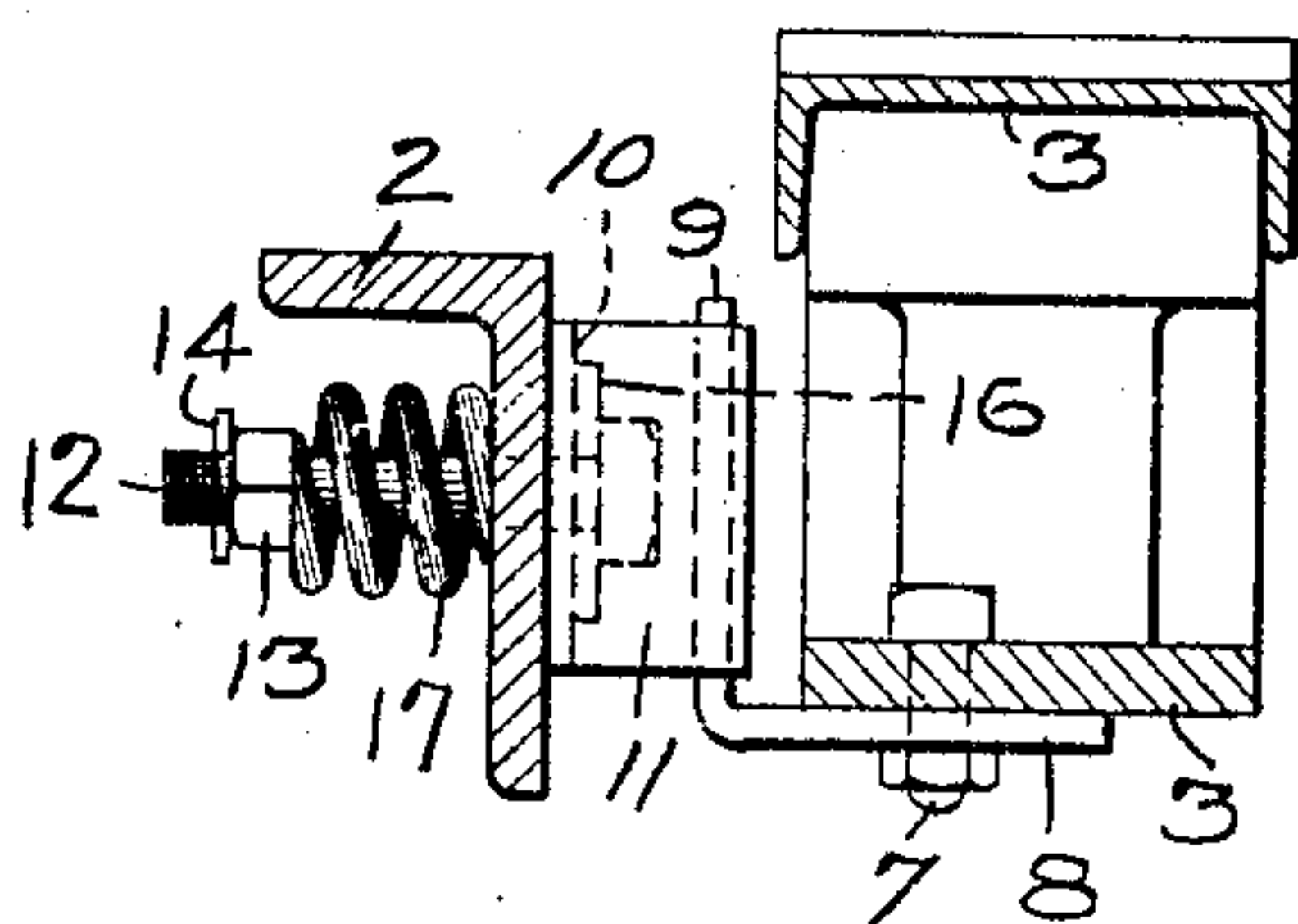
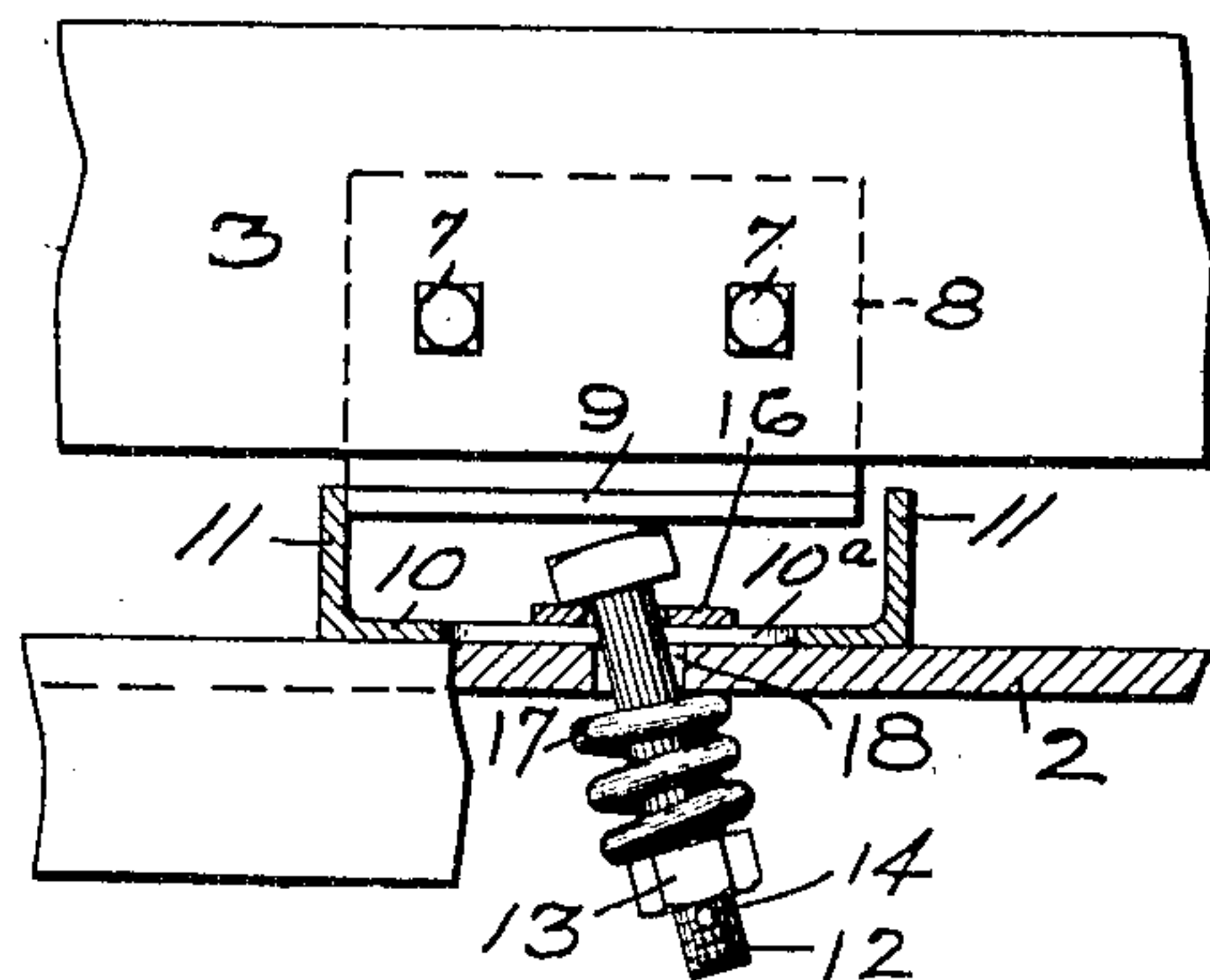
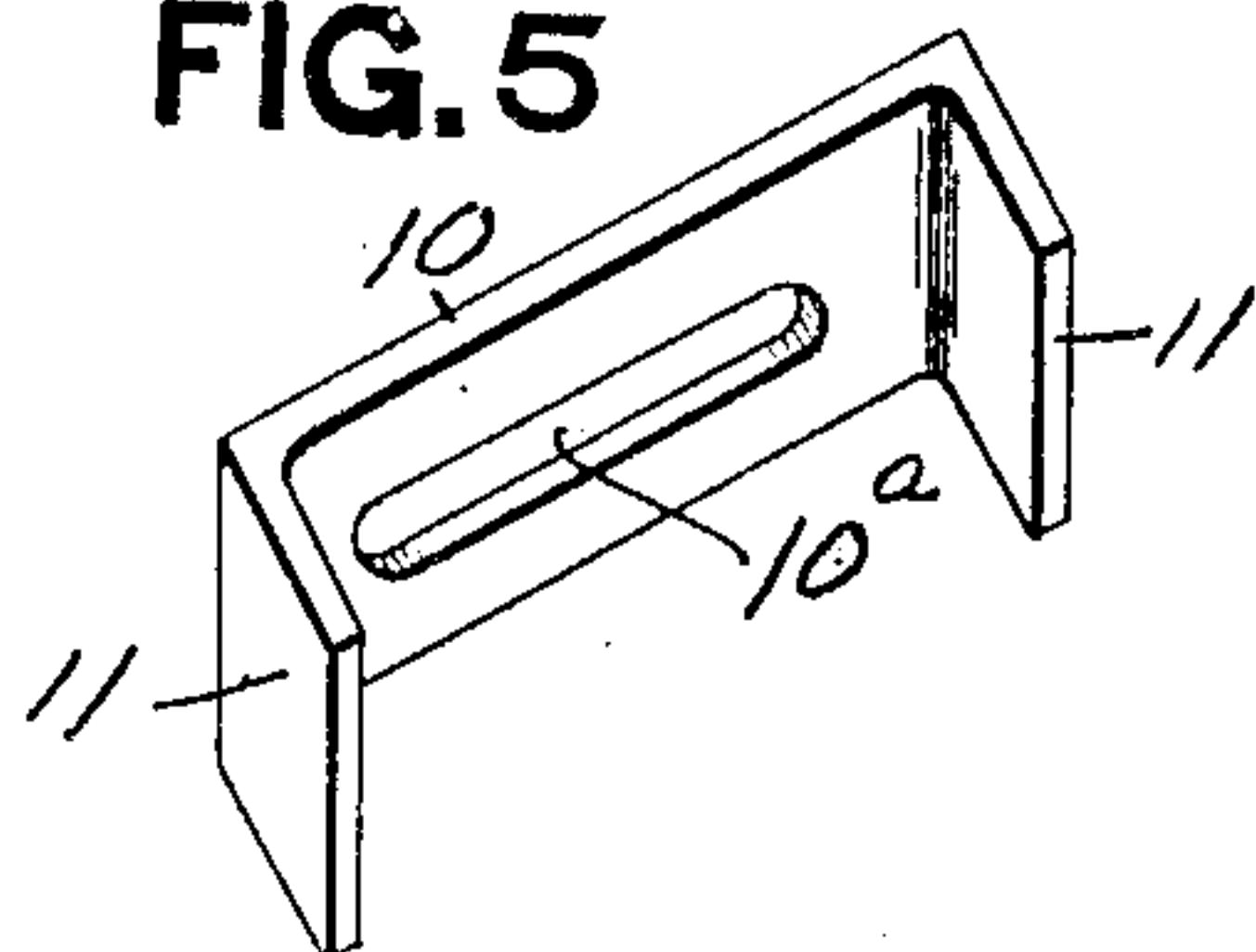


FIG. 5



WITNESSES.

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WILLIAM G. PRICE, OF NEW CASTLE, PENNSYLVANIA.

BOLSTER SWING-DAMPER.

No. 872,015.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed August 18, 1906. Serial No. 331,138.

To all whom it may concern:

Be it known that I, WILLIAM G. PRICE, resident of New Castle, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Improvement in Bolster Swing-Dampers, (Case 2;) and I do hereby declare the following to be a full, clear, and exact description thereof.

This invention relates to railway car trucks, and more especially to motor trucks for street railway and similar service.

The object of the invention is to provide a truck of this type having what is known as a swing bolster with means for damping or gradually bringing to a stop the endwise movements of the bolster.

Motor trucks for street railway and similar service are usually provided with a bolster which supports the car body and which is so mounted as to have both a vertical and an endwise movement, this being most commonly effected by supporting the ends of the bolster upon elliptic springs which in turn are supported by U-shaped hangers pivoted to the frame. Consequently, the bolster has an endwise movement so as to prevent the sudden shocks due to change of direction of the car body when rounding curves, upon rough track, and the like. It is desirable, however, to prevent such extended endwise movement of the bolster as to cause the same to strike the side frames of the truck, as this causes a disagreeable shock. Heretofore friction devices have been used to prevent excessive endwise movement of the bolster, but in all prior devices of this character said devices have either interfered with the free vertical movement of the bolster, which is desirable in order to give easy riding, or else have given nearly as great resistance on small endwise movements of the bolster as for large. It is desirable to have considerable freedom of endwise movement for the bolster when only small movements occur, but to have sufficient resistance against extended movements of the bolster to prevent the same from striking the side frames.

This invention is intended to secure the objects just stated, namely, to provide a bolster swing damper which does not interfere with the free vertical movements of the bolster, and which also preferably imposes little or no frictional resistance to small endwise movements of the bolster, but a sufficient frictional resistance to large endwise movements of the bolster. These objects are ac-

complished by the construction and arrangement hereinafter described and claimed.

In the accompanying drawing Figure 1 is a plan view of a portion of a truck embodying my invention; Fig. 2 is a transverse section on the line 2—2 Fig. 1; Fig. 3 is an enlarged plan view of the bolster and the swing damping device in horizontal section; Fig. 4 is a similar view showing a modification; and Fig. 5 is a perspective view of the friction plate.

The truck frame may be of any desirable construction, that shown having the side frames 1 connected by transoms 2 which are shown formed of metal angle bars. The bolster 3 is supported upon elliptic springs 4 held in U-shaped hangers 5 pivotally suspended from the frame. It is obvious that this manner of mounting the bolster permits both vertical and endwise movements thereof and this type is usually spoken of as a swing bolster. The bolster itself may be of any desired construction, it being shown in the drawing as a solid beam.

Connected to the lower face of the bolster by means of bolts 7 is a plate 8 whose edge is turned upwardly to provide the vertical portion 9. Coöperating with this vertical portion is the friction plate 10 whose ends are bent at right angles to its body as at 11 and lie on either side of the vertical portion 9 of the bolster plate 8. The friction plate is provided with a longitudinal slot 10^a through which passes a bolt 12, said bolt also passing through a hole in the transom 2 and being provided on its inner end with a nut 13 and cotter pin 14. Interposed between the head of the bolt and the friction plate 10 is a washer 16 and between the transom and the nut 13 on the bolt is a spiral spring 17, which normally is under sufficient compression to frictionally clamp the plate 10 between the washer 16 and the transom 2. By means of the nut 13 the strength of the spring 17 can be adjusted so as to vary the extent of the friction on the plate 10 as desired.

It is obvious from this construction that the vertical movement of the bolster merely carries the plate 9 up and down, but without producing any movement of the friction plate 10 whatsoever and without any material contact between the plate 9 and the plate 10. Consequently vertical movements of the bolster are entirely free. Should the bolster, however move endwise the upwardly

turned portion 9 of the bolster plate contacts with one or the other end portions 11 of the friction plate 10 and moves said plate endwise, so that the friction between said plate and the washer 16 and transom 2 resists the endwise movement of the bolster and gradually brings the same to rest.

In Fig. 4 I have shown a modification having the preferred function wherein practically no, or at least only a very slight, frictional resistance is offered to small endwise movements of the bolster but greater frictional resistance is offered to longer endwise movements of the bolster. This is effected by making the hole 18 in the transom 2 through which the bolt 12 passes considerably larger than said bolt, so that for small endwise movements of the plate 10 the bolt swings to the inclined position shown in Fig. 4, thus permitting the washer 16 to move with the plate 10 and relieving the plate of the friction of said washer. Consequently the bolster is subjected to only a slight damping effect for small endwise movements. As soon, however, as the bolt has swung to such an extent that it comes in contact with the walls of the hole 18 it becomes stationary and the washer 16 likewise becomes stationary so that in the further endwise movement of the bolster the plate 10 is subjected to the full frictional effect of the washer 16 and transom 2. In this way the more extended endwise movements of the bolster are subjected to an increasing frictional resistance.

What I claim is:

1. In a car truck, the combination of a truck frame, a bolster mounted therein for both vertical and horizontal movement, and a friction plate between the bolster and truck frame and arranged to resist the endwise but not the vertical movements of the bolster.

2. In a car truck, the combination of the truck frame, a bolster mounted therein for both vertical and horizontal movement, a friction plate connected to the frame, and connections between said friction mechanism and the bolster permitting a free vertical movement of the bolster.

3. In a car truck, the combination of transoms, a bolster mounted between the same for both vertical and horizontal movement, a plate movable longitudinally of the transom and having frictional connection therewith, and connections between said plate and the bolster providing a free vertical movement of the bolster.

4. In a car truck, the combination of transoms, a bolster mounted between the same for both vertical and endwise movement, a plate longitudinally movable on the transom, a spring arranged to press said plate against

the transom, and connections between said plate and the bolster permitting a free vertical movement of the bolster.

5. In a car truck, the combination of transoms, a bolster mounted therebetween for both vertical and endwise movement, a plate having a frictional connection with the transom, and connections between the plate and the bolster comprising members having a vertical sliding movement with reference to each other.

6. In a car truck, the combination of transoms, a bolster mounted therebetween for both vertical and endwise movement, a plate having a slot and bolt connection with the transom, a washer on the bolt, a spring arranged to frictionally hold the plate between the transom and the washer, and an angle member secured to the bolster and engaging said friction plate.

7. In a car truck, the combination of the truck frame, a bolster mounted therein for both vertical and longitudinal movement, a friction plate mounted on the frame by a bolt and slot connection, a washer on the bolt, an adjustable spring surrounding the bolt and frictionally confining the plate between the transom and a washer, horizontal projections on said plate, and an angle member secured to the bolster and having a vertical portion arranged between the horizontal projections of the plate.

8. In a car truck, the combination of a truck frame, a bolster mounted therein for vertical and endwise movement, a friction plate provided with a slot, a bolt passing through said slot and an opening in the frame, the hole in the frame being larger than said bolt, a spring arranged to frictionally confine the plate between the bolt head and frame, and connections between the bolster and plate whereby the latter is moved endwise with the bolster.

9. In a car truck, the combination of the frame, a bolster mounted therein for both vertical and endwise movement, a friction plate provided with a slot, a bolt passing through said slot and an opening in the frame, said opening being larger than the bolt, a washer between the bolt head and friction plate, a spring for confining the plate between the washer and frame, horizontal projections on the plate, and a connecting member secured to the bolster and having a vertical portion extending between the horizontal projections of the plate.

In testimony whereof, I, the said WILLIAM G. PRICE have hereunto set my hand.

WILLIAM G. PRICE.

Witnesses:

M. D. VOGEL,

F. W. WINTER.