

(No Model.)

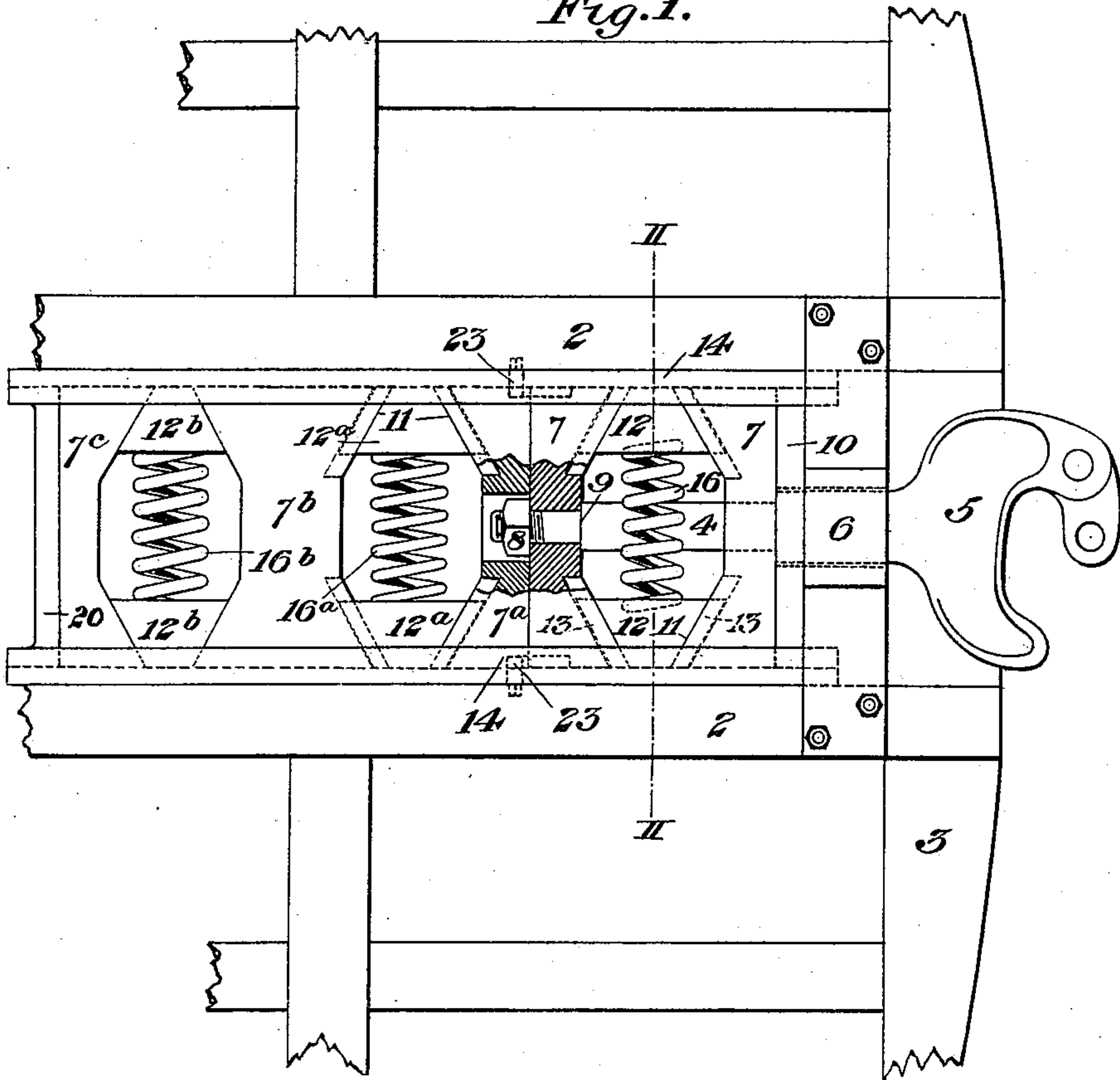
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W. M. PIPER.  
DRAFT RIGGING.

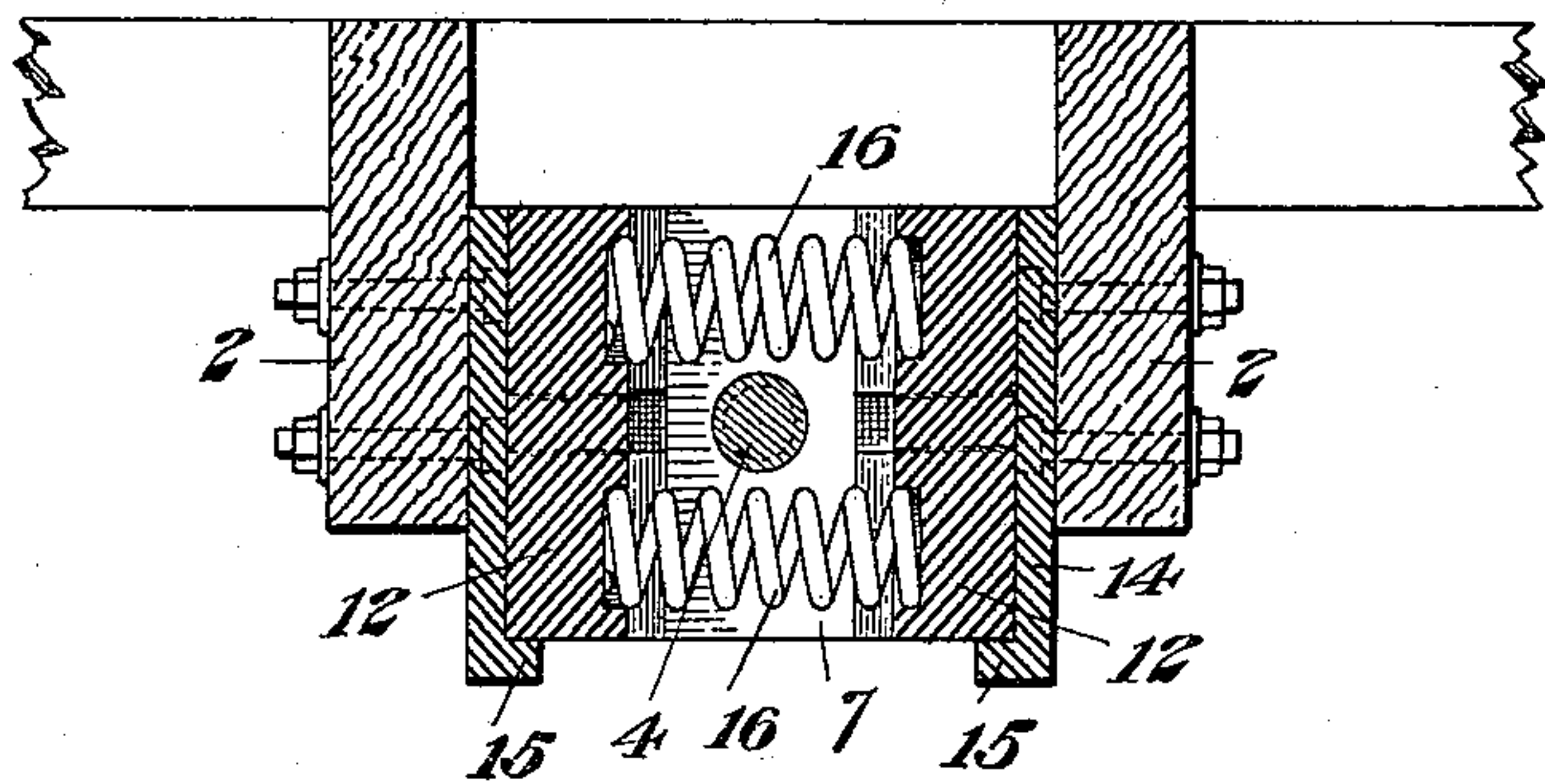
No. 566,935.

Patented Sept. 1, 1896.

*Fig. 1.*



*Fig. 2.*



WITNESSES

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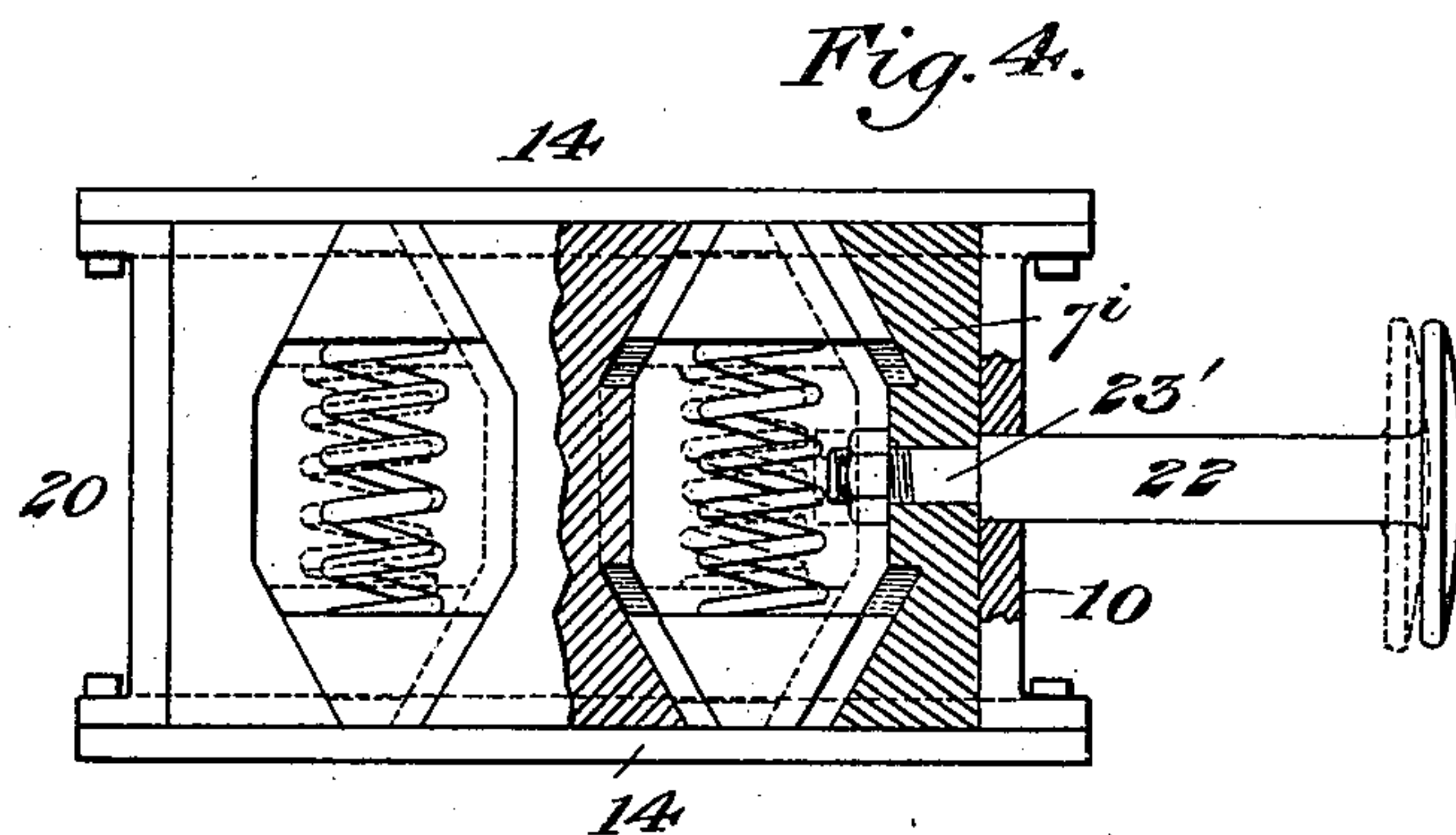
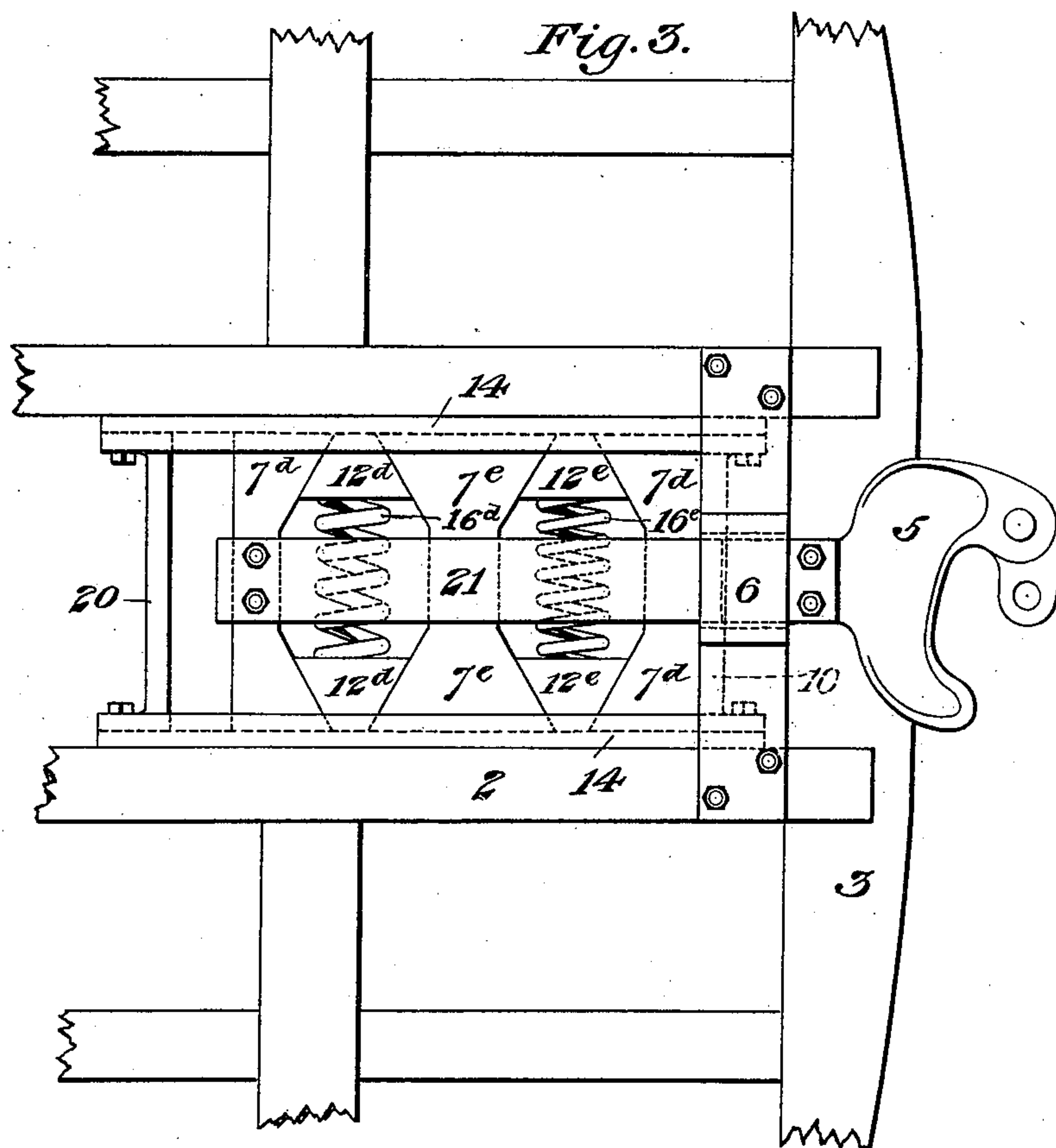
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WITNESSES

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# UNITED STATES PATENT OFFICE.

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## DRAFT-RIGGING.

SPECIFICATION forming part of Letters Patent No. 566,935, dated September 1, 1896.

Application filed April 16, 1896. Serial No. 587,747. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM MORGAN PIPER, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Draft-Riggings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a bottom plan view of the preferred form of my invention as applied to the draft-rigging of a car. Fig. 2 is a cross-section on the line II II of Fig. 1. Fig. 3 is a bottom plan view showing another form of draft-rigging provided with my invention; 15 and Fig. 4 is a similar view, partly broken away, showing the invention as applied to a car-buffer.

My invention relates to the class of devices 20 employed to take up strains, either of a compressive or pulling nature, such as in the draft-rigging or supporting-springs of cars; and it consists in two or more blocks or plates, at least one of which is provided with oppositely-directed inclines, and wedges which 25 are held between these plates and are normally forced apart by a yielding pressure constantly exerted thereon, the strain being applied to the block or plate having the inclines and forcing the wedges along these inclines. 30

In the drawings, in which similar numerals indicate corresponding parts, Fig. 1 shows the preferred form of my invention as applied to a draft-rigging, 2 2 being the draft-timbers secured to the bottom of the car, 3 the end sill, and 4 the draw-bar carrying the coupler-head 5. The draw-bar rests upon the carry-iron 6, of the usual stirrup shape, and at 40 its rear end is reduced in diameter and secured to a sliding block 7 by a suitable nut 8. The shoulder 9 at the end of the reduced portion of the bar rests against the opposite face of the block and the forward portion of the bar extends through a stationary end plate 10 and through another sliding block 7, similar to the one in which the draw-bar is secured, the draw-bar also having a shoulder abutting 45 against the forward end of the outer block 7, as shown in dotted lines. Each of these blocks 7 7 is provided on its inner face with oppositely-directed inclines 11, between

which are held the wedges 12 12, which are preferably provided with projecting tongues 13, entering grooves in the inclines to hold 55 and guide the wedges in their movements.

The blocks 7 7 are held between guide-plates 14, secured to the draft-timbers, these plates having inwardly-projecting lower flanges 15 to support the blocks. The wedges 12 are 60 normally held at the outer limit of their movement by spiral springs 16, bearing against their opposite faces and entering suitable recesses therein, as shown in Fig. 2. In the rear of the block 7 is a similar block 7<sup>a</sup>, which 65 normally contacts therewith and is of similar shape, this block 7<sup>a</sup> coacting with a block 7<sup>b</sup>, which is provided with the opposite inclines, on both its faces, being practically the same as two of the blocks 7 secured to each other, 70 back to back. To prevent the block 7<sup>a</sup> from moving forward beyond its normal position during a pull upon the coupler, I provide projecting stops 23 on the side plates; which rest within grooves in the ends of the blocks 7 75 and 7<sup>a</sup>, but which prevent forward movement of block 7<sup>a</sup> beyond the desired point.

Coacting with the rear face of block 7<sup>b</sup> is a fifth block 7<sup>c</sup>, which rests against and may be a part of a stationary end plate 20. Co- 80 acting with the inclines of plates 7<sup>a</sup>, 7<sup>b</sup>, and 7<sup>c</sup> are the wedges 12<sup>a</sup> and 12<sup>b</sup>, normally forced apart by springs 16<sup>a</sup> and 16<sup>b</sup>, the arrangement being similar to that of the blocks 7 7 and all of these blocks sliding within the guide-plates 85 14. The spring 16<sup>a</sup> is preferably much weaker than the spring 16<sup>b</sup>, so that when a pressure is exerted upon the coupler the series of blocks 7 7 and 7<sup>a</sup> slide rearwardly and the wedges 12<sup>a</sup> move down the inclines against the pres- 90 sure of the spring 16<sup>a</sup> until they near the limit of their inward movement, when the block 7<sup>b</sup> begins to move rearwardly and compress the spring 16<sup>b</sup>, thus equalizing the shock of the blow and giving a steady even move- 95 ment. As the shoulders upon the draw-bar abut against the plates 7 7 these plates do not move relatively to each other upon the inward movement of the draw-bar, but when an outward strain is brought thereon the inner 100 block 7 is drawn outwardly, driving the wedges 12 12 down the inclines of these blocks 7 and compressing the spring 16.

In the form of Fig. 3 the draw-bar is pro-



vided with a yoke 21, which surrounds the draft device, being bolted to the inner sliding block 7<sup>d</sup> and contacting with the front face of the outer similar block. Between these 5 blocks is the block 7<sup>e</sup>, having its faces provided with opposite inclines coacting with those of the blocks 7<sup>d</sup>, wedges 12<sup>d</sup> and 12<sup>e</sup> being employed as before and actuated by similar springs 16<sup>d</sup> and 16<sup>e</sup>.

10 In Fig. 4 I show my invention as applied to a buffer, the buffer-stem 22 having a shoulder which contacts with the outer sliding block 7<sup>i</sup> and a reduced portion 23' passing through and secured thereto. The arrange- 15 ment is otherwise similar to that of Fig. 3, there being three blocks and two springs coacting with the wedges, as before. By using the sliding blocks as top and bottom plates the device will form an efficient spring-bearing 20 for cars, and by connecting these wedges on opposite sides of a car they will all move in unison, and swaying of the car is thus avoided.

The advantages of my invention will be appreciated by those skilled in the art, since 25 sudden jars or shocks are avoided and a steady even motion imparted.

On account of the friction between the wedges and the inclines, a much more flexible spring may be employed than ordinarily, 30 and the entire device is simple, compact, and not liable to get out of order.

Many variations in the form and arrangement of the blocks, the springs, and wedges may be made without departing from my in- 35 vention, since—

I claim—

1. The combination with a longitudinally-movable bar, of a block arranged transversely 40 of the same and actuated thereby, said block having oppositely-directed inclines, guides for the block, wedges contacting with the in-

clines, and a spring bearing upon the wedges and arranged to resist their movement along the inclines; substantially as described.

2. The combination with a longitudinally-movable bar, of a block arranged transversely 45 of the same and actuated thereby, said block having oppositely-directed inclines, guides for the block, wedges contacting with the inclines, and a transverse spring extending be- 50 tween the wedges and arranged to force them apart; substantially as described.

3. A draft-rigging comprising a coupler having a draw-bar secured to at least one of two or more blocks, at least one of said blocks 55 having oppositely-directed inclines, wedges movable upon said inclines and means for exerting a yielding pressure upon said wedges; substantially as described.

4. The combination with two sets of sliding 60 blocks, each set having at least one block provided with opposite inclines, wedges supported between said blocks and movable upon the inclines, and springs between the wedges and bearing thereon, one of said springs be- 65 ing stronger than the other; substantially as described.

5. The combination with a longitudinally-movable bar, of two or more blocks extending 70 transversely of the same, at least one of the blocks being secured to the bar and having oppositely-directed inclines, wedges movable upon the inclines and a spring arranged to bear upon the wedges; substantially as de- 75 scribed.

In testimony whereof I have hereunto set my hand.

W. MORGAN PIPER.

Witnesses:

G. I. HOLDSHIP,  
C. BYRNES.