(No Model.) 4 Sheets—Sheet 1.

W. CASE.

DRAFT RIGGING.

No. 564,867. Patented July 28, 1896.

Fig. 1.

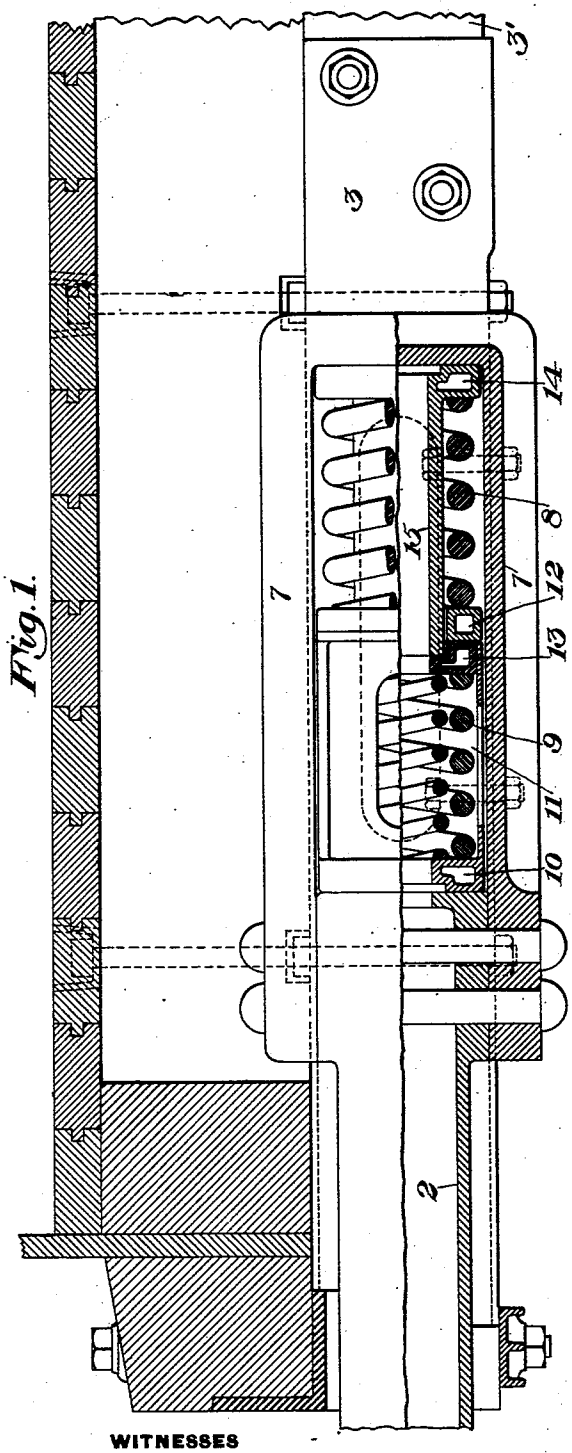
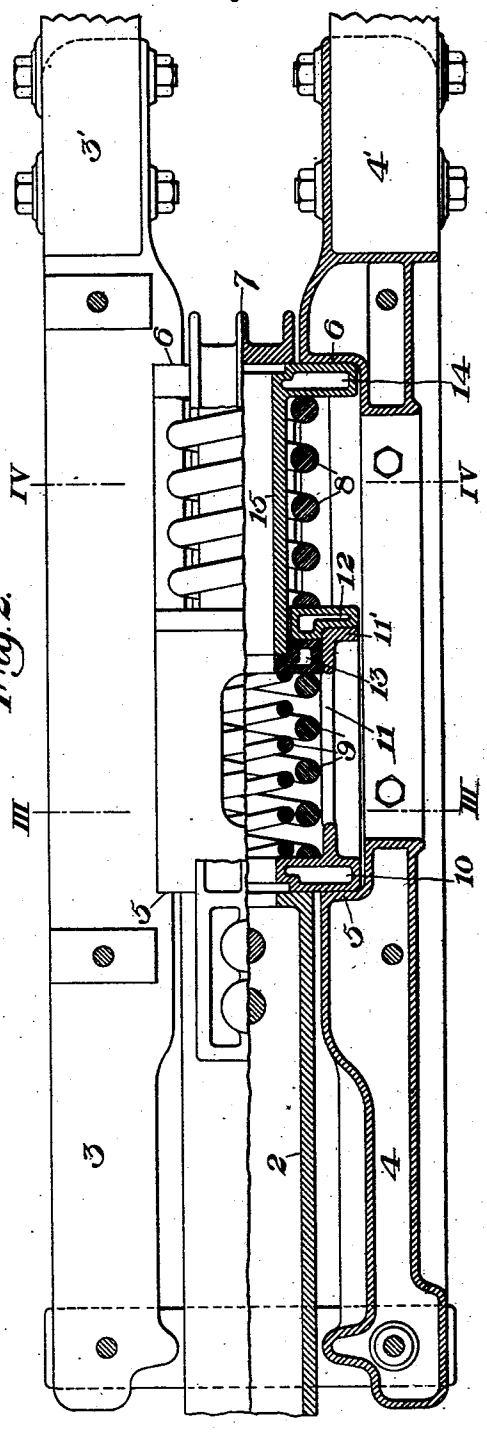


Fig. 2.



WITNESSES

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(No Model.)

4 Sheets—Sheet 2.

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Fig. 4.

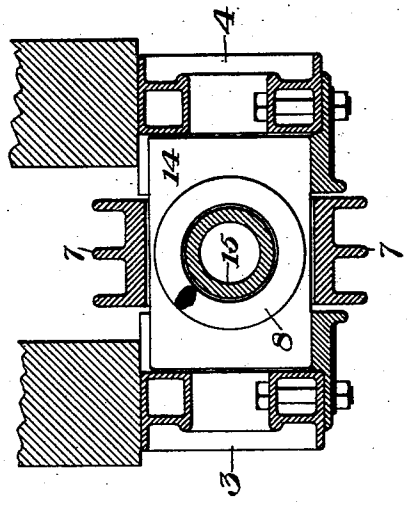
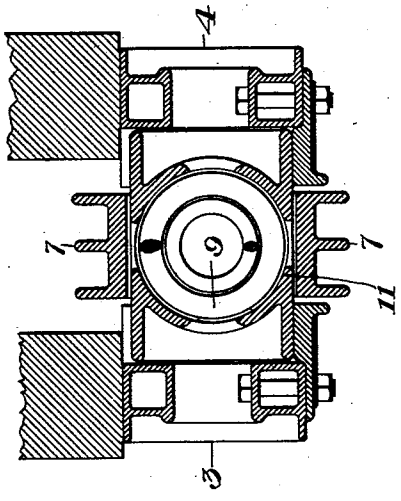


Fig. 3.



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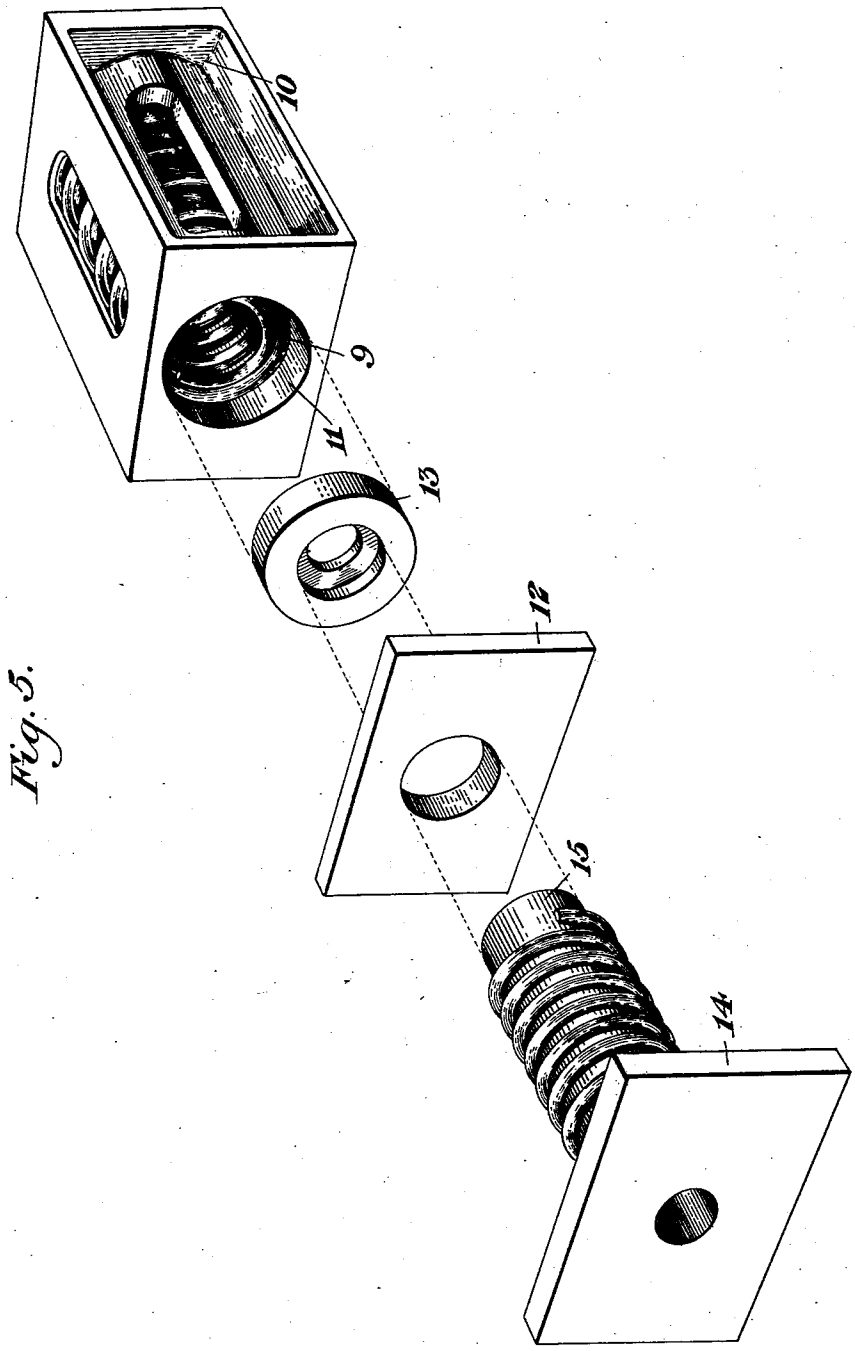

Fig. 5.

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4 Sheets—Sheet 4.

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DRAFT RIGGING.

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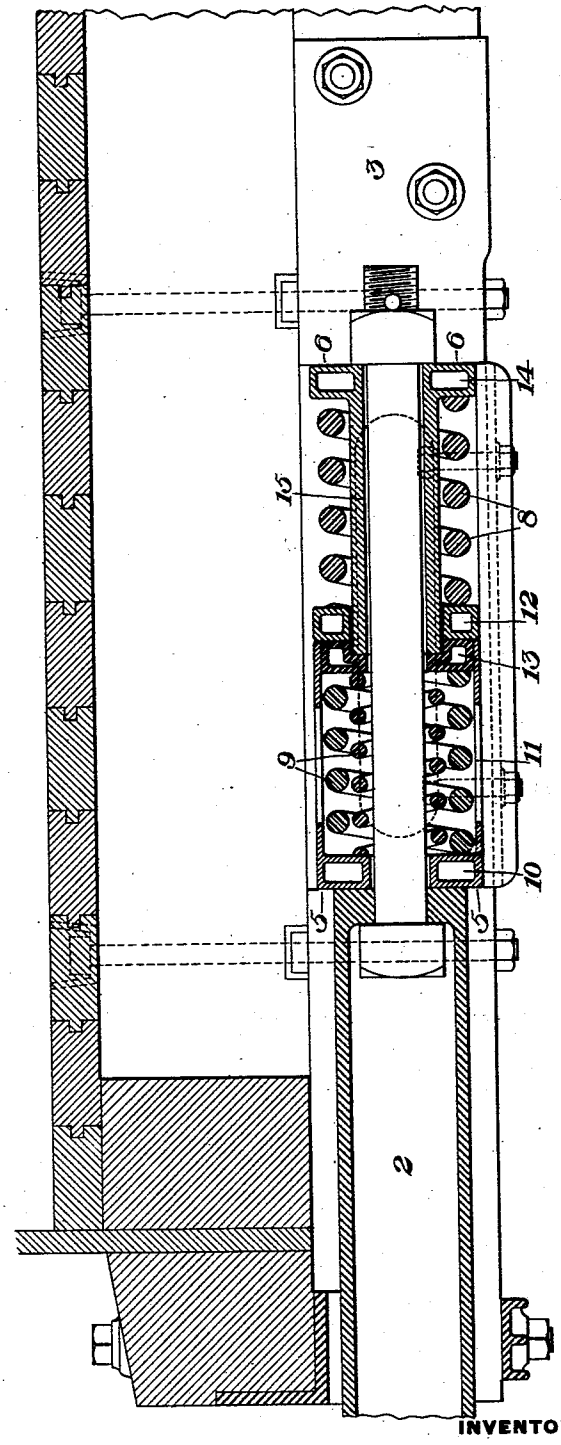

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM CASE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO.

DRAFT-RIGGING.

SPECIFICATION forming part of Letters Patent No. 564,867, dated July 28, 1896.

Application filed April 14, 1896. Serial No. 587,521. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CASE, of Chicago, in the county of Cook and State of Illinois, 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—

Figure 1 is a sectional side elevation of my improved draft-rigging. Fig. 2 is a plan view, partly in section. Fig. 3 is a cross-section on the line III III of Fig. 2. Fig. 4 is a cross-section on line IV IV of Fig. 2. Fig. 5 is a perspective view showing the traveler, followers, and the springs separated. Fig. 6 is a sectional side elevation of a modified construction of draft-rigging, showing the tail-bolt.

In the drawings, 2 represents the shank of a draw-bar applied to a car.

3 and 4 are the draft-irons secured to the draft-timbers 3′ 4′ on opposite sides of the draw-bar and formed with lugs 5 5 and 6 6, between which the followers of the spring are set.

7 is a strap or yoke of U form, the branches of which are bolted or riveted to the draw-bar and extend thence parallel to each other. This strap is preferably a malleable-iron casting formed with longitudinal ribs, as shown in the drawings. Instead of the yoke, a tail-bolt extending from the draw-bar and passing axially through the springs and through the stem 15, hereinafter described, may be used for the same purpose, which is to afford means for drawing upon and compressing the springs when a pulling strain is put upon the draw-bar.

8 and 9 are the coiled springs of the draft-rigging. These are set in tandem between the legs of the strap and in line with each other, and one of the springs, 9, is preferably double, being composed of two concentric helices. The forward end of the spring 9 abuts against a follower or traveler 10, having a preferably integral connecting-box 11, whose annular end 11′ bears against a follower 12, which is interposed between the springs 8 and 9 and is separate from but bears against the end of the box 11. A loose annular follower 13 is interposed between the follower 12 and the rear end of the spring 9. At the rear end of the spring 8 and abutting against the same is a plunger-head or follower 14, which at its rear side bears against the strap 7. This head has a longitudinal stem 15 extending lengthwise within the axis of the spring and through the follower 12 between the legs of the strap, bearing at its forward end against the follower 13.

The operation of the device is as follows: When a buffing impact is imparted to the draw-bar, it is transmitted directly to the traveler 10 and moves it rearwardly, compressing the spring 9, and, through the box 11 and follower 12, also compressing the spring 8, which, pressing upon the head 14, transmits the strain ultimately to the lugs 6 of the draft-irons. During such motions the follower 12 moves telescopically over the stem 15, and the force applied to the follower 13 through the spring 9 is transmitted directly by the stem 15 and head 14 to the lugs 6. I therefore obtain in buffing the advantage due to the independent compression of the two springs.

When a pulling strain is imparted to the draw-bar, it is transmitted by the strap 7 to the head 14, and the latter moving forward compresses the spring 8, the tension of which is transmitted by the followor 12 and box 11 to the traveler 10, and thereby to the lugs 5 5 of the draft-irons. Simultaneously the forward motion of the stem 15, which bears at its end upon the follower 13, will compress the spring 9, the tension of which is transmitted directly to the traveler 10 and thereby to the lugs 5 5. It is apparent, therefore, that I thus obtain in pulling as well as in buffing a telescopic action of the parts and independent compression and action of both springs 8 and 9.

It will be noticed that the spring-compressing parts of the device are essentially two in number, one composed of the traveler or follower 10, box 11, and follower 12, which might be rigidly fixed together, and the second composed of the head or follower 14, the stem 15, and follower 13, which might be fixed together, except that such construction would be inconvenient, and that of these two parts each bears against an end of each of the

springs and that they act by moving reciprocally in opposite directions. The box form of the part 11 is very desirable, though not essential to my broader claims. It may be made in the form of an open cage. It receives the spring 9, acts as a cylinder and guide for follower 13 at the end of the stem 15, which fits and moves within the longitudinal hole in the box, and is itself movable and guided in its movement between the draft-irons or draft-timbers. For the latter purpose it is made square or angular and the head 14 is also made angular.

A valuable feature of the device is that it can be used either with a strap or with a tail-bolt, for the wearing parts are constructed so as to be movable between the legs of the strap and are formed with longitudinal holes extending in line with the axes of the springs for insertion of a tail-bolt.

Instead of making the draft-irons with the lugs 5 and 6 formed on the same casting they may be made in separate pieces, and, in fact, lugs and draft-irons of any other suitable form may be employed in conjunction with the parts of the rigging which I have described above. I illustrate, however, a novel construction of the draft-irons, in that in front of the lug 5 and back of the lug 6 these irons are cast hollow, as shown, so as to give a double wall of metal at these points. The strength and durability of the draft-iron are thus very much enhanced.

The simplicity of the parts of my invention is notable. I need only to use one set of straps or one tail-bolt, and the number of necessary parts of the device is reduced to a minimum.

I claim—

1. A draft-rigging having springs arranged in tandem, followers at the ends of the springs intermediate followers, and connections from the end followers to the intermediate followers respectively, one of said connections extending outside and the other extending inside the springs.

2. A draft-rigging having springs arranged in tandem, and a box or cage which is fitted around one of said springs and bears at the end against the other, thus serving to compress both springs, and an end follower having a stem passing through one spring and entering the box to bear against the spring therein.

3. A draft-rigging having springs arranged in tandem, and a box or cage which is fitted around one of said springs and bears at the end against the other, thus serving to compress both springs, said box or cage abutting against the draw-bar but unattached thereto.

4. A draft-rigging having springs arranged in tandem, followers at the ends of the springs, intermediate followers, and connections from the end followers to the intermediate followers respectively, one of said connections extending inside the spring and being integral with its follower.

5. In a draft-rigging the combination of a head and its stem, a spring surrounding the stem, a follower for the stem, a second spring bearing against said follower, and a box or cage within which the second spring is inclosed and which serves as a guide for said follower.

6. The combination of a head 14, having a stem 15, a spring 8 around the same, a box or cage 11 containing a spring 9, a follower 13 in the box against which the stem bears, and a follower 12, which transmits pressure between the box and the spring 8.

7. The combination of a head 14, having a stem 15, a spring 8 around the same, a box or cage 11 containing a spring 9, a follower 13 in the box, and a follower 12 which transmits pressure between the box and the spring 8, the box and head being fitted to move between draft irons or timbers.

8. A draft-rigging comprising two parts movable telescopically in both directions and having a spring on each part with means for compressing both springs by motion of the parts in either direction.

9. A draft-rigging having springs arranged in tandem, end followers and intermediate followers, all adapted to move between the legs of a connecting-strap, and connections from the end followers, to the intermediate followers, said parts having a continuous central longitudinal hole, whereby a tail-bolt or strap may be used interchangeably.

10. The traveling box or cage 11, having a longitudinal hole for receiving a spring and adapted to move lengthwise in compressing the spring.

11. The traveling box or cage 11, having a longitudinal hole for receiving a spring and adapted to move lengthwise in compressing the spring, and in combination with a follower and stem for compressing the spring.

In testimony whereof I have hereunto set my hand.

WILLIAM CASE.

Witnesses:
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CLAYTON MARK.