

No. 653,075.

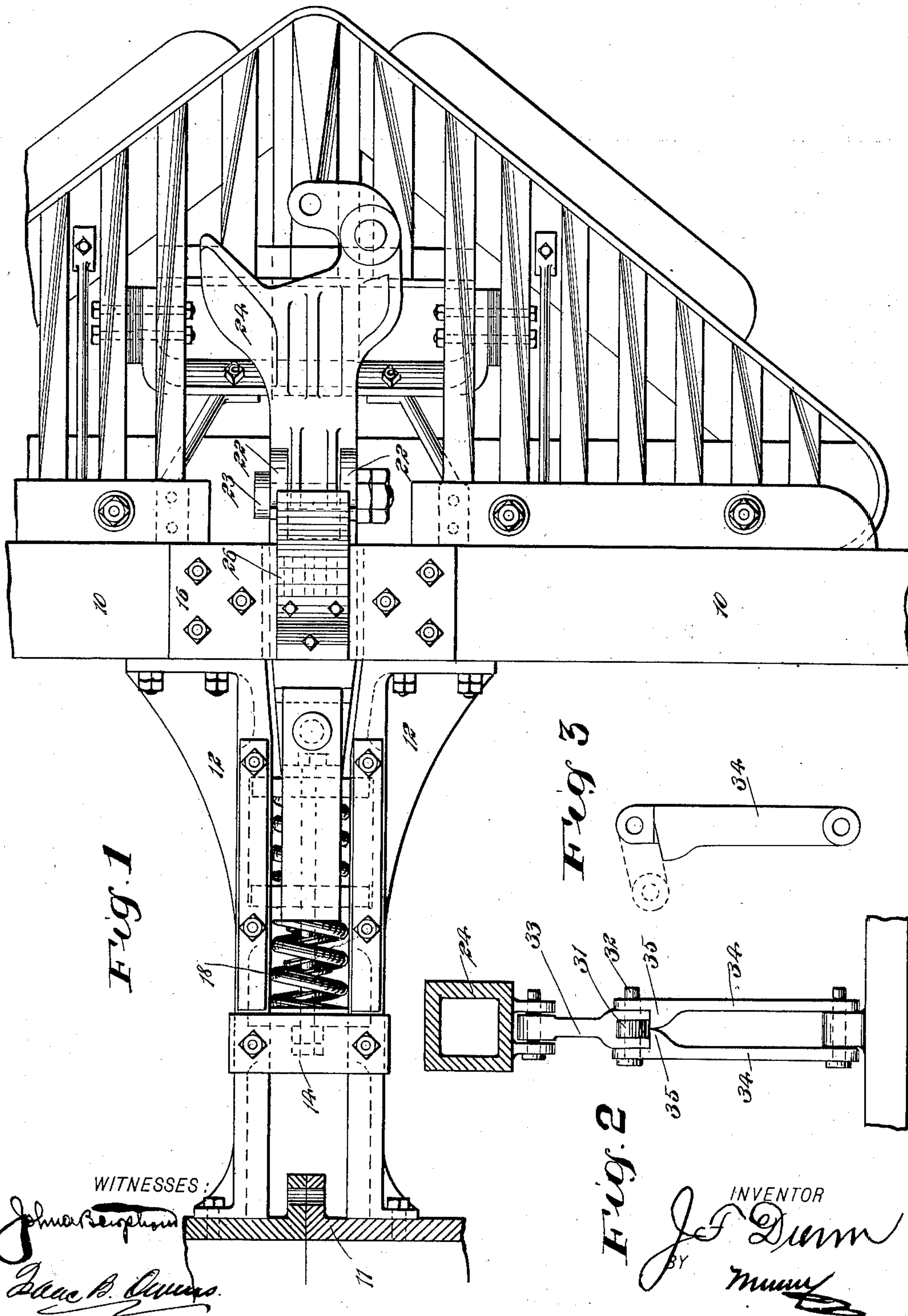
Patented July 3, 1900.

J. F. DUNN.  
LOCOMOTIVE PILOT RIGGING.

(Application filed Aug. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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Fig. 2

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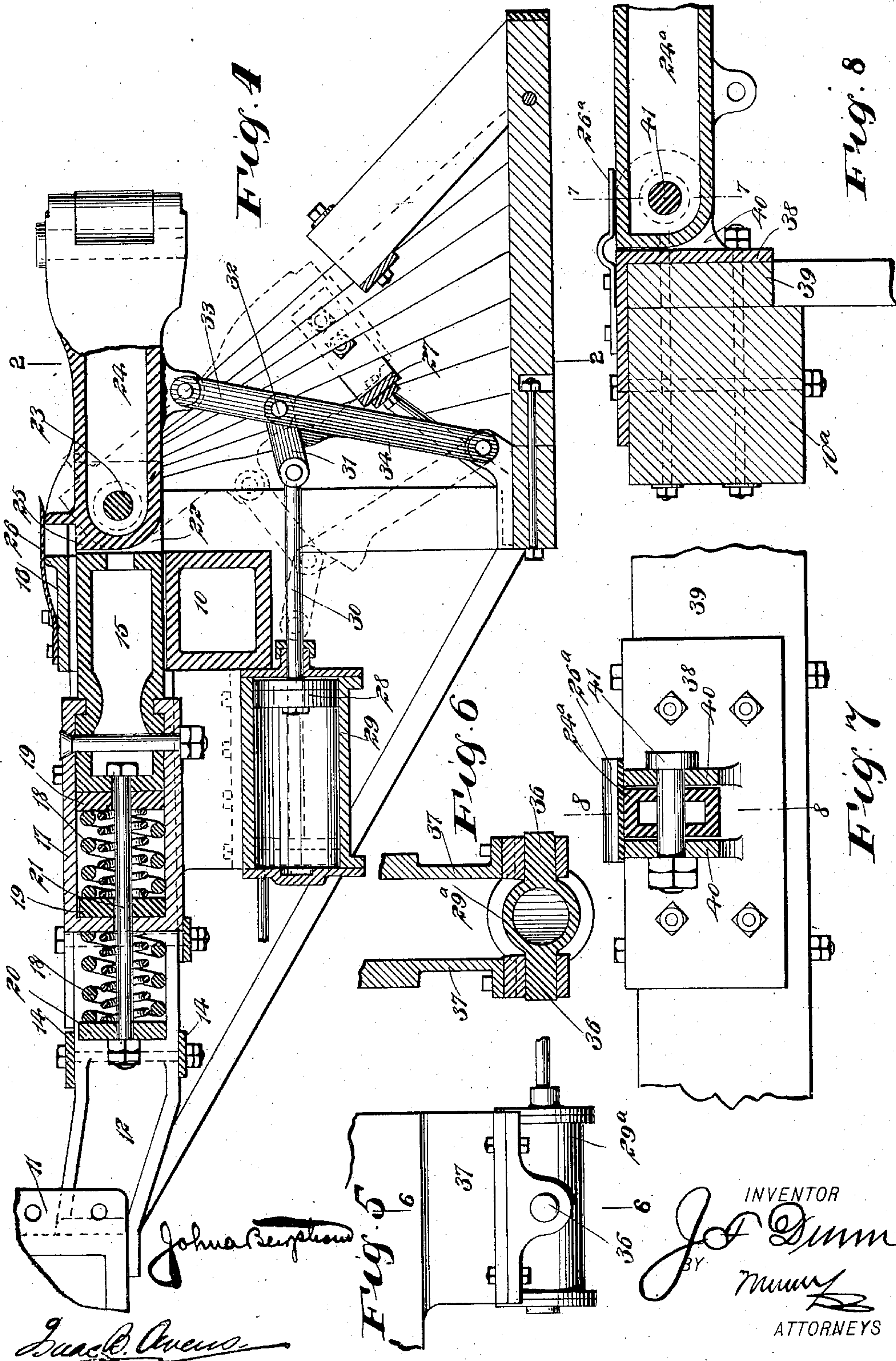
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# UNITED STATES PATENT OFFICE.

JAMES F. DUNN, OF SALT LAKE CITY, UTAH.

## LOCOMOTIVE-PILOT RIGGING.

SPECIFICATION forming part of Letters Patent No. 653,075, dated July 3, 1900.

Application filed August 29, 1899. Serial No. 728,905. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. DUNN, of Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and Improved Locomotive-Pilot Rigging, of which the following is a full, clear, and exact description.

This invention relates to means for mounting a coupler on a locomotive-pilot or front of a locomotive so that the coupler may be raised to operative position or lowered into line with the face of the pilot, thus permitting the pilot to operate effectively, the invention also embodying a novel means of mounting the coupler draw-head, such means serving to brace the buffer-beam against the cylinder-saddle.

This specification is the disclosure of one form of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 4. Fig. 3 is an inner side elevation of one of the toggle-links which support the coupler. Fig. 4 is a vertical longitudinal section of the invention. Fig. 5 is a fragmentary view showing a modified manner of arranging the air-cylinder. Fig. 6 is a section on the line 6 6 of Fig. 5. Fig. 7 is a sectional view on the line 7 7 of Fig. 8, the view showing a different manner of attaching the draw-head to the buffer-beam; and Fig. 8 is a sectional view on the line 8 8 of Fig. 7.

The buffer-beam 10 is braced against the cylinder-saddles 11 by means of draw-bar stops or brackets 12, which are bolted to the buffer-beam and to the cylinder-saddles. The draw-bar stops or brackets 12 are provided with cross-braces 14, secured between them and serving to hold the draw-bar stops spaced apart. The draw-head 15 is mounted in a transverse opening in the buffer-beam and held in place by a plate 16, bolted down on top of the buffer-beam. The rear portion of the draw-head projects between the stops or brackets 12 and has a yoke 17 attached thereto, the yoke working with tandem springs

18, the forward of which is held by follower-plates 19, the follower-plates 19 being guided to move longitudinally of the engine between the stops or brackets 12 and being embraced by the yoke 17. The rear spring 18 bears against the yoke 17 and against a plate 20, extending across between the stops or brackets 12. A longitudinal bar 21 extends from the draw-head 15 to the plate 20, the bar passing loosely through the follower-plates 19, as shown.

By means of the draw-bar stops or brackets 12, attached to the cylinder-saddles and to the buffer-beams, as shown, the draft-rigging is effectively and properly supported and at the same time the buffer-beam is braced directly against the saddles of the cylinder.

The draw-head 15 has two lugs 22 formed in the front end thereof, between which lugs is pivoted on a bolt 23 the coupler-head 24, which has a shoulder 25 at its inner end, limiting the upward movement of the coupler-head, such shoulder, together with the toggle-links hereinafter described, preventing the coupler from springing upward beyond the horizontal position shown. A spring-plate 26, mounted on the plate 16, projects forwardly over the rear end of the coupler-head to prevent the passage of foreign material of any sort downward between the coupler-head and the draw-head. The coupler-head is capable of swinging downward to the position indicated by dotted lines in Fig. 4, in which position it will lie in the plane of the front pilot-bar and will therefore not interfere with the action of the pilot-bar in casting objects off the track. A U-shaped saddle-bar 27 is bolted to the pilot-bars and extended transversely below the same to form a seat in which the coupler-head is received when thrown down to the dotted position shown in Fig. 4. The front bars of the pilot are cut away, as indicated, to receive the coupler-head.

The coupler-head is operated by a piston 28, working in an air-cylinder 29, operated by the engineer in the engine-cab, from the main reservoir of the locomotive, or by steam from the boiler, if air is not available. This cylinder 29 is fastened below the front deck of the locomotive, behind the pilot, and has



a piston-rod 30 in connection with a short link 31, which, as best shown in Fig. 2, is joined to the pivot 32 of a link 33, pivoted to the coupler-head, and of two matching links 34, pivoted to the heel of the pilot. By throwing these links 33 and 34 outward, which inclines them to a vertical position, as shown by full lines in Fig. 4, the coupler-head 24 will be raised, and by throwing the links 33 and 34 inward, as indicated by the dotted lines in such view, the coupler-head will be thrown downward, as previously explained. For the purpose of limiting the outward movement of the links 33 and 34 and also for preventing lateral strain on the piston-rod 30 I provide the two matching links 34 with shoulders 35, which project rearwardly and inwardly in the path of the link 31, so as to be engaged by such link as the links 33 and 34 approach their outer position. These lugs or shoulders 35 prevent these links from swinging downward to the position shown in Fig. 4, and consequently the lateral strain on the rod 30 is avoided.

If desired, the link 31 may be dispensed with and the rod 30 connected directly with the pivot 32 of the links 33 and 34, in which case the cylinder 29<sup>a</sup> (see Figs. 5 and 6) is mounted to oscillate, the cylinder having trunnions 36 mounted in hanger-bearings 37, depending from the engine-frame draw-bar stops 12 or bumper-beam. Then as the links 33 and 34 are thrown the force of the rod 30 is transmitted directly to the links and the cylinder is oscillated to account for the play which is made necessary by the movements of the links 33 and 34.

In engines constructed with a low buffer-beam and in which it is desired to mount the coupler-head in the highest possible position relative to the buffer-beam or where draft-springs are not desired I provide the angular casting 38. (Shown in Figs. 7 and 8.) This casting is fastened rigidly to the buffer-beam 10<sup>a</sup> and to the cap 39 of the pilot. The angular casting 38 has lugs 40 projecting forwardly therefrom, in which lugs is mounted a bolt 41, carrying the coupler-head 24<sup>a</sup>, as shown. A spring-plate 26<sup>a</sup> is mounted over the coupler in a manner essentially the same as the plate 26 previously described, and the pivoted coupler-head 24<sup>a</sup> is adapted to be raised and lowered by mechanism such as has been explained.

It will be understood that the air-pressure within the cylinder 29 may be maintained whenever desired, thus supplying a continuous pressure, which acts against the links 33 and 34 to hold them in extended position; but even without the air-pressure they would be held in extended position by the shoulders

35 on the toggle-links 33 and 34 hereinbefore described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a pivoted coupler-head, toggle-links having connection therewith to raise and lower the same, and means in connection with the toggle-links for throwing them.

2. The combination of a pivoted coupler-head adapted to move vertically on a horizontal axis, toggle-links mounted beneath the coupler-head and engaging therewith to raise and lower the same, and means for throwing the toggle-links.

3. The combination of a coupler-head pivotally mounted and movable vertically, toggle-links mounted beneath the coupler-head and connected therewith to raise and lower the same, and a cylinder and piston, the latter having a rod in connection with the toggle-links to impart movement thereto.

4. The combination with the pilot of a locomotive, of a coupler-head pivotally mounted at the top thereof, toggle-links respectively pivoted to the coupler-head and to the heel of the pilot, the toggle-links being connected with each other and movable forward and backward to raise and lower the coupler-head, and means in connection with the toggle-links for moving the same.

5. In a locomotive, the combination of a buffer-beam, draw-bar stops or brackets attached to the buffer-beam and extending rearwardly to and having connection with the cylinder-saddles, and coupler mechanism held by the draw-bar stops or brackets.

6. In a locomotive, the combination of a buffer-beam, cylinder-saddles, draw-bar stops or brackets extended between and fastened to the buffer-beam and cylinder-saddles, and coupler mechanism having portions held by the stops or brackets.

7. In a locomotive, the combination with the pilot having an opening in the front thereof, of a coupler-head pivotally mounted on the locomotive and capable of swinging downward into the opening in the pilot to lie below the surface of the pilot, and a saddle-bar having its ends fastened rigidly to the pilot-bars and extending transversely below the pilot across the opening therein, to form a seat in which the coupler-head is received when thrown down into the opening in the pilot.

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Witnesses:

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