

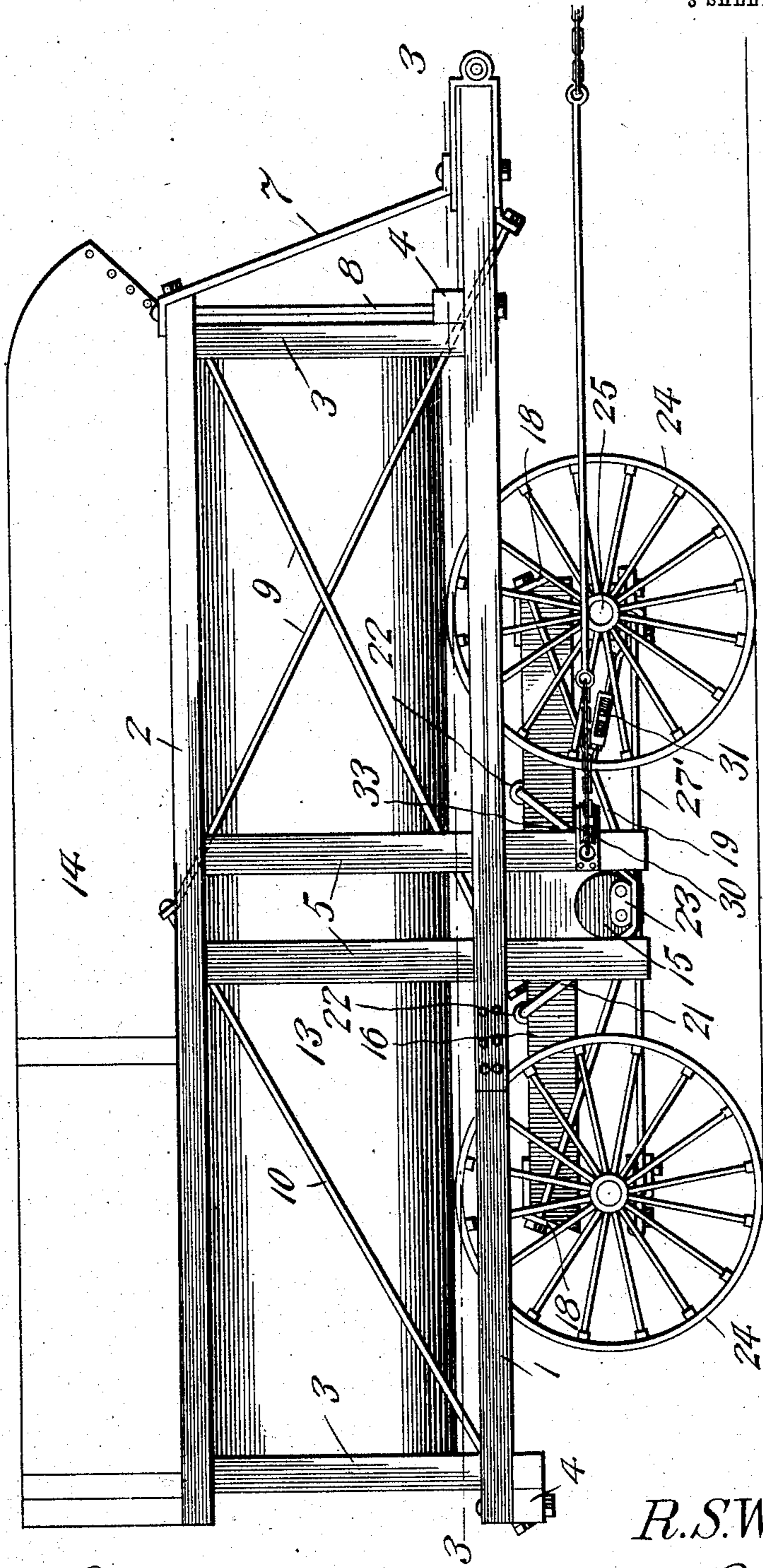
No. 842,739.

PATENTED JAN. 29, 1907.

R. S. WHITE, JR.
TENDER FOR TRACTION ENGINES.
APPLICATION FILED JULY 18, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



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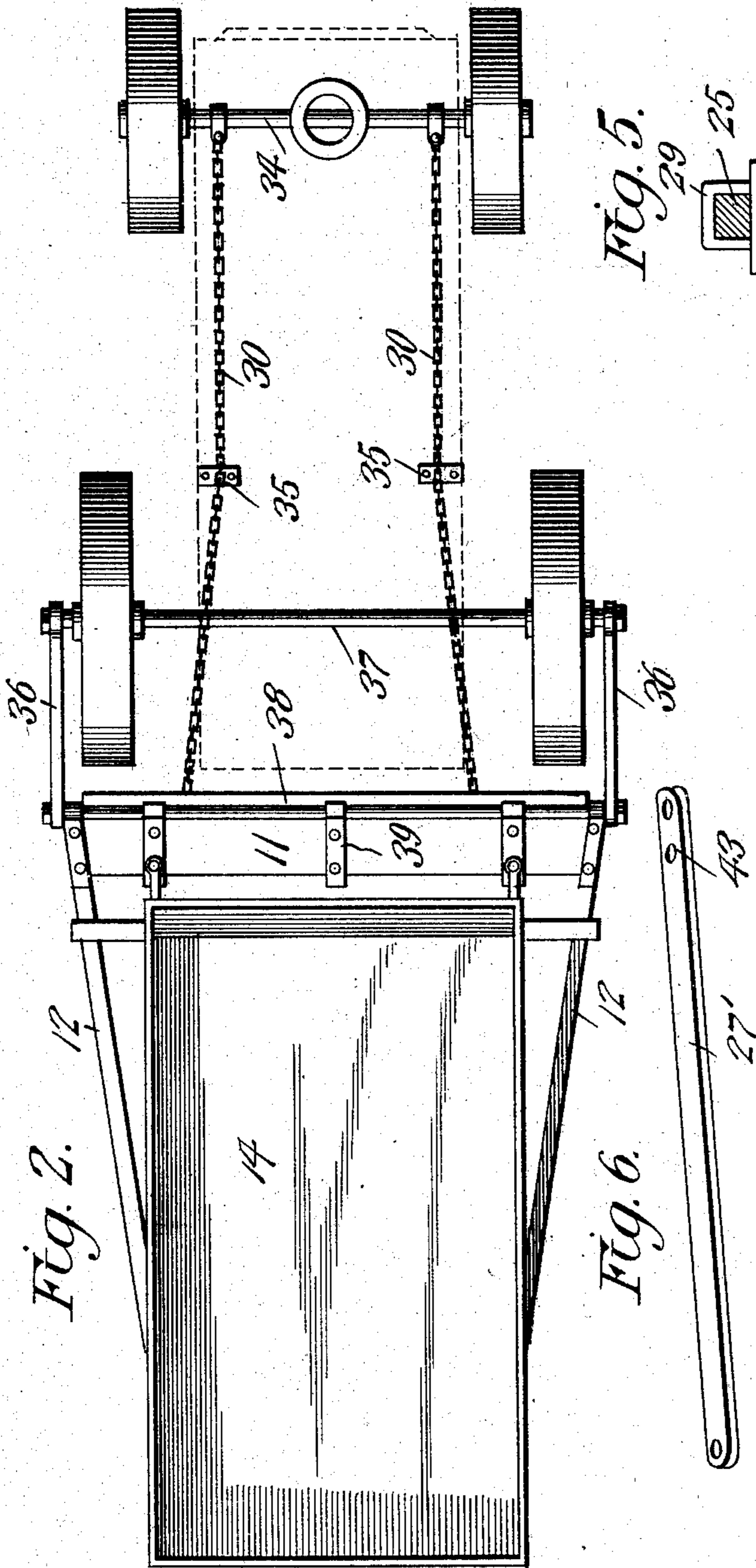


Fig. 5.



Fig. 4.

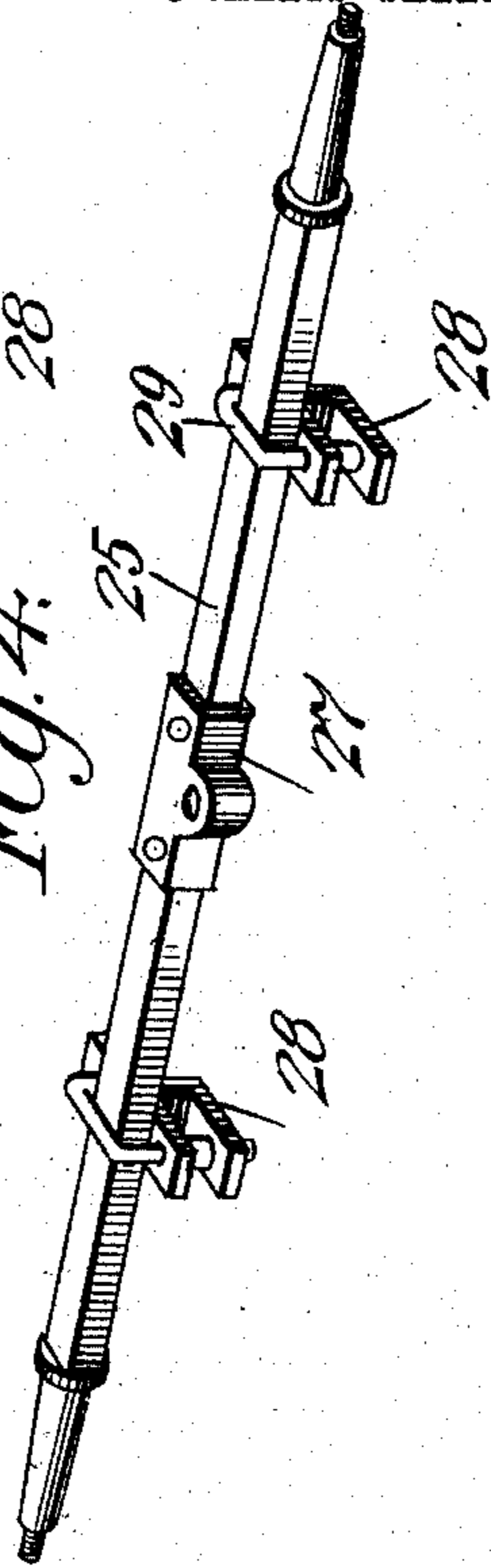
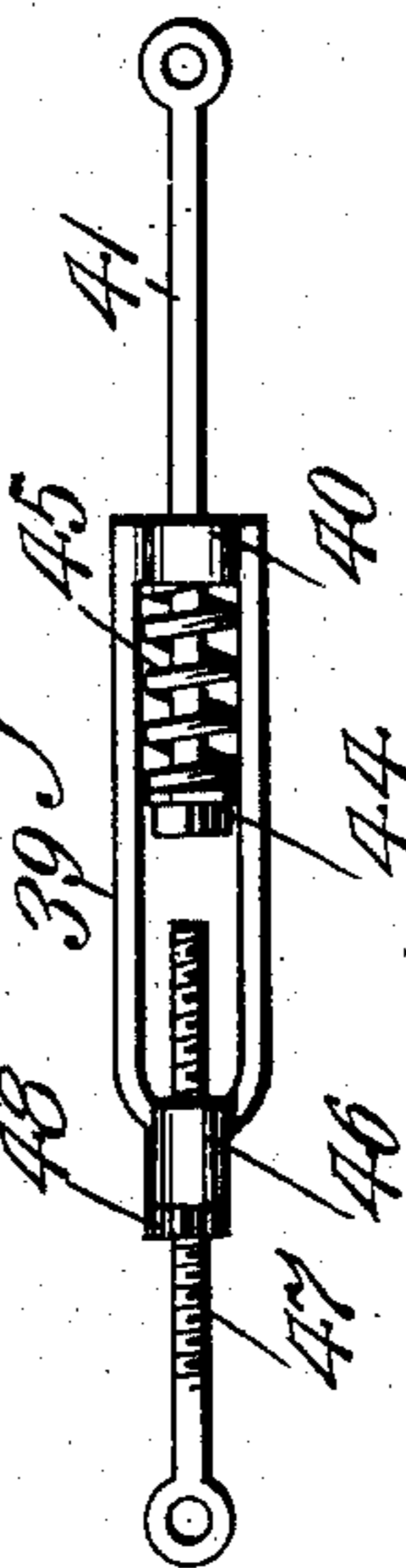


Fig. 7.



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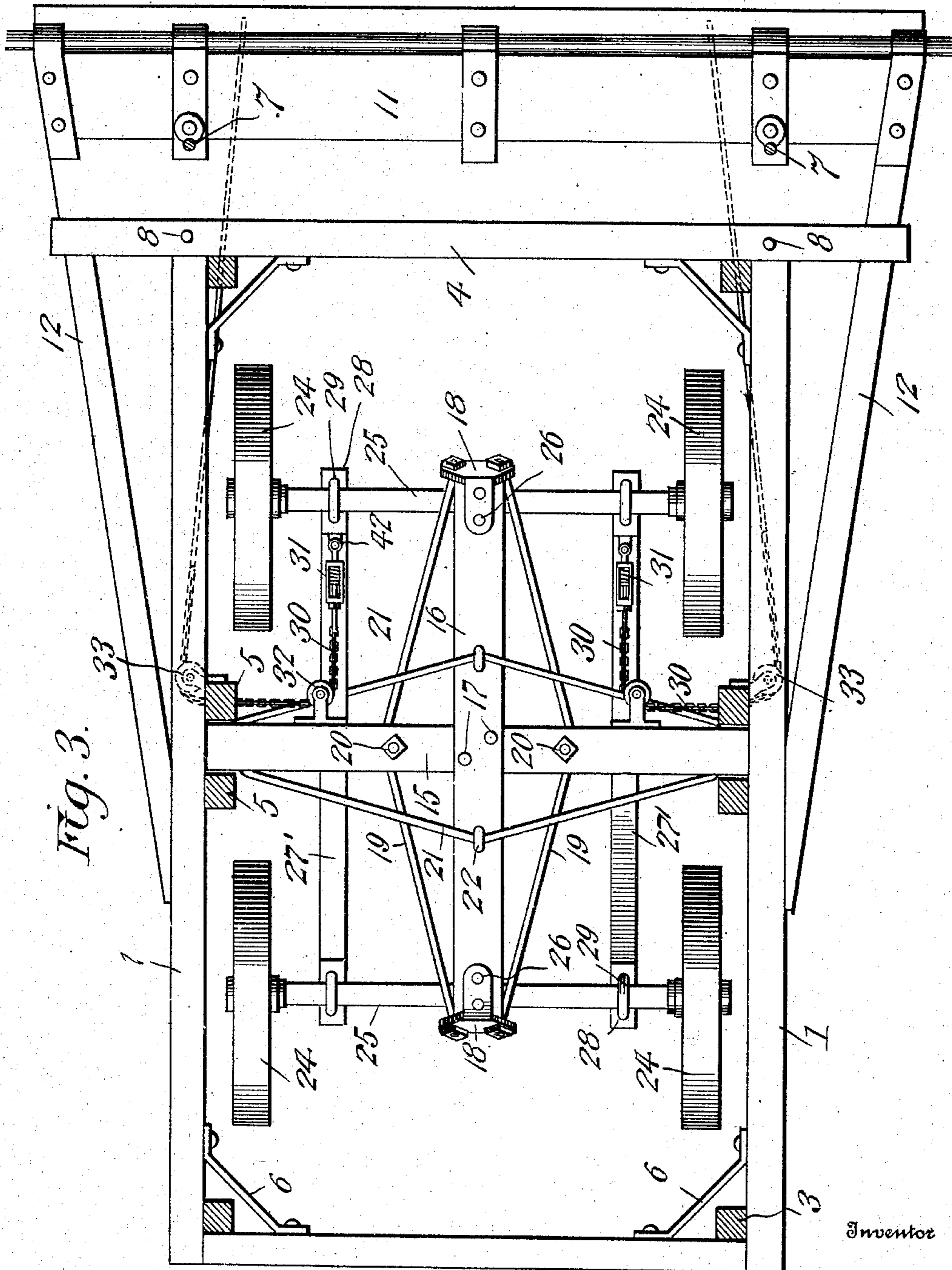
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3 SHEETS—SHEET 3.



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TENDER FOR TRACTION-ENGINES.

No. 842,739.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed July 18, 1906. Serial No. 326,728.

To all whom it may concern:

Be it known that I, ROBERT S. WHITE, Jr., a citizen of the United States of America, residing at Osceola, in the county of Custer and Territory of Oklahoma, have invented new and useful Improvements in Tenders for Traction-Engines, of which the following is a specification.

This invention relates to tenders for traction-engines, and particularly to an improved construction of tender and improved means for connecting the supporting and steering wheels of the tender to the steering-axle of the engine.

The invention consists of the novel features of construction, combination, and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a tender embodying my invention. Fig. 2 is a top plan view showing the steering connections between the tender and engine, the body of the latter appearing in dotted lines. Fig. 3 is a sectional plan view of the tender, taken substantially on line 3 3 of Fig. 1. Fig. 4 is a view of one of the axles of the tender. Fig. 5 is a cross-section thereof, showing the link-stirrup and mode of connecting the same with the axle. Fig. 6 is a view of one of the links of the tender-truck. Fig. 7 is a detail view of one of the spring-couplings of the steering chains or cables.

In accordance with my invention the frame of the tender is composed of longitudinal bottom bars or sills 1, upper longitudinal bars 2, and end standards or corner-posts 3, suitably fastened to and connecting said bars, together with front and rear cross-bars 4 and opposite pairs of central standards 5, fastened to the top and bottom longitudinal bars and projecting below the latter, as clearly shown in Fig. 1. Corner-braces 6 connect and tie the bars 1 and 4, while front braces 7 and 8, respectively, connect the top longitudinal bars with the extended forward ends of the bars 1 and with the front cross-bar 4. Crossed bracing rods or bars 9 are disposed upon each side of the frame and pass through and join the bars and standards 1, 2, 3, and 5 at the forward half of the frame, while a diagonal brace rod or bar 10 couples the upper rear end of one of the rods 9 and the central portion of the upper cross-bar 2 with the adjacent rear standard 3 and rear cross-bar 4. By this construction the

elements of the frame are firmly and securely joined and braced. The extended forward ends of the sills 1 support a board deck or platform 11, which carries the means for coupling the tender to the rear axle of the engine, as hereinafter described. To effectually stay this platform, which projects at each end beyond the sides of the frame, the front cross-bar 4 is extended and connected with forwardly-diverging brace-bars 12, secured to the sills 1 immediately in rear of the standards 5 and having their forward ends arranged to form supports for the platform. The frame incloses and supports a water tank or reservoir 13, upon which is superposed a holder or hopper 14 for fuel, such as coal.

The tender is supported upon a truck comprising a cross-bar 15, to which is bolted or otherwise secured a reach-bar 16, as indicated at 17. Upon the ends of the reach-bar are brackets 18 pierced for connection with truss bolts or rods 19. These truss bolts or rods are arranged on opposite sides of the reach-bar and intermediately connected with the cross-bar by fastenings 20 and are approximately of V form or otherwise shaped to form, with the brackets 18, a substantially diamond frame to rigidly connect and hold the bars from relative movement. The ends of the cross-bar 15 fit between the lower extended ends of the intermediate standards 5 and are suitably fastened thereto, thus supporting the frame upon the truck. Truss braces or bolts 21, similar in form to the braces 19, are arranged in front and rear of the bar 15 and intermediately fastened to the reach-bar, as indicated at 22, the ends of said bolts being bent downwardly and fastened to stay pieces or brackets 23, secured to the ends of the cross-bar 15, as clearly shown in Fig. 1, thus forming, with the rods or bolts 19, a pair of substantially diamond braces arranged at right angles to each other and serving to firmly and rigidly connect and brace the truck-bars against all strains.

The supporting-wheels 24 of the tender are mounted upon front and rear transverse axles 25, pivoted to the front and rear ends of the reach-bar by bolts 26, passing through eyes 27 on the axles and serving also incidentally as part of the fastening means for the brackets 18. The ends of the axles are connected for movement in unison by links 27', pivoted to stirrup-brackets 28, secured to the axles by clips 29. Steering chains or cables 30 are

connected at their rear ends to the stirrups of the front axle or forward ends of the links 27' by spring-couplings 31, and thence pass rearwardly and laterally around the guide-pulleys 32 and 33, mounted on the cross-bar 15 and sills 1, and thence project forwardly for connection with the front axle 34 of the engine 35. The axle 34 may be turned in practice for steering purposes by any ordinary construction of steering-gear, and the chains or cables are connected at their forward ends thereto on opposite sides of the pivotal connection thereof and extend beneath the engine through suitable guides 35, arranged adjacent the forward end of the fire-box. The connections between the engine and tender are completed by the use of draft-links 36 pivotally connecting the rear axle 37 of the engine with a draft rod or pipe 38, mounted in hanger-straps 39, secured to the platform 11. These links adapt the engine and tender to have relative vertical play in passing over irregular surfaces without the transferral of strain from one to the other. When the steering-axle 34 is swung in one direction or the other to steer the engine, motion will be communicated through the draft chains or cables to swing the axles of the tender to steer the latter, thus allowing them to have freedom of movement without interference while preventing any material skidding of the engine or tender in making a turn. As the tender is independently supported upon a four-wheeled truck the weight of the tender and the load carried thereby is relieved from the engine, thus enabling the two vehicles to be more readily and conveniently controlled.

Each spring-coupling 31 comprises a guide-frame 39, provided at its forward end with an eye 40, through which slides a coupling rod or bolt 41, pivotally connected by a bolt 42 with the underlying link 27', the bolt passing through an aperture 43 in said link. The rear end of the bolt 41 carries a nut or head 44, and surrounding the bolt between said head and the guide 40 is a coiled spring 41. The rear end of the frame 39 is provided with a threaded bearing 46 for a coupling-bolt 47, having a terminal eye connected with the end of the chain or cable 30. A nut 48 is applied to the bolt 47 to lock it against movement after it has been adjusted to the desired extent in the bearing 46. By this construction the spring-coupling may be adjusted to take up slack in the chain or cable, and as the frame 39 slidably engages the bolt 41 it will be seen that the pull upon the chain or cable will be gradually transmitted to the link 27', thus relieving the parts from strain. Furthermore, the couplings act in the nature of elastic sections in the steering chains or cables to avoid any liability of breakage of the steering connections from sudden shocks, jars, or strains.

The structure described provides a tender

which is strong and durable and convenient to control while being transported by the engine from place to place, and whereby the engine is relieved from undue weight and the interferences caused by the use of the constructions of tenders and coupling connections commonly employed.

Having thus described the invention, what is claimed as new is—

1. A tender having a truck comprising a rigid frame, axles pivotally connected with the frame, links connecting the axles for movement in unison, steering chains or cables, and elastic couplings connecting said chains or cables with the axles.

2. A tender having a truck comprising a rigid frame, front and rear axles pivoted to the frame, links connecting said axles for movement in unison, guides in rear of the front axle, and draft chains or cables having looped ends passing around the guides and connected forwardly of the guides to the front axle.

3. A tender having a truck comprising a rigid frame, front and rear axles pivoted to the frame, links connecting said axles for movement in unison, guides in rear of the front axle, steering chains or cables having looped rear ends engaging the guides, and spring-couplings connecting said chains or cables with the front axle.

4. A tender having a truck comprising a rigid frame and turning-gear, said turning-gear comprising front and rear wheeled axles pivoted to the frame and connected for movement in unison, guides forward of the rear axle, chains or cables having a looped engagement with the guides, and spring-couplings connecting said chains or cables with the forward portion of the turning-gear.

5. A tender having a truck comprising a cross-bar and a reach, right-angularly arranged trusses connecting the respective ends of the cross bar and truss and rigidly uniting the same, front and rear axles pivoted to the reach, links connecting said axles for movement in unison, and steering devices for swinging the axles.

6. The combination with an engine having a front steering-axle, of a tender provided with a truck having front and rear wheeled axles connected for movement in unison, and steering-cables connected with the steering-axle of the engine, and the front steering-axle of the truck.

7. The combination with an engine and tender, of draft-links connecting the tender with the rear axle of the engine.

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

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Witnesses:

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