No. 704,716. Patented July 15, 1902.

W. G. SWAN.

DRAFT RIGGING FOR CARS.

(Application filed Dec. 12, 1901.)

(No Model.)

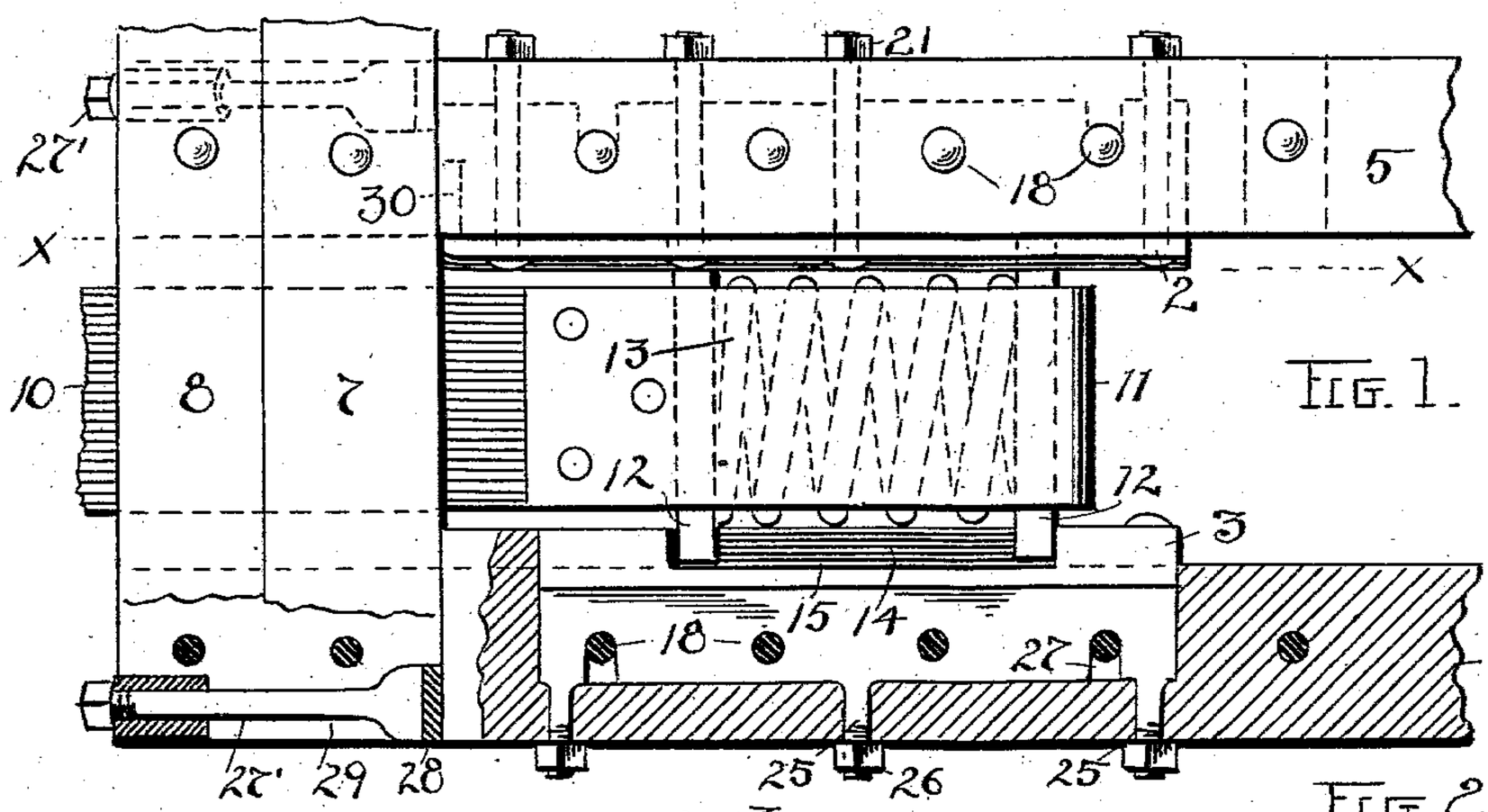
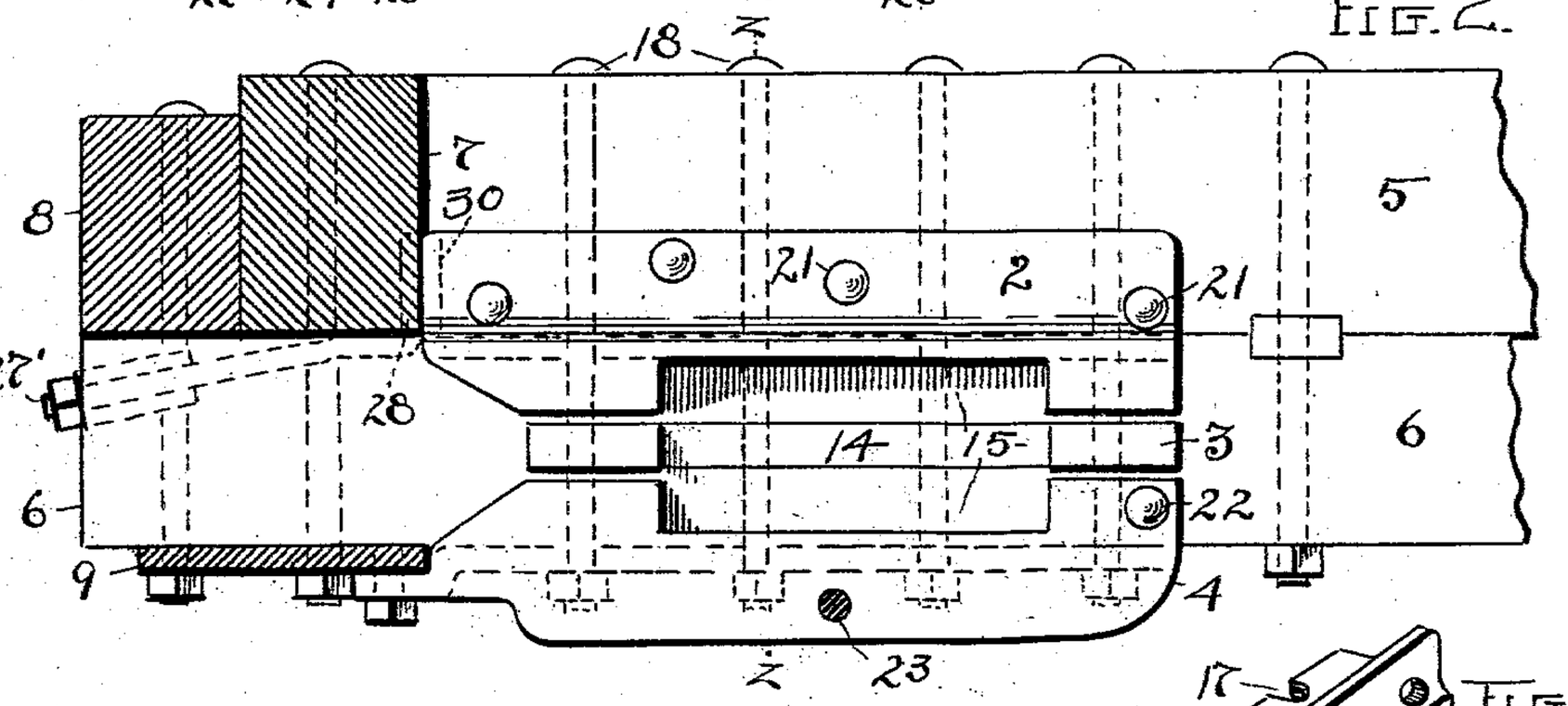


FIG. 1.

FIG. 2.



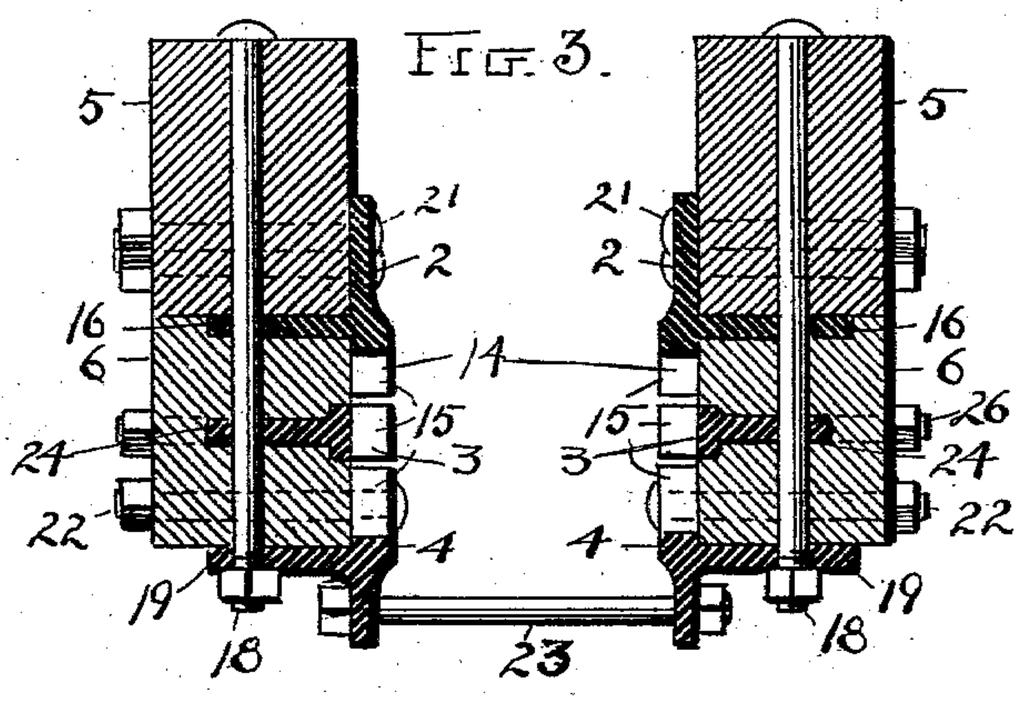


FIG. 3.

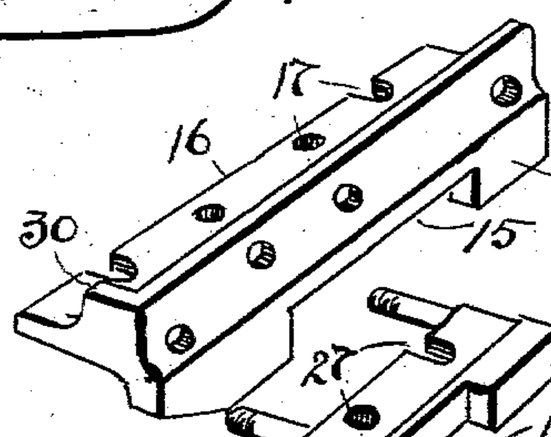


FIG. 4.

FIG. 5.

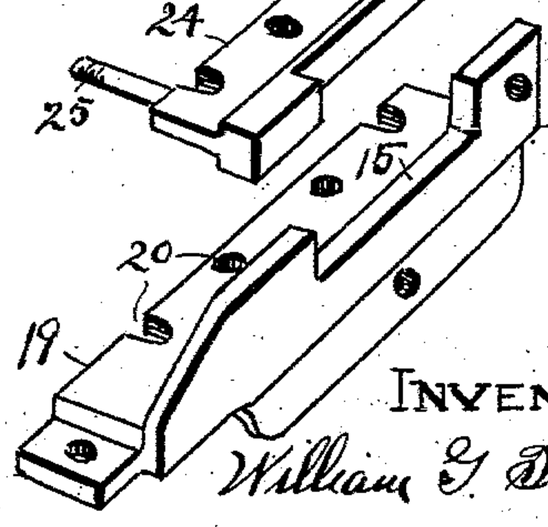


FIG. 6.

ATTEST

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WILLIAM G. SWAN, OF DETROIT, MICHIGAN.

DRAFT-RIGGING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 704,716, dated July 15, 1902.

Application filed December 12, 1901. Serial No. 85,646. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. SWAN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Draft-Rigging for Cars; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in draft-rigging for cars; and the improvement consists in the construction and arrangement of parts, all as hereinafter shown and described, and more particularly pointed out in the claims.

The object of the improvement is to provide a draft-rigging construction which is simple and strong and adapted to be fastened together in such a manner as will equalize the strain, minimize the danger of breakage of the draft-timbers and draft-rigging when under excessive working conditions, and give ready accessibility for repairs.

In the accompanying drawings, Figure 1 is a plan view of my improved draft-rigging, partly broken away at places and with the coupling end of the draw-bar also broken away. Fig. 2 is a sectional view on line *x x*, Fig. 1, showing an inner face view of the sectional supporting parts at one side. Fig. 3 is a cross-section on line *z z*, Fig. 2, with the draw-bar and followers removed. Figs. 4, 5, and 6 are perspective views of the separate draft-rigging parts as used at each side of the draw-bar to support and guide the followers.

The draft-rigging parts that enter more especially in my improvement are designated by 2, 3, and 4, respectively, and these parts are in duplicate and are mounted opposite each other upon parallel faces of the pair of draft-sills 5 and draft arms or timbers 6, supported and bolted beneath sills 5. The draft-sills have the usual end sill 7, with the head or bumping-block 8 at the front, and a cross-strap 9 between draft-arms 6 below said end sill and block and between which the draw-bar is confined. A draw-bar 10, having a strap 11 at its rear end, is provided with followers 12, between which a heavy coil-spring 13 is placed and which spring takes the strain of the pull or push of the load acting through the followers and the sectional supporting members or parts for the followers. The ends of the followers are confined within a pocket 14, which pocket is obtained by the joint arrangements of the sectional parts 2, 3, and 4, each of said parts having a longitudinal opening 15 in their inner face and edge. Part 2 or the upper member is T-shaped and has a flange 16, which is inserted and held between sills 5 and 6, openings and holes 17 being formed at the edge end in said flange to engage tie-bolts 18, which secure the said sills together. The part 4 or the lower member is of substantially the same shape as the upper member, but is reversed, in that opening 15 is at its top. Its flange 19 is adapted to come flush with the bottom of draft-arm 6, and bolts 18 also serve to hold said member in place through bolt openings and slots 20.

The upper member 2 is provided with a series of cross horizontal bolts 21, which secures the vertical flange of said member upon the inner face of draft-sills 5. These bolts are preferably arranged in staggered relation or out of line horizontally to prevent possible splitting of sill 5. They also serve to prevent splitting of sill 5 along the line of tie-bolts 18. The lower member has only a single cross-bolt 22, which passes through draft-arm 6 and pivotally supports said member at its inner end. The opposite end is supported by a bolt or bolts, which pass through strap 9. A tie-bolt 23 connects the depending flanges of members 4 for further security.

The intermediate member or part 3 has a flange 24, which is embedded in a longitudinal slot in sill 6, and bolt extensions 25 on said flange pass through bolt-holes in said sill to the outer side thereof, where they are engaged by nuts 26. Side slots and openings 27 are also provided in flange 24 of, section part 3 to straddle and engage the vertical bolts 18.

It will be seen that each of the parts 2, 3, and 4 are separably removable, but when in their respective positions are firmly tied together to constitute a complete draft-rigging frame or support for the followers at either side. The advantage of this construction is in that if one or even two of the parts or sectional members is broken the other member

or members can still be relied upon to take the pull and push. This is very desirable, because it prevents the complete breaking down or pulling apart of the rigging-frame before the car reaches its destination or before it is examined, as in the usual run of things. Furthermore, the strain or pull of the draw-bar is more equally distributed to the draft-sills and draft-timbers through said parts 2, 3, and 4. Each sectional member or part is separably removable in the event of breakage without affecting the position or fastenings of the other members, thereby effecting the saving of time and labor when a change or renewal of parts is required. As a further aid for distributing the blow or the pull of the draft-rigging I provide a pair of bolts 27′, having a vertical struck-up flat portion 28, adapted to engage the rear of end sill 7, the bolt 27′ being bent at an angle and resting in a slot or depression 29 in the end of the draft-timber 6. A nut-and-washer sleeve tightens and fastens said bolt in place upon timber 6.

The upper member or part 2 is provided with a vertical rib or lip 30 at its front end, which abuts against the end of the draft-sill 5 and behind end sill 7. This lip 30 is an aid to the tie-bolts in preventing end movement of part 2, and its location is such that sill 5 is not cut into in such manner to weaken said sill. If all the other fastening means should become loose, this lip 30 would still take up the forward or backward movement or end strain.

Each of the following confining members 2, 3, and 4, respectively, take upon themselves the forward-and-backward motion or strain of the load and equally divide it over the draft-sills and timbers. To illustrate, it will be seen that upper member or part 2 is independently supported by being confined between draft-sill 5 and draft-timbers 6, and the end strain on said part is taken up by lip 30, tie-bolts 18, and cross-bolts 21. The direct engagement of tie-bolts 18 with flange 16 dispenses with the use of separate or extra vertical bolts, which, if used, would only tend to weaken the draft-sills and timbers by reason of the extra bolt-holes required therefor. The second or middle member 3 also is held from end movement by tie-bolts 18, with the assistance of bolt extensions 25 on said member. The seating of this member in a longitudinal slot in draft-timber 6 materially assists in taking up the end strain and also strengthens said timber and prevents breakage at this point. The third or lower member 4 combines with the other members in taking up end strains through their common tie-bolt arrangement; but the bottom member is principally to hold the followers up and in place within pockets 14. In case of needed repairs to the coupler, its springs or followers, the mere removal of the nuts at the lower end of tie-rods 18 and the front of lower member 4 will permit said member to swing down and allow the followers or springs to be removed without interfering with or removing the other members.

What I claim is—

1. A draft-rigging comprising the draw-bar and followers, in combination with a pair of draft-sills having separate independent follower confining and supporting members mounted opposite each other upon said sills, and a pair of draft-arms secured to the bottom of said sills having further separate and independent follower confining and supporting members secured oppositely thereto, substantially as described.

2. The draft-sill and draft-arm, in combination with an upper draw-bar-follower-engaging member having lateral flanges adapted to rest between said sill and arm, a lower follower-engaging member bolted to said draft-arm, and an intermediate follower-engaged member embedded within and secured to said draft-arm, substantially as described.

3. In a draft-rigging for cars, the draft-sills and draft-arms secured thereto, a draw-bar and followers and a support therefor comprising upper members having lateral flanges adapted to rest between each sill and arm, lower members mounted on said draft-arms, and a separate intermediate member embedded within each draft-arm, all of said members having follower and engaging and confining portions, substantially as described.

4. The draft-sills having draft-arms secured at their ends and bottom, an end sill connecting said sills and arms, a draft-rigging frame mounted on said draft sills and arms, and a tie-bolt mounted at the end of said draft-arms and having a vertical portion adapted to engage between the end sill and the end of the draft-sill, substantially as described.

5. The draft-sill, and the upper follower-engaging member mounted thereon having a vertical rib at its front end to engage the end of said sill, in combination with a separate lower follower-supporting member mounted beneath said sill and upper member, and a single cross-bolt 22 to pivotally support said lower member in relation to said upper member, substantially as described.

Witness my hand to the foregoing specification this 12th day of November, 1901.

WILLIAM G. SWAN.

Witnesses:
R. B. MOSER,
H. T. FISHER.