

(No Model.)

3 Sheets—Sheet 2.

P. BROWN.
DRAFT MECHANISM.

No. 540,143.

Patented May 28, 1895.

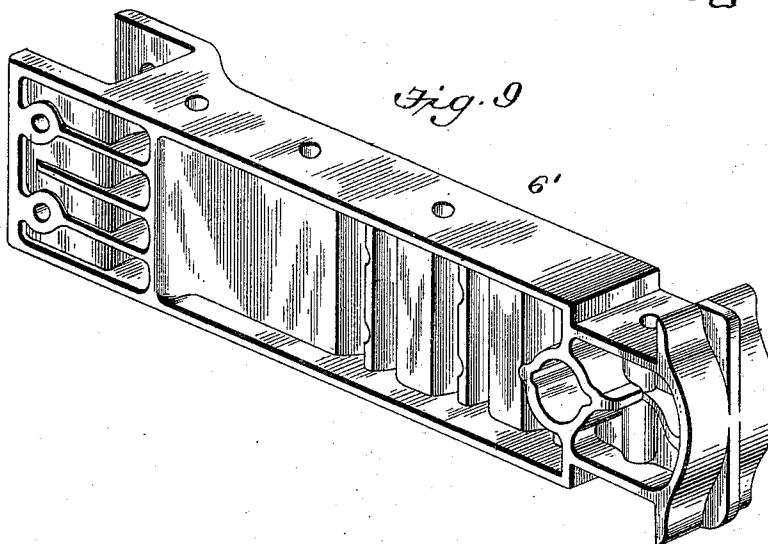
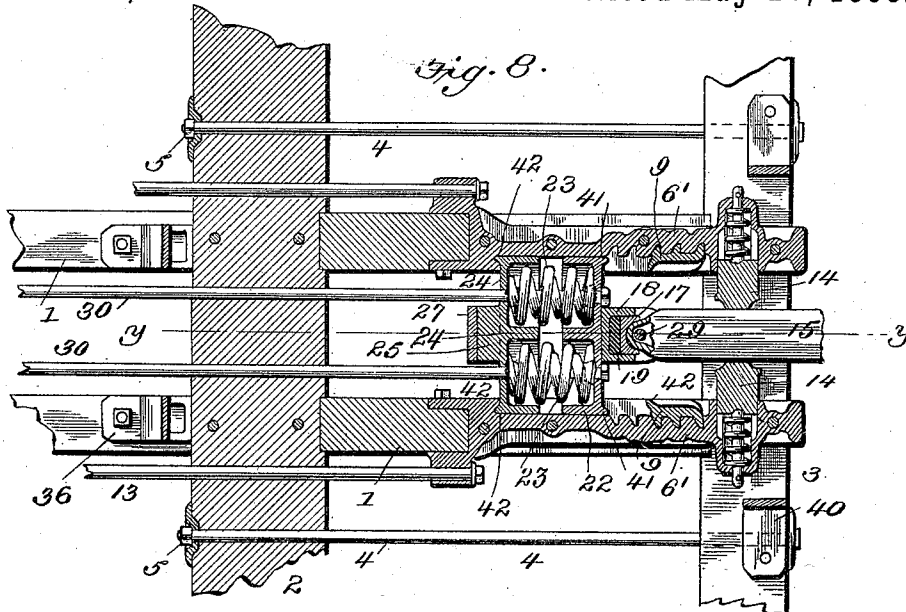
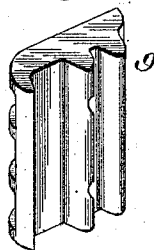


Fig. 10.



Witnesses
John Somine
Thos. E. Robertson

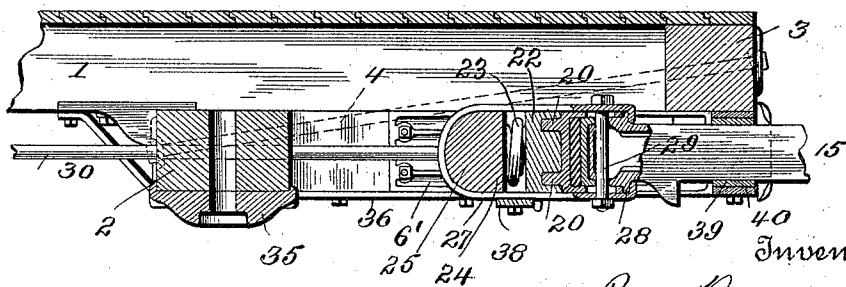
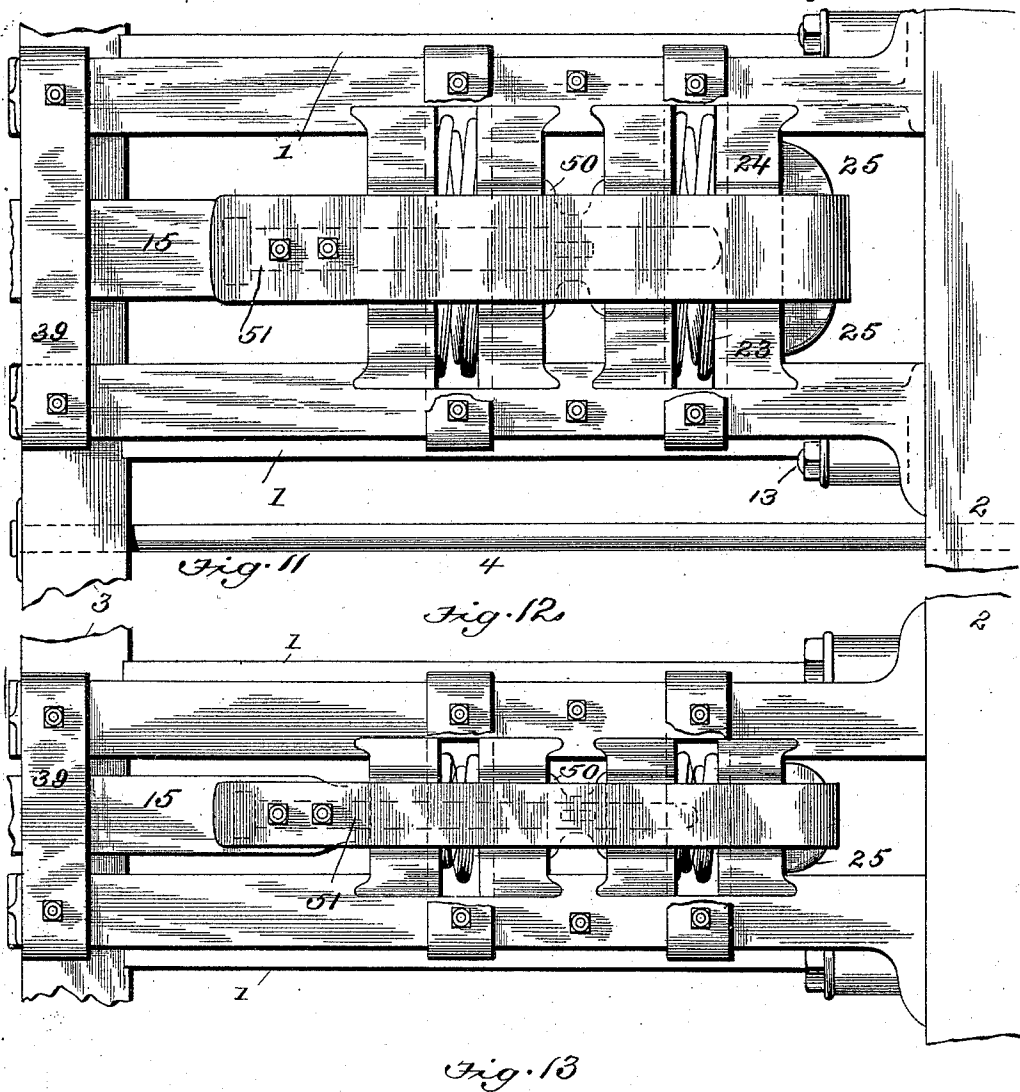
Inventor
Perry Brown
By J. M. Robertson

Attorney

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Thos. E. Roberts

Inventor
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By J. W. Robertson

Attorney

UNITED STATES PATENT OFFICE

PERRY BROWN, OF WILMINGTON, DELAWARE.

DRAFT MECHANISM.

SPECIFICATION forming part of Letters Patent No. 540,143, dated May 28, 1895.

Application filed April 14, 1894. Serial No. 507,572. (No model.)

To all whom it may concern:

Be it known that I, PERRY BROWN, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Draft Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention is intended to provide improvements in draft mechanisms for cars and designed to make such mechanisms more durable and stronger, so that they will be less liable to give out under the great strain they are subject to in the ordinary wear, and to these ends the invention consists in the peculiar construction, arrangement and combinations of parts hereinafter more particularly described and then definitely claimed.

15 In the accompanying drawings, Figure 1 is a plan of a draft mechanism constructed according to my improvement. Fig. 2 is a horizontal central section, on a larger scale, of one of the draw-irons and its immediate connections which are shown on the left-hand end of Fig. 1. Fig. 3 is a vertical section on the line *x x*, Fig. 1. Fig. 4 is a front view of a follower-block. Figs. 5, 6, and 7 are perspective views of parts of the connection between the coupling and follower-block shown in Fig. 4. Fig. 8 is a horizontal section of that part of my draft mechanism shown on the right-hand end of Fig. 1 on a rather larger scale than is shown in said Fig. 1. Fig. 9 is a perspective view, on a larger scale, of one of the draw-irons detached. Fig. 10 is a perspective view of an adjustable plate to be secured to the draw-iron shown in Fig. 9. Fig. 11 is a plan of a modification where the connection is not continuous. Fig. 12 is a similar view of another modification. Fig. 13 is a vertical section through the line *y y* on Fig. 8.

Referring now to the details of the drawings by figures and letters, 1 represents the longitudinal sills of a car, 2 the bolsters, and 3 the cross-sills of the same. Running from each cross-sill 3 to the bolsters 2 are the rods 4, secured by nuts 5, by which the bolsters and end sills are securely tied together. To the longitudinal and cross-sills are secured the

draft-irons 6 or 6', as the case may be—the draft-iron 6 being shown at the left-hand end of Fig. 1 and in Fig. 2, while the iron 6' is shown in the right-hand end of Fig. 1 and also in Figs. 8 and 9.

That form of draft-iron indicated by 6 is made of three pieces, one, indicated by *a*, being a piece of channel iron of suitable length, having end pieces *b b'* fastened thereto by bolts 7 (as shown in Figs. 2 and 3) each of said end pieces being provided with recesses 8, the walls of which receive and embrace the ends of the web of the channel iron as clearly shown in Figs. 2 and 3. These pieces of channel iron may be plain, ordinary channel iron cut to suitable lengths, but I prefer to heat and stamp them up in suitable dies, so as to make recesses 8 in the web, as shown in Fig. 2, so as to form a secure means of holding the adjustable stop plate 9. (Shown in perspective in Fig. 10.) The end *b'* is provided with sockets to receive the filling blocks 11 and eyes 12 to receive rods 13 running from one draft-iron to the next, as shown in Fig. 1, by means of which and the rods 4, the sills, bolsters and draw-irons are all connected together. The ends *b* are provided with the spring plugs 14, which are set in sockets 14^a, and are forced outward by spiral springs 14^b, and are so arranged as to yieldingly hold the couplers 15 central and yet allow them to yield when required, whereby most of the accidental breakage of the guard-arm 16 of the couplings (now so frequent) will be effectually prevented. The coupling has its inner end perforated to receive a bolt and rounded to fit into a socket 17 (see Fig. 5) which in its turn loosely fits inside the pivotal block 18, and between the two is a block of rubber 19 forming a cushion to receive and absorb the shock caused by driving the draw-bar backward. At the rear of the pivotal block 18 are teats or projections 20 fitting into holes 21 in the front follower 22, which is recessed to receive the forward ends of the springs 23, whose opposite ends are set in corresponding recesses in the rear follower 24, which is strengthened at the back by ribs 25 so shaped and arranged as to fit the curved rear end of yoke 27, whose forward ends embrace the end of the coupler and

around semi-circular projections 28 formed thereon, and is fastened thereto by a bolt 29 which passes through the yoke, the slotted pivotal block and the end of the coupling, so that these parts, the socket piece 17 and rubber cushion 19 are all securely fastened together, and yet the coupling can move backward under pressure, as the holes through the pivotal block are elongated or slotted as clearly shown in Fig. 7. Through these followers are set the headed rods 30, running into turn buckles 32 at the other end, which are kept from turning by a key 33 passing through both turn buckles and held there by a cotter 34.

At 35 is shown a bolster-iron, the under side of which is recessed to receive the straps 36 which are secured to the sills by bolts 37 in the rear, and to the draw-iron and filling piece. Over the top of the forward ends of these straps are cross-straps 38 which fit against the turned-up ends of straps 36.

The front ends of the draw-irons are recessed to receive two straps 39 and 40, one of which (39) is preferably short, extending only from outside to outside of the draw-irons, while the other one (40) extends over to the cross-sill and is bolted thereto.

The draw-irons shown at the right-hand end of Fig. 1 and on a larger scale in Figs. 8 and 9 are made in one piece, as shown in perspective in Fig. 9, instead of being made up of angle-irons and cast end pieces as shown in Fig. 2.

It will be observed that the follower blocks are provided with flanges 41 adapted to catch under lips 42 formed on or attached to the draw-irons, so that there is no tendency to spread them apart as is usually the case, owing to the wedging action due to the wear of the irons, but on the contrary there is a tendency to draw them together, and thus all danger from the spreading apart of the draw-irons is prevented.

Where the filling pieces are not used, the draw-irons may be secured directly to the bolster, in which case the ends may be spread out to form flanges to receive the tie rods passing through the bolster and bolts, which may simply pass through the flanges and into the bolster, as shown in Fig. 11.

In Fig. 11 I show a modification having two sets of follower plates behind each coupling, each set arranged in substantially the same way as in Fig. 1, but this is not a continuous connection as in Fig. 1. In this style of draft mechanism, a stop 50 is set between the two sets of followers and springs and is fast on a rod 51 (shown in dotted lines) attached to the coupler, so that I get the full advantage of both sets of springs. Fig. 12 shows a similar arrangement except that there is a central spring or springs between each pair of follower blocks, and the rod 51 runs through the

center of the springs and followers, to which is securely fastened the stop 50.

What I claim as new is—

1. The combination with a coupler, of a pair of followers, springs set between said followers, a connection between the coupler and the rear follower, and draw-rods connected with another coupler and running through said springs and both followers, substantially as described.

2. The combination with a coupler, of two sets of follower blocks, a headed bolt having its head set into the draw-bar, a stop keyed upon the bolt between the two sets of blocks, and a yoke connected to the draw-bar and passing in the rear of all of the follower blocks, substantially as described.

3. In a draft mechanism, a follower having lips at its ends adapted to engage with lips on the draw-irons to prevent spreading, substantially as described.

4. The combination with a draw-iron and follower block, of an adjustable movable stop-plate bolted directly to and supported by said draw-iron and adapted to co-operate with the follower block, substantially as described.

5. The combination with a coupler having a round, perforated end, of a socket piece fitting said round end, a pivotal block, a cushion between said pivotal block and socket, a pair of followers in the rear of the pivotal block, springs between the followers, and a yoke connecting the followers and couplers together, substantially as described.

6. In a draft mechanism, a draw-iron, consisting of a piece of channel iron having castings *b b'* secured to it at each end, casting *b* having a socket for a spring plug, and casting *b'* a socket to receive a filling block, substantially as described.

7. In a draft mechanism, a draw-iron consisting of a piece of channel iron, having recesses pressed into its web, in combination with a movable stop plate having corresponding projections fitting into said recesses, substantially as described.

8. In a draft mechanism, a draw-iron provided with recesses in its side, and an adjustable stop plate provided with corresponding projections, substantially as described.

9. In a draft mechanism, the combination of two pairs of draw-irons, each draw-iron having a socket to receive the end of a rod, with a pair of tie rods, running from one pair of draw-irons to the other, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 5th day of April, 1894.

PERRY BROWN.

Witnesses:

THOS. E. ROBERTSON,
W. H. BARNES.