(No Model.) 4 Sheets—Sheet 1

P. BROWN.

DRAFT AND BUFFER MECHANISM.

No. 598,765. Patented Feb. 8, 1898.

Fig. 1.

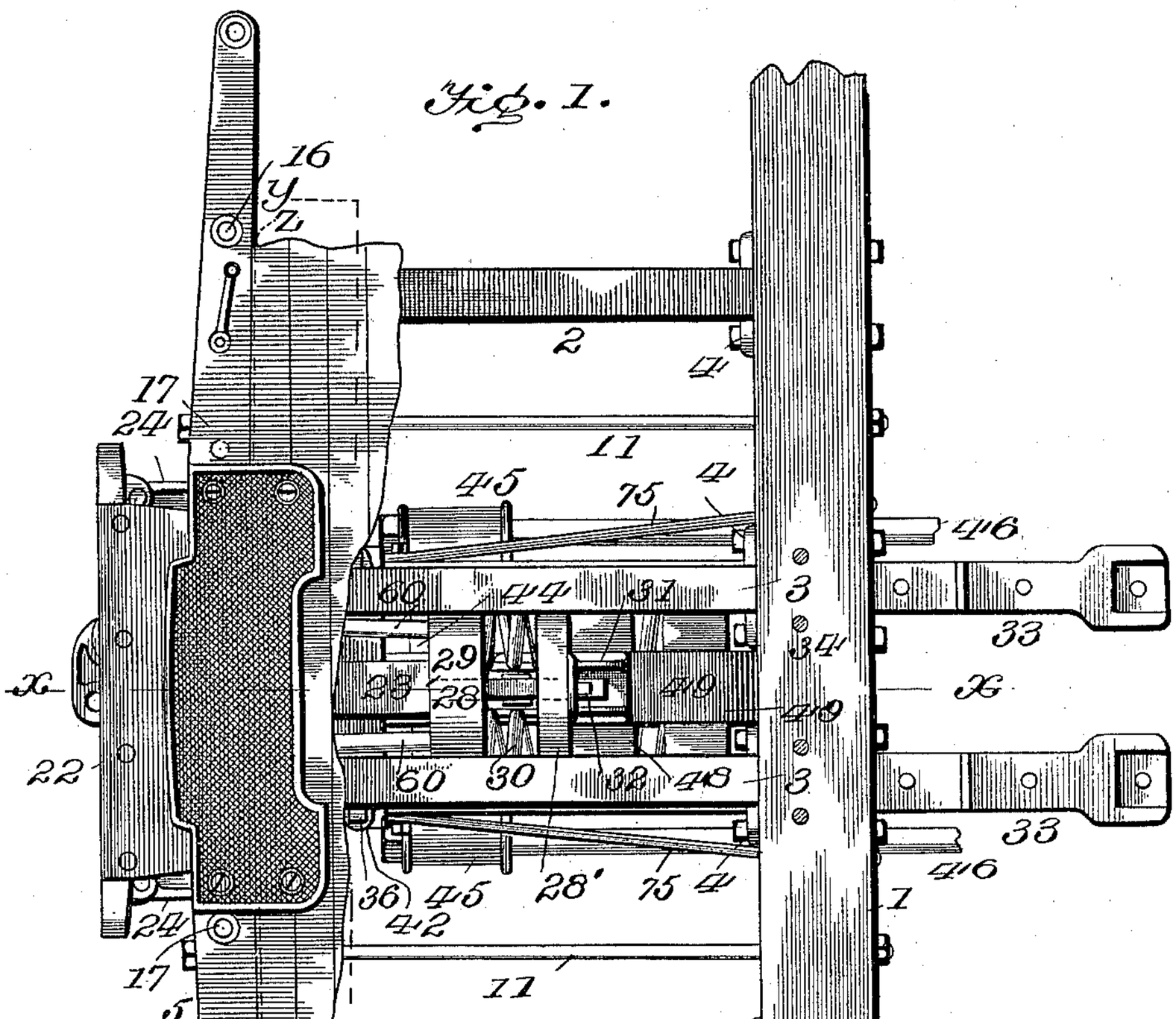
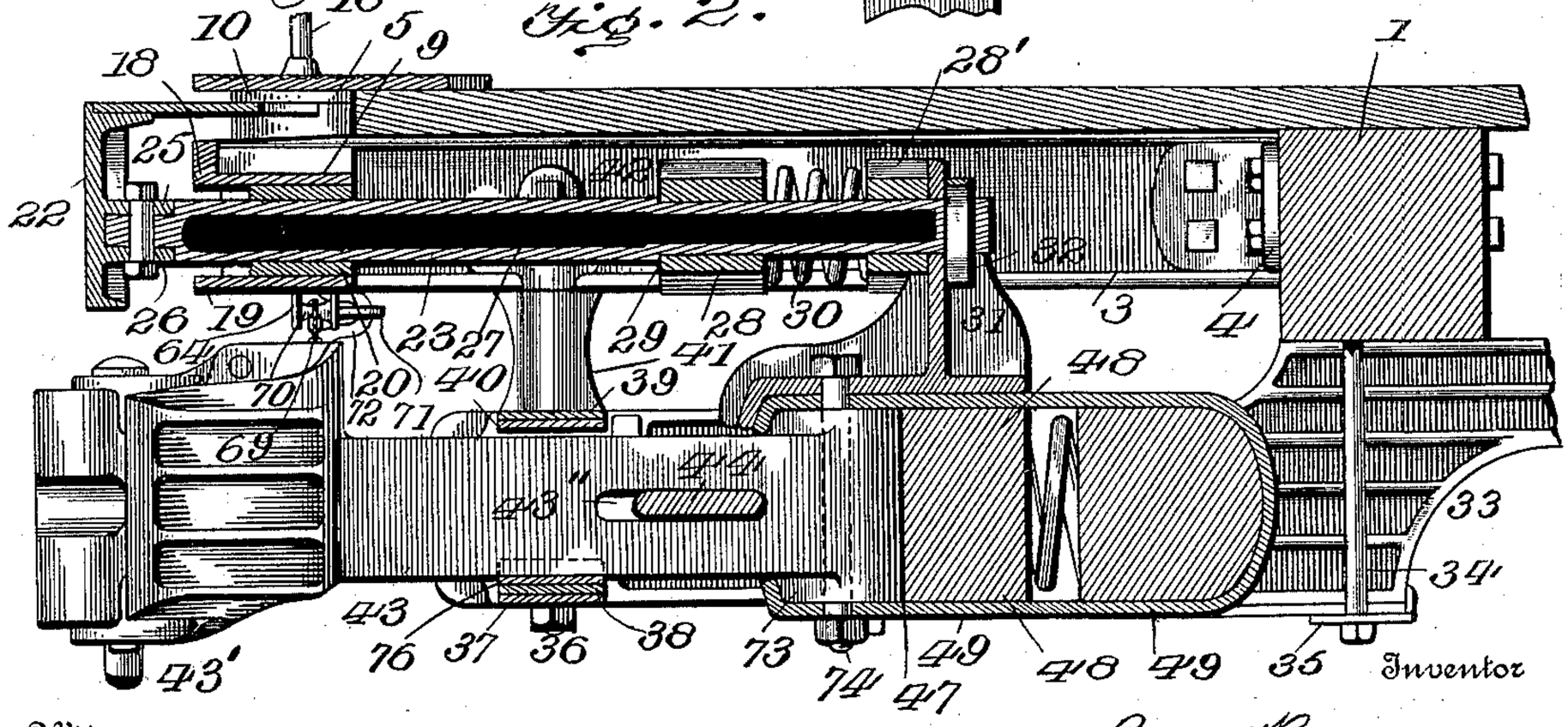


Fig. 2.



Witnesses

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4 Sheets—Sheet 2.

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DRAFT AND BUFFER MECHANISM.

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Fig. 3.

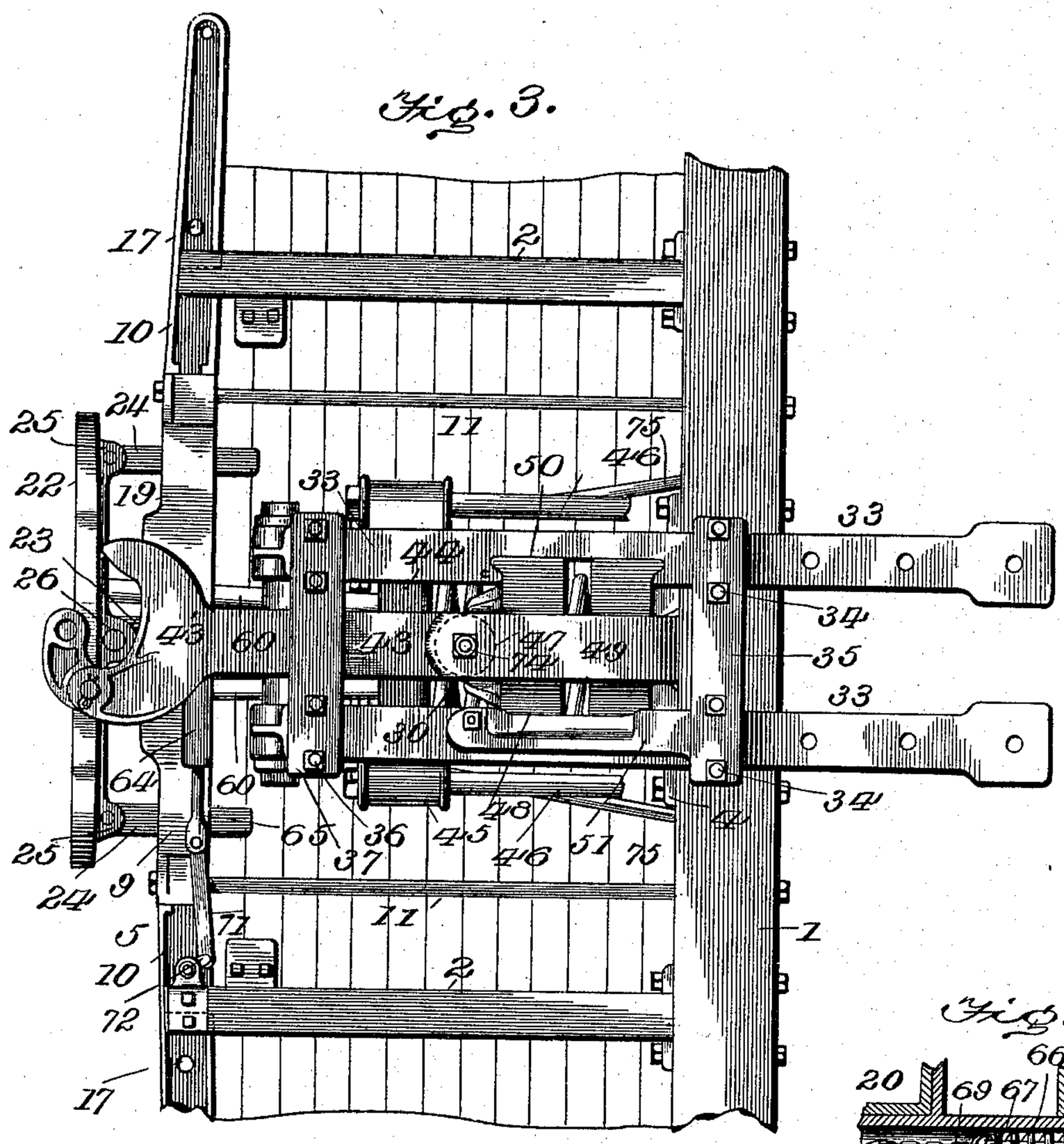


Fig. 16.

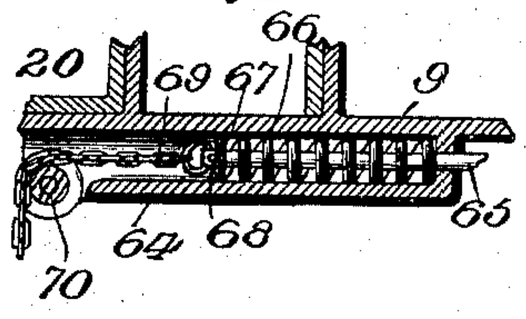
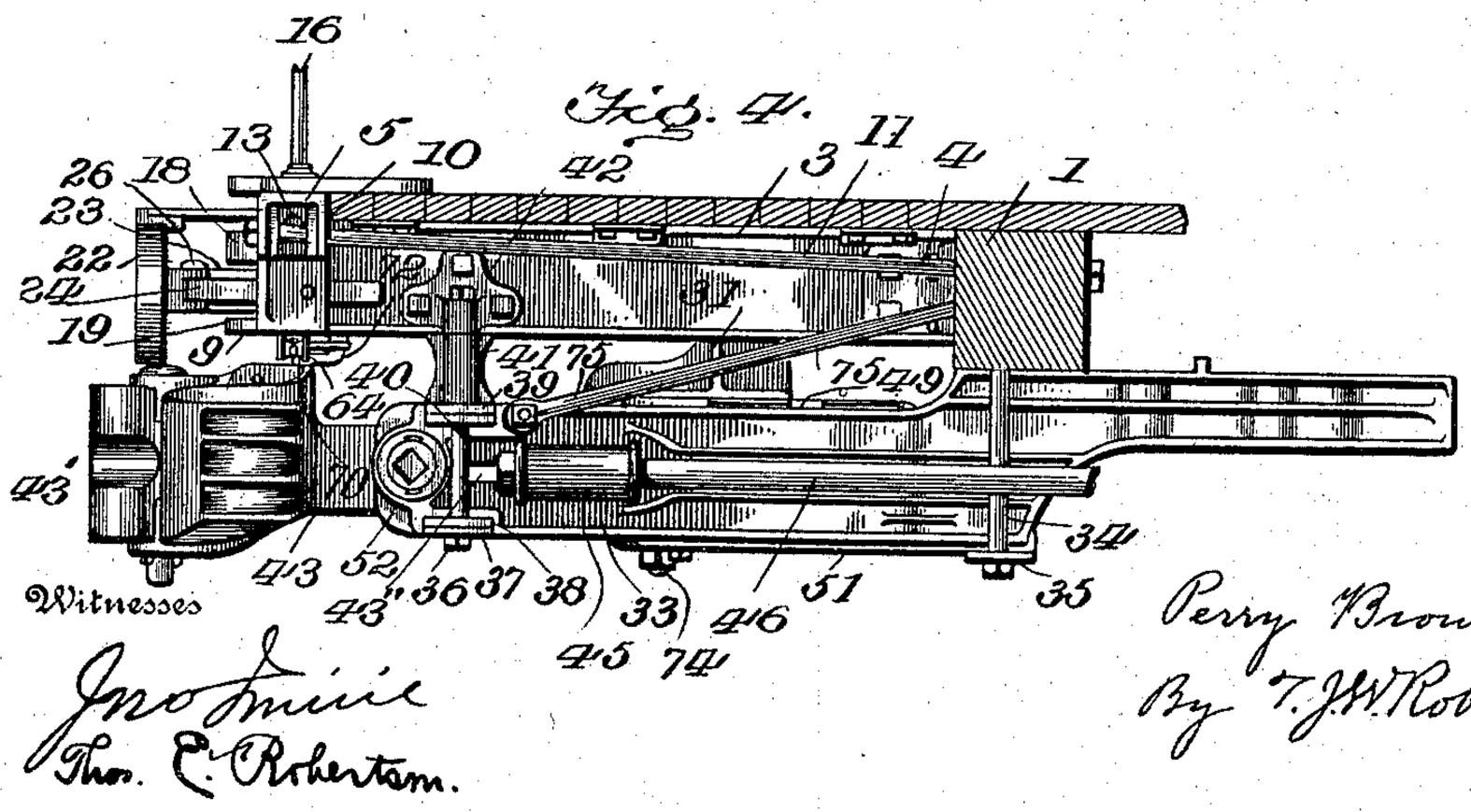


Fig. 4.



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4 Sheets—Sheet 3.

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DRAFT AND BUFFER MECHANISM.

No. 598,765. Patented Feb. 8, 1898.

Fig. 5.

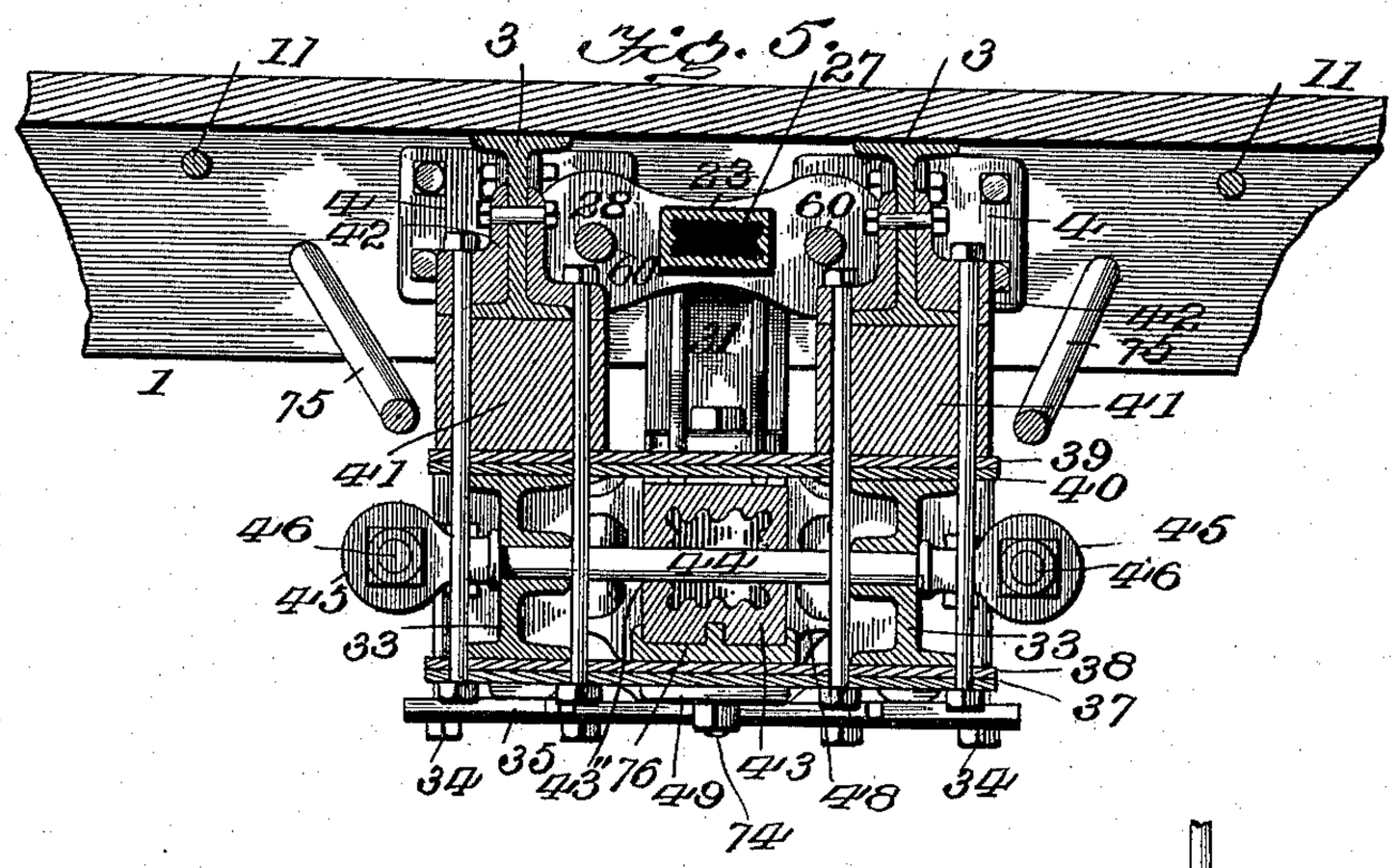


Fig. 6.

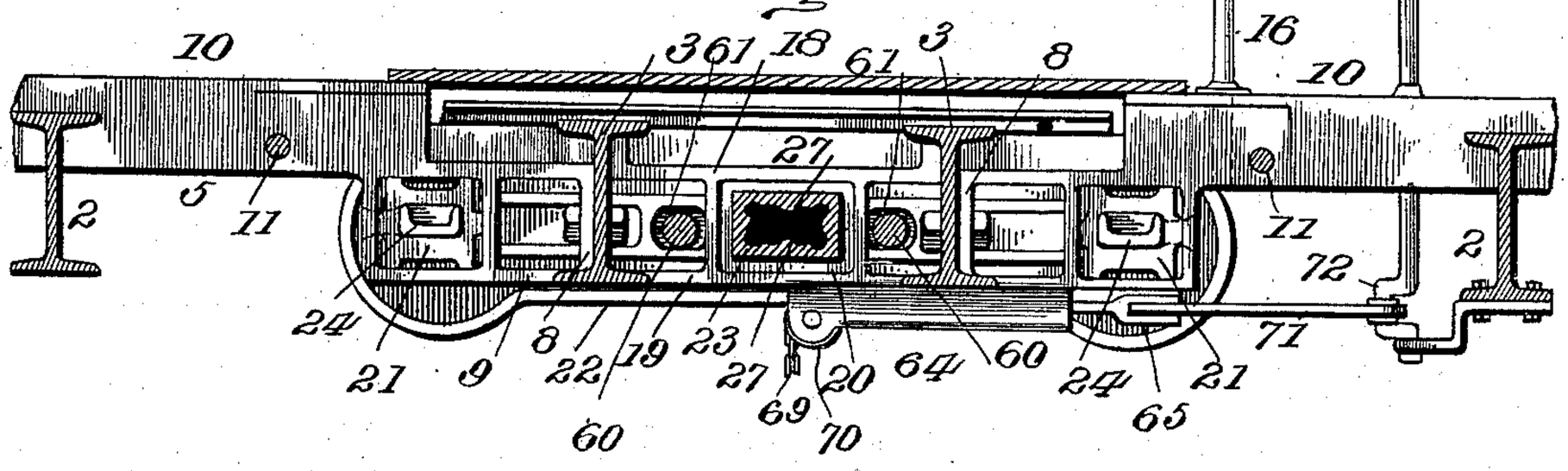
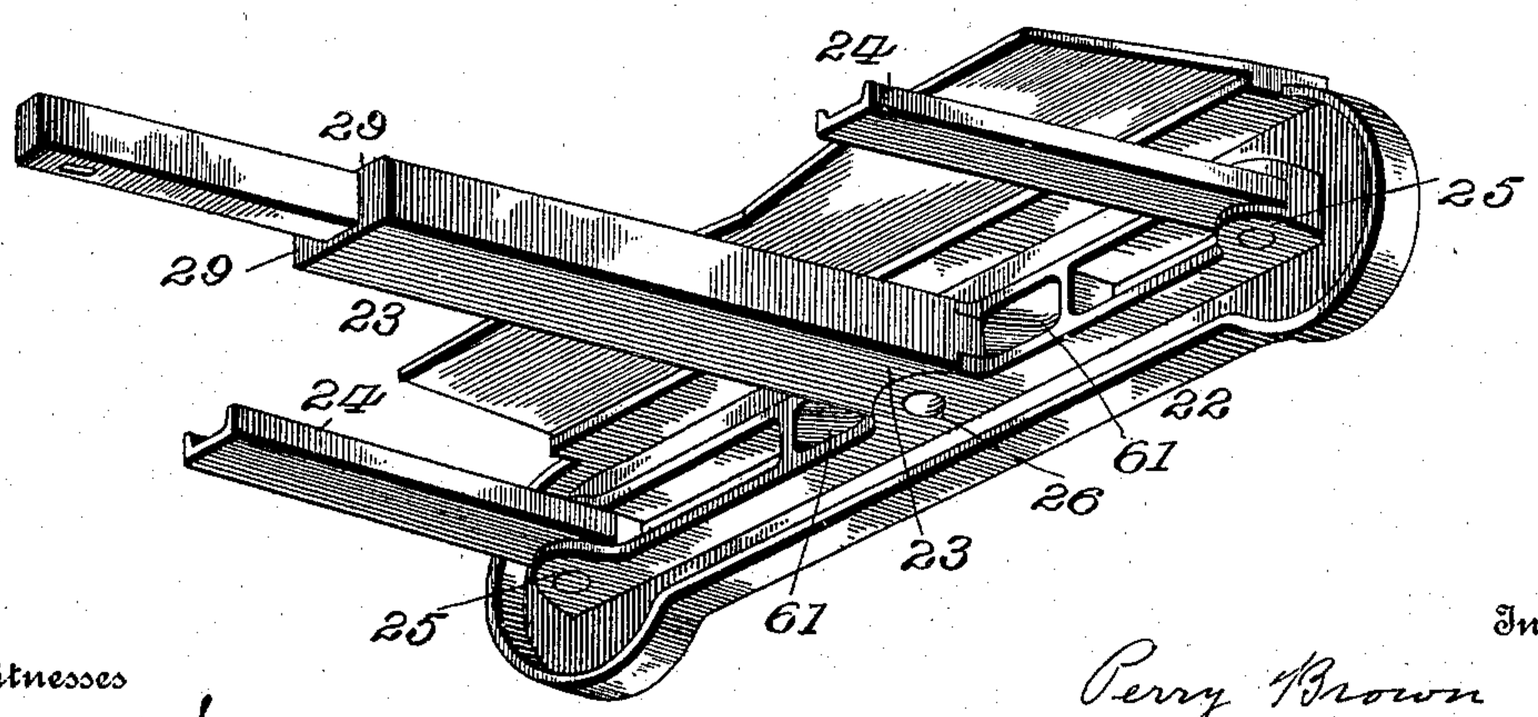


Fig. 7.



Witnesses

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(No Model.) 4 Sheets—Sheet 4.

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DRAFT AND BUFFER MECHANISM.

No. 598,765. Patented Feb. 8, 1898.

Fig. 8.

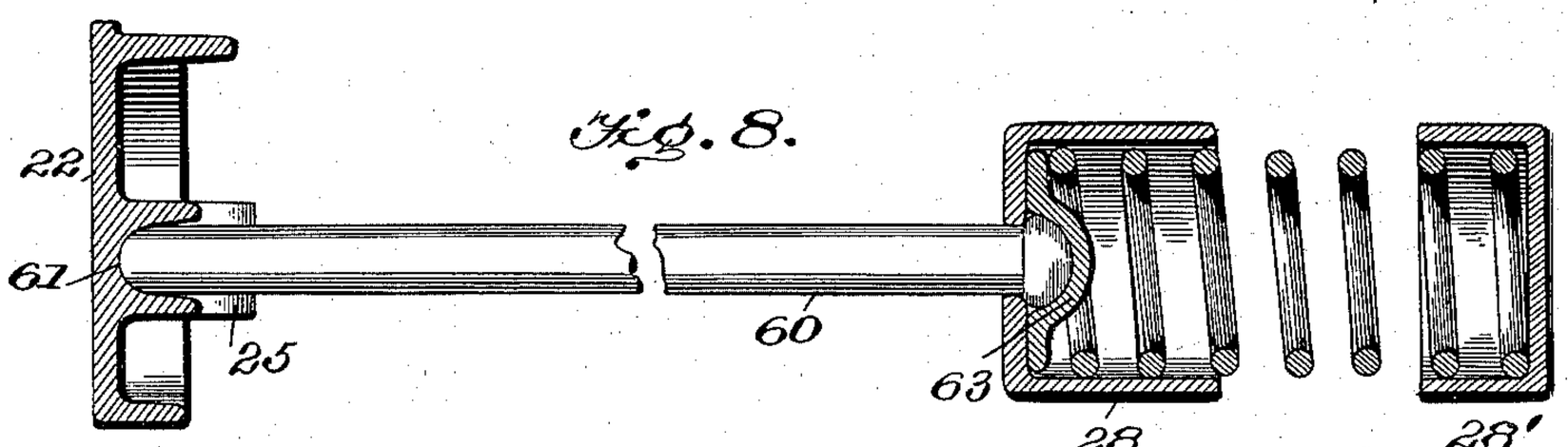

Fig. 9.

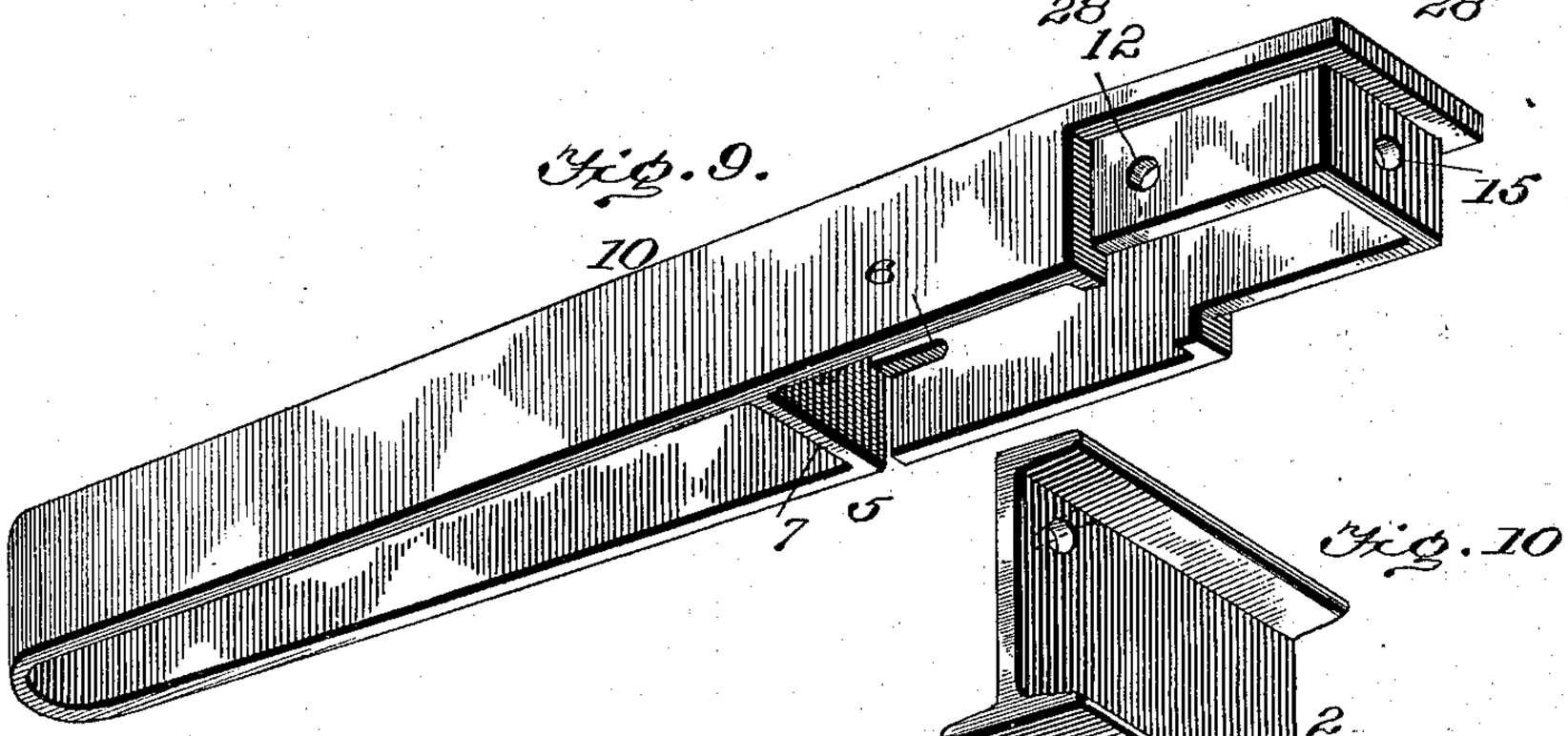

Fig. 10.

Fig. 11.

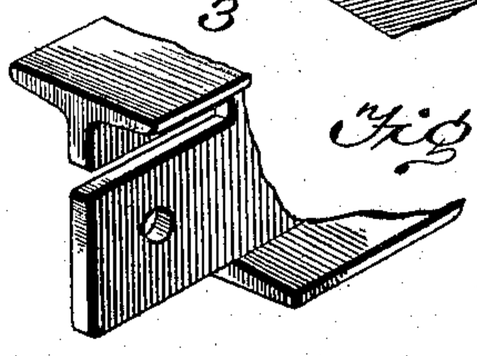

Fig. 12.

Fig. 13.

Fig. 14.

Fig. 15.

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UNITED STATES PATENT OFFICE.

PERRY BROWN, OF WILMINGTON, DELAWARE.

DRAFT AND BUFFER MECHANISM.

SPECIFICATION forming part of Letters Patent No. 598,765, dated February 8, 1898.

Application filed May 15, 1897. Serial No. 636,777. (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 a certain new and useful Improvement in Draft and Buffer Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

This improvement relates to that class of draft and buffing mechanism shown in my Patent No. 548,863, dated October 29, 1895, and is designed, mainly, to dispense with the equalizer employed therein and to strengthen the platform end rail by substituting iron for the wood rail usually employed.

To these ends the invention consists in the peculiar construction and arrangement and the combinations of parts hereinafter described and then definitely claimed at the end hereof.

In the accompanying drawings, Figure 1 is a plan of my new draft and buffing mechanism. Fig. 2 is a vertical longitudinal section of part of the same on the line *x x*, Fig. 1, on a larger scale. Fig. 3 is a reversed plan of the same on the same scale as Fig. 1. Fig. 4 is a side view of the same. Fig. 5 is a transverse vertical section on the line *y y*, Fig. 1. Fig. 6 is a similar section through the line *z z* in the same figure. Fig. 7 is a perspective view of the buffer-plate and its connected parts, taken from the rear and underneath on one side. Fig. 8 is a vertical longitudinal section through the buffer-plate and one of the springs and its casing. Figs. 9 to 16 are details that will be more fully referred to hereinafter.

Referring now to the details of the drawings by numerals, 1 represents the end sill of the car, to which are connected the steel I-bars 2 2 and 3 3 by angle-pieces 4, which are riveted or bolted to the I-bars and bolted to the end sill, as shown. These I-bars carry the iron end rail 5, which is firmly secured thereto in the following manner: The I-bars 2 have part of the upper flange thereof cut away at one side, as shown in dotted lines in Fig. 3, and these ends of the bars set in right-angled slots 6, (see Fig. 9,) cut in the rear flange of the end rail, or, rather, in one of the end pieces 10 of which said rail is formed, and then is bolted to a cross-rib 7, running from the front to the rear flange of the end rail. The I-bars 3 are cut and bored, as shown in the detail Fig. 11, and are bolted to a cross-rib 8, formed on the center section 9 of the end rail, as shown in Fig. 6.

The end rail may be formed in one piece, if preferred; but I prefer to form it in three pieces—a center piece 9 and end pieces 10, that overlap the ends of the center piece—which are secured together by bolts 11, which run through holes 12 in the lapping ends of the center and end pieces to the end sill 1, and bolts or rivets 13, passing through the holes 14 (see Fig. 12) into the holes 15 in the inner ends of end pieces 10. (See Fig. 9.) Two of the rail-posts 16 (see Fig. 6) also help to secure the end pieces to the center, for they pass through the holes 17 (see Fig. 1) in the overlapping parts of the end pieces into the bottom of the ends of the center piece.

The center piece is provided with a series of horizontal cells formed by ribs 8 between its upper and lower flanges 18 19. In three of these cells are set sleeves, a center one 20 and two outer ones 21. These form guides for the supports for the buffing-plate and are preferably made separately from the end rail, so that they may be renewed when worn; but it is obvious that the guides may be cast in one piece with the end rail or end-rail sections.

The buffing-plate 22 is provided with a central guide-bar 23 and end guide-bars 24, all of which are pivotally connected to ears 25, cast on the rear of the plate, and the center guide-bar, on which the strain mostly comes, is so jointed to the ears (see Figs. 2 and 7) that there is but little strain on the pivot or pin 26, coupling the central guide-bar to the ears 25.

The guide-bar 23 is cast hollow, with ribs 27, as shown in Fig. 6, for lightness and strength, as the large amount of "skin" due to the ribs strengthens the guide-bar. Its smaller end passes through the buffing-follower 28, the shoulder 29 acting on said follower, which thus acts on the buffing-springs 30, set between the followers 28 and 28′. The small end of the guide-bar passes slidingly through the follower 28′ and the top of the bracket 31, and its extreme end is perforated to receive a cotter or key 32.

The follower 28 is perforated at its front

end, through which passes headed rods 60, whose other ends enter recesses 61 in the buffing-plate 22. The heads of the rods are covered by plates 63, against the edges of which the springs act. These rods take the place of the equalizer in my former patent and will tend to always keep the buffing-plate in its proper position no matter what the curve on which the cars are traveling.

Beneath the end rail is a hollow projection or case 64, in which plays a rod 65, (see Fig. 16, Sheet 2,) around which is a spring 66, which finds its point of resistance between the end of the recess in the projection and a collar 67 on the rod 65. A pin 68 fastens the collar on the rod, and to the end of the rod a chain 69 is fastened, which passes over a pulley 70 and from thence to the locking-dog in the draw-head.

Motion is given to the rod 65 by means of the connecting-rod 71 and cranked shaft 72 in a manner well understood.

Above the buffing-plate are the safety and floor plates, like those shown in my aforesaid patent, and further description of them is therefore unnecessary.

Below the sill 1 are slotted draw-irons 33, secured to said sill by the bolts 34, passing through said sill and a strap 35, which passes under both draw-irons. The outward ends of these irons are secured to the I-bars 3 by bolts 36, passing through plates 37 and 38, (running under both draw-irons and the draw-bar 43,) through plates 39 and 40, pillow-blocks 41, and a fitting 42, bolted or riveted to the I-bar 3. The rear ends of these draw-irons extend past the sill, as shown in Figs. 1, 3, and 4, and are adapted to receive timbers connected to the bolster.

The draw-bar head 43′ may be of any approved variety, and as nothing new is herein claimed in said draw-head further description is uncalled for; but the draw-bar itself is slotted at 43″ to receive the cross-bar 44, which has on each end a casting 45, one of which may be permanently secured thereto, if desired; but the other should be detachably secured, so as to be removed, if required, in order that the bar 44 may be removed from the draw-bar and draw-irons. The slot 43″ should be considerably longer than the width of the bar 44 in order that although when the draw-bar is drawn out it shall act on the draw-rods 46, passing through the castings 45, and so act on the springs of the draw-bar at the other end of the car. The draw-bar at this end may be pushed in without acting on the cross-bar 44 or anything operated by it.

The draw-bar is provided with a round end fitting into a corresponding-shaped socket 47 (shown in dotted lines in Fig. 3) on the front of the follower 48, and the draw-bar and the two followers are all connected together by the yoke 49, the ends of which embrace the front of a round boss 73, formed on the top and bottom of the rear end of the draw-bar, as shown in dotted lines in Fig. 3 and in full lines in Fig. 2. A bolt 74 passes through the yoke, the end of the draw-bar, and the bracket 31, as shown in Fig. 2.

The draw-irons are cut away beneath, as shown at 50, and the cut-away portions are closed by guide-irons 51, only one of which is shown. By removing these guide-irons the followers, springs, &c., can be dropped down and removed without shifting the draw-irons. The bracket 31 can also be removed down through the opening between the draw-irons if said bracket be made distinct from the follower 28′, whereas if the two were made in one piece the bracket could not be readily removed without separating the draw-irons. Besides affording facilities for the removal of the parts referred to, the guide-irons, being made separate from the draw-irons, allow of the former being removed when worn and their being replaced with new without throwing away the whole of the draw-irons, as would be necessary if the guide-irons were made in one piece with the draw-irons.

In order to make room for the cross-bar 44 and castings 45, it became necessary to provide the draw-irons with more compact spring-plungers on each side of the draw-bar. These are shown in detail at Figs. 13, 14, and 15 and in position at Figs. 3 and 4. A thimble 52 is formed in the outer end of each draw-iron, in which works the hollow plunger 53, whose closed end bears against the draw-bar. In this plunger is a spring 54, which finds its resisting-point against a plug 55, (see Fig. 15,) having lugs 56, which engage with grooves 57 and 57′, (see Fig. 14,) cast inside the thimble. In assembling the parts the plunger is first set with the lugs 58 on its sides entered into the grooves 57. The spring 54 is then inserted and then the lugs on the plug 55 are inserted in the grooves 57 until in line with the grooves 57′, when the lugs are caused to enter said grooves and the plug turned until the lugs arrive at the ends of the grooves when the spring causes said lugs to enter the enlarged part of said grooves, and thus the plug is fastened in place in such a manner that while it can be readily removed, if desired, it is not likely to be accidentally removed.

At 75 is shown a diagonal brace-rod, one end of which passes through the sill and its other end is connected to the top of the draw-iron instead of below, as in my aforesaid patent, this change being necessary in order that the brace-rod shall be out of the way of the casting 45.

Between the plate 38 and the draw-bar is a wearing-plate 76, having upwardly-projecting flanges, as shown in Fig. 5, by which it is retained in place.

What I claim as new is—

1. A metallic platform end rail, provided with vertical ribs cast therein forming cells, substantially as described.

2. A cast metallic platform end rail comprising a central section and two end sections, each section having vertical ribs cast therein

forming means for securing other parts thereto, substantially as described.

3. A cast metallic platform end rail having vertical ribs forming cells to receive detachable guides for the guide-bars of the buffing-plate, substantially as described.

4. A metallic platform end rail having detachable guides for receiving and holding the guide-bars set in the cells formed by vertical ribs cast in said end rail, substantially as described.

5. A cellular metallic platform end rail formed of a central section and two end sections, the connections between the end and central sections lapping on each other, substantially as described.

6. A platform end rail provided with a hollow projection or casing adapted to receive the device for operating the locking-dog of a draw-head, and form a seat for the spring thereof, substantially as described.

7. The combination with an end rail having a casing 64, of a rod 65 working therein, a spring 66 inclosed in said casing and acting on said rod, a chain 69 connected to said rod and the locking-dog of a draw-head, and means for operating said rod, substantially as described.

8. The combination with a draw-iron having a thimble 52 with grooves 57, 57′, of the plunger 53, spring 54 and plug 55, substantially as described.

9. The combination with slotted draw-irons and a slotted draw-bar, of a cross-bar passing through said draw-bar and provided with castings at the ends adapted to receive the draw-rods, substantially as described.

10. The combination with a slotted draw-bar, of a cross-bar passing through said draw-bar and adapted to move independently of the same, and connected with the draw-rods, substantially as described.

11. The combination in a draft mechanism, of slotted draw-irons, a slotted draw-bar, a cross-bar of less width than the length of the slot in the draw-bar, perforated castings on the end of the cross-bar, and draw-rods connected to said castings, substantially as described.

12. The combination with the buffing-plate of a car, of the rods 60, one end of each loosely fitting in a cell in the rear of said buffing-plate and the other end acting against a spring, substantially as described.

13. The combination with a buffing-plate having recesses in its rear, of two rods 60, each having one end in a recess in said buffing-plate, and its other end in a follower, a spring acting on said rod, and a plate between said spring and rod, substantially as described.

14. The combination with an end rail for a car-platform, of a buffing-plate having a guide-bar passing through said end rail and bearing against a follower, of a pair of springs in the rear of said follower, and two rods each having one end acting on the rear of said buffing-plate, and its other end acting against one of the springs, substantially as described.

15. A support for a draft and buffing mechanism comprising an end sill, a metallic cellular end rail 5, the I-bars 2, 3, each having one end connected to the sill and the other entering into the cellular end rail and bolted to cross-ribs therein, substantially as described.

16. The combination with the draw-irons and the sill of a car, of the I-bars 3, attached to said sill, the pillow-block interposed between said draw-irons and I-bars, and the diagonal brace-rod connected to the sill and the draw-irons, substantially as described.

17. The combination with a draw-bar and its supports, of a wearing-plate 75 having vertical flanges to retain it in place, substantially as described.

In testimony whereof I affix my signature, in the presence of two witnesses, this 4th day of May, 1897.

PERRY BROWN.

Witnesses:
THOS. E. ROBERTSON,
WALTER E. CLENDANIEL.