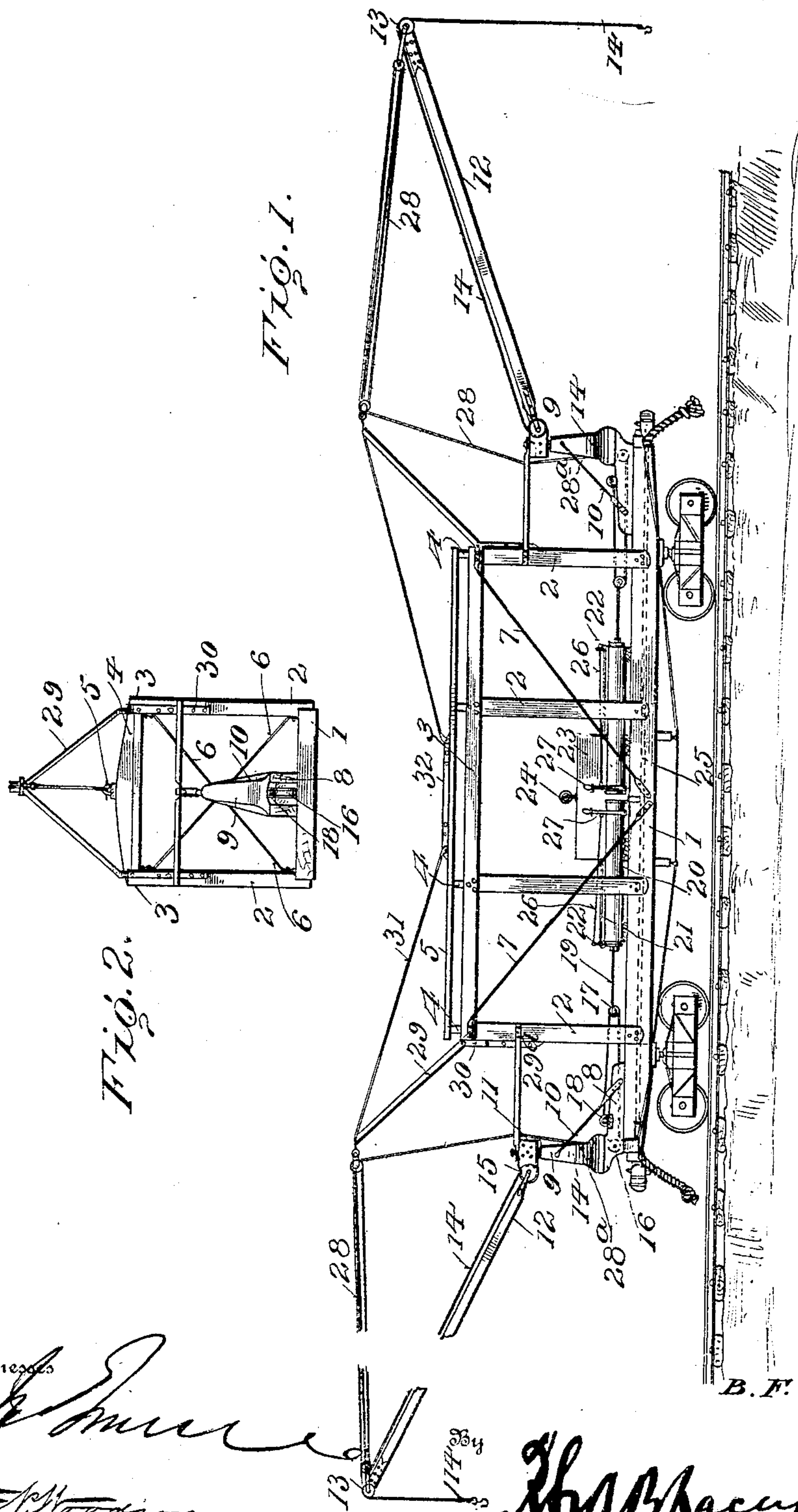


907,455.

B. F. BROWN.
RAIL HANDLING MACHINE.
APPLICATION FILED MAY 13, 1908.

Patented Dec. 22, 1908.
2 SHEETS—SHEET 1.



Inventor

B. F. Brown.

Witnesses

[Signature]
W. H. Hodson

[Signature] Attorneys

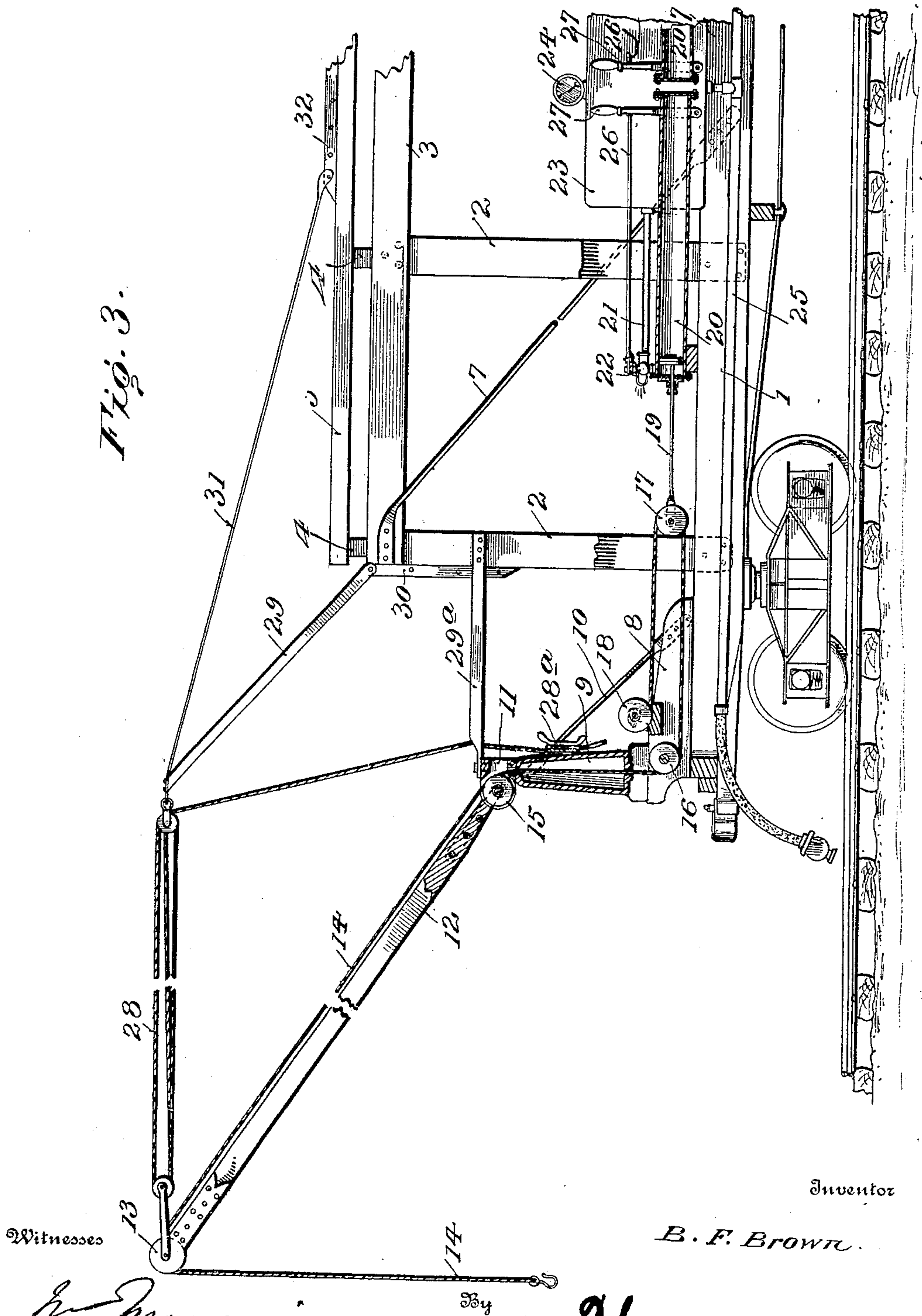
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Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN F. BROWN, OF LYNDONVILLE, VERMONT.

RAIL-HANDLING MACHINE.

No. 907,455.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed May 13, 1908. Serial No. 432,685.

To all whom it may concern:

Be it known that I, BENJAMIN F. BROWN, citizen of the United States, residing at Lyndonville, in the county of Caledonia and State of Vermont, have invented certain new and useful Improvements in Rail-Handling Machines, of which the following is a specification.

This invention relates to a loading and unloading apparatus, and has for its object an efficient construction of apparatus particularly designed for handling railroad rails, the invention consisting in certain constructions, and arrangements of parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a side elevation of my improved apparatus for handling rails; Fig. 2 is an end elevation of the supporting framework; and Fig. 3 is a side elevation on an enlarged scale, of one half of the apparatus the parts being shown in section.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The working parts of my improved rail handling apparatus are mounted upon the bed or platform of a railroad car of the flat-bottomed type, said bed forming part of the supporting framework of the apparatus, said framework also comprising end and intermediate standards 2 projecting upwardly from the bed 1, longitudinal side sills 3 secured to the upper ends of the standards 2, cross-beams 4 secured to the upper ends of the standards, and a middle upper sill 5 extending longitudinally and supported upon the cross-beams 4, as clearly illustrated in the drawings. The framework is braced by intersecting transverse tie rods or braces 6 secured to and extending between the standards 2, and is also braced by obliquely extending tie rods 7 secured at their upper ends to the ends of the side sills 3 and converging and secured at their lower ends to the sides of the bed 1 at the middle thereof.

At each end of the car base blocks 8 are mounted. These base blocks 8 support hollow pedestals 9 braced by means of tie rods 10 secured to the upper ends of their corre-

sponding base blocks. Upon the upper ends of the pedestals 9 hollow bearings 11 are mounted, said bearings comprising preferably steel plates to which the inner ends of the masts or booms 12 are pivotally connected for movement about horizontal axes. Each boom 12 carries a preferably incased sheave or pulley 13 at its outer end and hoisting cables 14 are mounted to run over the respective pulleys 13 and thence over pulleys 15 mounted at the pivot ends of the booms, the said hoisting cables thence extending through the hollow bearings and pedestals and around pulleys 16 journaled in the base blocks 8 around other pulleys 17, and finally are secured to the adjusting drums 18 which are mounted in the base blocks 8, and which provide for the lengthening or shortening of the cables, as required. The pulleys 17 are journaled in the outer ends of plunger rods 19, the pistons of which are mounted for reciprocating movement in the longitudinally aligned cylinders 20 to which air inlet pipes 21 are connected, the admission and exhaust of air into and from the respective cylinders 20 being governed by cocks 22 and the air being supplied to the cylinders from a common drum or reservoir 23 mounted on the bed of the car.

The drum 23 is provided with the usual pressure gage 24, and is designed to receive its supply of compressed air from the train pipe 25 of the car. In order to control or regulate the cocks 22, their handles are connected to link rods 26 which are in turn secured to the actuating levers 27 fulcrumed at the middle of the car as shown. By this means one operator may control both of the hoisting cables.

28 designates block and falls devices that are respectively secured to the outer ends of the booms 12 and whose cables are adapted to be fastened to cleats 28^a secured to the respective pedestals 9, so that the booms 12 may be adjusted and maintained at the proper elevation or inclination.

29 designates upper boom supports that are connected to the inner pulleys of the block and falls device and that preferably consist of angle bars of steel that diverge downwardly and have their lower ends pivotally and detachably connected to the vertically disposed bars 30 secured to the outer

edges of the end standards 2, said bars 30 being formed with a plurality of apertures so that the bolts which pivotally connect the supports 29 with the bars may be removed 5 and the connection between the bars and supports shifted to lower or raise the supports as desired.

29^a designates braces that are secured at their inner ends to the sides of the end standards 2 and that project outwardly to the bearings 11 of the masts and to which bearings they are connected in any suitable way.

31 designates strain rods that are connected at one end to the other ends of the upper boom supports 29 and that are connected at their opposite ends to a longitudinally extending anchor plate 32 which is mounted upon the middle sill 5 of supporting framework. The anchor plate 32 is formed with a 20 plurality of apertures through any one end of which the connecting bolts for the strain rods 31 may extend, so as to adjustably connect said strain rods to the plate.

From the foregoing description in connection with the accompanying drawings, it will be seen that I have provided a simple, durable and efficient construction of loading and unloading device, the booms of which may be easily adjusted and maintained at different 30 elevations or inclinations, the pivot ends of the booms being mounted at relatively high points by means of the pedestals 9 so that the booms may be easily operated over cars with relatively high sides. The block and falls device of the respective booms are strongly braced by means of the supports 29 and strain rods 31, and also in such a manner as to be capable of easy adjustment so as to accommodate themselves for the different 40 inclinations.

It is to be understood that the apparatus in working order is designed to be placed between two cars for loading and unloading, and may be used on any part of a train that 45 has an air brake connection with the main reservoir of the locomotive, the supply of compressed air for actuating the apparatus being transmitted to the drum or reservoir 23 through the train pipe 25 of the car.

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

1. In an apparatus of the character described, a car provided with an air brake train pipe, an air reservoir mounted thereon 55 in communication with said train pipe, an air cylinder having connection with said reservoir, means for controlling the admission of air from the reservoir to the cylinder, a piston working in said cylinder, a plunger rod connected to said piston, a pulley carried by said rod, a boom, means for supporting said boom, a hoisting cable mounted to run on said boom, and a drum to which said cable is connected, said cable passing around said 65 pulley, as and for the purpose set forth.

2. In an apparatus of the character described, the combination with a car provided with an air brake train pipe, of an air reservoir mounted on said car in communication with said train pipe, an air cylinder arranged 70 to be supplied from said reservoir, means for controlling the admission of air from the reservoir to the cylinder, a piston and plunger mounted to work in said cylinder, a boom supported on the car, a hoisting cable mounted to run on said boom, and an operative connection between said plunger rod and said cable.

3. In an apparatus of the character described, a traveling supporting framework, a 80 base block mounted therein, a hollow pedestal mounted on said base block, a boom pivotally mounted at one end upon the pedestal to swing about a horizontal axis, the boom being provided at each end with a pulley, 85 another pulley journaled in the base block, a drum mounted in said base block, a hoisting cable passing over the pulleys of the boom and down through the pedestal around the pulley of the base block, said cable being connected to the adjusting drum, a plunger rod carrying a pulley around which said cable runs, and means for actuating said plunger rod.

4. In an apparatus of the character described; a supporting frame-work, a boom, a support upon which said boom is mounted at one end to swing about a horizontal axis, block and falls secured to the outer end of said boom and arranged to adjust such outer 100 end to different elevations, upper boom supports connected at one end to the inner end of the block and falls device and extending downwardly therefrom, bars secured to the supporting framework to which the lower 105 ends of said upper boom supports are pivotally connected, a strain rod connected to the outer ends of the boom supports, and an anchor plate to which the inner end of the strain rod is connected, a hoisting cable 110 mounted to run over said boom, and means for actuating said cable.

5. In an apparatus of the character described, a supporting framework, a boom, a support upon which said boom is mounted 115 for swinging movement about a horizontal axis, a block and falls device connected to the outer end of said boom and arranged to hold such end at different elevations, upper boom supports connected to the inner end of 120 said block and falls device, vertically disposed bars secured to the ends of the framework and arranged for adjustable connection with the lower ends of said upper boom supports, a strain rod connected to the upper 125 ends of said boom supports and an anchor plate mounted upon the upper end of the framework and to which the strain rod is designed to be adjustably connected.

6. In an apparatus of the character de- 130

scribed, the combination of a boom, a cable
mounted to run on said boom, an air reser-
voir, an air cylinder operatively connected to
the air reservoir, means for controlling the
5 admission of air from the cylinder into the
reservoir, a piston and plunger mounted to
work in said cylinder, an operative connec-
tion between said plunger and said cable, and

a support for the boom, reservoir and air cyl-
inder.

10

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

BENJAMIN F. BROWN. [L. s.]

Witnesses:

N. A. NORTON,

A. E. HUMPHREY.