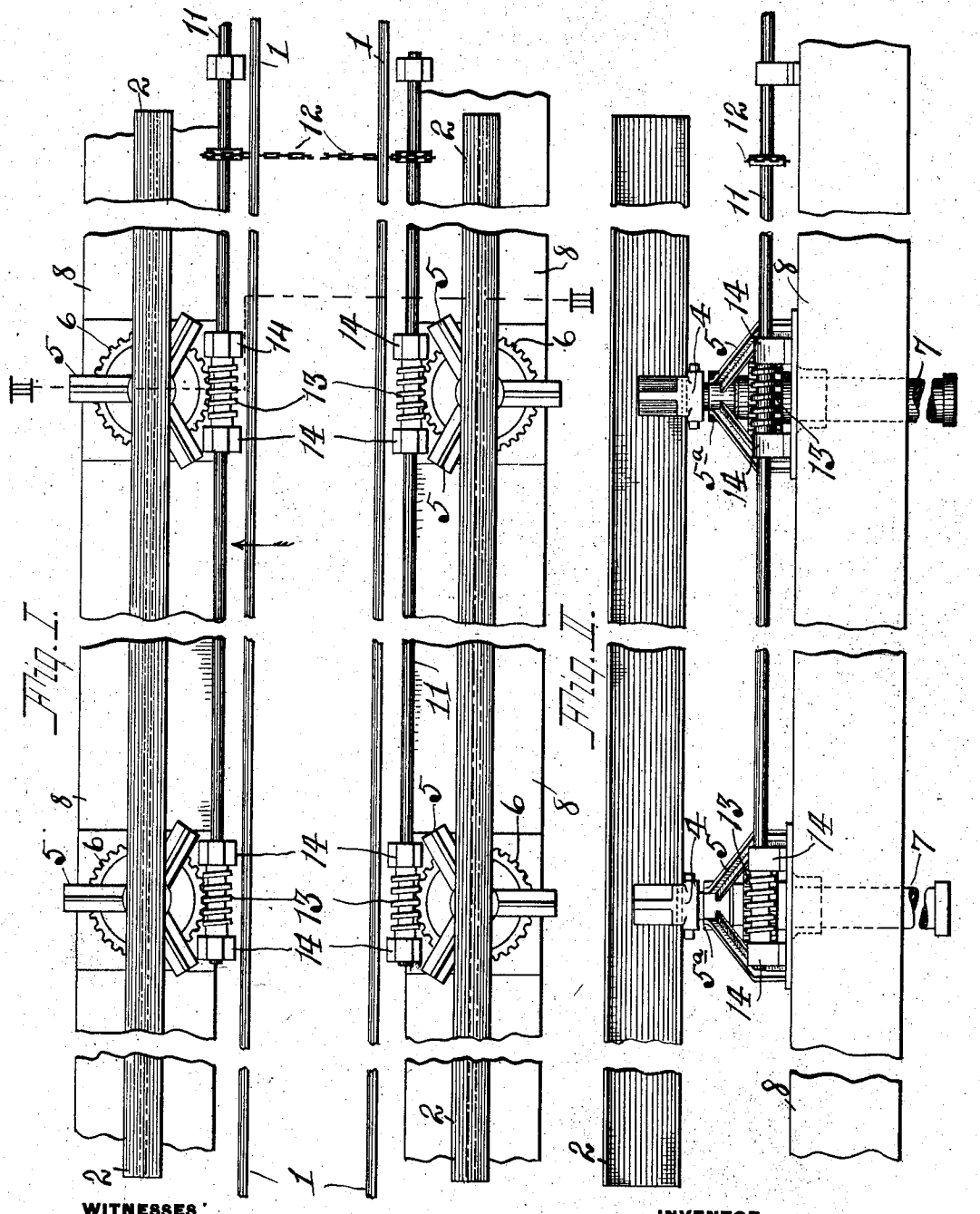
No. 760,622. PATENTED MAY 24, 1904.

W. A. HALLER.

APPARATUS FOR REMOVING CAR WHEELS, TRUCKS, &c.

APPLICATION FILED FEB. 24, 1904.

NO MODEL. 2 SHEETS—SHEET 1.



WITNESSES:

Geo. H. Harvey.

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by his Attorney

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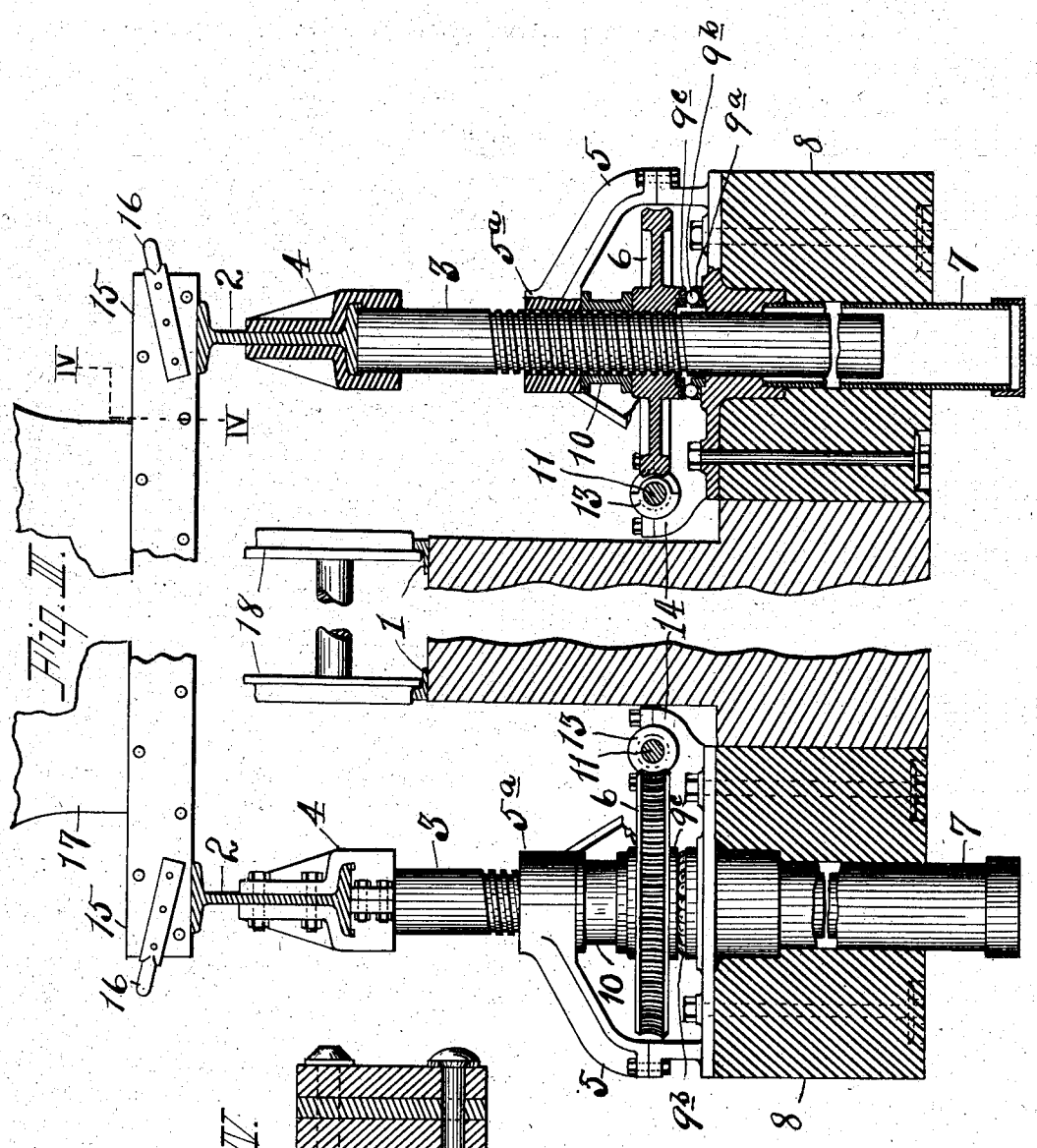


Fig. III.

Fig. IV.

WITNESSES

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UNITED STATES PATENT OFFICE.

WINFIELD A. HALLER, OF NEW YORK, N. Y., ASSIGNOR TO PITTSBURG ARMATURE WORKS, A CORPORATION OF PENNSYLVANIA.

APPARATUS FOR REMOVING CAR WHEELS, TRUCKS, &c.

SPECIFICATION forming part of Letters Patent No. 760,622, dated May 24, 1904.

Application filed February 24, 1904. Serial No. 195,101. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD A. HALLER, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Removing Car Wheels, Trucks, &c., of which the following is a specification.

My invention relates to hoisting apparatus and more particularly to the same as applied to the raising up of car-bodies for the purpose of facilitating the removal or replacing of car-trucks, car-wheels, or the running-gear thereof.

I am aware that there are several devices in use for accomplishing these objects; but they all have many disadvantages, which I believe to have been overcome in my invention. For example, lifts operated by hydraulic or pneumatic pressure are subject to the great defect of permitting the car-body to gradually settle after being raised. Others require specially-designed working pits or series of pits, thereby taking up much valuable room, whereas my invention may be installed in connection with any regular car-track irrespective of location or the relative position of the usual working pits. It also has the added advantage of being adapted to use with any kind or size of car, either single or double truck, and permitting the rapid and facile removal of the entire car truck or trucks or of all the wheels of or one pair of wheels only, as desired. Kindred devices which necessitate the lowering of the removed truck or running-gear into the pit, its consequent removal from the pit, and subsequent lowering into the pit of the substituted car-truck or running-gear and the raising thereof again into position have manifest disadvantages, which are obviated in the simple operation of my invention, as will appear from the description of the operation of my invention.

In the accompanying drawings, which form part of this specification, Figure I is a view of my invention, showing in a plan view the general position of my device with relation to the car-tracks. Fig. II shows a longitudinal elevation of one side of Fig. I looking in the direction of the arrow. Fig. III is an enlarged detail cross-section on line III III of Fig. I. Fig. IV is an enlarged cross-section of part of Fig. III through the line IV IV.

Similar figures of reference designate corresponding parts in Figs. I to IV of the drawings.

Referring now to the drawings for a detailed description of my invention, numerals 1 1 represent a pair of rails constituting an ordinary railway-track located in any convenient place, such as a car-barn or repair-shop. In pits or recesses outside and paralleling said tracks on either side are two I-beams 2 2, supported by the screws 3 3 3 3, attached rigidly to said I-beams by suitable clamps 4 4 4 4. Said screws pass through the collars 5^a of the spiders 5 5 5 5, resting on suitable foundations 8 8. Worm-gears 6 6 6 6 embrace said screws and have a thread engagement therewith. The lower ends of the screws 3 pass down through the base of the aforesaid spiders and into the casing 7 7 7 7, of larger bore than the said screws. The worm-gears 6 6 6 6 rotate on the bearings composed of the grooved ring 9^a, the balls 9^b, and the ring 9^c. A collar 10 holds the worm-gear against the ball-bearing. Parallel shafts 11 11, cross-connected by the link-belt 12, acting on suitable sprockets attached to said parallel shafts, have attached thereto the worms 13 13 13 13, meshing with the aforesaid worm-gears. Suitable bearings 14 hold shafts in position. Detached cross-bars 15 are provided with handles 16 16 at both ends. 17 is a representation of a portion of a car-body raised clear of the car-wheels 18, which rest on the car-track 1. (The representation of the car-wheels is reduced for convenience.)

The operation in detail is as follows: The car from which it is desired to remove the truck or one or more pair of wheels is run onto the track until in the proper position. The cross-bars 15 are laid across the parallel beams 2 2 and under the truck-frame or the free ends of the car-body, depending upon whether the wheels or the whole truck are to be removed. The worms on the shaft 11 11, driven by a convenient motor, revolve the

worm-gears 6 6 6 6, thereby raising the lifting-screws 3 3 3 3, attached rigidly to the I-beams 2 2. The cross-bars 15 are brought up against the car body or truck and the car body or truck raised as desired, the usual fastenings between the car-body and the part to be removed having first been loosened. When the car-body has been raised clear of the wheels or truck remaining on the track, said wheels or truck are shoved past the car-body and the substituted running-gear moved into its place, whereupon the action is reversed, the car-body lowered into its normal position, and the cross-pieces 15 removed.

I prefer to make the lifting-screws 3 3 3 3 in pairs, with right and left hand threads, respectively, so that the end thrust on the shafts may be thereby compensated.

Fig. III shows the pits or recesses only on outside of the track; but the pit may extend entirely under the track, as is the usual method in practice.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for raising car-bodies to remove or replace the running-gear thereof, the combination of two parallel beams, a stationary railway-track between said parallel beams, detached cross-bars to be laid across said parallel beams to support the car-body when said beams are raised, a pair of screw-pedestals under each of said parallel beams, and means for operating said screws in unison, substantially as set forth.

2. In a car-raising apparatus, the combination of a stationary railway-track, a working pit, parallel beams approximately flush with said tracks and lying outside thereof, separate cross-bars provided with handles at each end, screw-pedestals in said pit and supporting said parallel beams, and means of operating said screws in unison to raise and lower said parallel beams, substantially as set forth.

3. In a car-hoist the combination of a fixed railway-track, a working pit, two parallel beams parallel with said railway-track and lying in the same plane normally and outside of said railway-track, means of sustaining a car-body on said parallel beams when same are raised, hollow standards located in the working pit, a worm-wheel horizontally arranged within each standard, a lifting-screw extending centrally through the worm-wheel and having a threaded engagement therewith and rigidly connected to the aforesaid parallel beams, worm-shafts having thereon worms engaging said worm-wheels and means of operating said shafts in unison, substantially as set forth.

4. In a car-lift the combination with a pit, two parallel beams, a stationary railway-track between said parallel beams, and detached cross-bars for said parallel beams, of standards having openings extending therethrough, a spider at the top of said standards, a worm-wheel arranged horizontally in said spider, a lifting-screw extending through and supported by said worm-wheel by means of the thread therein, said worm-wheel being rotatable about the screw and having a hardened ring on its under side, an opposing ball-raceway on said standard and balls within said raceway, a motor-driven shaft with worms thereon operating said worm-wheel, substantially as set forth.

5. In a car-lift, in combination with means for supporting the car-body, pairs of standards or casings having a spider at their upper end, a vertical opening extending downward from said spider, a worm-wheel arranged within said spider having a hardened collar on its lower face, an annular grooved raceway and balls therein, a lifting-screw extending through the hub of said wheel, said wheel being rotatable about said screw, worm-shafts engaging said wheel, substantially as set forth.

6. In a lifting-screw, a spider, a casing having a socket in its upper face, an annular groove or channel in the base of said socket and a vertical opening extending downwardly from said socket, a wheel arranged within said spider and having an annular groove in its lower face, a lifting-screw extending through the hub of said wheel, said wheel being rotatable on the screw, annular bearings arranged within the channels of the wheel and socket, the lower bearing having a raceway, balls within said raceway, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses whose signatures are subscribed.

WINFIELD A. HALLER.

Witnesses:
FREDERICK S. DUNCAN,
JESSIE B. KAY.