

No. 779,988.

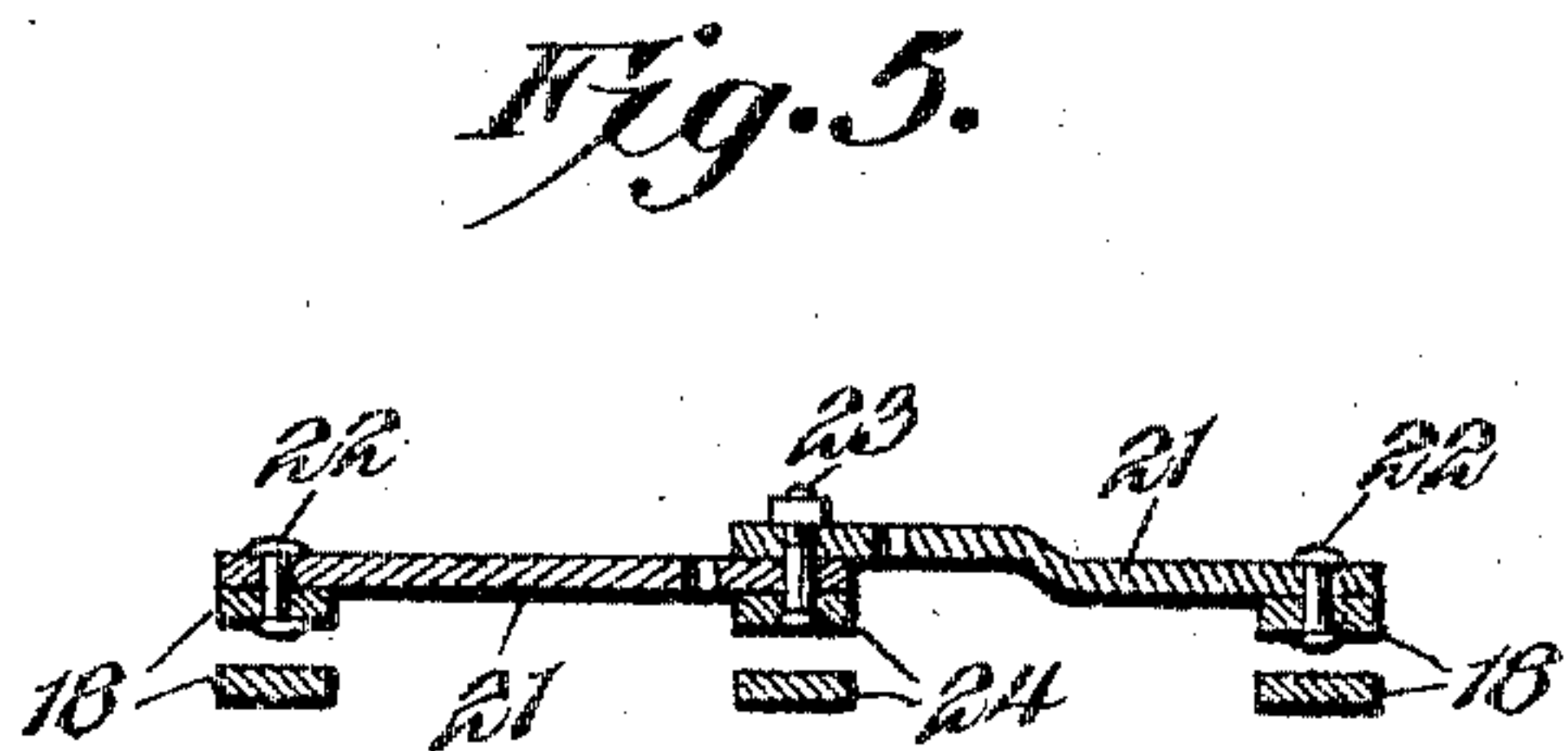
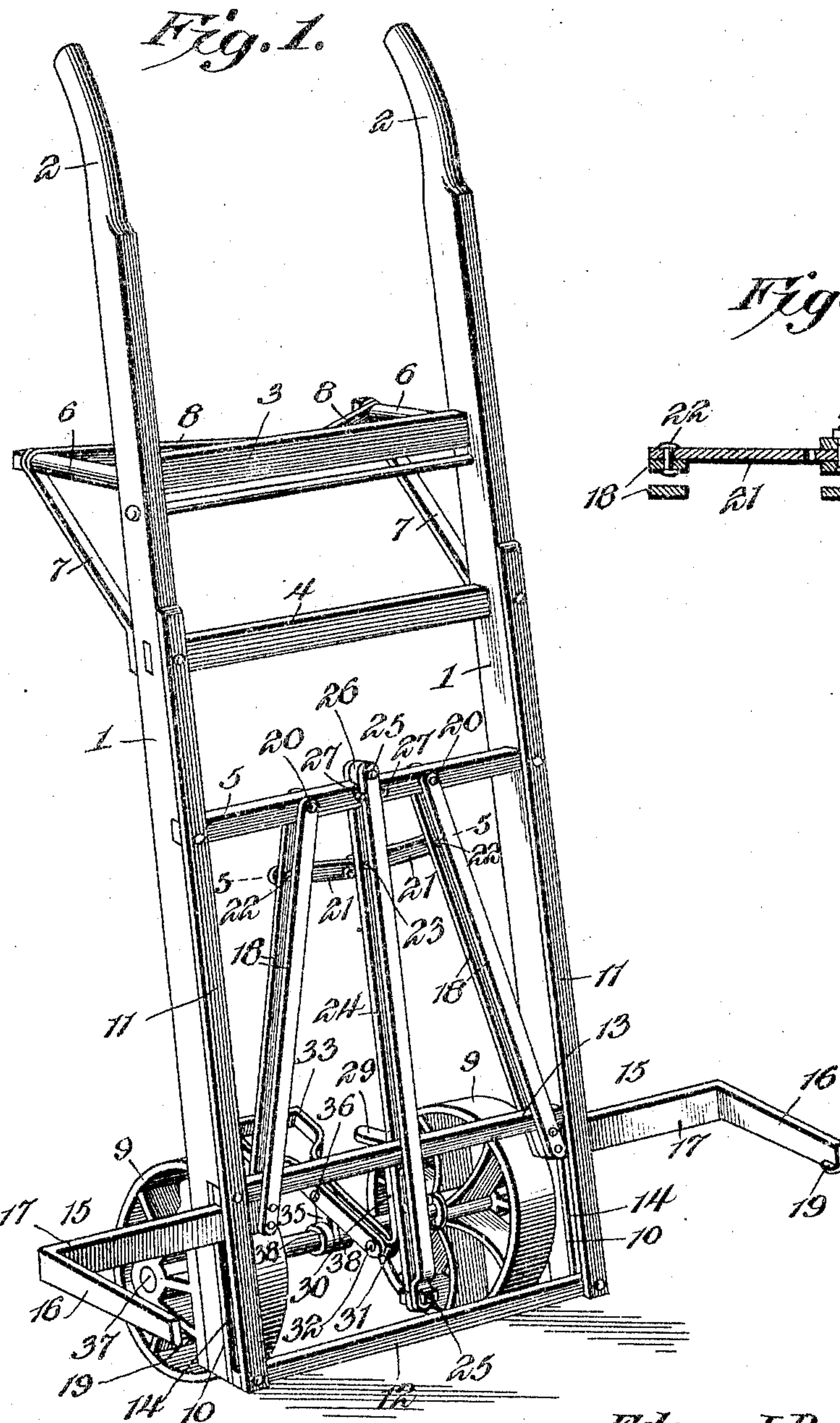
PATENTED JAN. 10, 1905.

E. J. BRYAN.

HAND TRUCK.

APPLICATION FILED JUNE 9, 1903.

2 SHEETS--SHEET 1.



Edgar J. Bryan, Inventor,

By

E. J. Figgess

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Witnesses

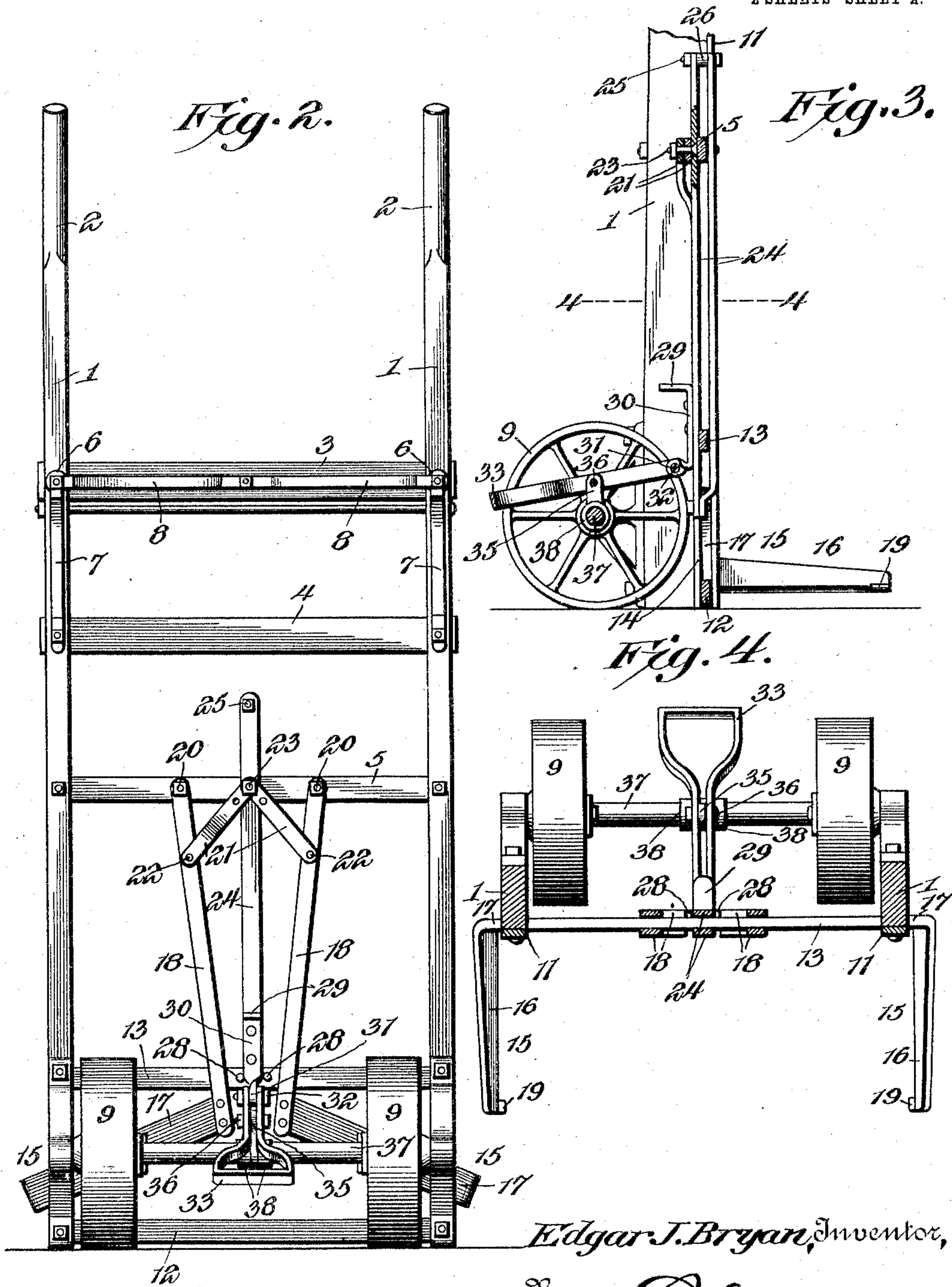
Howard W. Orr

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UNITED STATES PATENT OFFICE.

EDGAR J. BRYAN, OF RIVERSIDE, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO ALBERT W. MILLER, OF RIVERSIDE, CALIFORNIA.

HAND-TRUCK.

SPECIFICATION forming part of Letters Patent No. 779,988, dated January 10, 1905.

Application filed June 9, 1903. Serial No. 160,691.

To all whom it may concern:

Be it known that I, EDGAR J. BRYAN, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented a new and useful Hand-Truck, of which the following is a specification.

The invention relates to improvements in hand-trucks for moving boxes and various other receptacles and the like.

The object of the present invention is to improve the construction of hand-trucks, more especially that shown and described in an application filed by me on or about the 31st day of July, 1902, Serial No. 117,845, and pending concurrently with the present application, and to provide a simple, inexpensive, and efficient one of great strength and durability capable of being readily operated by the foot to positively actuate the clamping members in both their opening and closing movements.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a hand-truck constructed in accordance with this invention, the clamping members being open for receiving a load. Fig. 2 is a rear elevation of the truck, the latter being in an upright position and the clamping members being closed. Fig. 3 is a vertical longitudinal sectional view, the truck being in an upright position and the parts being arranged as shown in Fig. 2. Fig. 4 is a horizontal sectional view on the line 4-4 of Fig. 3. Fig. 5 is a sectional view on the line 5-5 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 1 designate longitudinal side bars pro-

vided at their rear ends with handles 2 and 50 connected by cross-bars 3, 4, and 5. The handles are of the ordinary form, and the side bars and the cross-bars 3 and 4 are preferably constructed of wood, as shown; but the truck-frame may be of any other desired construction, as will be readily understood. The cross-bar 5 is constructed of metal and forms a support for the clamping members hereinafter described. Suitable leg-standards 6, which are shaped to form hand-grips, project 60 from the under faces of the side bars and are braced by inclined rods or straps 7, extending from the outer ends of the leg-standards and the adjacent side bars. The leg-standards or handles 6 are also connected by braces 65 8, extending transversely of the truck-frame from the outer ends of the leg-standards or handles 6 to the center of the rear cross-bar 3. Suitable rollers or wheels 9 are mounted upon the under faces of the side bars and are 70 located as near as possible to the forward extremities of the same. Each side bar is notched or recessed, as shown at 10, and across each notch is secured a metallic plate 11 to form a longitudinal slot. The forward ends 75 of the straps or plates are connected by a flat cross-bar 12, which connects the forward ends of the side bars. The bar 12 is constructed of metal, and the side bars are also connected at the inner ends of the notches or recesses 10 80 by a metal cross-bar 13.

The side bars 1 are provided in the notches or recesses 10 with metal plates or bars 14, forming linings for the same and adapted to prevent the wood from becoming worn by 85 clamping members 15, which oscillate in the said slots. The clamping members, which are adapted to engage a box or other load, are composed of outer jaws or portions 16, transverse arms 17, and longitudinal arms 18. The 90 outer portions or jaws, which project outward from the truck-frame approximately at right angles to the same, are provided with lugs or flanges 19, adapted to embed themselves in a wooden box or other receptacle, whereby the 95 load is effectually prevented from slipping. The lugs or flanges 19 are beveled to provide sharp engaging edges, and they are set at an

angle when the clamping members are closed and when the truck is arranged in an upright or substantially upright position, whereby the weight of the load will operate to hold the clamping members in engagement. The transverse arms or portions of the clamping members extend through the longitudinal slots of the truck-frame, and the longitudinal portions or members 18 preferably consist of straps or bars arranged in pairs and located at the upper and lower faces of the cross-bars 5 and 13. The inner or upper ends of the straps or bars of the longitudinal arms of the clamping members are pivoted to the cross-bar 5 at points equidistant of the center thereof by bolts 20 or other suitable fastening devices. The said longitudinal arms are connected adjacent to their pivotal points to the outer ends of a pair of transverse links or bars 21 by rivets 22 or other suitable fastening devices, and these links or bars are adapted to be swung into and out of alinement to open and close the clamping members. The links or bars, which are arranged at an angle to each other, as shown in Fig. 2, when the pivoted clamping members are closed, are connected by a bolt 23 with a reciprocating slide or member 24, which is moved downward or outward to open the clamping members. The inner ends of the links or bars are provided with a plurality of perforations to afford an adjustment, and the slide or member is preferably composed of two straps or bars connected at their ends by bolts 25 and located at the opposite faces of the cross-bars 5 and 13, suitable spacing plates or pieces 26 being interposed between the ends of the straps or bars of the slide or member, as clearly shown in Fig. 3. The cross-bars 5 and 13 are provided with projecting studs 27 and 28, arranged in pairs and forming a guide or way for the reciprocating slide or member. The studs 27 of the cross-bar 5 are located at the upper or front face of the latter, and the other studs, 28, are located at the lower or rear face of the cross-bar 13. The reciprocating slide or member is guided in its movements, and when it is forced downward or outward by the means hereinafter described the transverse links or bars, which are connected with the pivoted clamping members, are swung downward into alinement and their inner pivoted ends are carried slightly below the longitudinal center. By this operation the pivoted clamping members are opened and are locked in such position by the links or bars. The slide or member is provided near its lower end with a foot-piece 29, extending outward at right angles to the slide or member from the lower or rear strap or bar of the same and formed integral with a plate or piece 30, which is secured to the lower or rear bar of the slide or member and which has its lower or rear end bent outward and provided with a quarter-bend to form an ear 31 and to arrange the

same longitudinally of the slide or member. The ear is pivoted by a bolt 32 to the inner arm of a foot-lever 33, which is fulcrumed between its ends, as clearly shown in Fig. 4 of the drawings. The foot-lever is preferably constructed of a single piece of metal, which is bent between its ends to form an outer foot-receiving loop and which is extended from the inner side of the loop to form a straight shank or body portion. The shank or body portion is composed of two sides, which are pivoted at their terminals by the bolt 32 to the ear 31. The sides are pivoted at the inner end of the shank or body portion to a support 35 by a bolt 36, and the said support consists of a plate or piece having an opening at its lower or outer end to receive the axle 37 of the truck. This support forms a fulcruming-link and is adapted to swing as the slide or member reciprocates. Suitable collars 38 are mounted on the axle at opposite sides of the fulcrum or support of the foot-lever to retain the same in a central position. The lever does not extend outward or downward a sufficient distance to come in contact with the ground or other supporting-surface, and the truck and its load may be placed in any position without liability of the lever accidentally coming in contact with the supporting-surface and releasing the clamping members. When the outer end of the foot-lever is depressed, the slide or member will be raised and the clamping members will be permitted to engage the load. It is only necessary to swing the inner ends of the transverse bars or links inward or upward sufficiently to carry their inner pivot beyond the center, and the clamping members will then close by gravity on the load.

The truck is designed especially for carrying a series or tier of boxes of oranges or lemons; but it is adapted for handling various other kinds of merchandise, as will be readily understood. It is placed in an upright position against the load with its pivoted clamping members open or spread. The foot-lever is then depressed to cause the clamping members to engage the load, and the truck is then tilted backward to raise the load from the ground or other supporting-surface. The weight of the load resting upon the jaws of the pivoted clamping members holds the latter firmly in engagement with the load and effectually prevents the clamping members from accidentally opening and releasing the load. When it is desired to deposit the load, the truck is brought to a perpendicular position to permit the load to rest upon the supporting-surface, and the clamping members, which are thereby relieved of strain, may be readily swung out of engagement with the load by depressing the foot-piece 29.

In the present application the means for actuating the clamping members to move the same positively in each direction by the foot

and for actuating the transverse bars to swing the pivots thereof into and out of substantial alinement are not broadly claimed, as broad claims for these features are presented in an application executed and filed by me of even date herewith, such broad claims being generic to the subject-matter of both applications.

What I claim is—

1. The combination with a truck, of pivoted clamping members located at opposite sides of the truck, bars disposed transversely of the truck and pivotally connected with each other and with the clamping members and arranged to be swung into and out of substantial alinement to lock the clamping members in an open position and to permit them to close and clamp a load, a reciprocating slide or member connected with the said bars, and means for operating the slide or member, substantially as described.

2. The combination with a truck, and pivoted clamping members, of operating mechanism for opening and closing the clamping members, comprising bars pivotally connected with each other and with the clamping members and arranged at an angle to each other when the clamping members are in engagement with a load, a slide or member connected with the bars, and means for reciprocating the slide or member, substantially as described.

3. The combination with a truck, of pivoted clamping members, bars connected with each other and with the clamping members and arranged to swing into and out of substantial alinement to lock the clamping members in their open position and to release them therefrom, a slide or member connected with the bars, and a foot-lever connected with the slide or member for operating the same, substantially as described.

4. The combination with a truck, of pivoted clamping members, transverse bars connected with the clamping members and arranged to swing into and out of substantial alinement to lock the clamping members in their open position and to release them therefrom, a slide or member connected with the bars, a pivotally-mounted fulcrum, and an operating-lever mounted on the fulcrum and connected with the slide or member, substantially as described.

5. The combination with a truck, of pivoted clamping members, approximately transverse bars connected with the clamping members and arranged to swing into and out of substantial alinement to lock the clamping members in their open position and to release them therefrom, a fulcrum-link pivoted at its outer end to the truck, a slide or member connected with the bars, and a foot-lever fulcrumed between its ends on the link and connected with the slide or member, substantially as described.

6. The combination with a truck, of pivoted clamping members, bars pivotally connected with the clamping members and with each other and arranged to swing into and out of

substantial alinement, and a slide or member provided with a foot-piece and connected with the bars and adapted to open and close the clamping members, substantially as described.

7. The combination with a truck, of pivoted clamping members, transverse bars connected with the clamping members and arranged to swing into and out of substantial alinement to lock the clamping members in their open position and to release them therefrom, a slide or member connected with the bars and provided with a foot-piece, and a foot-lever connected with the slide or member, substantially as described.

8. The combination of a truck provided with guides, pivoted clamping members, bars connected with the clamping members and arranged to swing into and out of substantial alinement, a slide or member arranged in the guides and connected with the bars, and means for reciprocating the slide or member to open and close the clamping members, substantially as described.

9. The combination of a truck provided with cross-bars having studs projecting from their opposite faces and arranged in pairs, pivoted clamping members, transverse bars connected with the clamping members and arranged to swing into and out of substantial alinement, a slide or member connected with the said bars and composed of two bars located at the opposite faces of the cross-bars of the truck and arranged between the studs, and means for operating the slide or member, substantially as described.

10. The combination of a truck provided with cross-bars and having guides at opposite sides, pivoted clamping members operating in said guides and provided with longitudinal arms composed of bars arranged in pairs at opposite faces of the cross-bars and pivoted to one of the same, a slide or member composed of bars located at the opposite faces of the cross-bars, transverse bars connecting the clamping members with the slide or member and arranged to swing into and out of substantial alinement, and means for operating the slide or member, substantially as described.

11. The combination with a truck, of pivoted clamping members, transverse bars connected with the clamping members and arranged to swing into and out of substantial alinement, a slide connected with the bars, and a foot-lever fulcrumed on the truck at the axle thereof and supported by the latter, said foot-lever being connected with the slide, substantially as described.

12. The combination with a truck, of pivoted clamping members, a slide connected with the clamping members, and a foot-lever mounted on the axle of the truck and connected with the slide, substantially as described.

13. The combination with a truck, of clamping members for engaging a load, and a foot-lever mounted on the axle of the truck and

connected with the clamping members and arranged to be operated by the foot, substantially as described.

14. The combination with a truck, of clamping members, a fulcrum-link mounted on the axle of the truck, and a lever fulcrumed on the link and connected with the clamping members, substantially as described.

15. The combination with a truck, of clamping members, a slide connected with the clamping members, a plate or piece mounted on the slide and having one end extended to form a foot-piece and provided at its other end with a projecting portion, and a foot-lever connected with the latter, substantially as described.

16. The combination with a truck, of clamping members movable inward and outward to clamp and release the load, and operating mechanism positively actuated by the foot and reciprocating longitudinally of the truck to move the clamping members positively in each direction to open and close the same and forming a lock to hold the clamping members in their open position for enabling them to be placed at opposite sides of a load, said operating mechanism being adapted to release the clamping members to permit the same to swing freely in closing, substantially as described.

17. The combination with a truck, of clamping members movable inward and outward to clamp and release the load, means arranged to reciprocate longitudinally of the truck for moving the clamping members inward and outward and adapted to lock the latter in their open position, said means being provided with a foot-piece for moving the members in one direction, and a foot-lever for moving the clamping members in the opposite direction, substantially as described.

18. The combination with a truck, of clamping members movable inward and outward to clamp and release the load, a slide arranged to reciprocate longitudinally of the truck and connected with the clamping members to open and close the same and adapted to lock the said clamping members in their open position, a foot-piece for moving the slide in one direction, and a foot-lever for moving the slide in the opposite direction, substantially as described.

19. The combination with a truck, of clamping members movable inward and outward to engage and release a load and provided with load-engaged portions lying beyond the truck, means reciprocating longitudinally of the truck for moving the clamping members inward and outward to open and close the same and forming a lock to hold the clamping mem-

bers in their open position for enabling them to be placed at opposite sides of a load, and adapted to permit the clamping members to swing freely to their closed position when the said clamping members are released, and operating mechanism for positively actuating the said means in each direction by the foot, substantially as described.

20. The combination with a truck, of clamping members movable inward and outward to engage and release the load, and provided with load-engaging portions lying beyond the truck, and mechanism reciprocating longitudinally of the truck and positively actuated by the foot to move the clamping members in each direction to open and close the same and forming a lock to hold the clamping members in their open position for enabling them to be placed at opposite sides of a load, said mechanism permitting the clamping members, when released, to swing freely to their closed position, substantially as described.

21. The combination with a truck, of clamping members movable inward and outward to engage and release the load and composed of outer engaging portions or jaws, transverse arms extending inward from the same, and longitudinal arms arranged at the inner ends of the transverse arms and pivotally connected with the truck, approximately transverse bars pivotally connected with the clamping members and with each other and movable in opposite directions to open and close the clamping members and forming a lock for holding the clamping members in their open position, a slide movable longitudinally of the truck and connected with the transverse bars, and means for enabling the slide to be positively moved in each direction by the foot, substantially as described.

22. The combination with a truck, of clamping members movable inward and outward to engage and release the load, a slide arranged to reciprocate longitudinally of the truck to open and close the clamping members, approximately transverse bars connecting the slide with the clamping members, and means for enabling the slide to be positively moved in each direction by the foot, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDGAR J. BRYAN.

Witnesses:

A. D. NICHOLS,
WM. T. DINSMORE.