No. 882,735. PATENTED MAR. 24, 1908.

R. S. BERGSATHER.

WAREHOUSE TRUCK.

APPLICATION FILED APR. 6, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

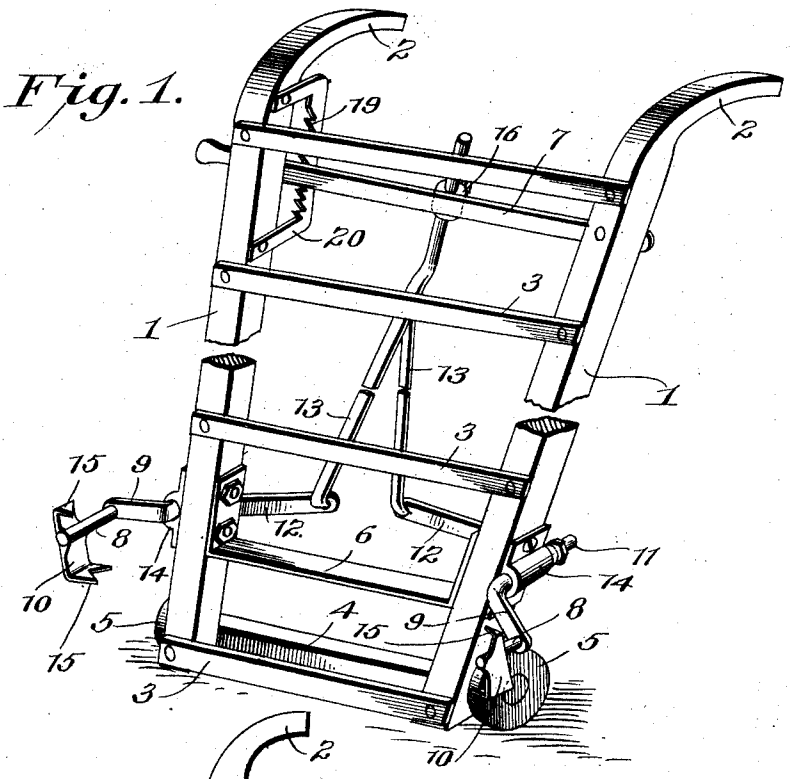
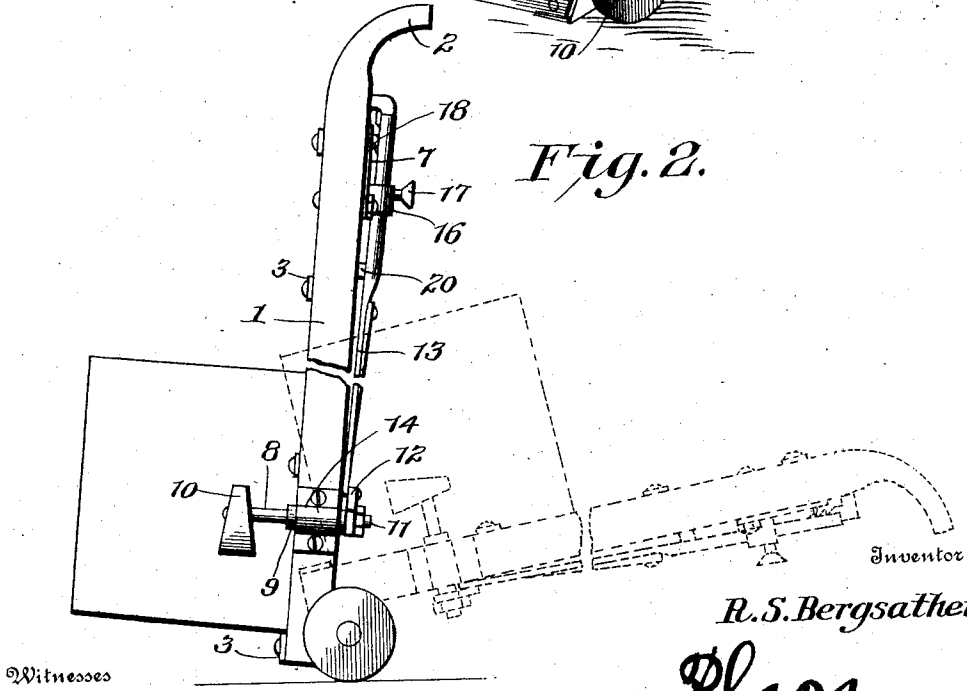


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

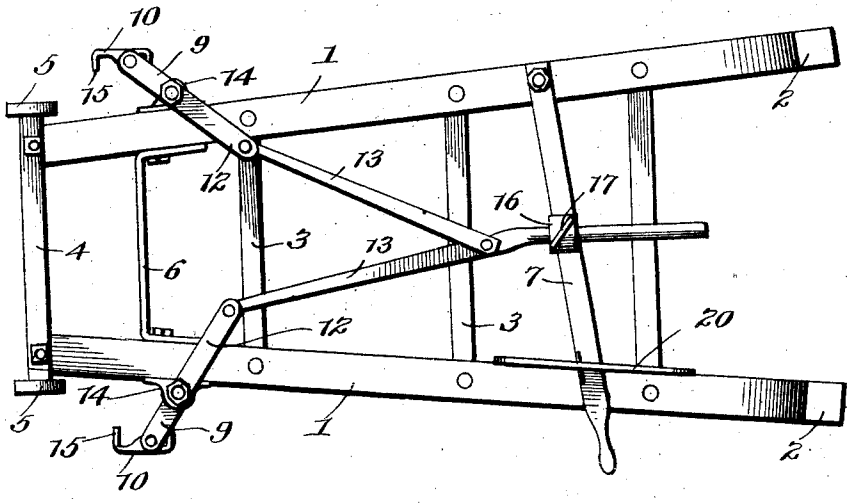


Fig. 4.

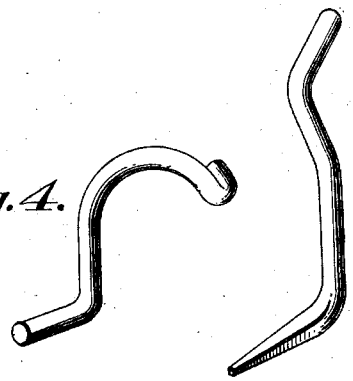


Fig. 5.

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WAREHOUSE-TRUCK.

No. 882,735. Specification of Letters Patent. Patented March 24, 1908.

Application filed April 6, 1907. Serial No. 366,817.

To all whom it may concern:

Be it known that I, RASMUS S. BERGSATHER, citizen of the United States, residing at Northwood, in the county of Worth and State of Iowa, have invented certain new and useful Improvements in Warehouse-Trucks, of which the following is a specification.

Hand trucks such as are generally used for moving merchandise either in warehouses and business places, or for transporting boxes, barrels, bales and like packages, are provided at the lower or front end with a lifting foot piece which is forced beneath the box or package to be lifted and said package pressed to the truck when tilting the same from an approximately vertical position to a convenient position for moving the goods.

The present invention provides a truck which may be placed against the side of the box, keg, bale or other package and grip the same from opposite sides so that when lowering the handle ends of the truck, the package will be lifted from the floor or surface so as to be transported or moved to the required position.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a warehouse truck embodying the invention. Fig. 2 is a side view thereof showing the same applied to a box or package preliminary to lifting the same, the dotted lines showing the upper end of the truck lowered and the package lifted. Fig. 3 is a view of the truck inverted or as seen from the bottom side. Fig. 4 is a detail view of a gripper especially designed for sacks of grain. Fig. 5 is a detail view of a form of gripper designed more particularly for lifting bales either of hay, straw or wire.

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 truck comprises the usual longitudinal bars 1 terminating at their rear ends in curved grips 2. Cross bars 3 connect the longitudinal bars and support the goods. The axle 4 is located at the forward ends of the longitudinal bars and is provided with the usual truck wheels 5. A brace 6 is interposed between the longitudinal bars 1 and prevents any relative movement of the longitudinal bars besides forming an additional support for the packages or goods.

Grips are journaled to the longitudinal bars 1 near their front ends and may be of such formation and structure as best adapted to firmly grip the package or goods to be moved, said grips having connection with an operating lever 7 by means of which they are forcibly moved to insure their firm gripping of the package, bale or other goods to be lifted and transported. Each grip comprises a crank pin 8 and a crank arm 9, an engaging portion 10 and a rock shaft 11, the latter being connected by means of a lever 12 with a rod or bar 13 having adjustable connection with the lever 7. The grips are located a like distance from the front ends of the longitudinal bars 1 and their shafts 11 are mounted in suitable bearings 14 which preferably have adjustable connection with the longitudinal bars to permit of the position of the grips being varied according to the nature and size of the packages to be handled. The crank arms or levers 12 may be of any length to secure a compound leverage in connection with the operating lever 7 and may form a part of the respective shafts 11 or have adjustable connection therewith. The engaging portions 10 as also the crank arms 9, may be variously formed and of integral or separate construction according to the adaptation of the truck for the particular work.

In the constructions shown in Figs. 4 and 5, the shafts, crank arms and engaging portions are of integral formation, whereas in the form shown most clearly in Fig. 1, the crank arm 9 is integral with the shaft 8 and the engaging portion 10 is pivotally mounted between its ends upon a crank pin projected outward from the crank arm, said pivoted engaging portion having spurs 15 at opposite ends to bite into a box, keg or other package to prevent possible slipping thereof when operating the truck.

The operating lever 7 has a block 16 connected thereto by means of a swivel joint, and said block has an opening through which the rod or bar 13 is slidable and adapted to be secured in the adjusted position by means of a set screw 17. The operating lever 7 extends transversely of the truck and is pivoted at one end to a longitudinal bar 1 and has its opposite end projected beyond the other longitudinal bar 1 and formed with a lip 18 to engage with one of a series of teeth 19 of a bar 20 secured to the longitudinal bar 1 beyond which the free end of the lever 7 projects outward.

When it is required to move a heavy box or package, the truck is placed against a side of the box in an approximately vertical position as shown in Fig. 2 after which the lever 7 is operated to cause the grips to take firm hold of opposite sides of the box. Should the grips fail to firmly take hold of the box at the first trial because of the distance between them being too great, they may be properly adjusted by loosening the set screw 17 and moving the rod or bar 13 in the block 16, said rod or bar being secured by retightening the set screw. After the adjustment of the grips to the box or package, the lever 7 is operated to cause said grippers to take a firm hold of the box or package, the lip 18 of the lever 7 being engaged with a tooth 19 of the bar 20 so as to hold the grips in firm engagement with the box. The truck is now moved from the vertical position into the usual inclined position assumed when trundling the box or package as indicated by the dotted lines in Fig. 2. After the box or package has been moved to the required point, it is discharged by turning the truck into an upright position, thereby bringing the box squarely upon the floor or other surface, after which the lever 7 is released and moved to cause the grips to relax their hold upon the box or package, when the truck may be moved away to be again used as may be required. The several grips may be interchangeable as well as adjustable so as to adapt the truck for various uses and kinds of goods to be moved.

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

1. The combination of a truck, bearings upon opposite sides of the truck, a rock shaft journaled within each of the bearings, crank arms upon the two ends of each of the shafts, one pair of the crank arms being located above the truck while the opposite pair are located below the truck, loosely mounted gripper members carried by the first mentioned pair of crank arms, and means coöperating with the crank arms under the truck to rotate the rock shafts.

2. The combination of a truck comprising longitudinal bars having wheels at one end thereof and handles at the opposite ends, bearings applied to the sides of the longitudinal bars, a rock shaft journaled within each of the bearings, crank arms at the two ends of each of the rock shafts, one set of the crank arms being located above the truck while the opposite set are located below the truck, an operating lever connecting the longitudinal bars of the truck, the said lever being pivotally connected to one of the bars and adjustably engaging the opposite bar, and rods connecting the operating lever to the crank arms under the truck for rotating the rock shafts to cause the crank arms above the truck to engage a member to be carried upon the truck.

3. The combination of a truck, bearings upon opposite sides of the truck, a rock shaft journaled within each of the bearings, crank arms at the two ends of each of the rock shafts, an operating lever mounted upon the truck, the said lever being pivotally connected to one side of the truck and adjustably engaging the opposite side, a block carried by the operating lever, and a rod adjustably connected to the block and serving as a connecting means between the lever and the crank arms at one end of the before mentioned rock shafts, the crank arms at the opposite end of the said rock shafts being provided with gripper members.

4. The combination of a truck, bearings upon opposite sides of the truck, a rock shaft journaled within each of the bearings, crank arms at the two ends of each of the rock shafts, one set of the crank arms being located above the truck while the opposite set are located below the truck, an operating lever mounted upon the truck, and connecting means between the operating lever and the crank arms below the truck for actuating those crank arms above the truck.

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

RASMUS S. BERGSATHER. [L. S.]

Witnesses:

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ROBERT HOOE.