

No. 770,355.

PATENTED SEPT. 20, 1904.

J. T. COX & J. W. FORBES.

HAND TRUCK.

APPLICATION FILED JULY 30, 1903.

NO MODEL.

Fig. 1.

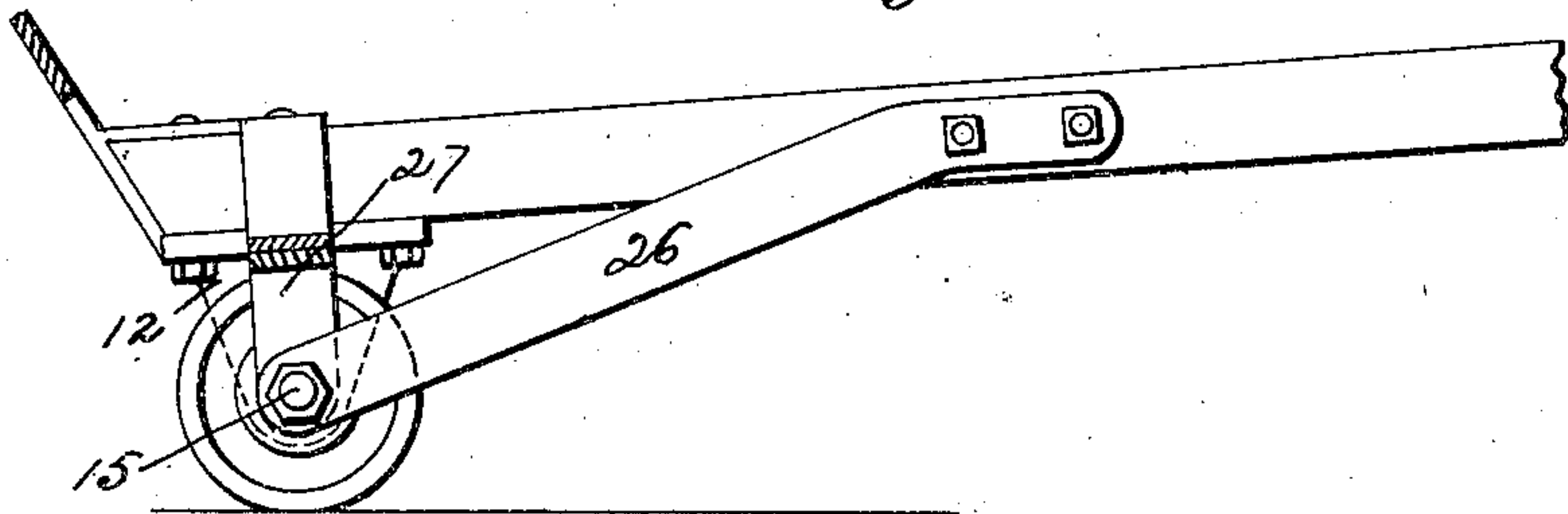


Fig. 2.

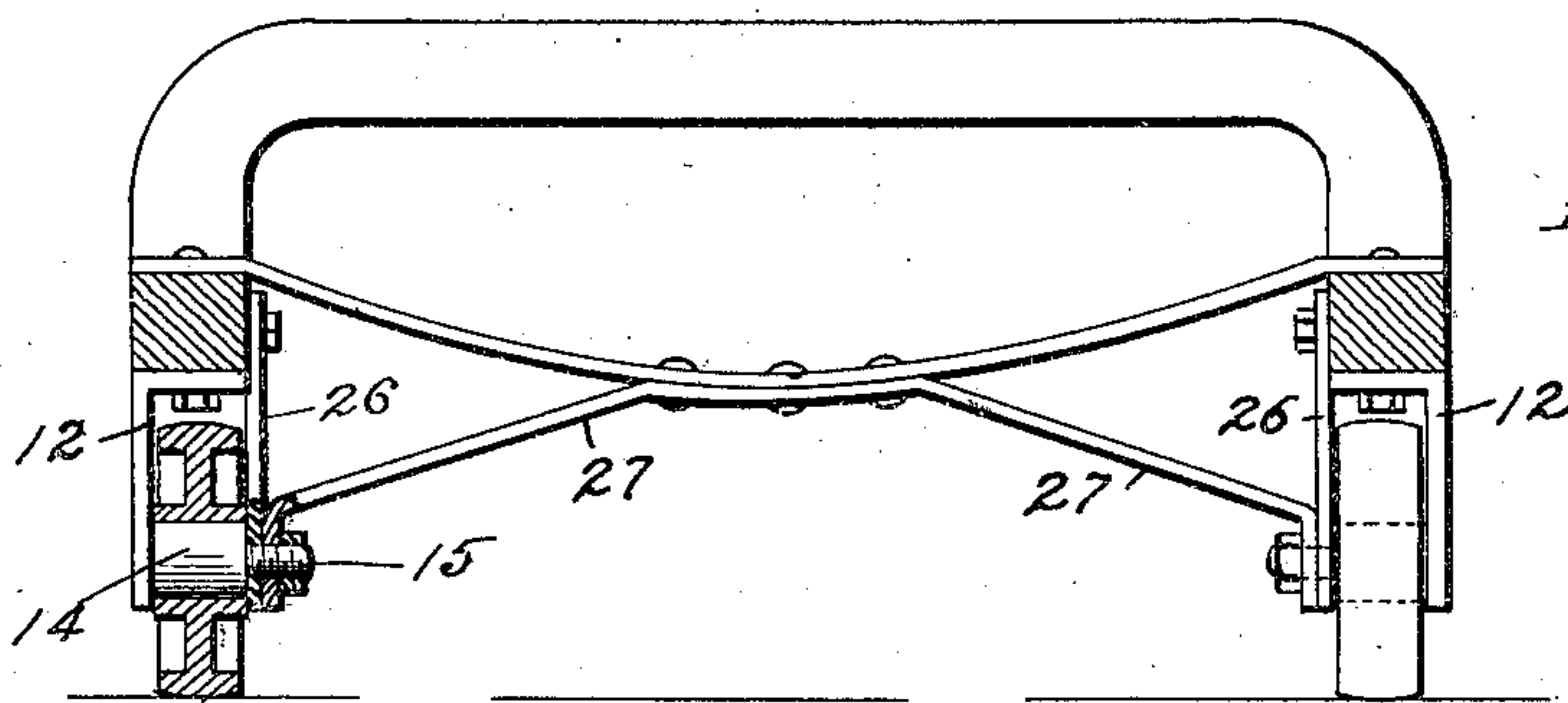


Fig. 3.

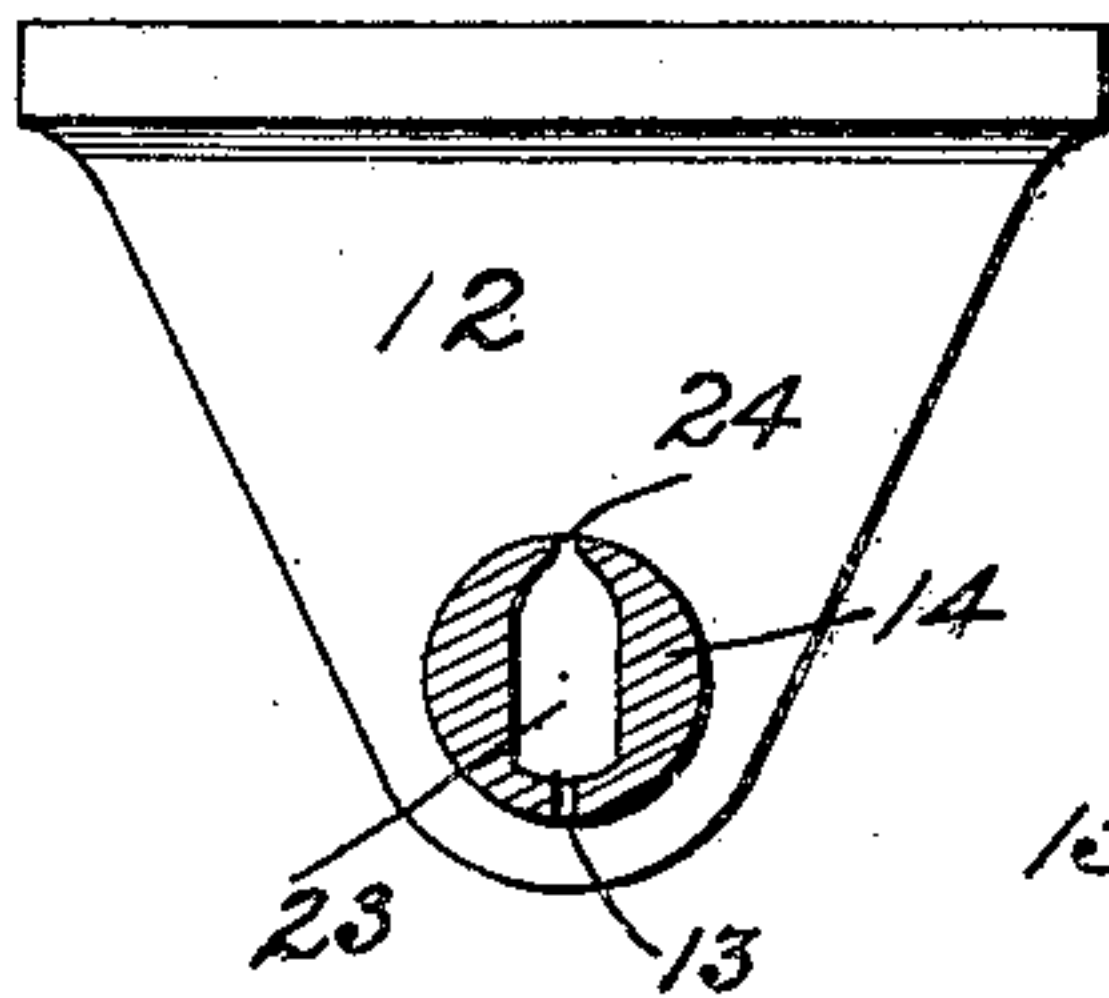


Fig. 4.

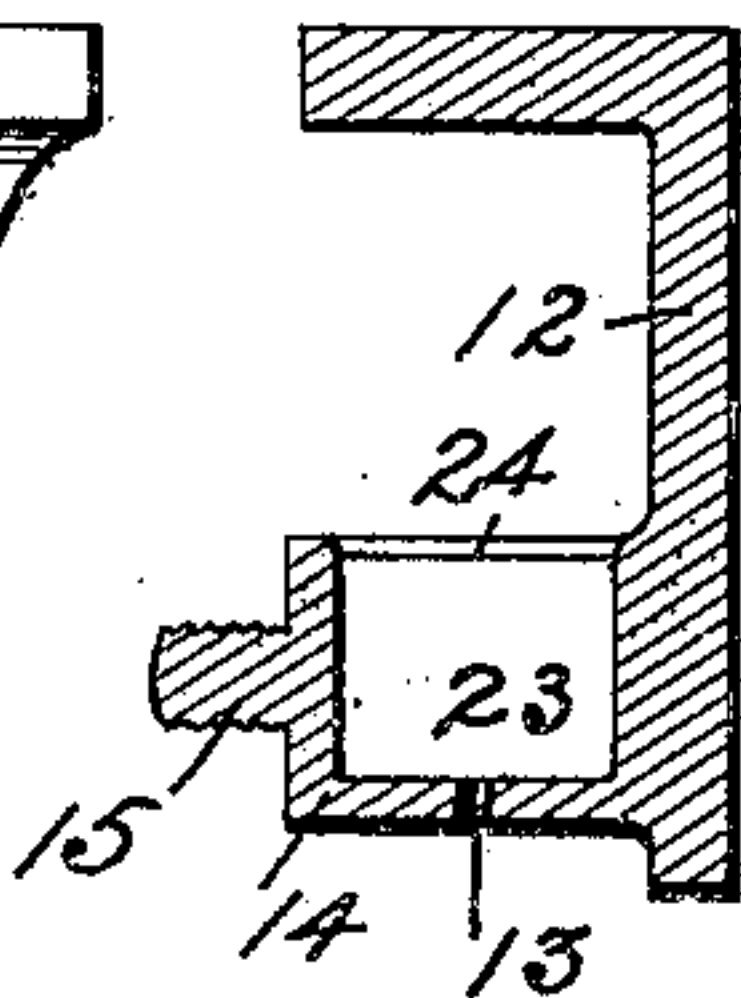


Fig. 5.

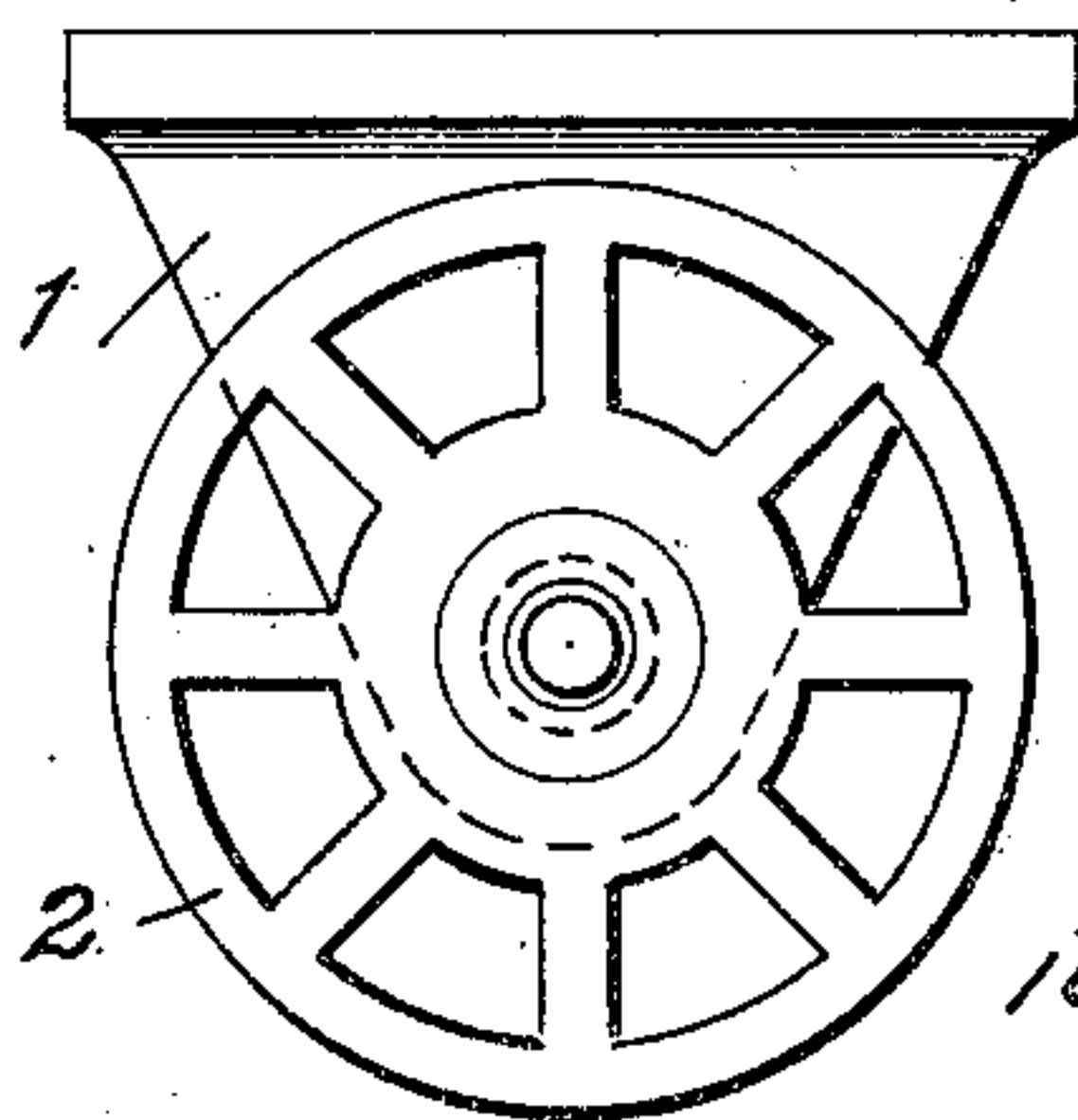


Fig. 6.

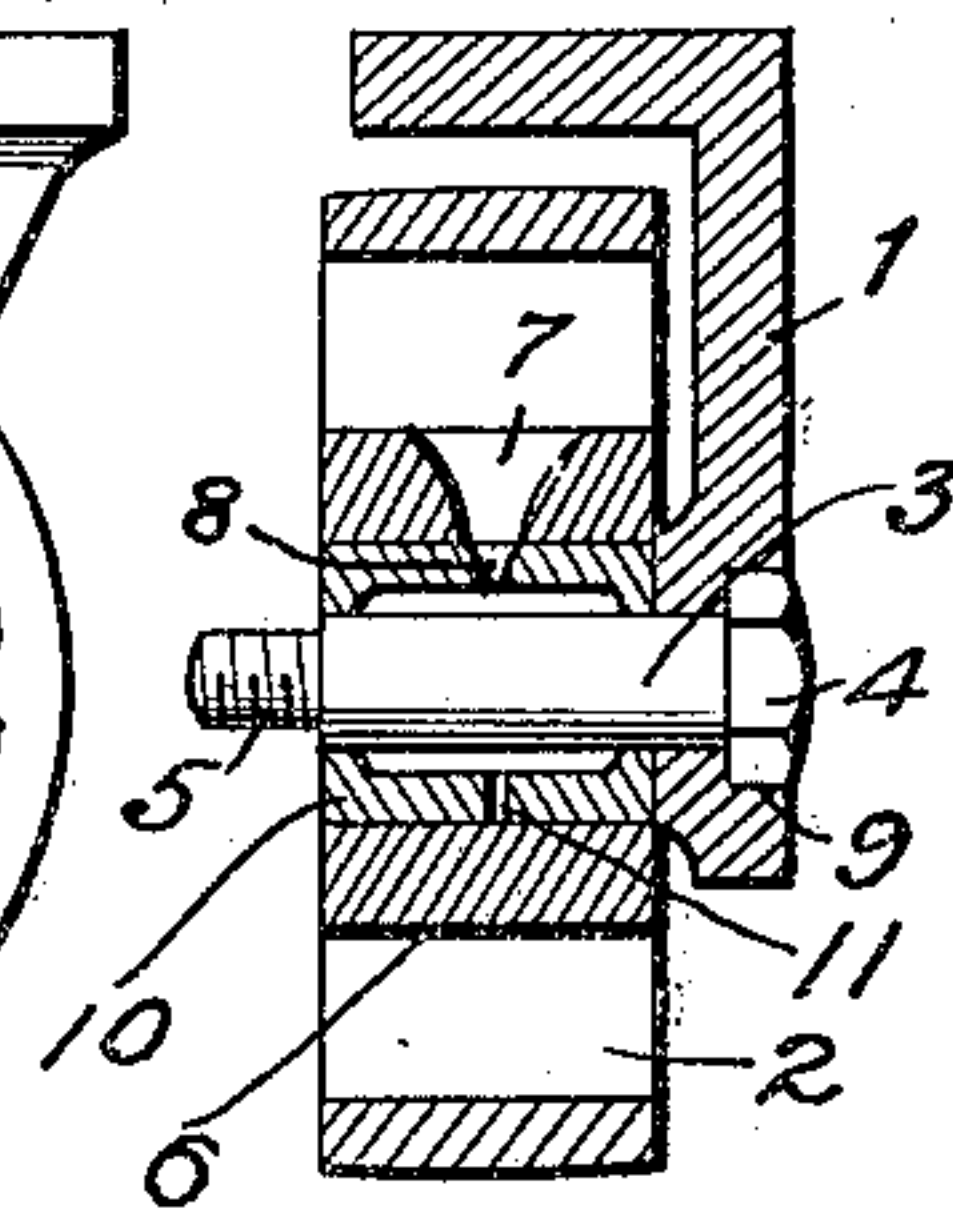
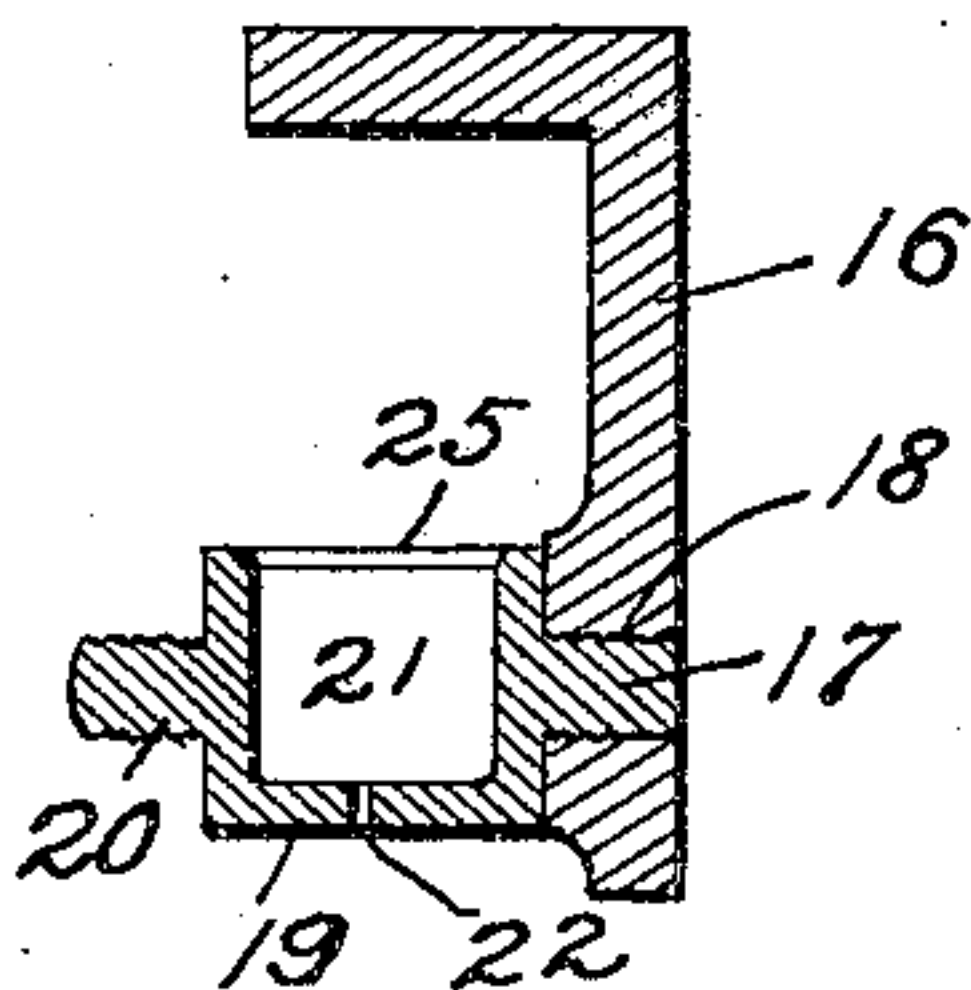


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN T. COX AND JOSEPH W. FORBES, OF NORFOLK, VIRGINIA.

HAND-TRUCK.

SPECIFICATION forming part of Letters Patent No. 770,355, dated September 20, 1904.

Application filed July 30, 1903. Serial No. 167,568. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. COX and JOSEPH W. FORBES, citizens of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Hand-Trucks, of which the following is a specification.

Our invention relates to improvements in hand-trucks.

It is well known to those using hand-trucks that there are several points of disadvantage in the ordinary form as at present in use. Either the wheels or the ends of the axle project, so as to tear the goods with which they come in contact, or else the guards which extend over the wheels to protect the bales, &c., from the abrasion of the wheels or from the grease on the axles tear the goods piled up alongside of the passage-way. Moreover, there is the necessity for constant oiling, which means a serious loss of time. In the truck which we will proceed to describe we have overcome these difficulties and have added several features which make the truck more durable, efficient, and cheap.

With these and other objects in view we have provided a body of the ordinary form and chairs of special construction, the principal difference between the latter and the form ordinarily employed being that the axle does not extend across the truck, but is practically limited in extent to the wheels themselves. Furthermore, we have introduced bushings which afford large bearing area, and hence avoid excessive wear.

Having thus described our invention with regard to its general features, we will proceed to describe it in detail, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figures 1 and 2 represent elevations, partly in section, of our hand-truck, illustrating the arrangement of axle-braces for all forms. Figs. 3 and 4 represent sectional detailed views of the preferred form of chair and bushings. Figs. 5, 6, and 7 are detail views of slightly-modified construction.

Referring to Figs. 3 and 4, 12 represents one of the chairs, which will be cast preferably of steel or any other tough and strong material.

14 represents the enlarged axle, on which the wheel (not shown) turns.

15 is a reduced concentric portion of the axle threaded and provided with a nut, which is set up hard against the shoulder of the axle 14 and serves to retain the wheel and the axle-braces 26 and 27 in place.

It will be noted that the axle 14 and the chair 12 are cast in one piece. This construction gives great strength in conjunction with the braces 26 and 27 and affords a means of economical machining. The axle 14 is cored out, being provided with the space 23, which serves as an oil-reservoir, the oil which is introduced through a hole in the hub of the wheel (see 7 of Fig. 6) escaping from the reservoir 23 through the oil-hole 13 between the bore of the wheel and the outer face of the axle, the supply being regulated automatically by the speed with which the wheels revolve. When the wheel is at rest, the pressure between wheel and axle prevents the escape of the oil. The upper extremity of the opening 23 being contracted, as shown at 24, the oil is thus prevented from spilling when the truck is stood on end. It is intended to bolt the chair to the frame of the truck by through-bolts (shown in Figs. 1 and 2) passing through the upper flange of the chair.

In the form illustrated in Fig. 7 there are all of the features noted in the preceding form except that the axle or bushing is made separate from the chair proper and is secured to the latter by being shouldered down to the spindle 17 and screwed into the hole 18, provided in the chair-flange. This form is intended for use where the nature of the goods transported or the unavoidable presence of grit is such that there is excessive grinding in the bearing-surfaces and where it therefore becomes necessary to renew the axle quickly and cheaply. One chair will thus outlast several axles.

In the form shown in Figs. 5 and 6 the bushing is made separate, as shown at 10, it being secured to the chair 1 by the bolt 3, which is provided with a square or hexagonal head recessed into the chair at 9, and on which the bushing fits snugly, so as to prevent the escape of the oil from the reservoir formed by

the recess in the interior of the bushing through the joints between bushing and bolt.

In all of the three forms shown we propose to afford additional support to the free end of the short axles by means of the braces 26 and 27. The longitudinal brace 26 has in one end a hole, into which fits snugly the reduced portions 5, 15, or 20 of the axles. At the other end it is bolted securely to the longitudinal frame of the truck. The transverse brace 27 is provided at either end with holes similar to the one in 26, into which fit the portions 5, 15, or 20, the central portion of the brace being secured to the cross-bar of the truck-frame by bolts, rivets, &c. With the additional support afforded by these braces a very strong and rigid construction is obtained, and the danger of breakage of the chairs or axles is reduced to a minimum. It will thus be seen that we have provided a form or forms of chairs which are at once strong, durable, simple, and cheap to make. As the outside of the chair is flush with the outside of the longitudinal frames of the truck, there are no projections to tear goods, the oil is not liable to soil goods, and the reservoir may be made of such a size as to enable the operator to use the truck for a considerable length of time without renewing the supply of oil.

We do not wish to be understood as confining ourselves to the exact details shown, and we reserve the right to modify any or all of them so long as we do not depart materially from the essence of our invention. For instance, we may alter the proportions of the various parts or the materials, we may omit one or both of the braces shown or may introduce others, we may alter the angle at which the oil-hole is set with reference to the normal handling position of the truck, &c.;

nor do we wish to claim in general a new form of truck, as our invention has to do with details only of the truck.

What we do claim, however, and wish to secure by Letters Patent, is as follows:

1. In a hand-truck, the combination of the frame, the right-angled-shaped chairs, the inward-extending hollow bearings carried by the chairs, means for supplying oil to said bearings, and the wheels mounted on said bearings, the vertical braces connecting the rails of the truck and bearings and the cross-braces connecting the bearings and truck-rails.

2. A hand-truck, consisting of the side rails, the right-angled chairs carried by said rails, the bearings mounted on said chairs and extending inward and formed with the inner threaded ends, the wheels mounted on said bearings, means for lubricating the bearings, the vertical braces connected to the side rails and threaded ends of said bearings, and the cross-braces connected to the side rails and secured upon the threaded ends of the bearings.

3. A hand-truck, consisting of the side rails, the chairs secured to the under side of the side rails and having the inward-extending hollow journal portion having the extended ends, means for lubricating said journal portion, wheels mounted on the journal portion and covered by the chair and side rails, and vertical and inclined braces connected to the inner ends of the journal portions and to the side rails.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN T. COX.

JOSEPH W. FORBES.

Witnesses:

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