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2,573,206

WAREHOUSE BOBBIN TRUCK

Filed Sept. 8, 1949

2 SHEETS—SHEET 1

Fig. 1.

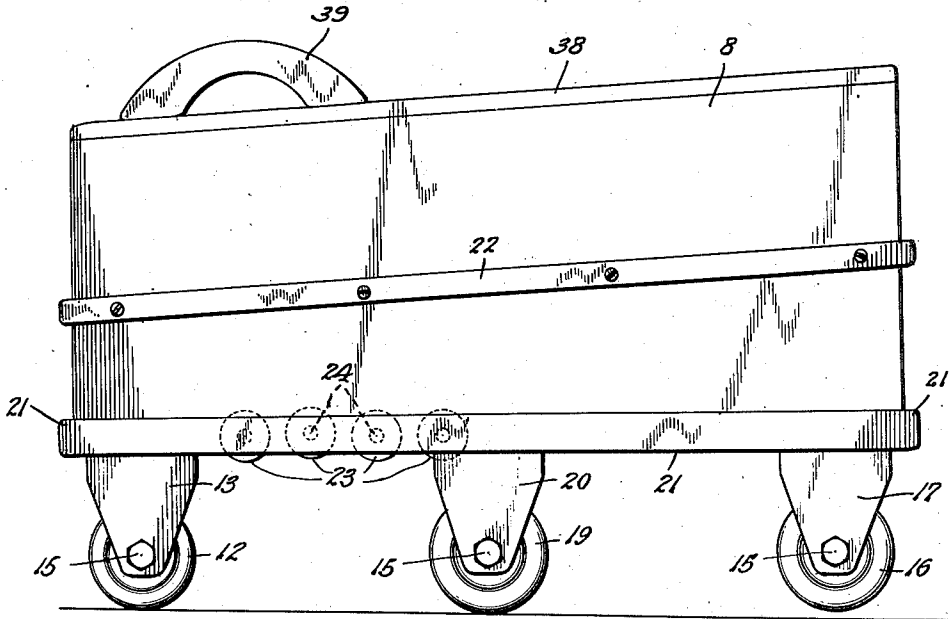


Fig. 2.

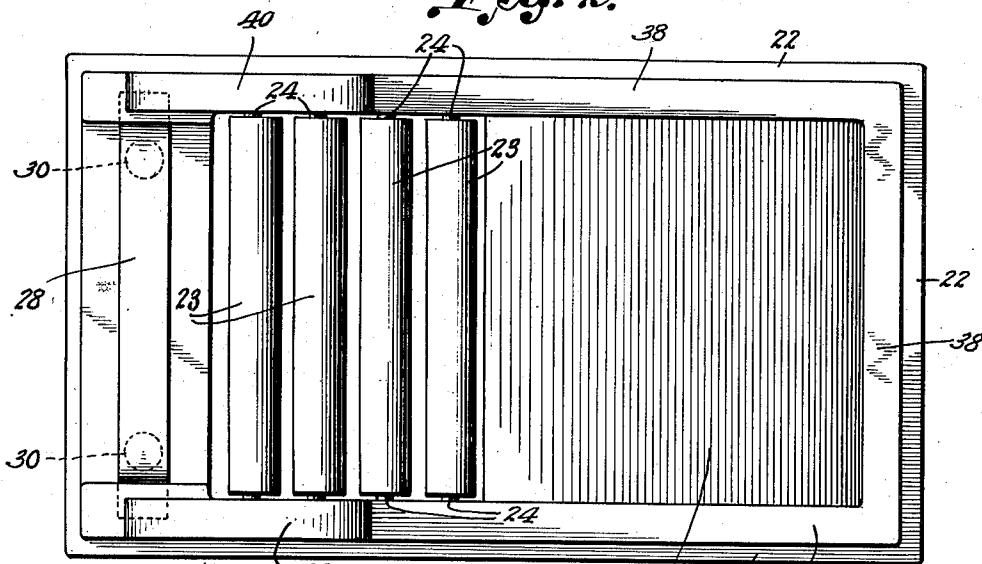
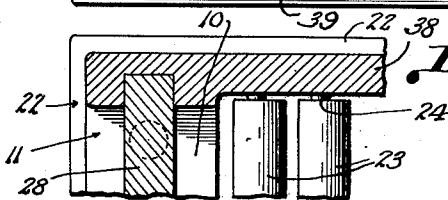


Fig. 5.



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2 SHEETS--SHEET 2

Fig. 3.

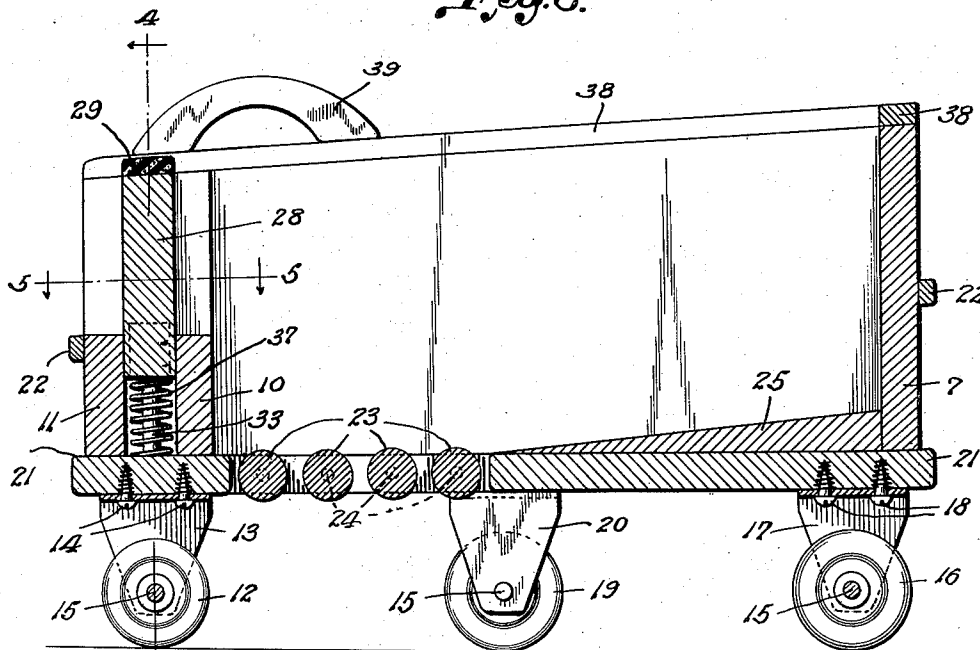


Fig. 6.

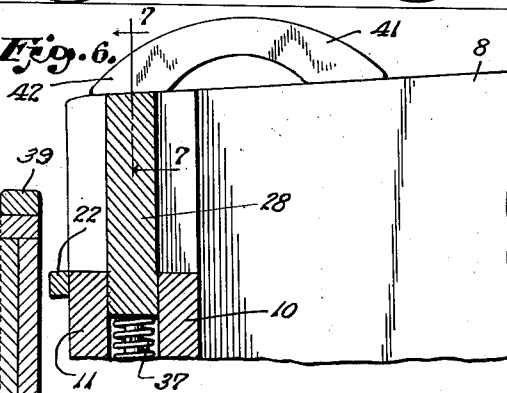


Fig. 4.

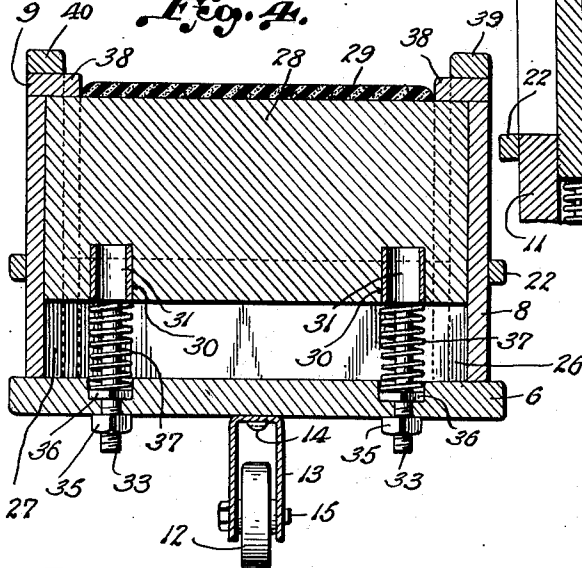
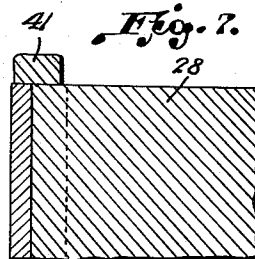


Fig. 7.



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UNITED STATES PATENT OFFICE

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WAREHOUSE BOBBIN TRUCK

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11 Claims. (Cl. 214—84)

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This invention relates to wheeled warehouse trucks and more particularly to such trucks which are known as a doff box or roving box and is adapted for use in textile mills or factories. In such factories these doff boxes are used to receive the output of different machines within the mill whereby the same can be transported from different parts of the mill as desired, the boxes being adapted to receive bobbins, spools, quills, yarns and loose bat cotton.

An object of the invention provides a doff box having a rectangular base, to the under side of which are attached intermediate its sides to the front and rear thereof a single wheel, and two side wheels intermediate the ends of the bottom or base. It will be noted that the two side or intermediate wheels extend slightly downwardly past the lower level of the front and rear wheels whereby the box, when resting on the side wheels, can be easily pivoted or turned end for end. Further, the box can be rocked somewhat on its side wheels to slightly lower the forward or discharge end of the box.

A further object of the invention is to provide a doff box having the bottom thereof with a forwardly directed inclined slide extending to substantially the mid-point of the unit and extending from side wall to side wall to thereby direct material within the box, as by natural gravitation, to the front of the box where easy access may be had to the box contents.

A further object provides such a doff box with sides tapering upwardly from front to rear to take care of or compensate for the space occupied by the tapering insert in the bottom of the box and thereby produce a box of equal capacity to one without the inclined bottom.

A further and important object of the invention provides an opening in the front portion of the bottom of the box, said opening having therein a plurality of spaced transverse rollers which permits dirt, dust and other foreign particles to pass out at the base of the box, the rotation of the rollers caused by the act of removing material from the front of the box, further assisting dirt removal.

A further object of the invention provides the front of the box with a vertically slidable wall which is pressed down by the operator in grasping material in the box and thus permits easy removal and easy access to materials within the box, the upper edge of the slidable front plate being provided with a strip of air-foam rubber to prevent injury to the operator's hand or arm during the removal operation.

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Other objects and advantages will become apparent to those skilled in the particular art when considered in the light of the following detailed description and drawings in which—

5 Fig. 1 is a perspective view in side elevation of the roving or doff box;

Fig. 2 is a top plan view of the doff box;

Fig. 3 is a horizontal longitudinal sectional view through the box proper;

10 Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 3;

15 Fig. 6 is a partial sectional view of a modification in which the forward portion of the handle acts as a stop for the slidable front plate; and

Fig. 7 is a sectional view on the line 7—7 of Fig. 6.

Referring to the drawings, in which like numerals indicate similar parts throughout the various views, the doff or roving box is provided with a rectangular base or bottom 6, a rear wall 7, two sides 8 and 9, the front wall consisting of spaced members 10 and 11 for a purpose later to be described.

The base has attached to its under side and extending downwardly therefrom a front wheel 12 which is mounted in a U-shaped bracket 13 attached to the base as by screws 14, the wheel being mounted on a bolt 15 forming an axle for the wheel and extending through openings at the lower ends of the bracket. This wheel is mounted adjacent the front end of the truck and substantially equidistant between the two sides 8 and 9. Likewise, and in the same manner, the base is provided with a rear wheel 16 mounted on a U-shaped bracket 17 attached to the under side of the base as by screws 18. The two side wheels 19 are attached to the base at opposite sides thereof by like U-shaped brackets 20.

The rear wall 7, two sides 8 and 9 and partial front wall 11 are placed or attached to the upper side of the base 6 a slight distance inwardly of its circumference to form a laterally extending circumferential rib 21. Spaced about midway up the sides, rear and front wall of the box is a lateral rib 22.

The base or bottom of the doff box is provided with an opening extending entirely across the same and from about midway of the same to adjacent the partial front wall 10. Within this opening are a plurality of rolls 23 having at each end supporting studs 24 which are journaled in holes in the respective sides of the base defining the recess whereby the rolls are rotatably

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mounted. The inner rear portion of the base has fitted therein a plate 25 which covers the entire rear portion of the base and is tapered forwardly, or from back to front, such tapering producing a bottom sloping toward the front of the box to cause articles within the box to gravitate to the front of the box and onto the rollers 23. And this is made more so by the rocking of the front end of the box downwardly on its intermediate wheels 19.

The partial front walls 10 and 11 of the doff box are spaced to form vertical channels or recesses 26 and 27 which act as guides and into which is placed a vertically sliding front plate or slide 28 which is provided on its upper edge with a sponge rubber protecting strip 29. The lower edge of the front slide is provided with two laterally spaced vertically projecting recesses 30 adapted to receive tubular metal inserts 31. The base between the parts 10 and 11 has openings 32 and 33 which are in alignment with the recesses 30, the openings having threaded pins 34 extending upwardly there-through, the lower ends of the pins below the base having nuts 35 thereon. The openings 33 are countersunk to receive nuts 36 whereby through the nuts 35 and 36 the pins are held in position. Coiled around the pins 34 are compression springs 37 with their lower ends seated in the countersunk portion and their free ends engage the lower edge of the slide 28 to normally urge the same to its uppermost position.

The sides and rear walls have attached to their upper edges a finishing strip 38, the forward ends of which at each side extend across the upper open ends of the guide slots 26 and 27 to thereby close the same and thus confine the sliding front 28 within the guides and also limit the upward movement thereof under the action of the springs 37. Handle members 39 and 40 are fastened to the upper sides of the finishing strip adjacent the front of the doff box whereby the same can be grasped during pushing or manipulation of the box.

In the modification shown in Figs. 6 and 7 the construction is substantially identical with that of the other figures with the exception that in this modification the finishing strip 38 has been dispensed with or omitted and the handle 41 of Fig. 6 is attached directly to the upper edge of the side 8, the front end 42 of the handle bridging the guide opening for the slidable front 28 to thereby retain the same within the guide.

It will thus be seen that we have provided a very desirable doff or roving box which is well adapted for the use to which it is intended, the same being provided with a vertically movable front wall whereby the same can be lowered to facilitate removal of material therefrom. Further, the box is rockably mounted on the two side wheels permitting the same to easily be rocked to its forward end to lower the same which causes the contents therein to gravitate towards the front or discharge end of the box. Such action is further facilitated by the forwardly inclined bottom insert and the rollers, which upon removal of material are caused to rotate and further facilitate movement of material to the front or discharge end of the box, the rollers being laterally spaced in an opening in the box to permit dirt, dust, lint and other foreign material to drop to the floor and out of the box.

It is not intended that the invention be limited to the exact construction shown, but the same is

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capable of various modifications within the scope of the following claims.

We claim:

1. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material-receiving compartment, said bottom wall having a cutout extending from adjacent the front wall to substantially midway of the car and extending throughout substantially the full width of the compartment, laterally spaced rollers extending across said bottom wall cutout and journaled in the opposite sides of the same, said rollers forming a substantial continuation of said bottom wall at the bottom of said compartment, said bottom wall inclined upwardly away from the rollers and in the direction of the other end of said compartment whereby to cause the contents of the same to gravitate toward and onto said rollers.

2. A warehouse car or the like comprising a wheeled body consisting of side, bottom and front and rear end walls defining an open-topped material-receiving compartment, said bottom wall having a cutout extending from adjacent the front wall to substantially midway of the car and extending throughout substantially the full width of the compartment, laterally spaced rollers extending across said bottom wall cutout and journaled in the opposite sides of the same, said rollers forming a substantial continuation of said bottom wall at the bottom of said compartment, the side walls having vertical grooves therein, the front end wall adjacent said rollers having its side edges fitting the vertical grooves being vertically depressable whereby to afford ready access to the contents of said compartment.

3. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material-receiving compartment, said bottom wall having a cutout extending from adjacent the front wall to substantially midway of the car and extending throughout substantially the full width of the compartment, opening providing compartment content supporting means disposed in said cutout and forming a continuation of said bottom wall whereby to provide outlet means for dust and dirt, said bottom wall inclined upwardly away from the bottom cutout and in the direction of the other end of said compartment whereby to cause the contents of the same to gravitate toward and onto said opening-providing means.

4. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material-receiving compartment, a forwardly tapered insert having its entire base surface mounted in contiguous engagement with the inner surface of the bottom wall and extending from side to side and contacting one end wall and extending forwardly to substantially the mid-portion of the compartment, and a vertically slidable front end wall adapted to be depressed to give access to the interior front of the compartment.

5. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material-receiving compartment, a forwardly tapered insert having its entire base surface mounted in contiguous engagement with the inner surface of the bottom wall and extending from side to side and contacting one end wall and extending forwardly to substantially the mid-portion of the compartment, and a vertically slidable end wall, spaced walls providing a guide for the slidable end wall and

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guide channels in the sides of the respective side walls in which the slidable end wall is movable and spring means between the bottom wall and the lower edge of the slidable end wall to urge the wall to its uppermost position.

6. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material-receiving compartment, a forwardly tapered insert mounted on the inner surface of the bottom wall and extending from side to side and contacting one end wall and extending forwardly to substantially the mid-portion of the compartment, and a vertically slidable front end wall adapted to be depressed to give access to the interior front of the compartment, and guide pins extending upwardly through the bottom wall, springs coiled about said pins and engaging the top of the bottom wall and the lower edge of the slidable wall, the slidable wall having recesses therein registering with said pins and guide sleeves mounted in said recesses.

7. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material receiving compartment, a forwardly tapered insert having its entire base surface mounted in contiguous engagement with the inner surface of the bottom wall and extending from side to side and contacting one end wall and extending forwardly to substantially the mid-portion of the compartment, said end wall being vertically slidable, and adapted to be depressed to give access to the interior front of the compartment.

8. A warehouse car or the like comprising a wheeled body consisting of side, bottom and end walls defining an open-topped material-receiving compartment, said bottom wall having a cutout extending from adjacent the front wall to substantially midway of the car and extending throughout substantially the full width of the compartment, laterally spaced rollers extending across said bottom wall cutout and journaled in the opposite sides of the same, said rollers forming a substantial continuation of said bottom wall at the bottom of said compartment, said bottom wall being upwardly inclined in the direction of the other end of said compartment whereby to cause the contents of the same to gravitate toward and onto said rollers, and an end wall adjacent said rollers being depressible whereby to afford ready access to the contents of said compartment.

9. A doff box or the like comprising a wheeled body consisting of side, bottom, front and rear

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walls, defining an open-topped material-receiving compartment, said bottom having an opening therein extending from substantially the mid-portion of the bottom to adjacent the front wall and extending from side to side of the box, laterally spaced rollers mounted in said opening, a tapered insert fitting the bottom and extending from adjacent the rear wall and sloping forwardly to the mid-portion of the box and terminating adjacent one of the rollers, said insert extending from side to side of the box, the front wall being vertically slidable in guide grooves in opposite sides of the side walls of the box, spring means between the bottom and the lower edge of the front wall normally urging the wall to its uppermost position and a pair of handles mounted on the upper edges of the side walls, the front ends of the handles bridging the guide grooves for the front wall to close the same and confine the front wall within said grooves.

10. A warehouse car or the like comprising a body having side, bottom and end walls defining an open-topped material-receiving compartment, said bottom wall having dirt and small foreign matter discharge openings at least adjacent one wall, said bottom being inclined from adjacent the opposite wall toward said particularly mentioned wall, and the latter having a depressible upper section whereby to provide ready access to the contents of the car.

11. The combination set forth in claim 10, and said bottom being provided by rollers at least for a distance inwardly of said first-mentioned wall and toward said second-mentioned wall.

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