Oct. 1, 1957 M. K. PETZKE II, ET AL 2,808,163

HAND TRUCK FOR DESKS

Filed March 11, 1954

FIG. 1

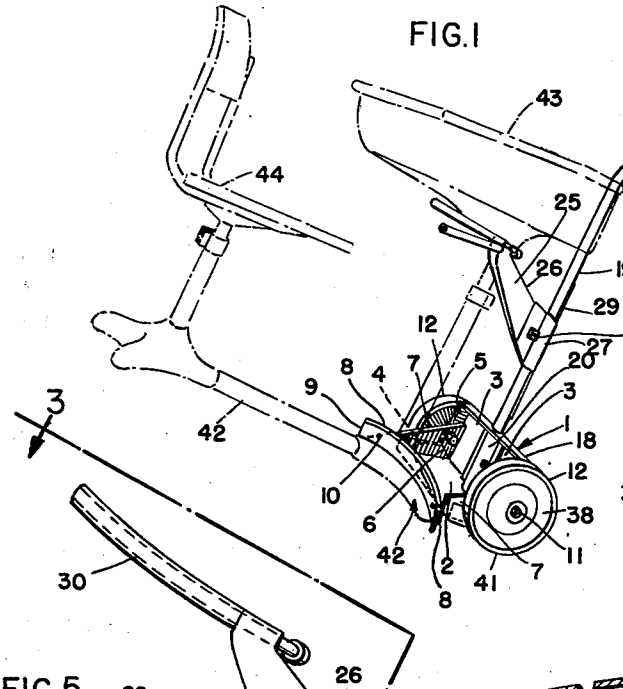


FIG. 4

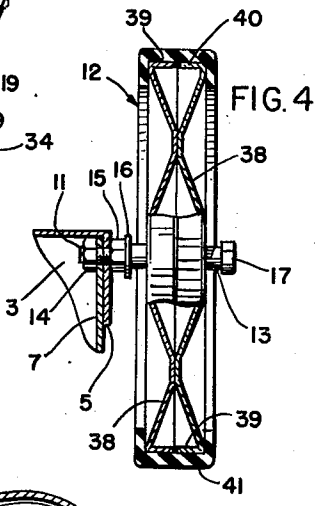


FIG. 5

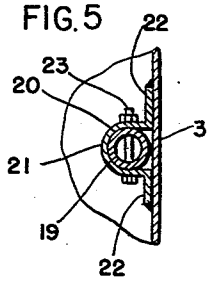


FIG. 2

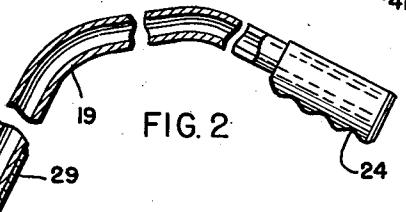
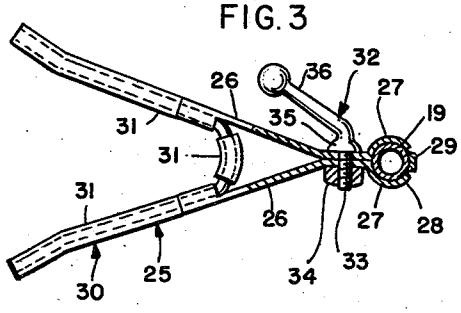


FIG. 3



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HAND TRUCK FOR DESKS

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4 Claims. (Cl. 214—383)

This invention relates to hand trucks.

The hand truck of the invention is used primarily for moving desks, particularly a school desk embodying a metal frame to which the working part or table of the desk is rigidly supported, there being a seat or chair supported and pivotally mounted on a part of the metal frame, whereby the table and its cooperating chair may be shifted as a single unit from one position to another.

In cases where a room is to be cleaned, or the floors are to be washed or polished, it is desirable that all the desks be removed from the room. School rooms usually contain thirty-five or more desks, and the complete removal of all desks permits the floors of the room to be cleaned more rapidly and easily than by shifting the desks from one side of the room to the other.

The hand truck of the present invention is particularly adaptable to permit removal of all desks from the room, and in actual practice it has been found that by using the hand truck of the invention, thirty-five desks may be removed in less than eleven minutes time. The time of an individual cleaning a room is thereby reduced, the room may be cleaned better and faster, and the necessity of manual back-breaking work to shift the desks from one location or position to another is eliminated.

The primary object of the invention consists in the provision of a hand truck for moving desks, including the attached seat and table, bodily from one location to another, the device being light in weight, durable in construction, and very economically manufactured.

Numerous other objects and advantages will be apparent throughout the progress of the specification which follows.

The accompanying drawings illustrate a selected embodiment of the invention and the views therein are as follows:

Fig. 1 is a detail perspective view of the hand truck showing the same applied to a desk;

Fig. 2 is a detail transverse sectional view taken vertically through the entire hand truck;

Fig. 3 is a detail transverse sectional view looking in the direction of the arrows 3—3 of Fig. 2;

Fig. 4 is a detail transverse sectional view taken through one of the wheels of the hand truck; and

Fig. 5 is a detail transverse sectional view on the line 5—5 of Fig. 2.

The particular construction herein shown for the purpose of illustrating the invention comprises a supporting base or frame 1 which is preferably formed or stamped from sheet metal. The base or frame 1 includes a bottom or horizontally disposed plate 2, and an upper or vertically disposed plate 3. The plates 2 and 3 are integrally connected, being formed from a single piece of sheet metal. The plates 2 and 3 are arranged at right angles to each other. An integral side flange 4 is bent upwardly from each side of the horizontal or bottom plate 2 and an integral side flange 5 is bent upwardly

from each side of the vertical or upper plate 3, the flanges 4 and 5 being mitered at the corners to make flush abutting joints, as indicated at 6.

A corner gusset 7 engages the inner surfaces of each of the flanges 4 and 5, the corner gusset 7 being welded to the side flanges of each plate. The gussets 7 are stamped from sheet metal and are relatively triangular in shape so as to fit neatly and snugly within the corners of the member 1 defined by the horizontal and vertical members 2 and 3. The extreme outer ends of each triangular gusset member 7 is elongated, being bent outwardly to form an attaching ear 8 to which a contacting or supporting bar or rail 9 is adapted to be secured in any convenient manner, such as by means of nuts and bolts 10. The gusset plates 7 overlie the side flanges 5 on the vertical member 3, to form a double thickness of material, Fig. 4, to support wheel axles, there being a hole provided through each gusset plate 7 and each flange 5 to receive axles 11 for wheels 12.

The axles 11 each comprise a headed bolt having a threaded inner end which extends inwardly through each flange 5 and through a gusset plate 7, passing through a tubular hub 13 and locked in position by an inside nut 14, Fig. 4. A nut 15 and a washer member 16 are arranged exteriorly of each outer flange 5 which holds each hub of the wheels 12 in place, there being a head 17 to hold each wheel. The axles, therefore, comprise headed bolts extending through the wheels and locked to the frame or base 1 by means of the nuts. The double thickness of the material, that is, the gusset 7 overlying a side flange 5, provides a strong bearing for the axles.

An inwardly extending integral flange 18, Figs. 1 and 2, is bent from the upper edge of the vertical plate 3, and a centrally disposed opening is provided in the flange 18 to receive a handle 19. A strap member 20, having a semi-circular part 21, and an outwardly extending flange or leg 22, projecting from each side, is arranged on the inner surface of the plate 3. The legs 22 are welded to the plate 3, on the inner face of the member 3, with the tubular part 21 in alinement with the opening in the flange 18, thereby forming a receiving socket for the handle 19. The handle 19 may be locked in its supporting socket member, in any conventional manner, such as by a bolt 23 passing through alined openings in the tubular part 21 and the handle 19. If desired, the extreme inner end of the handle 19 may be bifurcated and engage a lug (not shown) on the upper surface of the member 2 so as to center the handle 19 properly, later being locked in position by means of the bolt 23 and its locking nut.

The handle or operating member 19 extends upwardly a predetermined distance, being curved inwardly and downwardly (toward the operator), terminating in a grip handle 24. The handle is hollow, being preferably made of tubing. The handle 19 carries an adjustable lifting or supporting element 25.

The lifting or supporting element 25 is adjustably mounted longitudinally of the handle, and comprises a pair of like but oppositely disposed metal stampings 26, 26, which have contacting side faces, each of which terminates inwardly into rounded surfaces 27, so that when they are brought together they will form a sleeve 28 to surround and clamp the handle 19, Fig. 3. The sleeve 28 is spaced at its inner or bottom end to provide a groove acting as a guideway for a rib 29 which is welded to the bottom side of the handle 19. The supporting or lifting element 25, therefore, is free to have longitudinal or axial movement along the handle 19, but is prevented from having rotational movement because of the strip 29 receivable in the groove. The outer end

of the element 25 has the forward ends of the two plates 26 spread apart in relative V-shaped form to receive a relatively U-shaped or V-shaped member 30, which is made of preferably a single integral round rod or bar, the opposed plates 26 of the element 25 being welded to the U-shaped bar 30. The ends or prongs of the U-shaped member 30, and a centrally disposed part is provided with cushioning material such as rubber 31, Fig. 3, so as not to damage or mar a desk during moving thereof by the hand truck.

The supporting or lifting element 25 is adapted to be locked in adjusted position on the handle 19 by means of a clamping member 32. The clamping member 32 may include a stem 33, Fig. 3, passing through alined holes in the two side plates 26, with the threaded outer end threadedly engaging a nut 34 welded to the outside surface of one of the plates or members 26. The locking or clamping member 32 has a shoulder 35 which is adapted to bear against the outer end of the other plate 26 so that during rotative movement of the handle 36 the two plates 26 will be drawn together and bring the curved ends 27 into locking or clamping engagement with the handle 19. Movement of the clamping handle 36, therefore, is free for vertical adjustment of the lifting element 25 along the handle 19, the lifting element 25 being then locked in adjusted position by rotating the clamping handle 36. Instead of the particular locking or clamping construction herein shown, other means may be employed, such as a cam construction.

The forward end of the bottom member 2 may be bent back upon itself as indicated at 37, Fig. 2, to provide a smooth outer edge, as well as to reinforce the bottom or horizontal plate 2. A rubber or other flexible means may be secured to, or surround, the contacting member 9.

The wheels 12 are formed preferably of two disc members 38, 38, Fig. 4, each having an inwardly extending flange 39 contacting each other to provide an outer rim 40. The flange 39 of each disc 38 is preferably corrugated or otherwise serrated to receive the rubber tread 41 which is slipped over the rim 40 and held by the corrugations, being prevented from moving circumferentially by reason of the corrugations or serrations. Each wheel 12, therefore, comprises two discs which are first deformed inwardly and then projected outwardly in conventional form and locked together by means of the aforesaid axles 11. A sleeve 13, either as a separate item or as an integral part of the disc, is provided on each disc of each wheel to provide the hub therefor.

In operation, the hand truck of the invention is adapted to move a desk of the general type shown in Fig. 1, wherein a desk support 42 has connected thereto a table 43 and a chair 44 comprising a single unit. The lifting element or fork 25 is brought to a position so that its upper edges will fit easily beneath the front edge of a desk support of the support 42 with the contacting member 9 engaging the base 42 of the desk. Therefore, as the operator pushes downwardly on the handle 19, the fork 25 will lift the desk off the floor as the handle 19 is pushed downward, the desk being guided by the bottom member 9. The desk, therefore, may be easily lifted and moved readily from one location to another without exertion.

The hand truck of the invention, therefore, is particularly adapted for use in moving school desks from one location to another. It may be extremely economically manufactured, as practically all the parts are formed from sheet metal stampings, and the handle may be economically manufactured by merely bending tubing to the desired shape.

Changes may be made in the form, construction and arrangement of the parts without departing from the spirit of the invention or sacrificing any of its advantages and the right is hereby reserved to make all such changes

as fall fairly within the scope of the following claims.

The invention is claimed as follows:

1. A hand truck for moving desks from one location to another comprising a sheet metal base including a vertical member and a horizontal member integrally connected together, integral side flanges bent inwardly from the sides of said horizontal and vertical members, corner gussets in said base and having edges contacting said members and the sides of the gusset engaging and secured to said flanges, whereby two thicknesses of material are provided at both ends of the base member, axles passing through said two thicknesses of material, wheels on said axles and arranged outwardly of said base, a handle receiving socket member secured to one of said members and having a curved center piece with outwardly extending legs, said legs being welded to one of said members and forming a socket defined by said rounded part and the latter said member, and a handle received in said socket.

2. A hand truck for moving desks from one location to another comprising a sheet metal base including a vertical member and a horizontal member integrally connected together, integral side flanges bent inwardly from the sides of said horizontal and vertical members, corner gussets in said base and having one edge and one end contacting said members and the sides of the gusset engaging and secured to said flanges, whereby two thicknesses of material are provided at both ends of the base member, axles passing through said two thicknesses of material, wheels on said axles and arranged outwardly of said base, a lifting device slidably engaging said handle and comprising a pair of plates, said plates terminating in a slotted sleeve, a handle in said sleeve, locking means to lock said plates together to cause the sleeve to impinge said handle, and a strip secured to the handle between the slot to prevent rotative movement of the device but permitting longitudinal movement thereof.

3. A hand truck for moving desks from one location to another comprising a sheet metal base including a vertical member and a horizontal member integrally connected together, integral side flanges bent inwardly from the sides of said horizontal and vertical members, corner gussets in said base and having one edge and one end contacting said members and the sides of the gusset engaging and secured to said flanges, whereby two thicknesses of material are provided at both ends of the base member, axles passing through said two thicknesses of material, wheels on said axles and arranged outwardly of said base, a lifting device slidably engaging said handle and comprising a pair of plates, said plates terminating in a slotted sleeve, a handle in said sleeve, locking means to lock said plates together to cause the sleeve to impinge said handle, a strip secured to the handle between the slot to prevent rotative movement of the device but permitting longitudinal movement thereof, said pair of plates extending upwardly and angularly and spread apart laterally, and a rod relatively U-shaped welded to said pair of plates.

4. A hand truck for moving a desk comprising a tubular handle, a lifting fork slidably engaging the handle for supporting the desk, and a sheet metal base for engagement against the base of the desk, said sheet metal base including a vertical member and a horizontal member integrally connected together, an attachment connecting the handle to the vertical member, integral side flanges bent inwardly from the sides of said horizontal and vertical members, corner gussets in said base and having one edge and one end contacting said members and the sides of the gusset engaging and secured to said flanges, whereby two thicknesses of material are provided at both ends of the base member, axles passing through said two thicknesses of material, and wheels on said axles and arranged outwardly of said base.

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