March 3, 1970 L. H. BEST 3,498,412

PORTABLE CARRIAGE

Filed Sept. 18, 1968 5 Sheets-Sheet 1

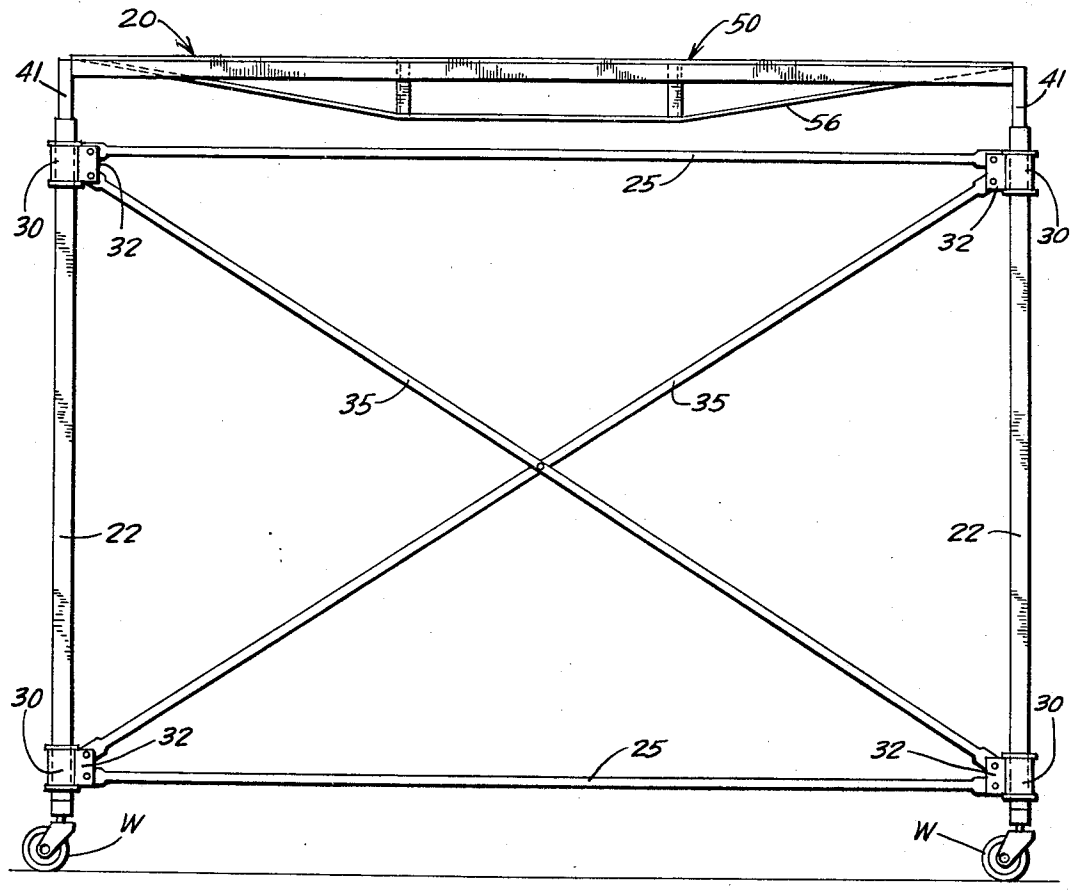


FIG. 1

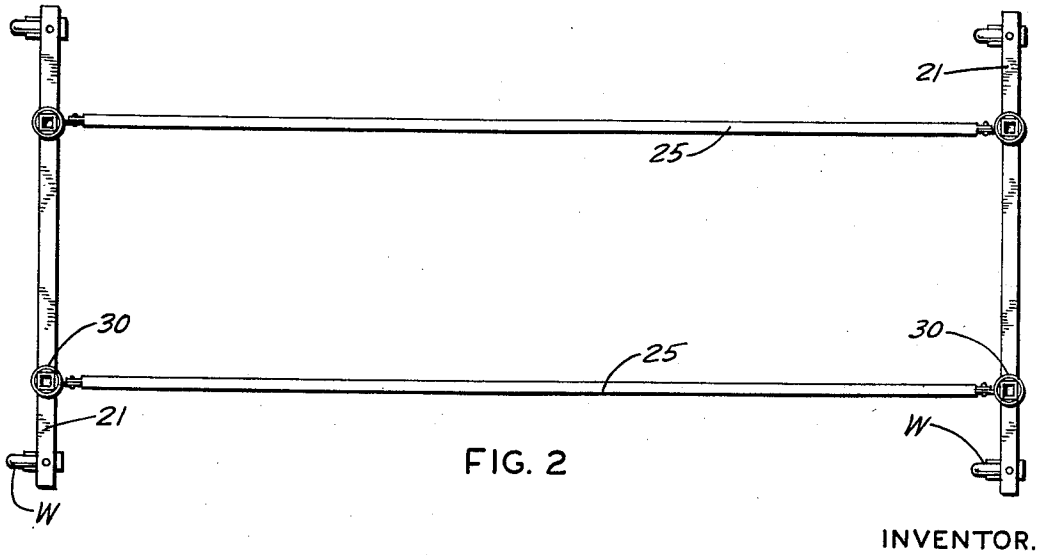


FIG. 2

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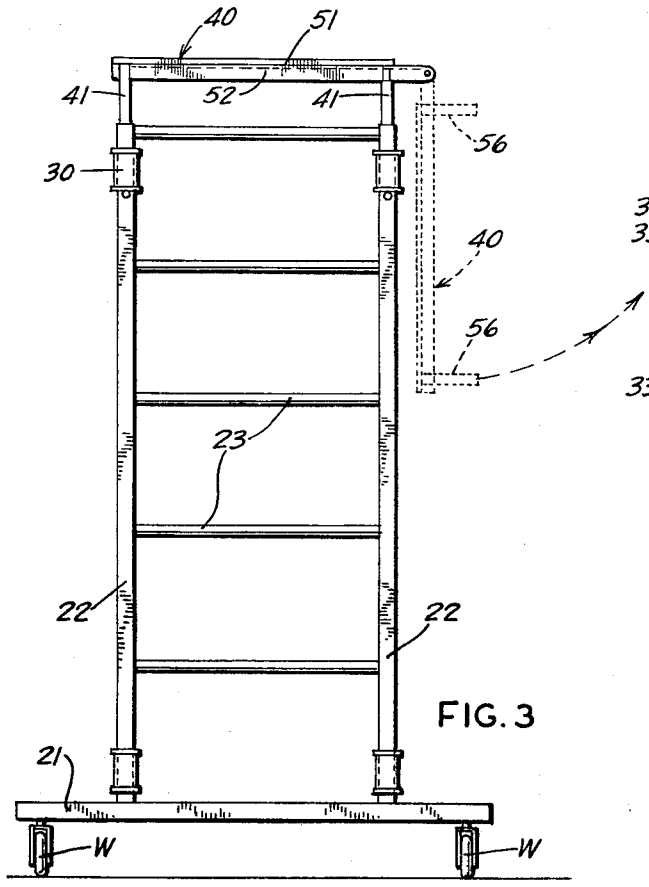


FIG. 3

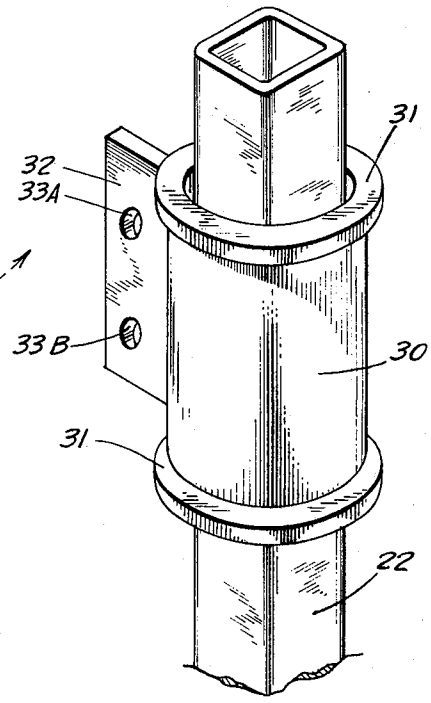


FIG. 6

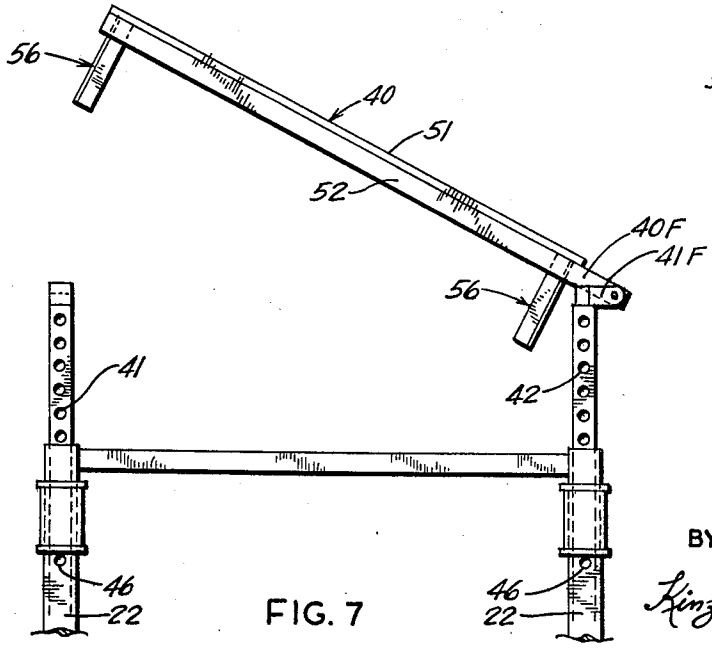


FIG. 7

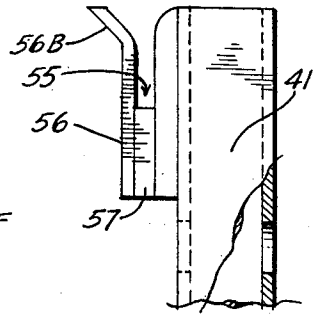


FIG. 8

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PORTABLE CARRIAGE

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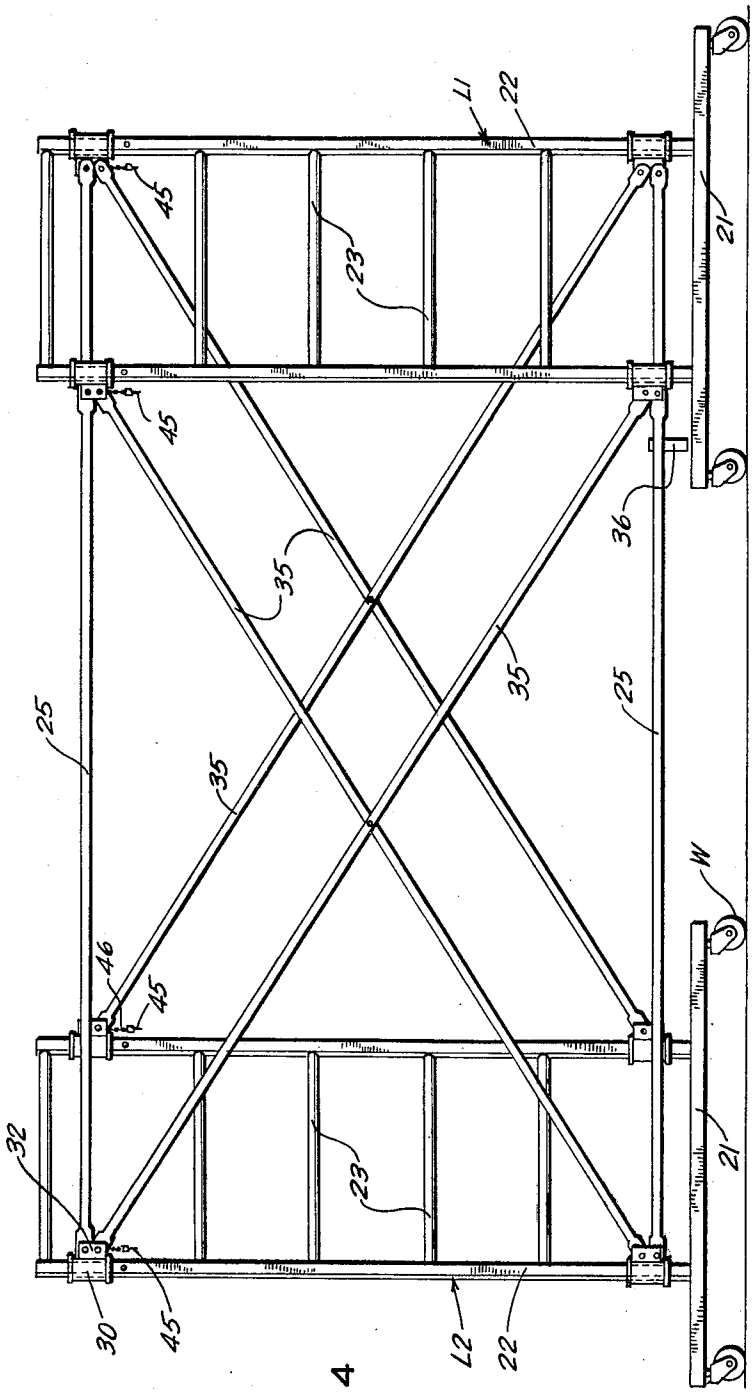


FIG. 4

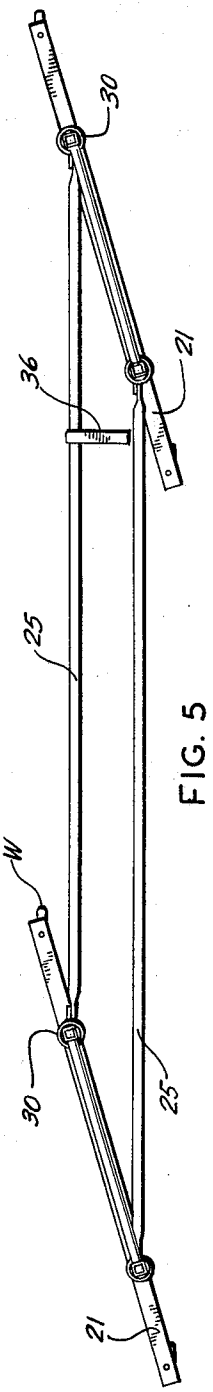


FIG. 5

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PORTABLE CARRIAGE

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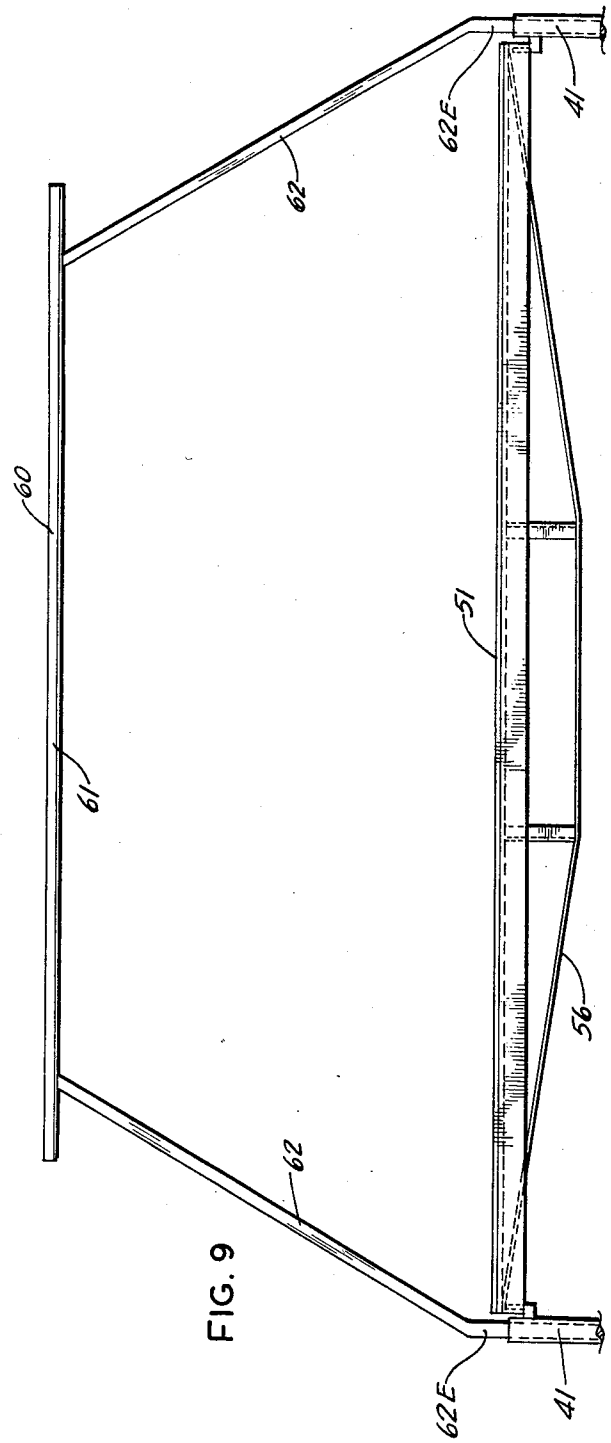


FIG. 9

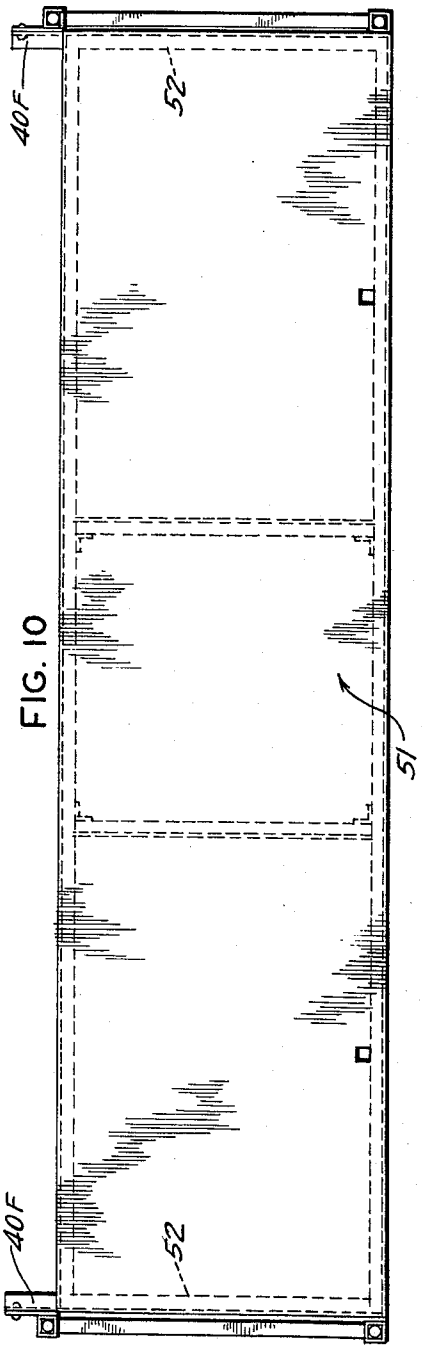


FIG. 10

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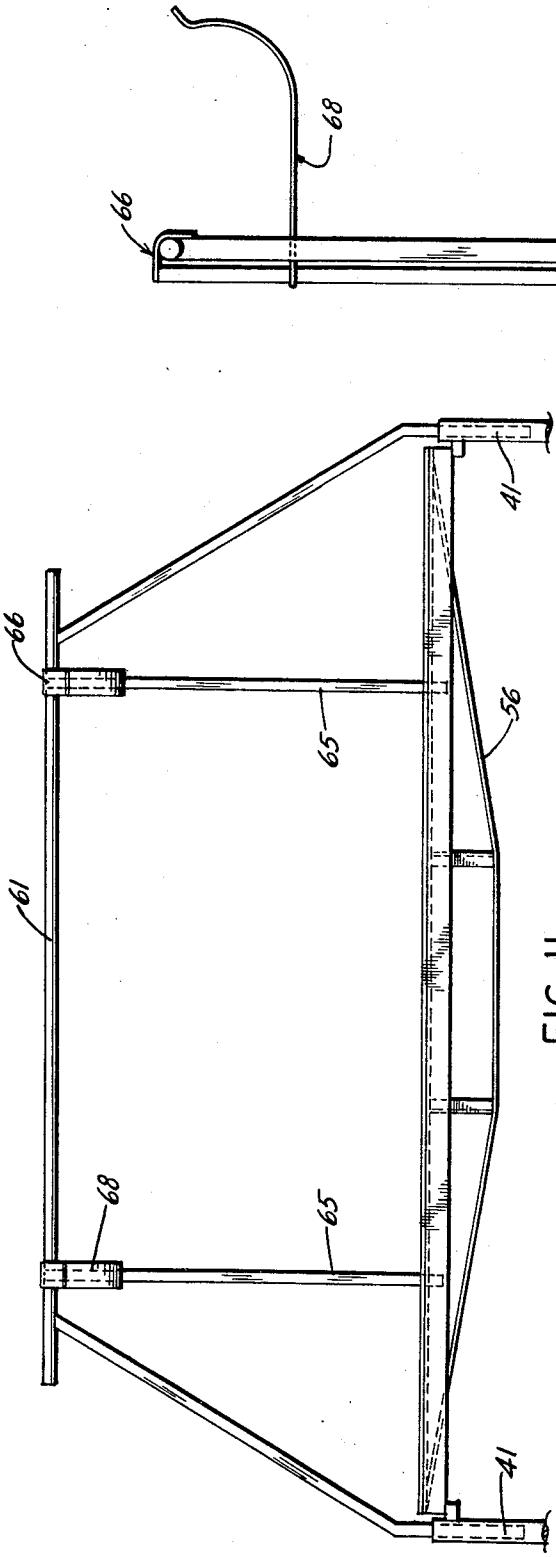


FIG. 11

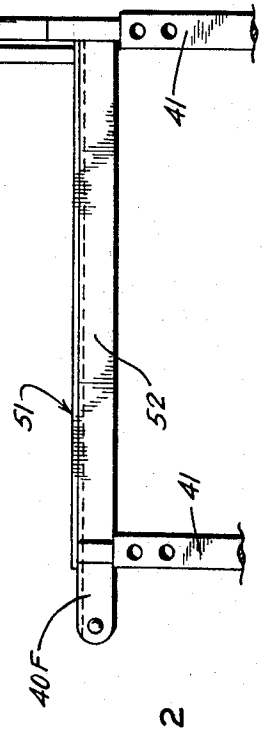


FIG. 12

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United States Patent Office 3,498,412 Patented Mar. 3, 1970

3,498,412

PORTABLE CARRIAGE

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Filed Sept. 18, 1968, Ser. No. 760,443
Int. Cl. E06c 1/00; A47l 3/02
U.S. Cl. 182—152 4 Claims

ABSTRACT OF THE DISCLOSURE

A collapsible carriage is extendible to afford a ladder and a platform capable of supporting a workman in an elevated position. When collapsed, the carriage is easily movable through doorways or down narrow corridors.

This invention relates to a carriage having caster wheels to facilitate movement of the carriage from one location to another.

Rugs, such as the 9' x 12' size hung on a rug display rack or on pin bars along the wall in an elevated position, are quite difficult to handle when they are to be hung or removed. Of course, this is equally true of other kinds of goods stored in high out-of-the-way locations, and the primary object of the present invention is to enable goods in high, confined locations to be more easily handled in the course of being moved to or from such positions. Another object of the present invention is to enable goods to be moved by, or workmen themselves to use, a carriage, the construction of which presents a side ladder and a top platform which together contribute to a wide, safe, rigid carriage and in which the platform when moved to an inoperative position enables the whole unit to be collapsed into a narrow structure which can be easily wheeled through a narrow doorway, down a narrow corridor, or into or through areas of limited size.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, shows a preferred embodiment of the present invention and the principle thereof and what I now consider to be the best mode in which I have contemplated applying that principle. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention.

In the drawings:

FIG. 1, 2 and 3 are side, top and end elevations, respectively, of a carriage constructed in accordance with the present invention, but in FIG. 2 the platform has been removed;

FIGS. 4 and 5 are side and top elevations, respectively, showing the carriage in its collapsed, folded state and with the platform removed as in FIG. 2;

FIG. 6 is a detail view of one of four swivel joints;

FIG. 7 is a fragmentary end elevation of the carriage showing features of the carriage associated with the platform;

FIG. 8 is a detail view showing a support for the platform;

FIG. 9 is a fragmentary side elevation at the top of the carriage showing an installed hand rail;

FIG. 10 is a top plan view of FIG. 9;

FIG. 11 is a view similar to FIG. 9 but showing carpet support racks installed; and

FIG. 12 is an end view of FIG. 11.

The carriage **20**, FIG. 1, comprises a pair of horizontal stabilizers **21**, FIG. 2, each supporting at the opposite ends thereof caster wheels W of which there are four in number. In connection with the description to follow,

structural elements may be understood as secured one to another by welds, unless otherwise specified.

Each stabilizer **21** has a pair of hollow uprights **22**, FIG. 1, secured to the top side thereof, and each pair of uprights is joined by horizontal rungs **23**, FIG. 4, which together afford a ladder at each end of the assembly. Thus, there is a ladder L1, FIG. 4, at one end and a second ladder L2 at the other end. It will be observed in FIGS. 2 and 3 that the uprights are well spaced inward from the ends of the stabilizers so that a well stabilized structure is afforded.

Horizontal stringers or spacers **25** extend between the uprights **22** as shown in FIG. 1, and the ends of the spacers **25** are connected by swivel joints to the uprights **22** so that the unit may be collapsed or folded as shown in FIGS. 4 and 5. To this end, a collar **30**, FIG. 6, is slipped onto each upright and its position is maintained by a pair of spacer rings **31** welded to the upright in a spaced relatonship dimensioned to correspond to the axial length of the sleeve **30**. The rings **31** on the other hand allow the sleeve **30** to turn freely with respect to the upright **22**.

Each swivel sleeve as **30** includes a mounting flange **32** rigid therewith. Each flange **32** has an aperture **33A** therein enabling the ends of the spacers **25** to be secured thereto as by bolts. Each side of the ladder assembly is braced by cross braces **35**, and the ends of these braces are also bolted to the flange of the swivel sleeve as shown in FIG. 1, resort being had to a second aperture **33B** in the flange of each swivel sleeve.

When the unit is properly erected, the horizontal stabilizer members **21**, the upright members **22** and the spacer members **25** define, FIG. 2, a right angled parallelogram. When the unit is folded or nested, FIGS. 4 and 5, the members just enumerated afford an acute or oblong parallelogram. Prefeably a stop member **36**, FIG. 5, limits the extent to which the sides may be brought next to another. Stop **36** has one end fixed to a lower stringer **25** on one side of the carriage, the free end projecting forward and in alignment with the stringer on the opposite side.

The normal condition represented by the geometry of a right angle parallelogram is maintained by a hinged platform **40** which in its operative position, FIG. 3, braces and rigidifies the sides and ends of the assembly while allowing workmen to stand thereon. The top platform of course may take different configurations, but it is nevertheless so hinged at the top of the unit as to be capable of being swung to an inoperative position as shown by dotted lines in FIG. 3 which enables the whole carriage to be collapsed or folded, FIGS. 4 and 5, for easy movement through narrow passages or down narrow corridors.

Thus the carriage is braced in its normal erected state by a platform **40**, FIG. 3. Details of the platform structure will shortly be described, but first it is to be explained that, as shown in FIG. 7, the platform **40** is arranged for extensibility in a vertical direction. To this end, each upright **22** receives in its upper end an extender arm **41** having openings **42** along the length thereof adapted to receive a pin as **45**, FIG. 4, conveniently attached to the carriage assembly by a chain **46** suspended from the flange **32** of each of the upper swivel collars **30**.

The openings **42** in the extender arms are adapted to be aligned with a related opening **46**, FIG. 7, in each upright **22**, so that by setting the arm **41** collectively in like extended positions as determined by registry between an opening **46** and an adjusting opening **42**, the pins **45** may be inserted into the aligned openings or apertures. This holds or maintains the platform **40** in a selected adjusted position as will be apparent from the description to follow.

The arms **41** at one side of the carriage, FIG. 7, are formed with flanges **41F**, and these flanges serve as hinge supports for corresponding flanges as **40F** projecting from the rear of the platform **40** as viewed in FIG. 7. The flanges thus afforded are provided with openings for hinge pins by which the platform **40** is articulated to the arms **41** having the flanges **41F**.

The platform **40** comprises a top plate **51**, FIGS. 7, 9 and 10, and it may be noted that the flanges **40F** referred to above are aft extension of angle bars **52** which are secured to the underside of the platform plate **51** at the opposite ends thereof. The angle bars **52** have vertical flanges, and the fore end portions of these flanges are adapted to be neatly received in a slot **55**, FIG. 8, presented at the upper end of each of the fore extender arms **41**. The slots **55** are afforded by welding or otherwise securing a guide plate **56** to the outside face of a spacer block **57** rigidly secured as by weld or the like to the inside face of the corresponding extender arm **41** as shown in FIG. 8. Preferably the upper edge of each guide plate is bent outwardly at **56B** to guide the flanges of the angle bars **52** into the support slots **55**.

Thus, when the platform is lowered to operative position, FIG. 3, the narrow vertical edges of the angle bars **52** will repose in the slots **55** and bear on the upper edges of the spacers **57**, thereby supporting the platform at the unhinged side. At the same time, it will be appreciated, the platform **40** in lowered position holds the carriage in its extended configuration. A workman may ascend either of the ladders **L1** and **L2** and attain a working position on the platform plate **51**.

The platform is reinforced at its underside, FIGS. 7 and 9, by trusses **56** of standard form. Preferably, a detachable railing **60**, FIG. 9, is afforded, presenting a horizontal hand rail **61** and a pair of end supports **62**. The end supports **62** serve to position the hand rails **61** at the desired elevation, and this may be easily accomplished by dimensioning and configuring the free ends **62E** of the end supports to telescope into the upper ends of the hollow extender arms **41** as will be apparent in FIG. 9.

The primary objective as to utility in this instance is to enable a workman to hang or remove rugs at an elevated position. To do this the rolled rug is placed in the arms **65**, FIG. 11, where the rug is supported a short distance below the rug rack arm or correspondingly below a pin bar attached to the wall to support rugs for display. When removing rugs they are simply dropped to the floor. Accordingly, a fixture is afforded under this objective, and comprises a pair of separate and independent arms **65**, FIG. 11, each having at the upper end a hook or flange **66**, FIG. 12, adapted to embrace the hand rail **61**. The lower end of each arm **65** is dimensioned to set into a hole in the surface of the platform plate **51**. Each arm **65** is provided with a forwardly extending cradle arm **68** which, as will be apparent in FIG. 12, is adapted to support a piece of rolled carpeting.

It will be seen from the foregoing that under the present invention a carriage is constructed from stabilizer members, upright members extending upward from the stabilizers, and stringer members extending horizontally between and joined to the uprights by swivel joints. The members may therefore be extended and squared off so to speak to define a right angle parallelogram; or they may be folded into a tight nest enabling the carriage in its collapsed state to be easily moved through narrow

spaces. The uprights have horizontal rungs affording a pair of ladders, and a workman may ascend either ladder to attain a platform at the top of the carriage. The platform is hinged on the carriage and when opened to its operative state itself becomes a brace which maintains the carriage in its extended or erected condition. When the platform is folded back to its inoperative position, the carriage may then be folded up.

The platform is sturdy, being reinforced by a truss at its underside, and a replaceable handrail may be used to support fixtures which afford a cradle for a rolled rug which the workman may partially unroll for hanging while he is on the platform.

It is evident then that the present construction presents a great deal of utility and this is further enlarged by supporting the platform on extender arms **41** which telescope into the tops of the uprights. The platform may therefore be hinged at one end to a pair of these arms and the other arms serve to support the opposite or free end of the platform.

Hence, while I have illustrated and described a preferred embodiment of the present invention, it is to be understood that this is capable of variation and modification within the purview of the following claims.

I claim:

1. A collapsible wheel mounted carriage comprising a pair of horizontal stabilizer members supporting the wheels of the carriage, upright members secured to the topside of the stabilizer arms and joined one to another by rungs to afford a ladder at one end of the carriage, horizontal spacer members at the sides of the carriage extending between the uprights and each connected thereto by a swivel joint so that said members collectively may be extended in the form of a right angle parallelogram or folded into an oblong parallelogram, and a hinged platform at the top of the carriage normally extended to operative position to both support a workman and to brace the carriage in its extended form, said platform being supported for vertical extension on extender arms in turn mounted for extensible adjustment on the uprights.

2. A carriage according to claim **1** having a detachable hand rail associated with the platform and detachable fixtures on the hand rail for holding a rolled carpet.

3. A carriage according to claim **1** in which the extender arms have apertures which register with an aperture in the corresponding upright at the adjusted position, and pins insertible in the registered apertures to hold the adjusted position.

4. A carriage according to claim **3** in which the platform at one end is hinged to a pair of extender arms and in which the other pair of extender arms present supports for the free end of the platform.

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U.S. Cl. X.R.

182—113