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L. A. WIELAND
RACK TRUCK FOR RUGS

2,664,307

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2 Sheets-Sheet 1

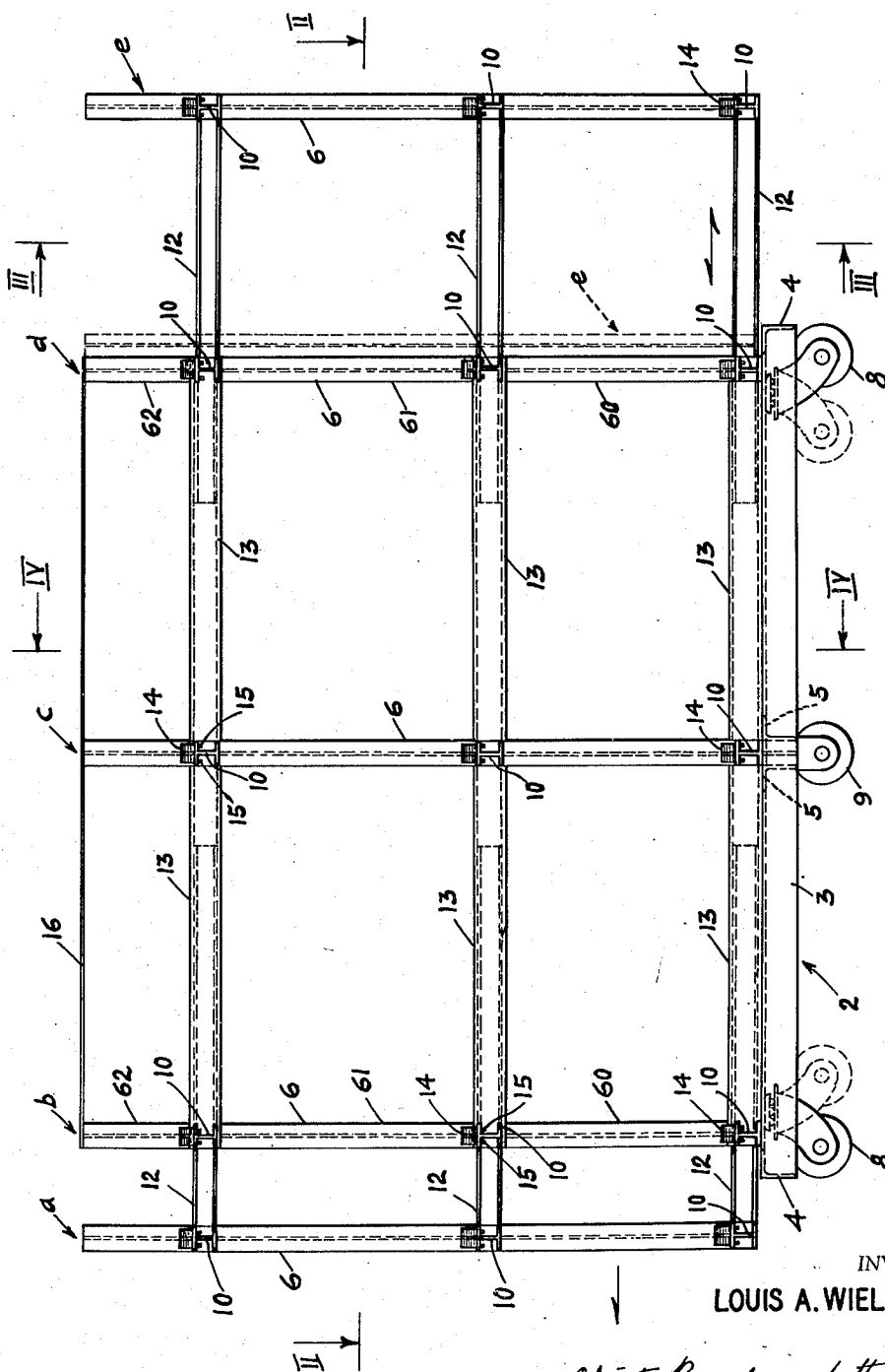


Fig. 1.

INVENTOR
LOUIS A. WIELAND.

BY *Christy, Parmelee and Strickland*
his ATTORNEYS

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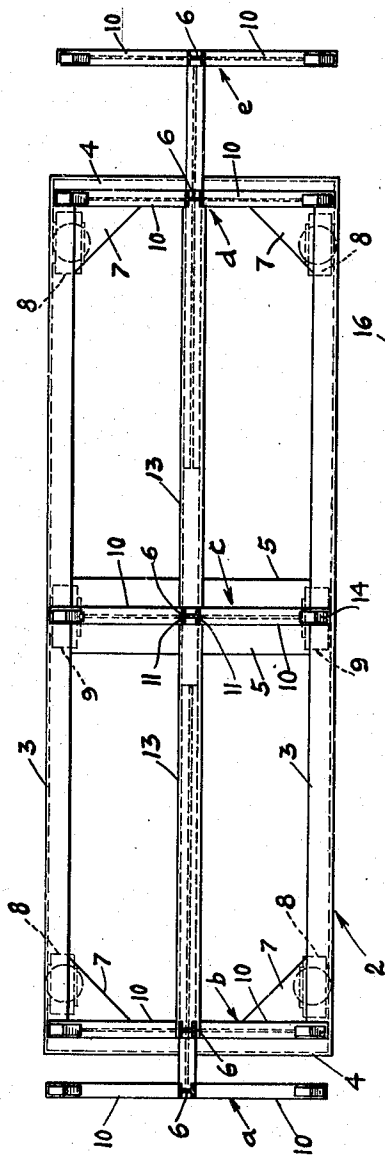


Fig. 2.

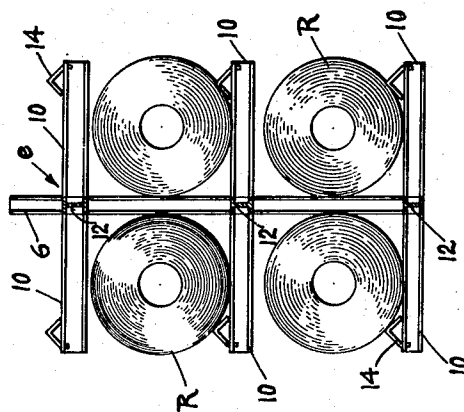


Fig. 3.

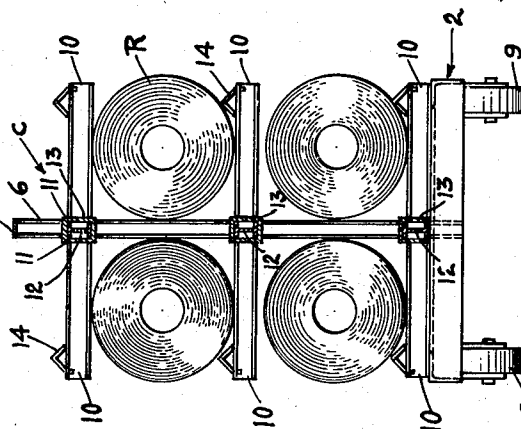


Fig. 4.

INVENTOR
LOUIS A. WIELAND.

BY *Christy, Parmelee and Strickland*

his ATTORNEYS

UNITED STATES PATENT OFFICE

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RACK TRUCK FOR RUGS

Louis A. Wieland, Pittsburgh, Pa.

Application November 2, 1951, Serial No. 254,541

3 Claims. (Cl. 296—3)

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My invention relates to the storage and handling of large rugs or carpets, and consists in certain new and useful improvements in a rack for supporting a plurality of rolled rugs in salesrooms and warehouses.

Retail stores necessarily carry large inventories of assorted rugs and carpets to meet the varied tastes or requirements of the purchasing public, and the large salesrooms for the display of such inventories are very costly to staff and maintain. Considerable labor is required to move the rugs into position where they may be suitably considered by customers. This has presented a problem that has remained unsolved through the years.

In the solution of the problem, my invention consists in a traveling rack which is adapted to be easily and quickly moved from an out-of-the-way storage area into a display area, whereby the rugs on the rack may be severally viewed and inspected. Individual rugs may be readily removed from the rack, or placed upon it, and in due course the rack and its burden of rugs may be returned to the storage area.

It is important to note that the construction of the rack is designed for cooperation with a fork lift-truck, a well-known device that has recently come into wide general use in the handling of various materials. Furthermore, the rack is adjustable at will for rugs of various sizes.

The invention will be understood upon reference to the accompanying drawings, in which:

Fig. 1 is a view in side elevation of a rug rack embodying the invention, it being noted that a certain adjustable element of the structure is shown in dotted lines in an alternate position from that in which it appears in full lines;

Fig. 2 is a view of the rack on horizontal section, as seen on the plane II—II of Fig. 1;

Fig. 3 is a view in vertical section of one of the adjustable supports of the rack, the plane of section being indicated at III—III in Fig. 1; and

Fig. 4 is a view of the rack structure, as seen on the plane IV—IV of Fig. 1.

Referring to the drawings, the rack will be understood to be formed principally of metal tubes and beams of standard sections, preferably steel sections, which are readily available on the open market at the present time, whereby uniformity and economy of construction are obtained, and ready interchangeability of parts is afforded.

The rack structure comprises a base 2 in the form of a rigid frame, which is rectangular as viewed in plan, Fig. 2. This basal frame is built

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of lengths of steel angles, two lengths 3, 3 forming the sides, two lengths 4, 4 the ends, and two lengths 5, 5 a medial reinforcement. The base is rigidly integrated by welding, and at the four corners gusset-plates 7 further reinforce the structure. Under each of the four corners of the base a swivel caster 8 is secured, and at the middle of the frame two non-swivel casters or wheels 9 are provided. The structural steel frame and its six casters afford a sturdy traveling chassis upon which the rug-supporting members of the rack are mounted.

The rug-supporting members of the rack comprise five "trees" or supports *a*, *b*, *c*, *d* and *e*, each having a central trunk or mast 6, from which three pairs of branches or arms 10 extend in alignment. As will presently appear the two end supports *a* and *e* are adjustable, to make accommodation for rolled rugs of various lengths, and to permit a balancing of the rug load on the rack. All of the masts 6 are conveniently formed of steel I-beam sections, and the masts of the three supports *b*, *c* and *d* are mounted rigidly upon the base 2. The mast of the central support *c* extends at its lower end downwardly between, and is welded to, the two cross braces 5, 5 of the base, and the three pairs of arms 10 are at their inner ends 11 (Figs. 2 and 4) rigidly welded to the mast, with the arms of each pair aligned transversely of the rack structure. The arms are formed of steel I-beam sections; the lower pair of arms is welded to the base 2, providing for still further reinforcement of the structure, and the other two pairs of arms are spaced upwardly therefrom by a distance slightly but sufficiently in excess of the diameter of the rugs to be carried by the rack. The three pairs of arms of the five supports *a* to *e* are identically spaced in the vertical, whereby the arms provide on each side of the line of masts 6 three flights of five horizontally aligned arms 10, each flight being arranged to receive and support a rolled rug R.

Whereas the three supports *b*, *c* and *d* are rigidly mounted upon the base 2, the end supports *a* and *e* are adjustable on the longitudinal axis of the rack structure, whereby the effective length of the five supports may be modified to suit rolled rugs of various lengths. Each of the supports *a* and *e* is borne by three horizontal I-beam sections 12, welded at their outer ends to the mast portion 6 of the support (*a* or *e*) and telescoped at their inner ends in steel tubes 13 of square or rectangular cross section. The tubes 13 are welded at their inner ends to the mast 6 of the

central support *c*, and at their outer ends to the masts *6* of the supports *b* and *d*, respectively. While the mast *6* of each of the supports *a*, *c* and *e* is formed of a continuous length of steel beam, the masts *6* of the supports *b* and *d* are made in three sections *60*, *61* and *62* welded at their upper and lower ends to the outer ends of the tubes *13*; the two lower tubes extending from the opposite sides (Fig. 1) of the mast *6* of the central support *c* are welded to the base *2*, as are the bottom arms *10* of the three rigid supports *b*, *c* and *d*. Thus it is that great strength and rigidity are obtained in a structure built of relatively light structural metal sections, and a sturdy telescope frame or carriage is provided for the members *12* that adjustably bear the end supports *a* and *e*.

As already mentioned, the members *12* which mount the adjustable end supports *a* and *e* in the tubes *13* are formed of lengths of standard structural steel I-beams; the tubes *13* are three in number for each of the supports *a* and *e*, and they are vertically spaced, lying in the three horizontal planes, respectively, in which the three flights of arms lie on the opposite sides of the row of masts *6*; the tubes *13* are formed of lengths of square steel tubing—a standard product of the tube mill, and the adaptation of lengths of such tubing to form the telescopic receptacles for the I-beam members *12* of the adjustable end supports *a* and *e* is of great practical value. It will be noted that the members *12* are positioned with the flanges of their I-beam section arranged to bear on the inner surfaces of the top and bottom walls of the associated tube members *13*, whereby greatest strength is obtained; that is, strength of the supports *a* and *e* to withstand the vertical loads imposed by the rolls of rugs introduced to the rack structure. On the other hand, the frictional engagement of the telescopic parts *12* and *13* is minimized, whereby the adjustment of the end supports *a* and *e* may be readily made. More specifically, the bodies of the I-beam members *12* bear upon the side walls of the tubes *13* only along the edges of the top and bottom flanges of the I-beam, and thus the friction of the engagement of the members *12* with the internal surfaces of the tubes *13* is minimized. Additionally, the “*i*” section of members *12* within the square tubes *13* eliminates the possibility of air becoming entrapped within the tubes *13*, to resist the telescopic movement of the members *12*. The telescoped parts *12* and *13* provide means of ample strength and rigidity to support the heavy rolls of rugs *R*, while admitting of ready adjustment of the end supports *a* and *e*.

The manner in which a conventional fork-lift truck (not shown) may be used to pick-up a rolled rug broadside, and to carry it, lift it, and place on any of the three flights of arms *10* on either side of the rack structure, will be readily understood by those skilled in the art. And such a lift truck may be also readily used in removing rugs from the rack.

In order to prevent the rugs from rolling from supported position on the arms *10*, detents are provided at the ends of such arms. Advantageously, such means comprise chocks *14* that are removably secured to the arms. As shown in Figs. 1 and 4 the chocks *14* are formed of short sections of angle iron, having two pin or finger portions *15*, *15* (Fig. 1) provided on one edge of the angle. The chocks are positioned with their free edges directed downwardly upon the top sur-

faces of the respective arms *10*, and the two pins on each chock are extended through orifices formed in the arm *10*, as will be understood upon reference to Fig. 1. The provision of chocks *14* at the end of each of the five arms of each rug-supporting flight of arms insures that the rug cannot be unintentionally dislodged from supported position while the rack and its burden are being moved from place to place. And it is noteworthy that the chocks are readily and quickly removable from secure position of attachment to the arms.

In some cases the tops of the masts *6* of the supports *b*, *c* and *d* may be interconnected by a welded steel strap or beam *16*, thereby providing in a rack for unusually heavy rugs additional reinforcement of the three medial masts.

Within the terms of the appended claims various modifications in the structure described may be made without departing from the spirit of the invention.

I claim:

1. Apparatus for storing and transporting rolled rugs comprising a base in the form of a rectangular frame having two side and two end members of structural metal sections mounted on wheels adjacent the corners of said frame to support the structure on a floor for travel, a plurality of fixed supports comprising a row of masts formed of lengths of a structural metal section rigidly secured to said base and extending upwardly therefrom at points spaced apart on the longitudinal center-line of the base, each of said masts having a plurality of pairs of arms formed of lengths of structural metal sections secured to the masts at vertically spaced apart points, with the arms of each pair extended on opposite sides of the associate mast and aligned transversely of the row of masts, providing on each side of the row a plurality of flights of horizontally aligned arms adapted severally to receive and support rolls of rugs, one of said masts being located centrally of said row, metal tubes united to the central mast and positioned in the horizontal planes of said flights of arms, said tubes extending from opposite sides of said central mast to the masts in row next adjacent to said central mast, with the several horizontally disposed tubes aligned above each other in common vertical plane with the center-line of the base, an auxiliary support at each end of the row of fixed supports above defined, each auxiliary support comprising a vertical mast having pairs of arms extending laterally therefrom, a plurality of lengths of a structural metal section rigidly united to the mast of each auxiliary support and telescopically received severally in and adjustable in said tubes at one end of the row of fixed supports, the two auxiliary supports thus carried at the opposite ends of said row of fixed supports having their arms aligned in the planes of said flights of arms of the fixed supports, said assembly providing for the horizontal adjustment of said auxiliary supports relatively to said row of fixed supports, whereby the length of said flights may be adjusted for rugs of various lengths and for balancing the load of rugs on the apparatus.

2. Apparatus for storing and transporting rolled rugs comprising a base in the form of a rectangular frame having two side and two end members of structural metal sections mounted on wheels adjacent the corners of said frame to support the structure on a floor for travel, a plurality of fixed supports comprising a row of masts formed of lengths of a structural metal section

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rigidly secured to said base and extending upwardly therefrom at points spaced apart on the longitudinal center-line of the base, each of said masts having a plurality of pairs of arms formed of lengths of structural metal sections secured to the masts at vertically spaced apart points, with the arms of each pair extended on opposite sides of the associate mast and aligned transversely of the row of masts, providing on each side of the row a plurality of flights of horizontally aligned arms adapted severally to receive and support rolls of rugs, one of said masts being located centrally of said row, metal tubes united to the central mast and positioned in the horizontal planes of said flights of arms, said tubes extending from opposite sides of said central mast to the masts in row next adjacent to said central mast, with the several horizontally disposed tubes aligned above each other in common vertical plane with the center-line of the base, an auxiliary support at each end of the row of fixed supports above defined, each auxiliary support comprising a vertical mast having pairs of arms extending laterally therefrom, a plurality of lengths of a structural metal section rigidly united to the mast of each auxiliary support and telescopically received severally in and adjustable in said tubes at one end of the row of fixed supports, the two auxiliary supports thus carried at the opposite ends of said row of fixed supports having their arms aligned in the planes of said flights of arms of the fixed supports, said assembly providing for the horizontal adjustment of said auxiliary supports relatively to said row of fixed supports, whereby the length of said flights may be adjusted for rugs of various lengths and for balancing the load of rugs on the apparatus, the outer ends of said arms including perforations, and chocks having pin portions engaging said perforations removably to engage the chocks severally to the outer ends of the arms, to retain said rolls of rugs in supported positions on said flights of arms between said masts and said chocks.

3. Apparatus for storing and transporting rolled rugs comprising a base in the form of a frame having two side and two cross members of structural metal sections mounted on wheels on said frame to support the structure on a floor

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for travel, a plurality of fixed supports comprising a row of masts rigidly secured to said base and extending upwardly therefrom at points spaced apart on the longitudinal center-line of the base, each of said masts having a plurality of pairs of arms secured to the masts at vertically spaced apart points, with the arms of each pair extended on opposite sides of the associate mast and aligned transversely of the row of masts, providing on each side of the row a plurality of flights of horizontally aligned arms adapted severally to receive and support rolls of rugs, one of said masts being located intermediately of said row, metal tubes united to the intermediate mast and extending from said intermediate mast to the mast in row next adjacent to said intermediate mast, with the several horizontally disposed tubes aligned above each other in common vertical plane with the center-line of the base, an auxiliary support at one end of the row of fixed supports above defined, said auxiliary support comprising a vertical mast having pairs of arms extending laterally therefrom, a plurality of lengths of a structural metal section rigidly united to the mast of each auxiliary support and telescopically received in and adjustable in said tubes at said end of the row of fixed supports, the auxiliary support thus carried at the end of said row of fixed supports having its arms aligned in the planes of said flights of arms of the fixed supports, said assembly providing for the horizontal adjustment of said auxiliary supports relatively to said row of fixed supports, whereby the length of said flights may be adjusted for rugs of various lengths.

LOUIS A. WIELAND.

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