

Nov. 18, 1941.

W. E. BURBANK ET AL

2,262,794

ARTICLE HANDLING AND STORING APPARATUS

Filed May 6, 1939

FIG. 1

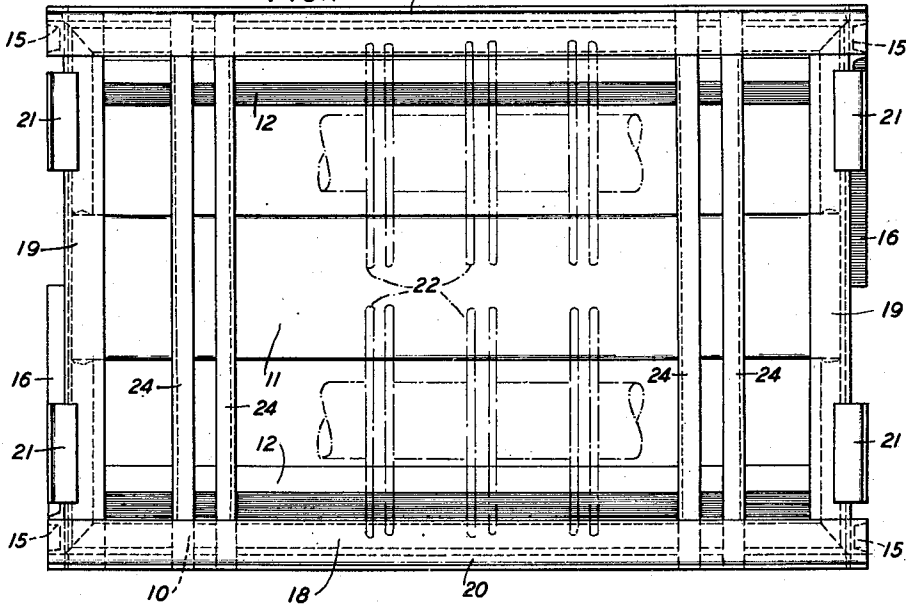


FIG. 2

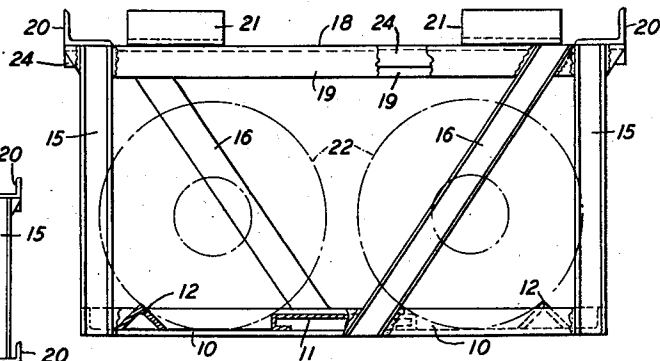
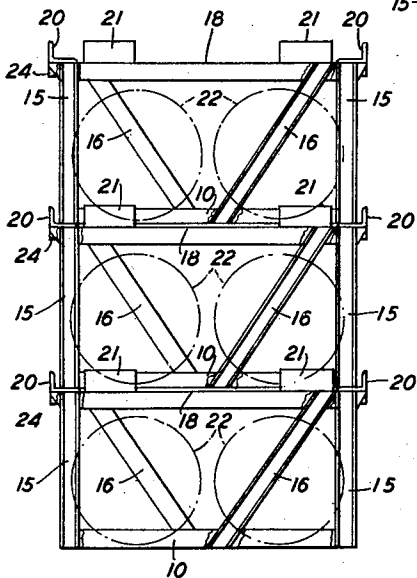


FIG. 3



W. E. BURBANK
INVENTORS : S. P. MC DANIELS
P. A. SUTTON
BY E. R. Nowlan

ATTORNEY

UNITED STATES PATENT OFFICE

2,262,794

ARTICLE HANDLING AND STORING APPARATUS

William E. Burbank, Westfield, Shryock P. McDaniels, Maplewood, and Paul A. Sutton, Cranford, N. J., assignors to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

Application May 6, 1939, Serial No. 272,126

10 Claims. (Cl. 248—120)

This invention relates to article handling and storing apparatus and more particularly to pallets for handling and storing reels, coils and the like.

It has been found difficult to store reels or coils of wire due to their contours and to the lack of sufficient rigidity and strength to permit stacking. The storing of such materials or articles in self supporting piles not only requires considerable floor space but subjects them to possible damage.

An object of this invention is to provide a simple, efficient and practical apparatus for handling and storing articles.

With this and other objects in view, the invention comprises an open frame including a pallet having parallel elements for supporting rows of articles, such as reels or coils, and upright members for supporting a flanged shelf to receive another pallet of like structure to permit stacking of a plurality of pallets in vertical alignment while allowing sufficient clearance between the articles and the shelf for the reception of forks of a tiering truck, or other suitable lifting and transporting means, guide members being secured to the under surface of the shelf for the forks.

Other objects and advantages will be apparent from the following detailed description taken in conjunction with the accompanying drawing, wherein—

Fig. 1 is a top plan view of one of the pallets;

Fig. 2 is an end elevational view of one of the pallets, portions thereof being broken away, and

Fig. 3 is an end elevational view of a plurality of pallets shown in stacked formation.

In the present embodiment of the invention the pallets are designed primarily to receive coils, reels or spools of strand material.

By viewing Figs. 1 and 2 of the drawing it will be noted that the pallet is formed of a metal angle, the lower or horizontal portion of which is notched at selected positions to permit bending to form the corners, the abutting edges at the notches and the end of the metal angle are secured together by welding, to form a solid rectangular member 10 angular in cross section. A central article supporting member 11 preferably formed of sheet metal and bent into the cross sectional contour shown in Fig. 2 has its ends resting upon the horizontal end portions of the rectangular member 10, where they are secured in place. It should be understood that the various parts may be formed of any suitable material and may be secured in their proper positions by any suitable means, but in the pres-

ent embodiment of the invention all of the parts are formed of metal for the purpose of rigidity and durability and it has been chosen to secure these parts in their respective positions by means of welding.

The central member 11 is of suitable width to engage the inner contacting surfaces of the articles to space them a suitable distance apart and to properly position them within the confines of the structure. Inverted V-shaped or angle elements 12 disposed in positions parallel with respect to each other and the central member 11 are spaced sufficiently from the central member to assist in supporting the articles. The ends of the angle elements 12 rest upon the horizontal portions of the rectangular member 10 to which they are secured.

At the ends adjacent the corners of the rectangular member 10 are secured vertical channel members 15. Each end of the structure also has a transversely extending brace 16 secured as shown in Figs. 1 and 2. The upper ends of the vertical members 15 and the braces 16 are secured to a support 18 in the form of a flanged shelf. The shelf is formed of metal angles, namely, main end angles 19, side retaining angles 20 and end retaining angles 21. The end angles 19 are secured to the uprights 15 and braces 16, with portions thereof extending inwardly. The side retaining angles 20 have their ends mounted upon the outer ends of the end angles 19, while two of the end retaining angles 21 are mounted upon each of the side angles 19 at spaced positions as shown. The retaining angles 20 and 21 are so positioned that a plurality of pallets may be stacked one upon the shelf of another to locate the vertical channel members in alignment to form rigid columns at the corners to support the total weight of the stack without adding any weight to the individual pallets. The end retaining angles are spaced to allow for the vertical channel members 15 and the channel braces 16, the ribs of which extend outwardly.

The apparatus, which may be defined as a pallet with a spaced support or shelf for the stacking of another pallet thereon, is illustrated as supporting a plurality of reels or spools of strand material indicated at 22. Although the ends of the stacking or supporting structure carried by the pallet are partially closed due to the reinforcing braces 16, it is possible to remove the reels therethrough. The sides thereof are open so that the reels may be readily inserted in place or removed selectively or in any desired

manner therefrom even when in a stacked position. There is also sufficient clearance between the reels and the support for the reception of lifting means, for example, a lifting fork of a tiering fork truck. Trucks of this type are well known commercially for the lifting, transporting and stacking of certain types of articles. Spaced tracks 24 formed of angle members suitably positioned and secured to the under surface of the support 18 are provided to receive lifting forks of trucks of the kind described. If the lifting forks are of sufficient length to extend beneath and beyond the support 18 the tracks 24 are not essential but may serve as guides for the forks. However, if the forks are shorter in length than the width of the support 18 the tracks 24 are essential in lifting and transporting the pallet due to the open framework structure of the shelf.

The reels may be disposed manually in rows, as illustrated in the drawing, resting upon the central member 11 and the tubular member 12. The filled pallets may then be stacked one upon the other, by the aid of a tiering truck or other suitable means, as illustrated in Fig. 3. Furthermore, with this construction a plurality of stacked pallets may be transported simultaneously. For example, a stack of three pallets may be transported to a selected position, where they are to be stored, and another stack of pallets may be transported and disposed upon the original stack of pallets. The apparatus is of sufficient rigidity and durability to support a plurality of such pallets to enable stacking a quantity of the pallets from floor to ceiling of a storeroom if so desired. Furthermore, it is possible to remove any desired reel regardless of its position in the stack of pallets and each reel supports only its own weight and does not rest upon nor is it necessary that it touch another reel. Another important feature of the invention is that it is not necessary for the lifting means to be positioned beneath the entire structure to accomplish lifting and transporting thereof. The lifting means need only be placed beneath the support or shelf which expedites the handling of one or a stack of pallets.

The embodiment of the invention herein disclosed is illustrative only and may be widely modified and departed from in many ways without departing from the spirit and scope of the invention as pointed out in and limited only by the appended claims.

What is claimed is:

1. An article handling and storing apparatus comprising a pallet to support a plurality of articles, a shelf with upwardly projecting side portions to support and hold a like pallet against displacement, and spaced uprights secured to the pallet to support the shelf.
2. An article handling and storing apparatus comprising a pallet to support a plurality of articles, a shelf disposed above the pallet and articles to support a like pallet, and means to secure the pallet and shelf at spaced positions to allow space for lifting means between the articles and the shelf for the lifting thereof on the shelf of a like pallet.
3. An article handling and storing apparatus comprising a pallet having spaced parallel elements to support circular articles, a shelf of a

contour to receive a like pallet, spaced uprights connecting the pallet and the shelf, reinforcing members secured to the shelf and the pallet, and lifting element guides secured to the shelf.

4. An article handling and storing apparatus comprising a pallet including an outer frame, a spacing and supporting member secured to the frame, elements secured to the frame and disposed at spaced positions in parallel relations with respect to the member to cooperate therewith in supporting rows of circular articles, a supporting shelf to receive another like pallet, uprights connecting the pallet and the shelf to space the shelf free of the articles, and a transversely extending guide disposed adjacent the under surface of the shelf to guide a means for lifting the apparatus.

5. An article handling and storing apparatus comprising a pallet having a frame formed of a metal angle with a horizontal under portion, a sheet metal central member of predetermined width disposed upon the said under portion and secured thereto, elongate elements disposed upon and secured to the said under portion in parallel positions upon each side of the central member to cooperate therewith to support rows of circular articles, a shelf formed of a metal angle to receive a like pallet, and vertical members to connect and space the shelf and the pallet a predetermined distance apart.

6. An article handling and storing apparatus comprising a pallet to support a plurality of articles, a shelf with horizontal portions to support a like pallet and vertical side portions to hold the like pallet against displacement, and spaced uprights secured to the pallet to support the shelf.

7. An article handling and storing apparatus comprising a pallet having spaced parallel members to support a plurality of circular articles in axial alignment, a shelf to support and hold a like pallet against displacement, and spaced uprights secured to the pallet to support a like pallet.

8. An article handling and storing apparatus comprising a pallet having spaced parallel members to support a plurality of circular articles in axial alignment, a shelf to support and hold a like pallet against displacement, and means to secure the shelf to the pallet at relative positions spaced for the rolling of the articles onto and off of the parallel members.

9. An article handling and storing apparatus comprising a pallet having spaced parallel members to support a plurality of rows of circular articles in axial alignment in each row, a shelf to support and hold a like pallet against displacement, and spaced uprights secured to the pallet to support a like pallet.

10. An article handling and storing apparatus comprising a pallet having spaced parallel members to support a plurality of rows of circular articles in axial alignment in each row, a shelf to support and hold a like pallet against displacement, and means to secure the shelf to the pallet at relative positions spaced for the rolling of the articles relative to the parallel members into or out of any of the rows.

WILLIAM E. BURBANK,
SHRYOCK P. McDANIELS,
PAUL A. SUTTON.