Dec. 12, 1967 R. GOODMAN ET AL 3,357,569

DISPLAY APPARATUS

Filed Dec. 10, 1965

Fig. 1

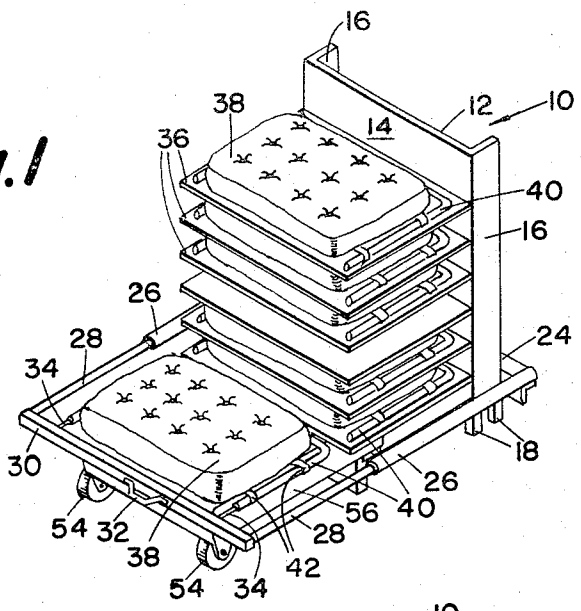


Fig. 2

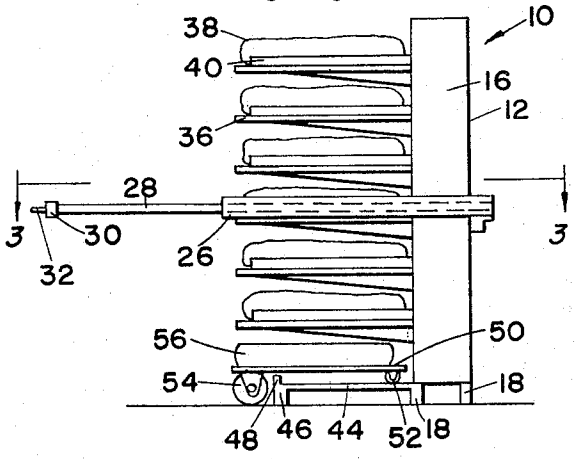
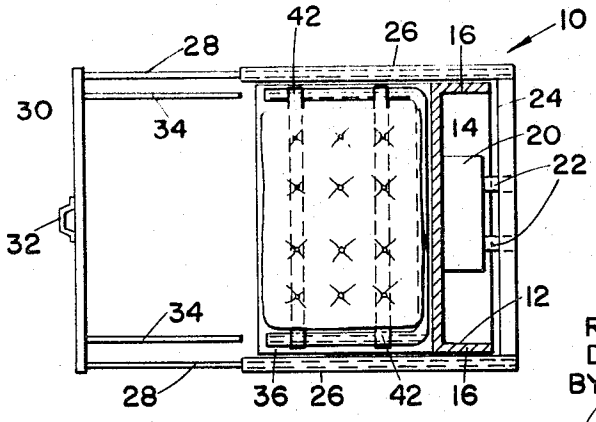


Fig. 3



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United States Patent Office 3,357,569 Patented Dec. 12, 1967

3,357,569

DISPLAY APPARATUS

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Filed Dec. 10, 1965, Ser. No. 513,023
6 Claims. (Cl. 211—28)

ABSTRACT OF THE DISCLOSURE

A display apparatus for storing mattresses and the like in vertically-spaced shelves and means for selectively removing a mattress from a self and displaying it in flat horizontal position which comprises a series of shelves mounted on a common frame and a vertically movable lift fork which is movable into selected positions opposite each shelf and has a pair of fork tines. When the fork is in the desired vertical position, the tines are moved horizontally to engage tubular means on a mattress support moveably positioned on the shelf. After engagement, the fork is moved horizontally back to its original position, carrying the support and a mattress thereon along with it. The fork is then moved vertically down opposite a horizontally movable rest or display carriage. The fork is then moved horizontally to deposit the mattress support and the mattress which lies thereon onto the display carriage. When it is desired to return the mattress to its storage shelf, the reverse movement of the fork takes place.

This invention relates to a display apparatus, and it more particularly relates to a display apparatus for mattresses and the like.

There are usually many different types and styles of mattresses, all of which must be displayed before a prospective customer in order to give him the opportunity to choose the one that most appeals to him. However, this has, heretofore, created a problem because mattresses are generally quite heavy and bulky and it requires a large amount of manual labor to bring them out of a storage area and display them and then move them back to the storage area. On the other hand, if all the mattresses were kept side-by-side in a permanent display position, they would occupy an undue amount of floor space that could otherwise be more beneficially utilized. In addition, it is not desirable to display the mattresses on the bare floor because of the dirt and dust that would be picked up. It has, therefore, heretofore, been the general practice to first cover the display area with sheets of fabric, straw, paper or the like or to heave the mattress onto a supporting platform. In either case, additional manual effort was required.

It is one object of the present invention to overcome the above difficulties by providing a display apparatus that includes a compact storage area and an effective display area and that is capable of moving any desired mattress or similar article from the storage area to the display area and then back to the storage area with a minimum of manual effort.

Another object of the present invention is to provide an apparatus of the aforesaid type that is relatively simple and economical in construction but is, nevertheless, sturdy and relatively free from maintenance problems.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following description when read in conjunction with the accompanying drawings wherein:

FIG. 1 is a top perspective view of an apparatus embodying the present invention, the apparatus being shown with a mattress in display position.

FIG. 2 is a side elevation view of the apparatus of FIG. 1, but with all the mattresses in storage position.

FIG. 3 is a cross-sectional view taken on line 3—3 of FIG. 2.

In accordance with the present invention, the aforesaid objects are achieved by providing a series of vertically-spaced shelves supported on a common frame. Each shelf is adapted to support a movable mattress support upon which a mattress or the like is arranged in flat, horizontal position. A lift fork or the like is vertically movable to any selected vertical position corresponding to each shelf and is provided with horizontally movable arms which are adapted to engage a mattress support, bring it horizontally forward off its respective shelf, and then move it down to desposit it on a horizontally movable rest means or display carriage. The lift mechanism is also used to remove the mattress support and mattress from the display carriage and return them to the shelf, when so desired, by simple reverse movements.

Referring now in greater detail to the various figures of the drawing wherein similar reference characters refer to similar parts, there is shown a display apparatus, generally designated **10**, comprising a side frame **12** that is provided with a front wall **14** and opposite end walls **16**. The side frame **12** is supported by legs **18** depending from each end wall **16**.

Within the hollow of the side frame **12**, and supported by the front wall **14** between the end walls **16**, is provided a hydraulic lift mechanism, dessignated **20**. This lift mechanism has not been shown in detail because it may be any one of a number of standard type hydraulic lift means. In fact, although a hydraulic lift means is here described, the lift means may be any other desirable and feasible type such as mechanical screw-type jacks, pneumatic lifts, etc.

The lift mechanism **20** is provided with laterally-extending arms **22** to which is attached a bar **24**. This bar **24** extends slightly beyond the end walls **16**, at either end, and is connected, at each end, to a laterally-extending tubular arm **26**, each arm **26** being positioned outwardly of the end walls **16** of the side frame **12**. Telescopically positioned within each tubular arm **26** is a rod **28**. Each rod **28** extends forwardly from its respective tubular arm **26** and is connected at its forward end to a transverse bar **30**. The bar **30** is provided with a hand grip **32** at its center portion and has two oppositely-arranged tines **34** extending rearwardly therefrom, each tine **34** being parallel and adjacent to but laterally spaced from a corresponding rod **28**.

Mounted on the front face of the wall **14** and extending forwardly therefrom are a number of vertically-spaced, parallel, flat shelves **36**. Each shelf **36** is of a size to easily support a single box-spring mattress **38** as it rests on an individual mattress-support **40**.

Each mattress-support **40** comprises a generally U-shaped, tubular frame wherein the open-ended arms of the frame extend forwardly. Stretched between these arms are a pair of straps **42** of fabric or the like. The mattress rests on these straps which provide a firm yet flexible support therefor. The tubular arms of this mattress-support **40** are spaced from each other by a distance corresponding to the distance between the tines **34** of the lift mechanism so that when the mattress-support is properly arranged with its arms in alignment with the corresponding tines **34**, these tines may be telescopically movable into and out of the open-ended, tubular arms.

At its lower end, the side frame **12** is provided with a forwardly-extending platform **44**, the forward end of which is supported by legs **46**. Extending upwardly from

the forward edge of the platform 44 is a stop-flange 48. Positioned on the platform 44 is a movable carriage 50. This carriage 50 has relatively small rollers 52 at its rear end and relatively large rollers 54 at its front end. The rollers 52 move on the platform 44 while the rollers 54 move on the floor. The relative sizes of the rollers 52 and 54 are such that the carriage is level at all times. The stop flange 48 acts to limit the forward movement of the carriage by abutment with the rollers 52.

The carriage 50 is adapted to be manually moved into its forward, or extended, position and into its rearmost, or retracted, position. It is also adapted to hold a supporting means for the displayed mattress after the mattress has been removed from its shelf 36 by the lift mechanism. This supporting means is illustrated here as being another box spring mattress 56, however, it can obviously be any other supporting means desired.

The operation of the above-described apparatus is as follows: Various box-spring mattresses 38, or the like, are placed on their individual supports 40 and each is then placed on its individual shelf 36 with the open ends of the supports 40 facing forwardly and in a position where they would be in alignment with the tines 34 when these tines are raised to the appropriate level. The mattresses are all now neatly and compactly stored. When it is desired to display them to a customer, the lift mechanism is operated to move it to the desired level, the fork, consisting of the bar 30 and tines 34, is then manually pushed rearwardly until the tines are in telescopic engagement with the support 40. The fork is then pushed forwardly to remove the support 40 and its mattress 38 from the corresponding shelf 36. The carriage 50 is then pulled into the forward, or extended, position, and the lift mechanism is actuated to lower the mattress and its support 40 onto the mattress 56 on the carriage 50. The reverse procedure is used to bring the mattress back into its storage position on its shelf 36.

Although the apparatus, here described, has been illustrated as used for the storage and display of box-spring mattresses, it can also be used for the storage and display of various other types of articles.

The invention claimed is:

1. A storage and display apparatus comprising a supporting frame a plurality of shelves vertically-spaced from each other on said frame, each shelf extending forwardly from said frame, a vertically-movable lift fork means operatively connected to said frame, said lift fork means having a fork assembly including at least one tine extending toward the forward plane of said shelves, means for moving said lift fork means vertically, means for moving said fork assembly horizontally toward and away from said shelves, a removable article-support means on at least one of said shelves, and means for releasably interengaging said tine and said article-support means said lift fork means comprising a pair of oppositely disposed, parallel, hollow arms, one arm being arranged outwardly of one side of the frame and the other arm being arranged outwardly of the opposite side of the frame, said arms extending rearwardly of said frame and being connected by a cross-bar rearwardly of said frame, a fork assembly comprising a rod slidably positioned within each arm, each rod extending forwardly of said shelves, said rods being connected to each other by a cross-bar, and at least one tine mounted on said fork assembly and extending rearwardly toward said shelves.

2. The apparatus of claim 1 wherein said article-support means is at least partially tubular and is constructed and arranged for telescopic engagement with said tine.

3. The apparatus of claim 1 wherein said fork means has two laterally-spaced tines and said article-support means comprises a generally U-shaped tubular member, the opposite arms of which are open-ended and so spaced from each other that each arm is arranged to telescopically receive a corresponding tine when the arms and the tines are in alignment.

4. The apparatus of claim 1 wherein said frame is provided with a movable article rest means, said rest means being normally in the same vertical plane as said shelves but being movable forwardly of the plane of said shelves, said rest means being constructed and arranged to underlie an article-support with an article thereon in a display position forwardly of said plane of said shelves.

5. The apparatus of claim 1 wherein said means for moving said lift fork means vertically is a fluid-pressure actuated piston.

6. The apparatus of claim 1 wherein said article-support means supports a mattress that is removably positioned thereon.

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