May 14, 1957 H. ERNST 2,792,252

METHOD AND APPARATUS FOR HANDLING BULKY STOCK

Filed Feb. 4, 1953 2 Sheets-Sheet 1

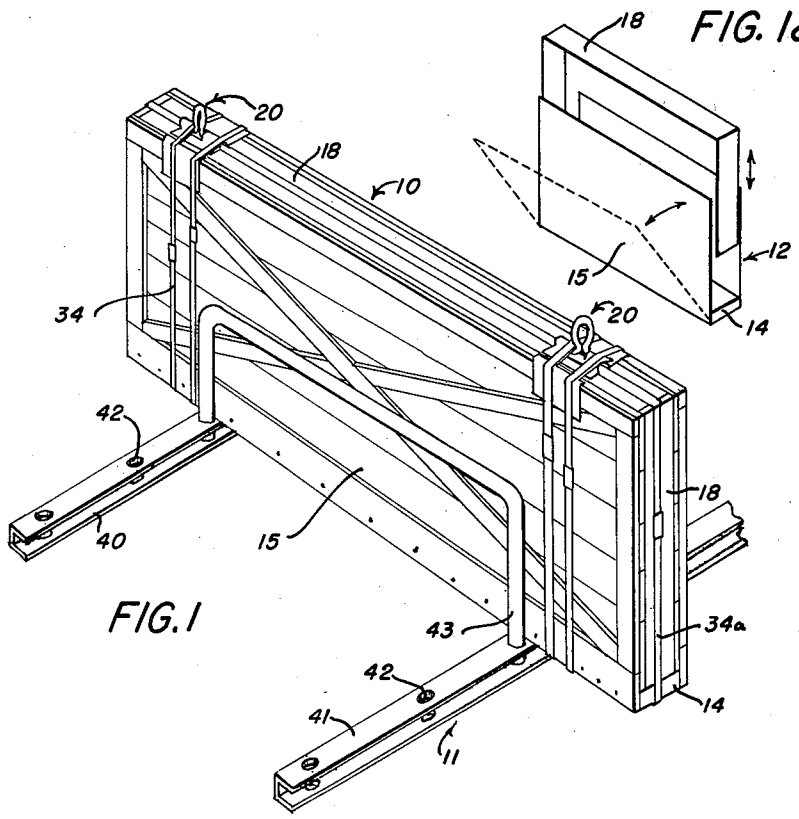


FIG. 1a

FIG. 1

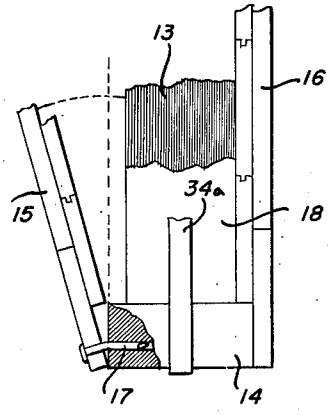


FIG. 2

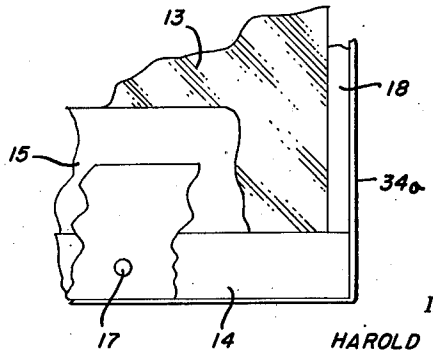


FIG. 3

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METHOD AND APPARATUS FOR HANDLING BULKY STOCK

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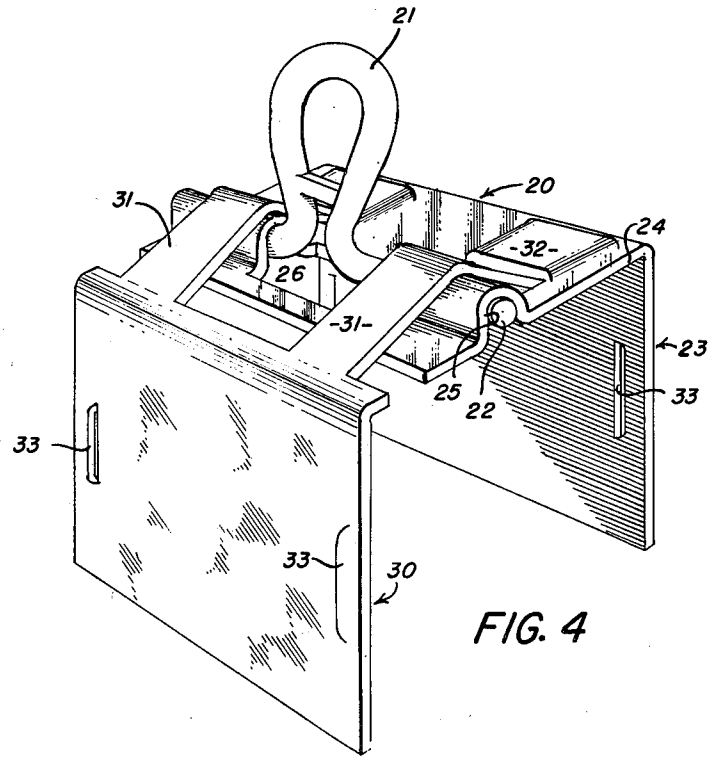


FIG. 4

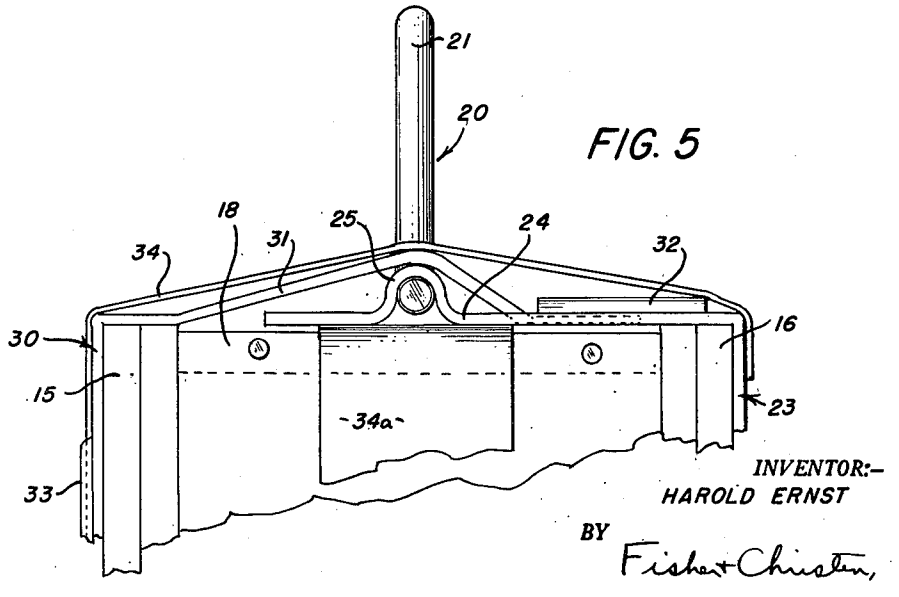


FIG. 5

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METHOD AND APPARATUS FOR HANDLING BULKY STOCK

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5 Claims. (Cl. 294—74)

This invention relates to a method and apparatus for packaging and handling bulky elongated stock and, more particularly, to a method and apparatus for packaging the same for transportation from the mill to storage in a warehouse, followed by inspection and removal of the stock for fabrication.

When shipping bulky stock and when storing and handling the same prior to fabrication, it is necessary to package the stock in substantial protective crates, bound rigidly to prevent damaging or marring the stock. These packages are expensive and cumbersome from the standpoint both of the original packaging and thereafter the transportation, storing and unpacking of the same.

It is, therefore, an object of this invention to provide a crate of simple, yet sturdy, construction, which may be easily opened for inspection and removal of the stock and which may be adapted for easy and convenient handling.

It is another object of this invention to provide a crate having a base and sides, at least one of which is hinged to the base and adapted to be opened like the cover of a book for easy inspection and removal of stock for fabrication, but which will hold the stock rigidly therein, as well as provide a protective covering for the same.

It is another object of this invention to provide a method of handling sheet stock economically, conveniently and safely, from the mill to its point of use without the need for transferring the stock, together with a method for conveniently inspecting the stock prior to use.

It is still another object of this invention to provide a lifting eye assembly for such packages having a pair of angular plates adapted to engage the sides of the crate and, at the same time, to confine a lifting eye thereunder, and having guides thereon to facilitate the packaging or baling of the crate by defining positions for the straps which hold the lifting eye in place thereunder and which bind the crate and its contents rigidly.

I accomplish these and other objects of my invention by providing a package for handling elongated stock and the like, including a crate comprising a base for receiving the stock, a pair of sides, at least one of the sides being adapted to be fastened to the base only at its bottom edge, to thus form a crate. The side which is fastened at its bottom edge only may be opened like the cover of a book for purposes of inspecting and removing the stock. Baling means are provided which rigidly bind the base and the sides about the stock.

My invention further comprises such a package wherein a furring section is provided to cover the exposed edge portions of the stock. Additional modifications include such a package wherein a lifting eye is provided and wherein at least one side of the crate is hinged to the base.

I further accomplish the objects of my invention by providing a method of handling elongated bulky stock and the like comprising packaging the same in a crate having at least one side hinged at an edge, applying baling devices to the crate, placing the entire package thus formed in a rack, removing the baling devices and opening the side at an edge thereof for access to the stock.

Some of the objects of my invention having been stated, others will be apparent to those skilled in the art of packaging, to which this invention pertains, when the specification is read in connection with drawings, in which:

Fig. 1 is a perspective view of my package assembly positioned in a storage rack;

Fig. 1–*a* is a schematic perspective view of the assembly illustrating the mode of opening the crate for purposes of inspection and removal of the stock;

Fig. 2 is an enlarged end elevation of the lower portion of Fig. 1, with parts broken away;

Fig. 3 is an enlarged front elevation of the lower right-hand portion of Fig. 1 with parts broken away;

Fig. 4 is a perspective view of the lifting eye assembly, and

Fig. 5 is an end elevation of the lifting eye assembly positioned on the crate.

Referring more particularly to the drawings, Fig. 1 shows the package assembly broadly designated at **10**, positioned in a storage rack broadly designated at **11** prior to the opening of the package and removal of the stock therefrom for fabrication. The crate portion of the package assembly is shown schematically in Fig. 1–*a* and broadly designated at **12**.

The elongated stock **13**, sheet metal for purposes of this illustration, is shown positioned vertically with its lower edge on a suitable base portion **14**, preferably wood or the like. It is to be understood, however, that the elongated stock may additionally comprise sheets, bars, tubes and structural shapes of metal, plastic, wood or other material. A pair of matched sides **15** and **16** which may be fabricated in any suitable manner, such as the wooden construction shown, are positioned vertically and fastened as by nails **17** along their lower edges to the base **14** to fit in snug engagement with the stock **13**. It is to be understood that any suitable type of fastening may be employed which will hold the sides **15** and **16** in firm engagement with the stock **13** and provide a hinged or partially hinged joint at the juncture of base **14** and the sides **15** and **16**, so that the sides may be swung downwardly. Nails **17** are used for purposes of illustration because they are a preferred fastening means.

A protective covering or furring section **18** is then positioned around the exposed edges of the sheet metal. It is seen that the crate **12** thus formed completely surrounds the sheet metal for purposes of protecting the surface of the same from marring and scratches which may result from the handling operation. It is further seen that, upon removal of the furring section **18**, a piece of the stock may be removed from fabrication. If a further inspection of the stock is desired prior to removal thereof, the sides **15** and **16** may be prized or pulled outwardly from their top against the nailed hinge formed at the juncture of the sides **15** and **16** and the base **14** as shown in Fig. 2, exposing the sheet metal stock for visual inspection. It is preferred that both sides be hinged as described, but it is obvious that only one of the sides need be hinged to effectuate inspection of the stock.

Attachments to facilitate lifting, in this case a pair of lifting eye assemblies, broadly designated at **20**, may be placed over the top edge of furring section **18** and engage the sides **15** and **16** and may be attached thereto by suitable baling means.

The lifting eye assembly **20** is shown in detail in Fig. 4. The lifting eye per se comprises a substantially U-

shaped portion 21 having a pair of outward horizontally disposed arms 22 at the free ends thereof. An angular plate broadly designated at 23 is adapted to confine the horizontal projections 22 under the horizontal leg 24 thereof as at 25. The horizontal leg 24 has an aperture 26 therein, through which the lifting eye 21 is adapted to project. A second angular plate broadly designated at 30 has a pair of horizontal projections 31 adapted to fit over the horizontal leg 24 of the first angular plate 23 and to be received under a pair of raised clasping portions 32 disposed on the horizontal leg 24, thus providing a hinge action between the plates 23 and 30.

It is obvious that the lifting eye assembly may be readily disassembled by withdrawing the angular plate 30 and its projections 31 from the clasping portion 32 of the plate 23. The lifting eye may then be withdrawn from the plate 23. A pair of opposed protuberances or guides 33 are positioned on each of the vertical legs of the plates 23 and 30 adjacent the edges thereof for guiding baling means, preferably metal straps 34 extending transversely around the crate and over the lifting eye assembly 20 as shown in Fig. 1. The guide projections 33 firmly position the baling straps 34 so that there will be no tendency for the straps to slide off the lifting eye assembly 20. Fig. 5 additionally shows these transverse straps 34 confined between the guides 33 and passing over the plates 23 and 30 and securely fastening the same to the edges of the crate 18. If desired, additional baling means may be provided, such as the peripheral strap 34–*a*.

Referring again to Fig. 1, the storage rack comprises a pair of horizontally disposed parallel channel beams 40 and 41 having a plurality of spaced holes 42 therein. These holes are adapted to receive guide rails 43. A sufficient number of holes 42 should be provided so that the guide rails 43 may be positioned to accommodate packages of varying thicknesses. These guide rails may be removed to facilitate the inspection of stock when prying open the sides 15 and 16 of the crate. It is to be understood, of course, that, while sheet metal stock has been illustrated here, this type of package could be easily adapted to handle elongated stock having structural shapes other than sheets.

It is thus seen that I have provided a crate of sturdy construction which may be bound together to hold the contents rigidly during handling. The lifting eye assemblies 20 provide a convenient means for attaching a conventional two-leg sling (not shown) thereto for convenient lifting thereof. Upon removal of the baling devices, the lifting eyes and the furring section may be removed and the hinged sides opened down so that the stock may be conveniently inspected and removed therefrom for fabrication. If it is desired to remove the entire contents from the crate en masse, this may be done very conveniently by affixing a pair of slings around the stock at the points vacated by the lifting eyes.

It is apparent that the present invention is described in a preferred embodiment and that various modifications may be made which fall within the spirit and scope of the appended claims.

I claim:

1. A lifting eye assembly comprising a lifting eye provided with spaced trunnions, a pair of work engaging plates each provided with a pair of arms extending transversely from its top, each of said pair of arms being provided with an inverted, generally U-shaped portion overlying one of said trunnions in assembled position, and one of said pairs of arms defining journals for the trunnions, and a pair of spaced hooks positioned at the top of one of said plates for receiving the ends of the arms from the other plate, each of the arms from the other plate extending into said hook in assembled position.

2. A lifting eye assembly as set forth in claim 1, including guide means on said plates for defining the position of baling straps.

3. A lifting eye assembly as set forth in claim 2, wherein the guide means comprises a pair of opposed protuberances carried by each of said plates.

4. A lifting eye assembly comprising a lifting eye having a pair of horizontal arms thereon, a first angular plate comprising a vertical leg and a horizontal leg having an aperture through which the lifting eye projects upwardly, said horizontal leg confining the lifting eye arms thereunder, a second angular plate comprising a vertical leg and a pair of horizontal projections extending over said horizontal leg and a pair of raised portions on said horizontal leg receiving said horizontal projections and forming a connection between the first and second angular plate, whereby the assembly may be placed on a crate to be lifted while engaging the crate between the vertical legs thereof.

5. A lifting eye assembly as set forth in claim 4, including a pair of opposed protuberances exposed in each of the vertical legs, whereby the position of baling straps may be defined.

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