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[73]	Assignee	Jackson Manufacturing Co. Harrisburg, Pa.

[56]

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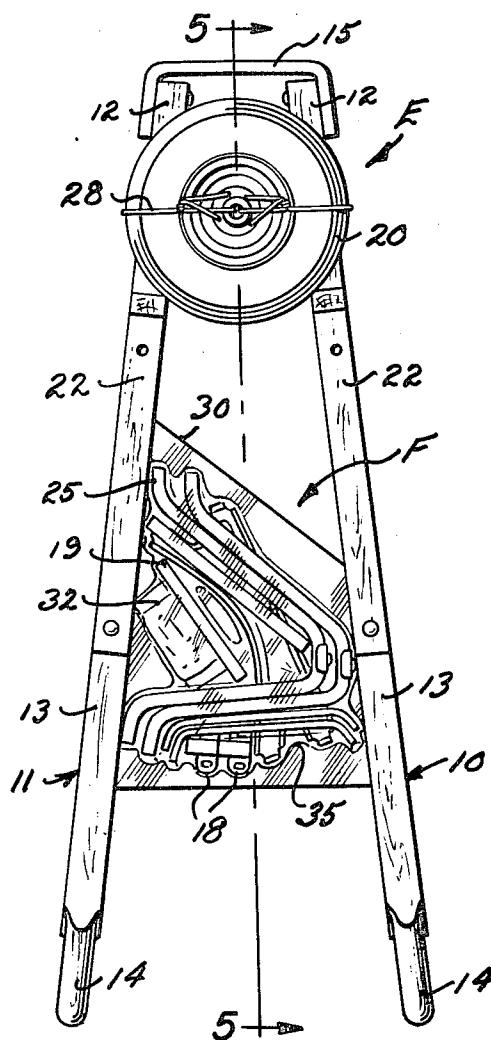
[54] WHEELBARROW PARTS PACKAGING
5 Claims, 7 Drawing Figs.

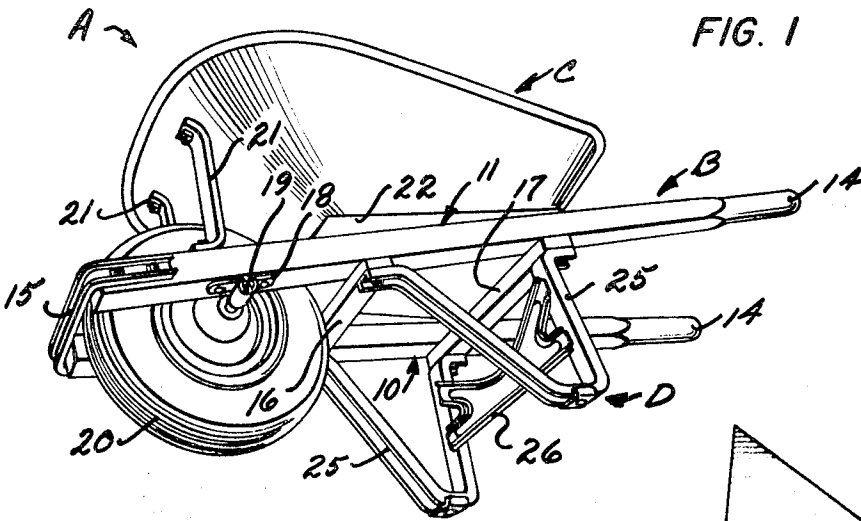
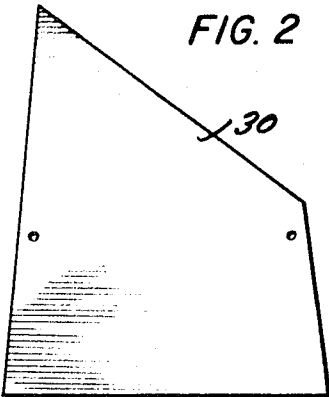
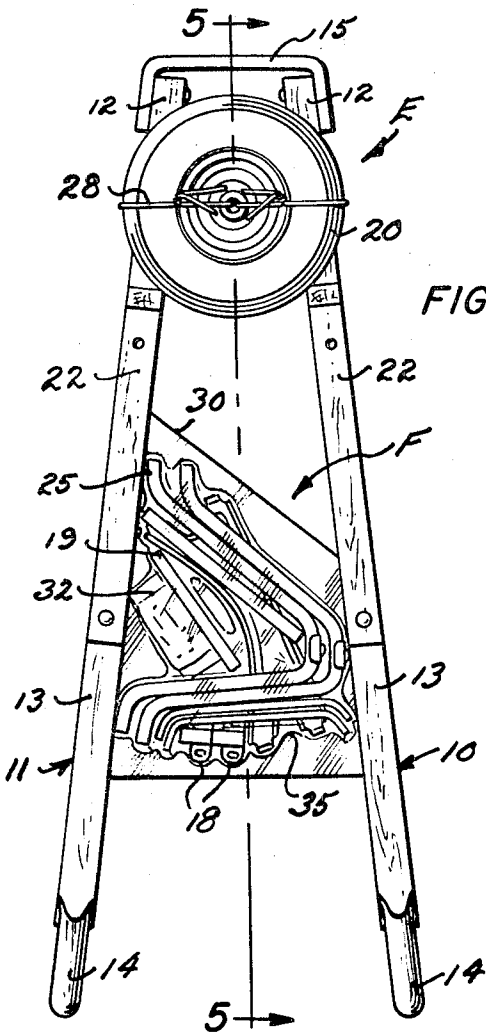
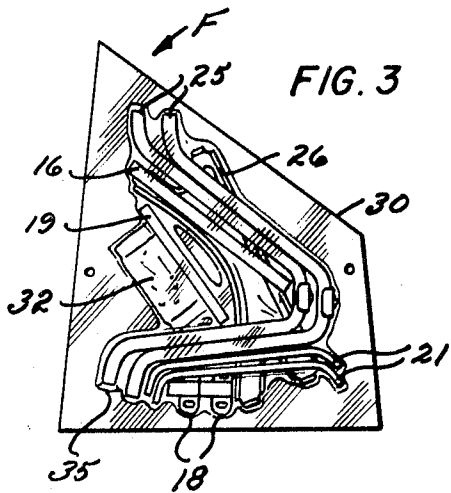
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207/65 R, 206/78 B

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46 M, 65 R, 78 B; 280/47.31; 53/30, 3

ABSTRACT: The packaging of wheelbarrow assembly components, other than the tray, with a frame in partially assembled condition, whereby the assembly components are compactly arranged and attached to the frame at a location so that they do not substantially increase the stowage area required by the partially assembled frame.





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FIG. 5

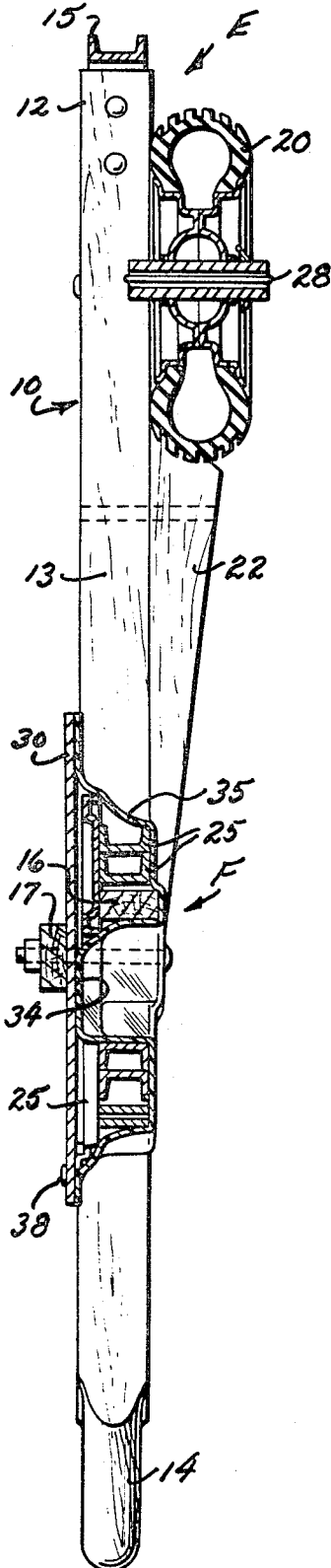


FIG. 6

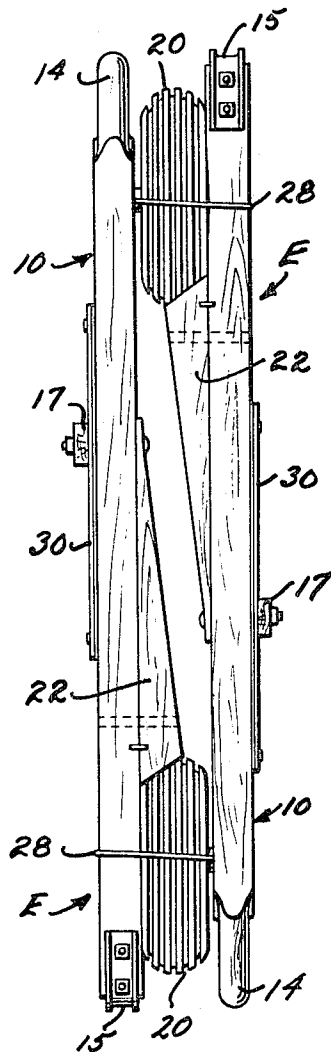
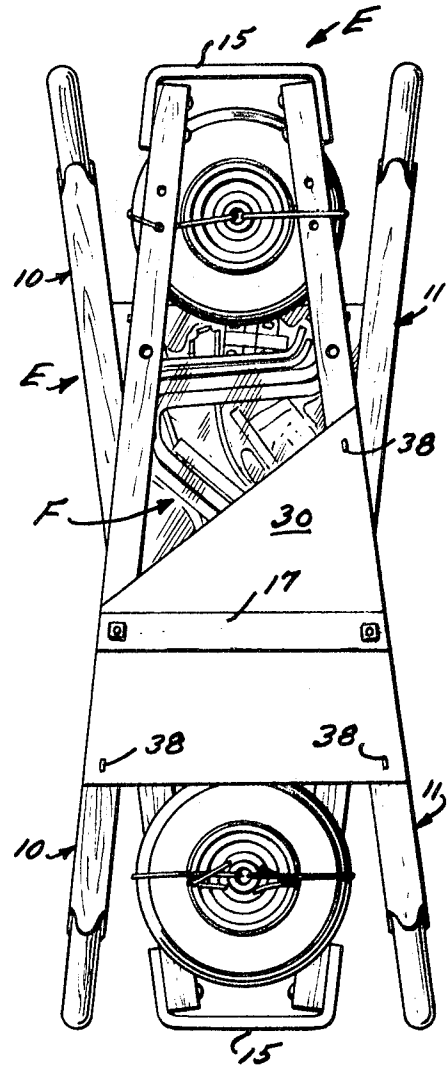


FIG. 7



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WHEELBARROW PARTS PACKAGING

This invention relates to improvements in wheelbarrow parts packaging techniques.

To conserve shipping space, virtually all wheelbarrows are shipped in a substantially knockdown condition, some partially assembled, the customer assembling the same. However, no one has heretofore provided a packaging technique for the wheelbarrow hardware assembly parts that did not create an extremely bulky package. It is thus the primary object of the invention to provide a wheelbarrow parts package which may include all components, except the tray, in association with a partially assembled frame, and where the components do not, by their presence, increase the stowage area of the frame.

A further object is the provision of a package for wheelbarrow hardware assembly components that may be attached between the wheelbarrow handle shafts at a location where the thickness of the package is substantially the same thickness of the wheelbarrow handle shafts.

A further object is the provision of a wheelbarrow parts packaging technique which facilitates assemblage of the complete unit by the ultimate customer.

Other objects and advantages of the invention will become apparent during the course of the following detailed description, taken in connection with the accompanying drawings, forming a portion of this specification, and in which drawings:

FIG. 1 is a perspective view of a wheelbarrow.

FIG. 2 is a plan view of a backing sheet which may be used in connection with my packaging technique.

FIG. 3 is a top plan view of a package of wheelbarrow hardware assembly components.

FIG. 4 is a top plan view of a complete wheelbarrow parts package, excluding the tray.

FIG. 5 is an enlarged sectional view taken substantially on the line 5-5 of FIG. 4.

FIGS. 6 and 7 are respectively a side view and a plan view showing techniques of stowage of a plurality of my improved wheelbarrow parts units.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of the invention, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A may generally designate a wheelbarrow which may include a frame B, tray C and leg assembly D, and in which, by use of my improved packaging technique, all parts of wheelbarrow A, except for tray C, may be conveniently shipped or stored as a partially assembled parts unit E which may include an only partially assembled frame B and a package F of wheelbarrow hardware assembly components.

Wheelbarrow A may be of any conventional type. The form shown in the drawings is by way of example, and it will be readily appreciated that my improved packaging technique may be adapted to other types of wheelbarrows.

In the form shown, frame B may include a pair of longitudinally elongated handle shafts 10 and 11 which each have a front end 12, intermediate portion 13, and a handle end 14. Front ends 12 thereof may be interconnected by a wheel guard bracket 15, handle shafts 10 and 11 extending therefrom in a spaced apart diverging relationship. Cross braces 16 and 17 may be interconnected between intermediate portions 13 of handle shafts 10 and 11, for maintaining them in the desired spaced apart relationship for attachment thereto of tray C and leg assembly D.

Axle brackets 18 may be attached adjacent the front end of each handle shaft 10 and 11 for supporting an axle 19 upon which may be mounted a wheel 20.

Tray braces 21 may be attached adjacent the front end of each handle shaft 10 and 11 and tray risers 22 may be attached to longitudinally extend along a part of intermediate portions 13 of each handle shaft 10 and 11. Tray C may be appropriately mounted on frame B by attachment thereof to braces 21 and risers 22.

Leg assembly D, as shown, is of the type as shown and described in the application of Roy W. Garber entitled "Wheelbarrow Leg Assembly," Ser. No. 803,148, filed Feb.

28, 1969, now U.S. Pat. No. 3,552,762. This particular leg assembly may include legs 25 which are attached to frame B and which are maintained in a juxtaposed spaced apart relationship by a leg brace 26.

It is obvious that storage or shipment of a completely assembled wheelbarrow takes a great deal of space, not to mention the labor costs in connection with complete assembling of each wheelbarrow at the factory. Accordingly, the same are preferably only partially assembled by the manufacturer, the ultimate assemblage being left to the customer. Thus, for stowage, I preferably break each wheelbarrow down into a partially assembled parts unit E and a tray C. There is nothing novel in the stacking or arrangement of wheelbarrow trays C for storage or shipment, and I have therefore not shown the same. The novelty of my invention resides in the provision of partially assembled parts unit E.

As shown in FIGS. 4-7, parts unit E preferably includes frame B in a partially assembled condition, with handle shafts 10 and 11 interconnected together by wheel guard bracket 15, tray risers 22 attached to each handle shaft 10 and 11, cross brace 17 attached and extending between handle shafts 10 and 11, and wheel 20 attached adjacent the front end 12 and laying across handle shafts 10 and 11, the same being secured thereto such as by a wire 28.

Package F preferably includes a substantially rigid backing sheet 30 which is preferably shaped so that it may be positioned to extend from handle shaft 10 to handle shaft 11, as is best shown in FIG. 7. Such backing sheet may, for instance, comprise 200-pound test treated No. 10 cardboard. The wheelbarrow hardware assembly components such as legs 25, tray braces 21, axle 19, axle brackets 18, cross brace 26, and a package 32 of the various other nuts and bolts, are preferably arranged in a spaced apart position on backing sheet 30, in a manner to be conveniently disposed between handle shafts 10 and 11 when backing sheet 30 is attached thereto, as best shown in FIG. 4. As shown in FIG. 5, these wheelbarrow hardware assembly components are preferably arranged to also provide open central areas 34 therebetween, for a purpose as will be subsequently described.

The wheelbarrow hardware assembly components are preferably attached to backing sheet 30 by a plastic film 35. This plastic film may comprise 0.012 polyethylene. The side of the cardboard to which the polyethylene is to be bonded may be treated with a conventional conditioner which acts as synergistic aid for a better bond or adhesion of the polyethylene to the cardboard, and the polyethylene may also be treated on one side for adherence to the cardboard. Backing 30 with the overlying plastic film is drawn through a vacuum machine and heated to bond the same together in a manner to encapsulate the wheelbarrow hardware assembly components. Open areas 34 are provided for better bonding of plastic film 35 to backing sheet 30. Of course, other methods and materials can be used to provide a unitary parts package for attachment to the partially assembled frame.

In attachment of package F to the partially assembled frame, the same is preferably disposed between handles 10 and 11 at a location where the thickness of the intermediate portion of handles 10 and 11 is substantially the same as the height of the package. Packing sheet 30 may be attached adjacent cross brace 17, which may extend across backing sheet 30 to further add rigidity thereto. Staples 38 may be used to further attach backing sheet 30 to handles 10 and 11.

As shown in FIGS. 6 and 7, a plurality of parts units E may be conveniently stacked for storage or shipment in substantially the same space that would normally be required for stowage of merely a partially assembled frame. Only the stacking of two such units have been shown, it being obvious that other units can be appropriately stacked thereon. As a matter of fact, in the stowing of other units, the ends of the bolts which are used to attach cross braces 17 will provide a guide for positioning of additional units.

When the wheelbarrow is shipped to a customer, the customer may remove package F by pulling out staples 38 and

detachment of cross brace 17. All parts can be removed from package F by slitting the plastic film with a knife. Wheel 20 may be removed by wire cutters or by untying the wire. The wheelbarrow may then be assembled by the customer.

Various changes in the shape, size and arrangement of parts may be made to the form of the invention herein shown and described without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A wheelbarrow parts unit including a partially assembled wheelbarrow frame having a pair of longitudinal handle shafts interconnected adjacent one end and divergently extending from such interconnection in a spaced apart relation, and a package of wheelbarrow hardware assembly components secured to and extending between said spaced apart shafts in a manner to avoid any substantial increase in the stowage area required by said partially assembled frame, said handle shafts each having an intermediate portion of substantial thickness, the wheelbarrow hardware assembly components being arranged in said package to provide a package of substantially the same thickness as a given location of said intermediate portion of each handle shaft, and said package is attached to the intermediate portion of each handle shaft at such given location.

2. A wheelbarrow parts unit including a partially assembled wheelbarrow frame, said wheelbarrow frame including a pair of elongated handle shafts having a front end, an opposite handle end, and an intermediate portion, a wheel guard bracket, said handle shafts being attached at the front end thereof to said wheel guard bracket and extending therefrom in a spaced apart diverging relation; and a package of wheelbarrow hardware assembly components, said package including a substantially rigid backing, a plurality of wheelbarrow hardware assembly components arranged on said backing, and a plastic film disposed over said wheelbarrow hardware assembly components and bonded to said backing in a manner to encapsulate said wheelbarrow hardware assembly components, said package being attached to said handle shafts with said wheelbarrow hardware assembly components disposed therebetween, said handle shafts adjacent the location of attachment of said package thereto being of a thickness substantially the same as the thickness of said package.

3. A wheelbarrow parts unit including a partially assembled wheelbarrow frame, said wheelbarrow frame including a pair

of elongated handle shafts having a front end, an opposite handle end and an intermediate portion, a wheel guard bracket, said handle shafts being attached at the front end thereof to said wheel guard bracket and extending therefrom in a spaced apart divergent relation; and a package of wheelbarrow hardware assembly components, said package including a substantially rigid backing, a plurality of wheelbarrow hardware assembly components arranged on said backing, and a plastic film disposed over said wheelbarrow hardware assembly components and bonded to said backing in a manner to encapsulate said wheelbarrow hardware assembly components, said package being attached to said handle shafts with said wheelbarrow hardware assembly components disposed therebetween, said partially assembled wheelbarrow frame including a cross brace interconnecting intermediate portions of said handle shafts, and said package of wheelbarrow hardware assembly components being attached to said handle shafts adjacent said cross brace, said cross brace extending across a portion of said backing and aiding in support thereof between said handle shafts.

4. A wheelbarrow parts-packaging technique which includes the steps of partially preassembling a wheelbarrow frame by providing a pair of elongated handle shafts interconnected together at the forward end of the frame and divergently extending from such interconnection in a spaced apart relation, arranging a plurality of wheelbarrow assembly components on a substantially rigid backing in a manner so that the spacing thereof is such as to fit intermediate the handle shafts at a selected spaced apart location and the maximum height thereof from such backing is substantially the same as the thickness of the handle shafts at the selected location, attaching the wheelbarrow hardware assembly components to the backing, and attaching the backing to the handle shafts at the selected location so that the wheelbarrow assembly components lie substantially between the handle shafts in a manner to avoid any substantial increase in the stowage area by the partially preassembled wheelbarrow frame.

5. The technique as specified in claim 4 which includes the step of attaching of the wheelbarrow hardware assembly components to the backing by overlying the components with a plastic film and bonding the plastic film to the backing in a manner to substantially encapsulate the wheelbarrow hardware assembly components.

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