

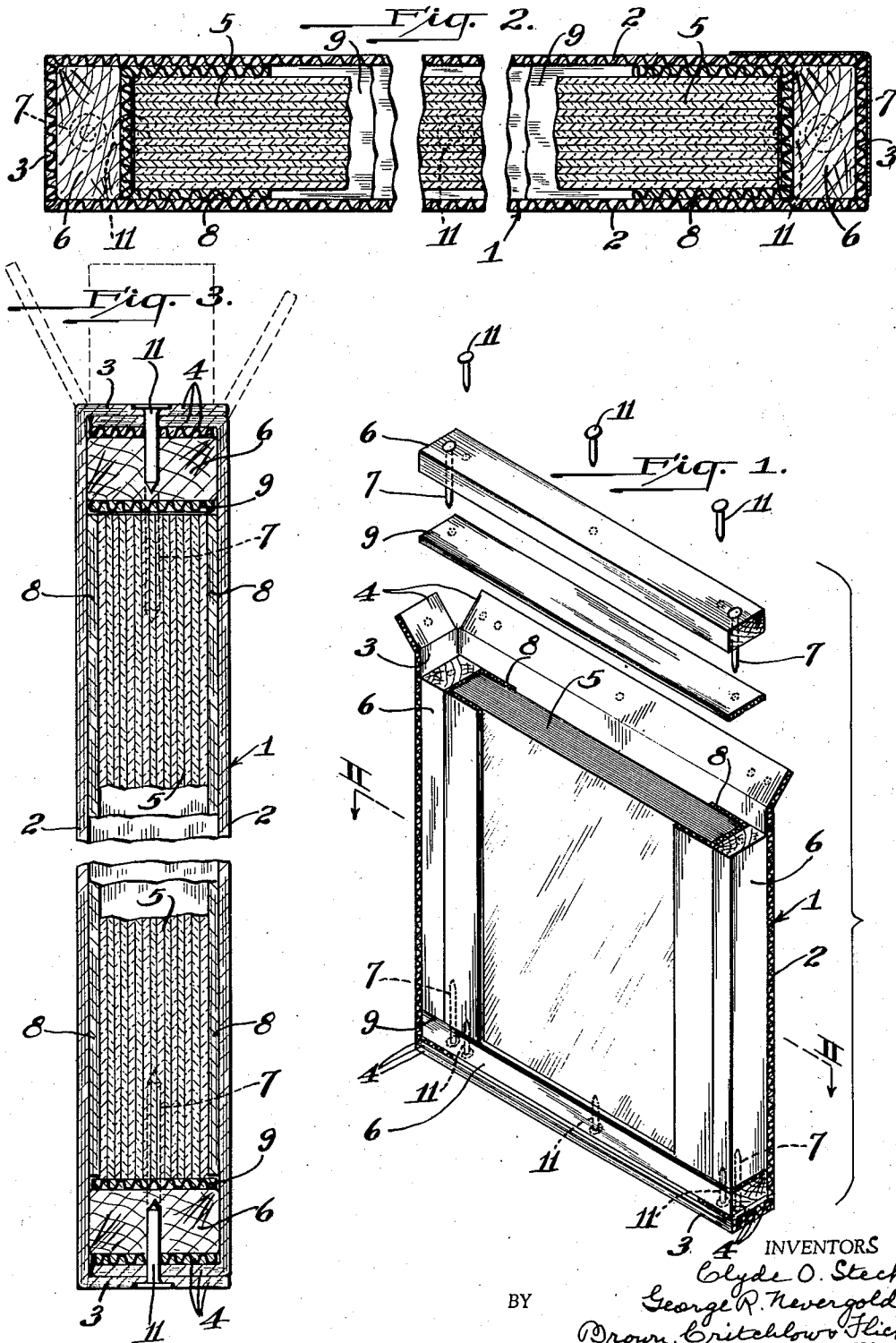
Aug. 11, 1942.

C. O. STECK ET AL

2,292,802

WINDOW GLASS PACKAGE

Filed Oct. 25, 1939



UNITED STATES PATENT OFFICE

2,292,802

WINDOW GLASS PACKAGE

Clyde O. Steck and George R. Nevergold, Pittsburgh, Pa., assignors to F. J. Kress Box Company, Pittsburgh, Pa., a corporation of Pennsylvania

Application October 25, 1939, Serial No. 301,108

4 Claims. (Cl. 206—60)

This invention relates to shipping packages for flat glass, such as window glass.

In the past it has been the practice to ship window glass and the like in wooden packing cases. Several sheets of glass are laid face to face with sheets of paper between them and the stack thus formed is spaced from the oversize packing case by suitable cushioning material such as straw, corrugated paper or other packing material. These wooden packing cases are heavy and relatively expensive, and generally give more protection to the glass than is actually needed. To overcome these disadvantages it has been proposed to use fibreboard boxes, but for relatively thin stacks of large sheets of glass they do not have sufficient resistance against torsional strains and do not give the glass much protection along the edges, particularly the corners. Furthermore, when a number of such boxes are piled on top of one another the lower sheets of glass have to take all the weight of the glass above and may break under the strain.

It is among the objects of this invention to provide a shipping package for a stack of flat glass sheets which is made primarily from fibreboard, which is reinforced against twisting and bending, which adequately protects the glass against the normal causes of breakage, which satisfactorily protects the edges and corners of the glass, which is adapted to the well-established methods of packing glass, and in which the glass does not have to bear the weight of other boxes of glass when they are piled on top of one another.

According to this invention a carton is formed of fibreboard, by which is meant any plain or corrugated paperboard or the like. The carton has spaced side walls, generally rectangular, surrounded and connected by a plurality of end walls one of which is adapted to be opened to receive a stack of flat glass edgewise. To reinforce the carton and protect the glass, a plurality of rigid reinforcing bars, preferably of wood, extend along the inner surfaces of the carton's end walls between them and the glass. By rigidly fastening the ends of these bars together a rigid frame is formed for the stack. The edges of the stack are cushioned from the reinforcing bars by means of padding material which may be in the form of strips of fibreboard some of which are channel-shape for spacing the stack from the side walls of the carton, or the entire stack may be enclosed in an envelope or folder of fibreboard.

The preferred embodiment of the invention is illustrated in the accompanying drawing in which Fig. 1 is a partially exploded perspective

view of my shipping package with some of the walls broken away to show its interior; Fig. 2 is an enlarged horizontal section taken on the line II—II of Fig. 1; and Fig. 3 is a vertical section through the center of the package.

Referring to the drawing, a carton 1 is formed from a fibreboard blank folded into shape to provide a pair of parallel rectangular side walls 2 of relatively large area connected at their edges by four relatively narrow end walls 3. The upper and lower end walls are formed by overlapping folded flaps 4, as shown in Fig. 3. The carton is slightly larger than the stack of glass 5 contained therein in order to accommodate a rigid frame which surrounds the edges of the glass and reinforces the package. This frame is made from rigid wooden bars 6 extending along the inner surfaces of the four end walls and nailed together at their ends by nails 7. The two horizontal bars overlie the ends of the vertical bars (Fig. 1).

The edges of the glass are prevented from being nicked, due to engagement with the wooden frame, by means of padding material inserted between the edges of the stack and the frame. Although the padding might be placed only at the corners, or the stack might be enclosed in a fibreboard envelope or folder, it is preferred to protect the vertical edges of the stack by means of channel-shaped strips 8 of fibreboard (Fig. 1), the flanges of which overlap the sides of the stack and thereby space the glass from the side walls of the carton. The upper and lower edges of the stack are cushioned by straight strips 9 of fibreboard held at their ends between the connected ends of the reinforcing bars.

In preparing this package for the shipment of glass sheets the lower bar 6 with the lower cushioning strip 9 is nailed to the ends of the two upright bars to form a U-shaped member, as shown in Fig. 1, which is then dropped into the carton through its open upper end. Sheets of glass are placed face to face with sheets of paper (not shown) between them to form a stack of the desired thickness which is stood on edge because such a stack can not be handled satisfactorily in any other position than on edge. After the two channel-shaped pads 8 have been applied to the opposite upright edges of the stack, the carton with the U-shaped frame inside is inverted and slid downwardly over the stack to insert it edgewise in the carton. The carton is then turned back to the position shown in Fig. 1 and the top padding strip 9 and the upper reinforcing bar are inserted in its open upper end

and nailed to the upper ends of side bars 6 to complete the wooden frame that completely surrounds the stack of glass. The upper flaps 4 of the carton are folded over the upper bar and fastened in place by any suitable means, such as tacks 11 driven into the bar. The package is then inverted again and the lower flaps fastened in place in a similar manner, whereby a vertical cross section through the center of the closed package appears as shown in Fig. 3.

It will be seen that with a glass shipping package constructed in accordance with this invention the usual method of packing glass by inserting it edgewise into an opening in a narrow end wall of a shipping case can be followed. The weight and cost of the package are considerably less than for wooden cases and it can be quickly assembled and packed without any trouble. The inside wooden frame reinforces the carton against torsional strains, and being on the inside of the carton it can not be torn loose in shipping or handling. It also adds protection to the edges of the glass, particularly the corners on which those who handle such boxes in transit are prone to stand the box. When packages of this character filled with glass are stacked in piles the wooden frames bear the weight of the boxes above and thereby relieve the glass from the strain of such weight.

According to the provisions of the patent statutes, I have explained the principle and construction of my invention and have illustrated and described what I now consider to represent its best embodiments. However, I desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. The method of packaging a stack of flat glass in a shipping package in the form of a fibreboard carton having a pair of relatively large side walls connected by narrow end walls and enclosing a rigid frame made from a plurality of rigid reinforcing bars rigidly connected together at their ends, said method comprising inserting in the carton through an open end thereof all but one of said bars fastened together to form a U-shaped frame having its open side at said open end of the carton, inserting the stack of glass edgewise through said open end into the U-shaped frame in the carton, fastening the remaining bar across said open side of the U-shaped frame to form a closed frame, and closing said open end of the carton.

2. The method of packaging a stack of flat rectangular glass in a shipping package in the

form of a rectangular fibreboard carton having a pair of relatively large side walls connected by narrow end walls and enclosing a rigid rectangular frame made from four rigid reinforcing bars extending along the inner surfaces of said end walls and rigidly connected together at their ends, said method comprising inserting in the carton through an open end thereof three of said bars fastened together to form a U-shaped frame having its open side at said open end of the carton, applying fibreboard channel members to two opposite edges of said stack of glass with their flanges overlapping the sides of the stack, inserting the assembly of channel members and glass edgewise through said open end into the U-shaped frame in the carton with said channel members adjoining the opposite sides of the frame, fastening the fourth bar across said open side of the U-shaped frame to form a rectangular frame, and closing said open end of the carton.

3. The method of packaging a stack of flat rectangular glass, standing on edge, in a shipping package in the form of a rectangular fibreboard carton having a pair of relatively large side walls connected by narrow end walls and enclosing a rigid rectangular frame made from four rigid reinforcing bars extending along the inner surfaces of said end walls and rigidly connected together at their ends, said method comprising inserting in the carton through an open end thereof three of said bars fastened together to form a U-shaped frame having its open side at said open end of the carton, sliding the U-shaped frame and carton edgewise down over the stack of glass, inverting the carton, fastening the fourth bar across said open side of the U-shaped frame to form a rectangular frame, fastening said open end of the carton shut, again inverting the carton, and fastening the upper end of the carton shut.

4. In combination a rectangular fibreboard carton having a pair of relatively large side walls connected by four narrow end walls, a rigid reinforcing bar disposed along the inner surface of each of three of said end walls, means rigidly connecting said bars together to form a U-shaped frame, the carton end wall adjacent the open side of said frame being open whereby the carton and the U-shaped frame therein are adapted to receive a stack of rectangular flat glass, a reinforcing bar for closing the open side of said U-shaped frame with said stack of glass therein, and means for fastening said open end wall shut when said last-mentioned bar is in the carton.

CLYDE O. STECK.

GEORGE R. NEVERGOLD.