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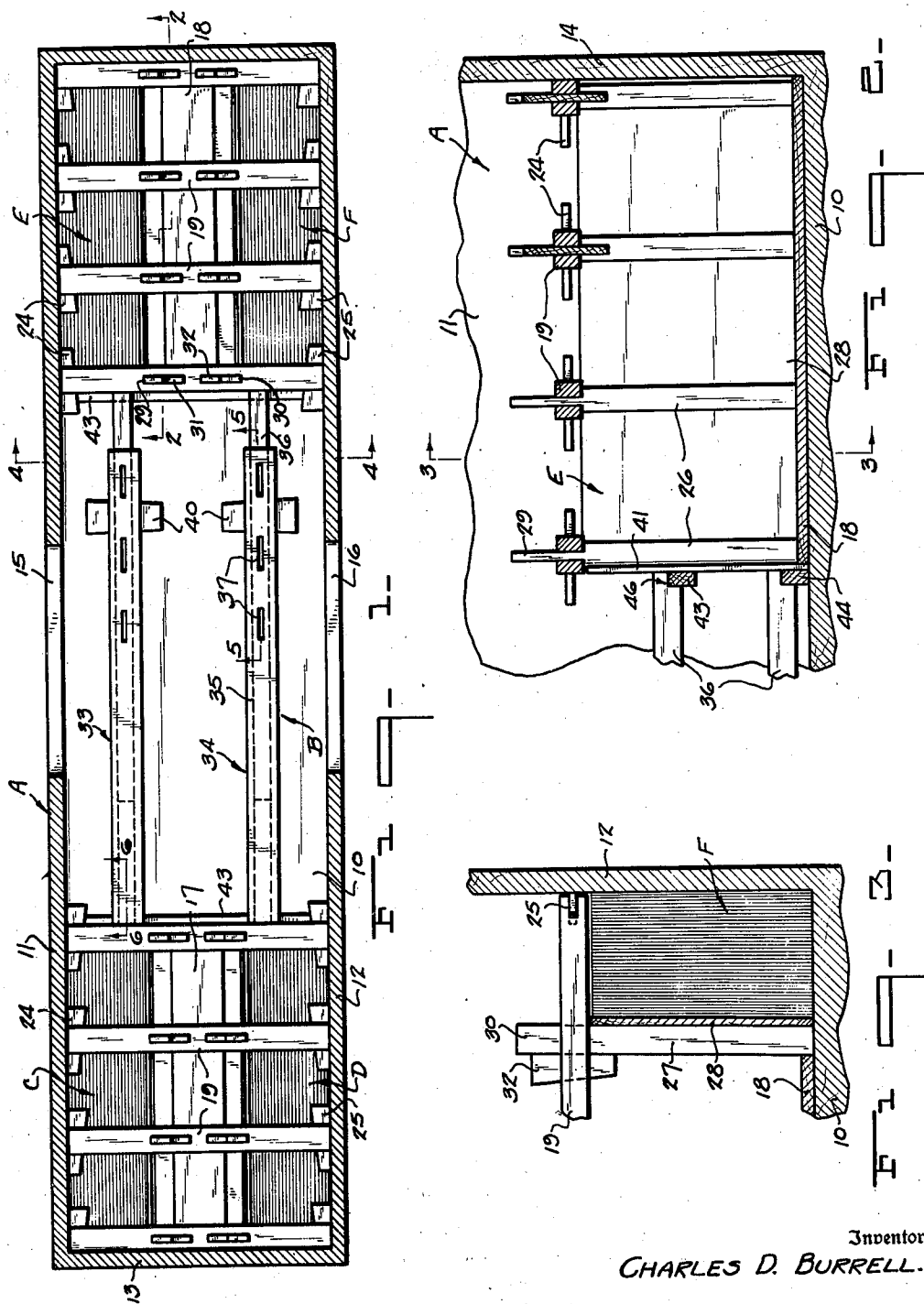
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APPARATUS FOR PACKING GLASS SHEETS

Filed Sept. 25, 1937

2 Sheets-Sheet 1



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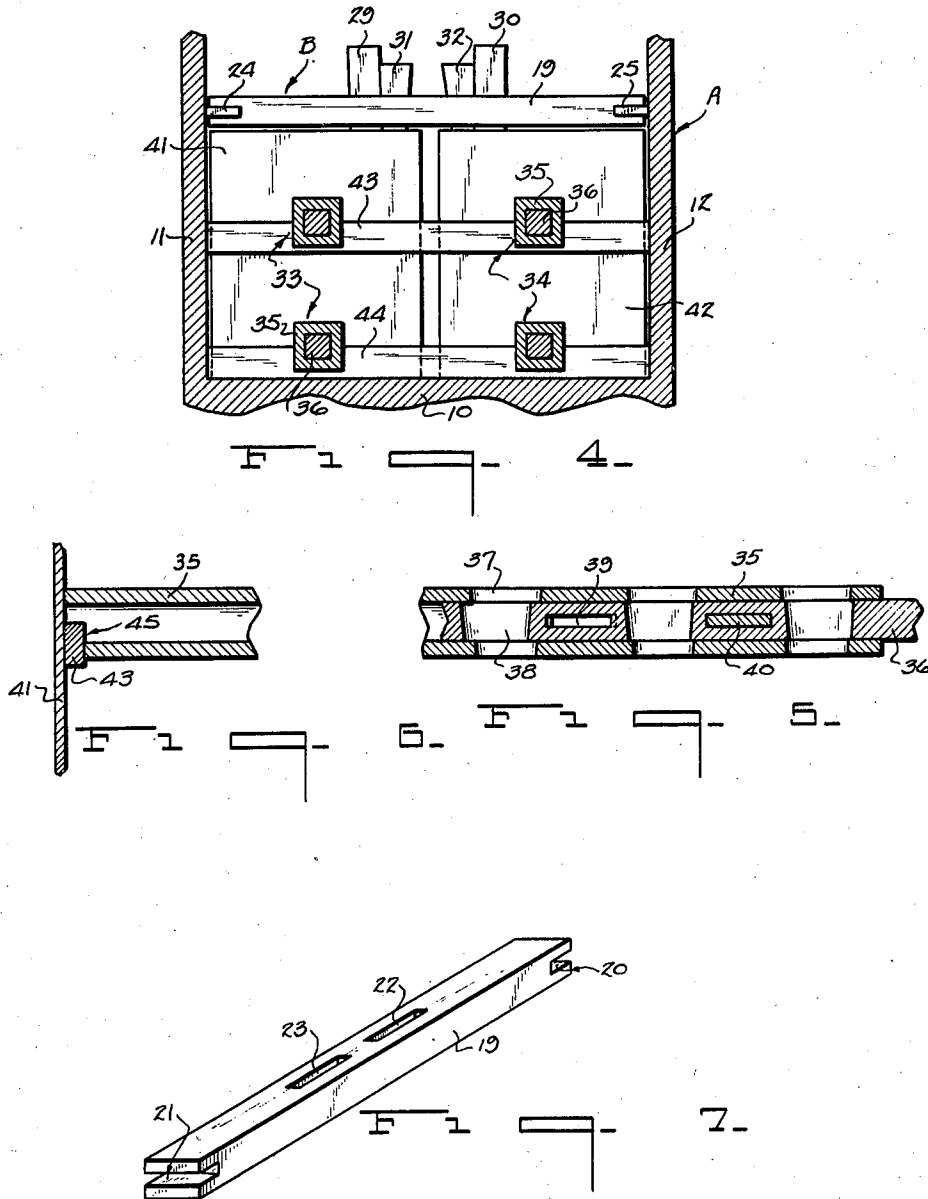
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APPARATUS FOR PACKING GLASS SHEETS

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2 Sheets-Sheet 2



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APPARATUS FOR PACKING GLASS SHEETS

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12 Claims. (Cl. 105—367)

The present invention relates broadly to the packing of glass and more particularly to the packing of relatively large sheets or plates of glass in a freight car for shipment.

5 An important object of the invention is the provision of improved means for securing the glass sheets or plates in position in the freight car to effectively maintain them in place and prevent relative movement therebetween during shipment, thereby reducing the liability of break-
10 age of the glass to a minimum.

Another important object of the invention is the provision of packing apparatus of the above character which is of knock-down construction
15 so that it can be easily and quickly installed and dismantled and repeatedly used.

Other objects and advantages of the invention will become more apparent during the course of the following description when taken in connec-
20 tion with the accompanying drawings.

In the drawings wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a horizontal sectional view through a
25 freight car of conventional construction showing in plan view the packing apparatus provided by the invention;

Fig. 2 is a longitudinal vertical sectional view taken substantially on line 2—2 of Fig. 1;

30 Fig. 3 is a vertical sectional view taken substantially on line 3—3 of Fig. 2;

Fig. 4 is a transverse vertical sectional view taken substantially on line 4—4 of Fig. 1;

35 Fig. 5 is a detail longitudinal sectional view through one of the strut members taken substantially on line 5—5 of Fig. 1;

Fig. 6 is a detail sectional view taken substan-
tially on line 6—6 of Fig. 1; and

40 Fig. 7 is a perspective view of one of the truss members.

Referring now to the drawings, the letter A designates a freight car within which the glass sheets or plates are adapted to be packed for shipping, and B the improved packing apparatus
45 for securing the said sheets or plates in position.

The freight car A may be of any conventional or preferred construction including a bottom 10, vertical side walls 11 and 12, end walls 13 and 14, and a top, not shown. The side walls 11 and 12
50 are shown as being provided intermediate their ends with the usual doorways 15 and 16. Secured to the bottom 10 of the car at one end thereof is a longitudinally extending sill plate 17 while a similar sill plate 18 is provided at the opposite
55 end of said car. The sill plates 17 and 18 are

preferably arranged in alignment with one another and are positioned intermediate the side walls 11 and 12 of the car.

A plurality of glass sheets are adapted to be stacked on edge against opposite side walls of the car at each end thereof. Thus, in Fig. 1 there is arranged at one end of the car the two stacks of glass sheets C and D, while at the other end of the car are the stacks of sheets E and F. As will be apparent, the glass sheets C and D are
10 stacked at opposite sides and outwardly of the sill plate 17, while the sheets E and F are stacked at opposite sides and outwardly of the sill plate 18.

The packing apparatus B is provided to main-
tain the stacks of sheets C, D, E and F in position
15 and against relative movement during shipment, thereby eliminating the liability of glass breakage. Arranged above the stacks of sheets C and D and also above the stacks of sheets E and F are a plurality of truss members 19 extending
20 transversely of the car and braced against the opposite side walls thereof. One of these truss members is shown in perspective in Fig. 7 and is provided at its opposite ends with horizontal slots
25 20 and 21 and intermediate its ends with vertical openings 22 and 23. In installing the truss members, they are disposed transversely of the car above the respective stacks of glass sheets, and insertable in the slots 20 and 21 are the wedges
30 24 and 25 which engage the side walls 11 and 12 of the car to rigidly secure the said truss members in place.

Before the truss members 19 are secured in position, however, a plurality of vertical bracing strips 26 and 27 are arranged inwardly of the
35 opposed stacks of glass sheets C—D and E—F, with the lower ends of said strips being disposed outwardly of the sill plates 17 and 18 and held thereby against inward movement. Arranged inwardly of each stack of sheets is a wooden board
40 28 engageable by the respective bracing strips 26 or 27. The bracing strips 26 and 27 are provided with reduced upper ends 29 and 30 respectively which are passed through the openings 22 and 23
45 in the truss members 19. The openings 22 and 23 are relatively longer than the width of the bracing strips 26 and 27, and inserted in the openings alongside the upper ends of said strips are the wedges 31 and 32, said wedges being forced down-
50 wardly to securely hold the upper ends of the said strips against the stack of glass sheets and also against movement relative to the truss members. From the above, it will be apparent that the transverse truss members 19 and vertical bracing
55 strips 26 and 27 cooperate to securely hold the

stacks of sheets C—D and E—F in place and prevent relative movement thereof transversely of the car.

In order to prevent any movement of the glass sheets longitudinally of the car, the packing apparatus B also includes the longitudinally extending strut members 33 and 34. Each of these strut members comprises the telescoping parts 35 and 36, the part 35 consisting of a tubular member substantially square in cross section and within which the part 36 in the form of a bar is slidable. The tubular member 35 and car 36 are provided with a plurality of vertical openings 37 and 38 respectively which are adapted to register with one another and also with similar openings 39 extending at right angles to the openings 37 and 38. Insertable through the registering openings is a wedge 40, the purpose of which will be more clearly hereinafter apparent.

The inner end edges of the sheets C and D and also the inner end edges of the sheets E and F are covered by wooden boards 41 and 42 which are secured together by the horizontal transverse strips 43 and 44. As shown in Fig. 4, the two pairs of strut members 33 and 34 are preferably provided, and the opposite ends of said strut members are carried upon the transverse strips 43 and 44. As illustrated in Fig. 6, the tubular member 35 of each strut member can be notched as at 45 to fit over the respective transverse strip 43 or 44, while the outer end of each bar 36 can also be notched as at 46 (Fig. 2) and supported upon the opposed transverse strip 43 or 44 at the opposite end of the car.

After the glass sheets have been properly stacked in the car and the transverse truss members 19 and vertical bracing strips 26 and 27 secured in place, the strut members 33 and 34 are installed. In doing this, the strut members are supported at their opposite ends upon the transverse strips 43 and 44, after which the wedges 40 are inserted through the openings 37 and 38 of the telescoping parts 35 and 36 or the openings 39, depending upon which openings most nearly register with one another. The forcing of the wedges through the openings will cause the telescoping parts to be further extended and to wedge at their opposite ends against the transverse strips 43 and 44 and boards 41 and 42 whereby to securely hold the glass sheets against movement longitudinally of the car.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of said car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets, and means for

securing the upper ends of said bracing strips against the stack of glass sheets and also against movement relative to said truss members.

2. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, wedge elements carried at the opposite ends of said truss members and engaging the side walls of said car for securing the said truss members in position, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets, and means for securing the upper ends of said bracing strips against the stack of glass sheets and also against movement relative to said truss members.

3. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of said car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets and wedge elements carried by said truss members for securing the upper ends of said vertical bracing strips against the stack of glass sheets and also against movement relative to said truss members.

4. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, wedge elements carried at the opposite ends of said truss members and engaging the side walls of said car for securing the said truss members in position, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets, and wedge elements carried by said truss members for securing the upper ends of said vertical bracing strips against the stack of glass sheets and also against movement relative to said truss members.

5. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, said truss members having open slots at the opposite ends thereof, wedge elements re-

ceived in said slots and engaging the side walls of said car for securing the said truss members in position, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets, and means for securing the upper ends of said bracing strips against the stack of glass sheets and also against movement relative to said truss members.

6. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of said car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets, said truss members having vertical slots for receiving the bracing strips therethrough, and wedge elements inserted in said slots for securing the upper ends of said bracing strips against the stack of glass sheets and also against movement relative to said truss members.

7. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor thereof and positioned intermediate the side walls of said car, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of said sill plate, of a plurality of truss members arranged transversely above the glass sheets, said truss members having open slots at the opposite ends thereof, wedge elements received in said slots and engaging the side walls of said car for securing the said truss members in position, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plate and held thereby against the stack of glass sheets, said truss members having vertical slots for receiving the bracing strips therethrough, and wedge elements inserted in said slots for securing the upper ends of said bracing strips against the stack of glass sheets and also against movement relative to said truss members.

8. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor at each end of said car and positioned intermediate the side walls thereof, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of each sill plate, of a plurality of truss members arranged transversely above the glass sheets at each end of the car, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of the car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plates and held thereby against the stacks of glass sheets, means for securing the upper ends of said bracing strips against the stacks of glass sheets and also against movement

relative to said truss members, and longitudinally extending strut members bearing at their opposite ends against the inner edges of the stacks of glass sheets at opposite ends of the car for preventing movement of the said sheets longitudinally of said car.

9. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor at each end of said car and positioned intermediate the side walls thereof, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of each sill plate, of a plurality of truss members arranged transversely above the glass sheets at each end of the car, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of said car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plates and held thereby against the stacks of glass sheets, means for securing the upper ends of said bracing strips against the stacks of glass sheets and also against movement relative to said truss members, longitudinally extending strut members bearing at their opposite ends against the inner edges of the stacks of glass sheets at opposite ends of the car for preventing movement of the said sheets longitudinally of said car, and wedge elements for extending the said strut members to hold them against the stacks of glass sheets.

10. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor at each end of said car and positioned intermediate the side walls thereof, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of each sill plate, of a plurality of truss members arranged transversely above the glass sheets at each end of the car, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of the car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plates and held thereby against the stacks of glass sheets, means for securing the upper ends of said bracing strips against the stacks of glass sheets and also against movement relative to said truss members, longitudinally extending strut members bearing at their opposite ends against the inner edges of the stacks of glass sheets at opposite ends of the car for preventing movement of the said sheets longitudinally of said car, said strut members comprising telescoping parts having openings adapted to register with one another, and wedge elements inserted in the registering openings for extending the strut members to hold them against the stacks of glass sheets.

11. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor at each end of said car and positioned intermediate the side walls thereof, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of each sill plate, of a plurality of truss members arranged transversely above the glass sheets at each end of the car, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of the car, vertical bracing

- strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plates and held thereby against the stacks of glass sheets, means for securing the upper ends of said bracing strips against the stacks of glass sheets and also against movement relative to said truss members, horizontal strips extending transversely of the inner vertical edges of the glass sheets at each end of the car, means for supporting said horizontal strips in position, and longitudinally extending strut members carried at their opposite ends by said strips for preventing movement of the glass sheets longitudinally of said car.
12. In apparatus of the character described for packing glass sheets, the combination with a freight car having a longitudinally extending sill plate secured to the floor at each end of said car and positioned intermediate the side walls thereof, a plurality of sheets of glass being adapted to be stacked upon edge against each side wall of the car outwardly of each sill plate, of a plu-

5 rality of truss members arranged transversely above the glass sheets at each end of the car, means associated with said truss members for mounting them in fixed position relative to the opposite side walls of the car, vertical bracing strips engaged with said truss members and having the lower ends thereof disposed outwardly of said sill plates and held thereby against the stacks of glass sheets, means for securing the upper ends of said bracing strips against the stacks of glass sheets and also against movement relative to said truss members, horizontal strips extending transversely of the inner vertical edges of the glass sheets at each end of the car, means for supporting said horizontal strips in position, longitudinally extending strut members carried at their opposite ends by said strips for preventing movement of the glass sheets longitudinally of said car, and wedge elements for extending the said strut members to hold them against said horizontal strips.

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