

May 23, 1939.

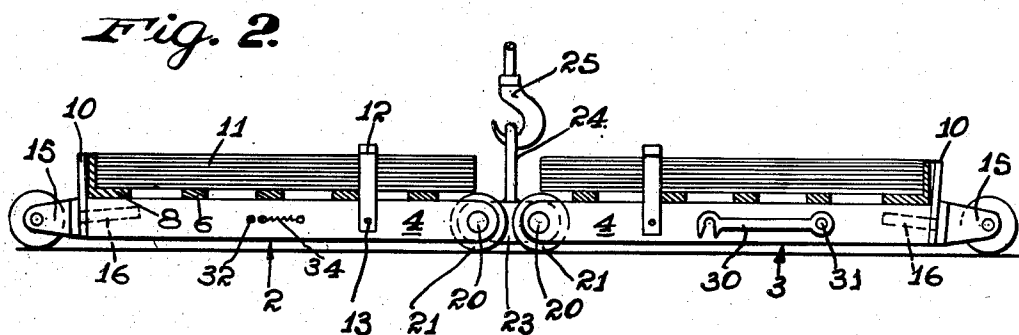
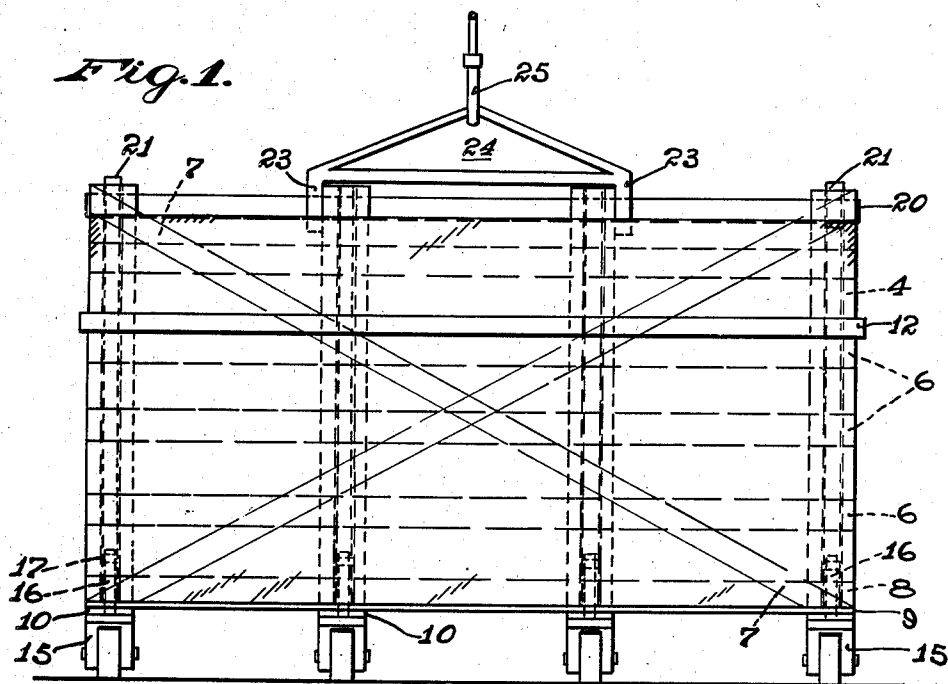
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2,159,672

GLASS RACK

Filed Oct. 22, 1937

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

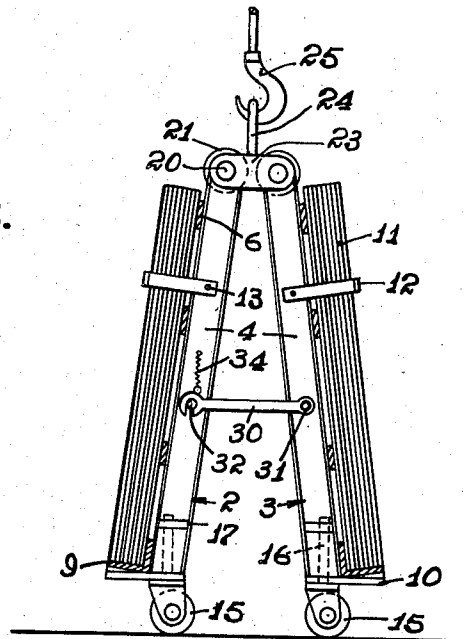
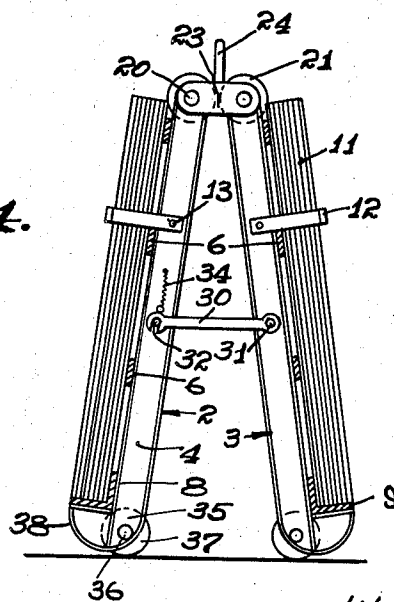


Fig. 4.



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UNITED STATES PATENT OFFICE

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GLASS RACK

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6 Claims. (Cl. 280—36)

The present invention relates to glass handling apparatus and more particularly to a rack for supporting glass sheets or plates.

One object of my invention is to provide a rack which may be more easily loaded and unloaded while in a horizontal position and which may be brought into a closed position similar to the standard A frame when it is desired to store the racks for any period of time.

This, and other objects and advantages of the invention, will become apparent during the course of the following detailed description.

In the drawings, wherein like numerals are employed to designate like parts throughout the same: Figure 1 is a front elevational view of a rack constructed in accordance with my invention. Figure 2 is a side elevational view of a rack in the open or horizontal position. Figure 3 is a side elevational view of the rack in closed position; and Figure 4 is a side elevational view of a modified form of rack.

Referring to the drawings the rack comprises two frames 2 and 3, formed of pairs of upright members 4, secured in spaced relation by means of transverse bars 6 and diagonal braces 7 interconnecting opposite corners of the frames. An angle iron 8 also extends transversely of each frame at the lower edge thereof with ledges 9 projecting outwardly, the ledges 9 being braced by plates 10 secured to the members 4 in abutting relation. The bar 6, members 8, and ledges 9 may be surfaced with a protective covering, such as felt, to prevent scratching of glass plates 11 placed thereon. A retaining member 12, substantially of U-shape, extends transversely of each frame in the upper portion thereof and is releasably secured at its extremities by means of pins 13, engaging the side members 4 of the frames. Each pair of the upright members 4 of the frames carries a caster 15, the pintle 16 of which is mounted in a block 17 secured between the members of each pair of uprights. The caster wheels are of a size sufficient and so positioned that they will project beyond the rear faces of the frames, to support the edges of the frames when the latter are in horizontal position, thus permitting free movement of the rack at all times.

Shafts 20 extend through the upper ends of the vertical members 4 and carry rollers 21, which further support the rack when in horizontal position. The shafts 20 of the two frames are connected by links 23 secured to a hanger 24. A hook 25 of a crane or chain hoist (not shown) may be secured under the hanger 24 to lift the

rack into upright or closed position. Tie bars 30, pivotally secured to the side elements 4 of one frame at 31, engage pins 32 projecting from the side elements 4 of the second frame to lock the frames together after they have been raised. Safety locks 34 prevent accidental displacement of the tie bars 30.

The casters 15 may be replaced by ordinary rollers, as illustrated in Fig. 4, wherein the vertical members 4 of the two frames are rounded at their lower ends to permit the addition therein of bearings 35 for shafts 36 which carry rollers 37. The vertical members 4 also carry curved extensions 38 which underlie and insure a more positive support for the ledges 9.

Manifestly the rack herein described may be used while in closed position although it is not particularly designed for such application. Preferably an empty rack, in open position, wherein the frames 2 and 3 are in horizontal, abutting relation, is brought into proper location for loading, for example, adjacent a grinding and polishing apparatus or at the discharge end of a leer, the casters 15 and rolls 21 facilitating the movement of the rack. The retaining members 12 are removed from the frames, and as the glass plates emerge from the leer or are finished, they are stacked upon the frames, with one edge resting against the supporting ledge 9. This loading of the frames may be accomplished by means of the ordinary vacuum transfer mechanism, well known to the art, or by any other suitable means. When the rack has received the proper number of sheets or plates of glass, the retaining members 12 are replaced on the frames to prevent accidental dislodgement of the glass during transportation. The hook 25 is brought into engagement with the hanger 24 and the rack is lifted centrally into closed position, the frames 2 and 3 assuming an inclined, downwardly diverging relation. The tie bars 30 are then fastened and locked to secure the frames in such position. The casters 15 project sufficiently to the rear of the frames to admit of this lifting action with a minimum of frictional vibration and at the same time serve as rollers, permitting the closed rack to be moved easily to other locations in the factory. The rack may be unloaded while in the closed position, or if desired, be opened prior to unloading.

The glass rack, as contemplated by my invention, reduces to a minimum the breakage incident to the handling of large plates of glass. The major portion of such handling is accomplished mechanically and by providing for load-

ing and unloading the sheets or plates of glass from a rack in a flat horizontal position, simplified transfer apparatus may be used. At the same time, because the rack may be brought
 5 into a closed position, it may be used for storing the excess glass production in the same space normally occupied by a standard A frame.

Although the device of my invention is simple in construction it is obvious that modifications
 10 may be made therein to embody the principles of the invention without departing from the spirit or scope thereof as set forth in the appended claims.

What I claim is:

15 1. A rack for supporting a plurality of glass plates comprising two frame members pivotally connected at one end to permit joint movement of the frame members from a horizontal, abutting position to an inclined, downwardly diverg-
 20 ing position releasable locking means for positively securing the members in inclined position and means for retaining plates of glass upon the members when they are inclined.

2. A rack for supporting a plurality of glass
 25 plates comprising two frame members pivotally connected at opposite ends of link elements to permit joint movement of the frame members from a horizontal, abutting position to an inclined position in which the frame members di-
 30 verge from a central axis as marked by the

link elements, means for locking the frame mem-
 bers together in their inclined position and means for retaining the plates in position when the members are inclined.

3. A rack for supporting a plurality of glass
 5 plates comprising two frame members pivotally connected at opposite ends of link elements, ledges projecting from the frame members adapted to receive the edges of the glass plates, retaining members substantially of U-shape re-
 10 leasably secured to the frame members over the glass plates, rollers positioned at the ends of the frame members to facilitate movement thereof, and means for locking the frame members to-
 15 gether in the inclined position to which they may be moved from a horizontal abutting relation.

4. A rack construction as defined in claim 3
 in which the link elements are secured in spaced relation to a hanger by means of which the rack
 20 may be lifted centrally.

5. A rack construction as defined in claim 3
 in which the rollers positioned at the ends of the frames are of a size sufficient to extend beyond the backs of the frame members.

6. A rack construction as defined in claim 3
 25 in which the rollers positioned at the outer ends of the frames are designed to swivel about a vertical axis when the frames are in their inclined position.

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