C. J. NOLAN.

ANNEALING TRAY.

APPLICATION FILED NOV. 14, 1912.

1,083,409.

Patented Jan. 6, 1914.

Fig. 1.

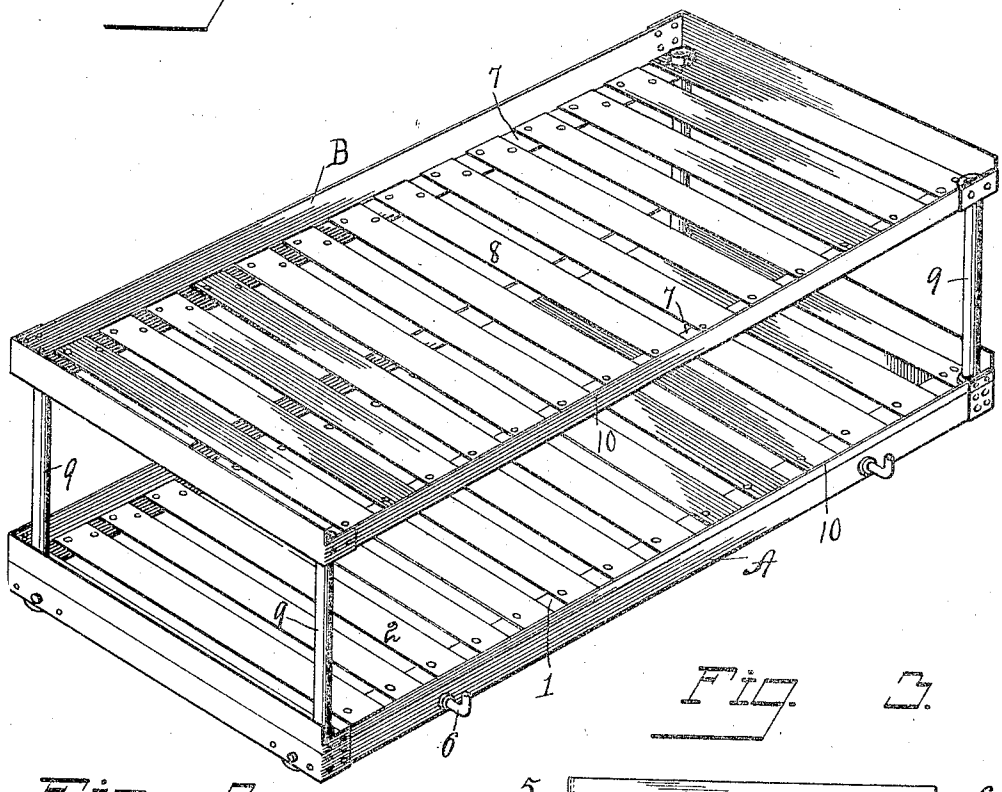


Fig. 3.

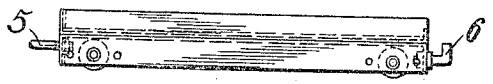
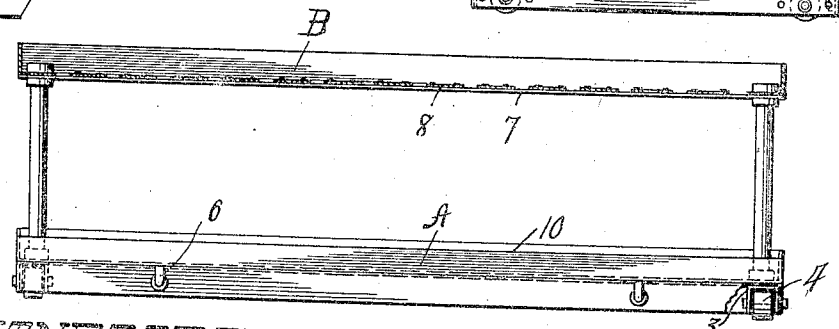


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CORNELIUS J. NOLAN, OF TOLEDO, OHIO, ASSIGNOR TO THE LIBBEY GLASS COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

ANNEALING-TRAY.

1,083,409. Specification of Letters Patent. Patented Jan. 6, 1914.

Application filed November 14, 1913. Serial No. 731,312.

To all whom it may concern:

Be it known that I, CORNELIUS J. NOLAN, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Annealing-Tray; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to the manufacture of glass articles and particularly to means for holding or carrying such articles when placed in annealing ovens, but is not restricted to such use as it may be used in any connection for which it may be adapted or appropriate.

The object of my invention is the provision of improved means of this character, which will enable a greater number of articles to be placed in an annealing arch or oven at one time than has heretofore been possible, thus rendering a material saving in the fuel consumption for the output of a plant, and which also enables a direct and uniform subjection of the articles to the oven heat, whereby to enhance the efficiency and practicability of such means.

Further objects and advantages of the invention will be apparent from the following detailed description thereof.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a perspective view of a double-story article-supporting tray embodying my invention. Fig. 2 is a front elevation thereof with the upper tray in longitudinal section and a portion of the lower tray broken away, and Fig. 3 is an end elevation of the lower tray.

Referring to the drawings, A designates the lower tray of the apparatus upon which may be mounted in vertically spaced relation any desired number of upper trays B, the number of such trays depending upon the height of the roof of an annealing arch or oven above the tray supporting ledges thereof.

The lower tray A, which is preferably of rectangular form, is shown as being of double angle-iron construction with the horizontal flanges of the angle-irons resting one upon the other and projecting inward relative to the frame to provide an inner marginal supporting ledge 1 upon which the ends of laterally spaced cross-bars or slats 2 rest, and are secured by rivets or in any other suitable manner, said cross-bars providing a grated form of bottom for the tray. The forming of the tray bottom in this manner enables the heat within the oven to pass vertically through a tray, thus permitting a more efficient and uniform heating of the articles resting thereon than would otherwise be the case.

Each end of the tray A is provided with a channel-bar strip 3, which is secured to the inner side of the lower one of the end angle-iron bars of the frame lengthwise thereof with its channel opening downward. Mounted within the opposite end portions of each of these channel-bars are rollers 4, which project at their lower edge below the frame bottom and are intended to travel on the adjacent pan supporting ledge of the annealing oven to facilitate an insertion of a pan into or a withdrawal of the same from the oven. The lower pan of a set is also provided at one side thereof with eyes 5 and at the opposite side thereof with complemental upwardly projecting L-shaped hooks 6 to facilitate a coupling together of a plurality of pans, one in advance of the other, to enable them to be pushed into or withdrawn from an oven in train form, as is customarily done.

The upper tray B, which is intended to be of substantially the same shape and size as the lower tray A, is preferably of single angle-iron construction, with the horizontal flange 7 thereof projecting inwardly at the lower edge of the frame. The tray bottom is preferably formed of spaced slats on bars 8, which have their ends resting on and secured to the flanges 7 at the respective sides of the tray, as in the case of the lower tray. Supporting legs 9 are secured to the tray B at the corners thereof and preferably rest loosely upon the lower or subjacent tray within the corner portions of the upstand-

ing flange thereof to permit a separation of the several trays or a building up of the same to any desired height. The upstanding flange at the front side of each tray is preferably cut low, as indicated at 10, to facilitate the placing of an article on a tray and the removal of the same therefrom.

It is found in practice with the use of multiple-story trays of this character, that the capacity or output of an annealing oven is doubled, trebled, etc., according to the number of superimposed trays employed without any increase in the fuel consumption thereof, thus effecting a very material saving in the manufacturing expense of glass articles; and also that a tray constructed along the lines of those described is not only strong and durable, but permits of a more even and efficient acting of the oven heat upon the articles carried by the trays than is possible with the forms of trays commonly employed.

I wish it understood that my invention is not limited to any specific construction, form or arrangement of parts except in so far as such limitations are specified in the claim.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

An article of the class described, comprising a frame of double angle-iron construction with the horizontal flanges of the superposed angle-irons resting one upon another and projecting inward relative to the frame, spaced bars connecting opposite sides of the frame with their ends secured to said flange, a downward opening channel bar extending from front to rear of the frame at each end thereof within the lower angle bar, and rollers carried by said channel bar.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

CORNELIUS J. NOLAN.

Witnesses:
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J. H. WRIGHT.