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O. C. KUHRT

APPARATUS FOR ANNEALING GLASSWARE

Filed Jan. 13, 1926

Fig. 1.

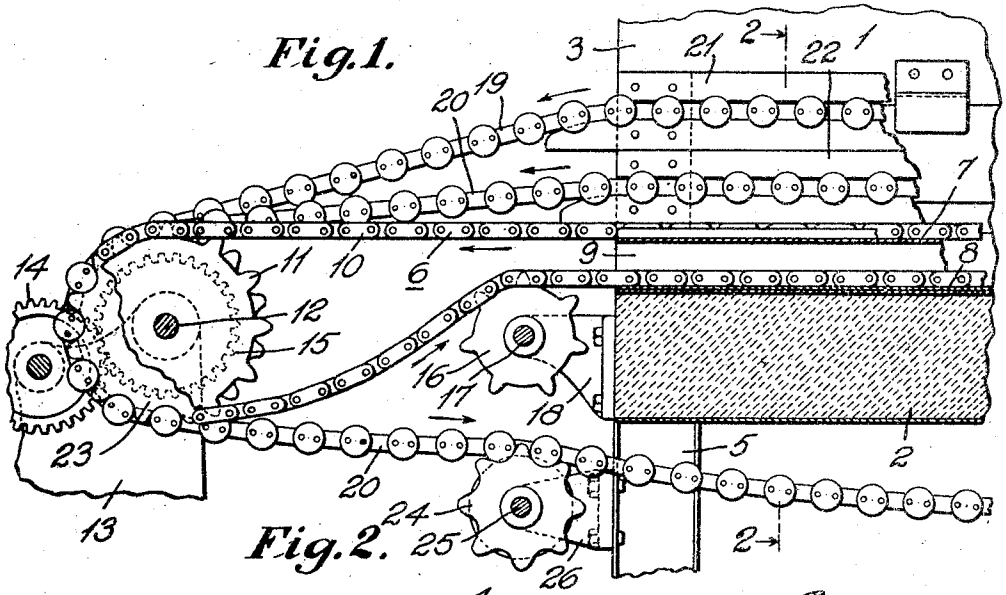
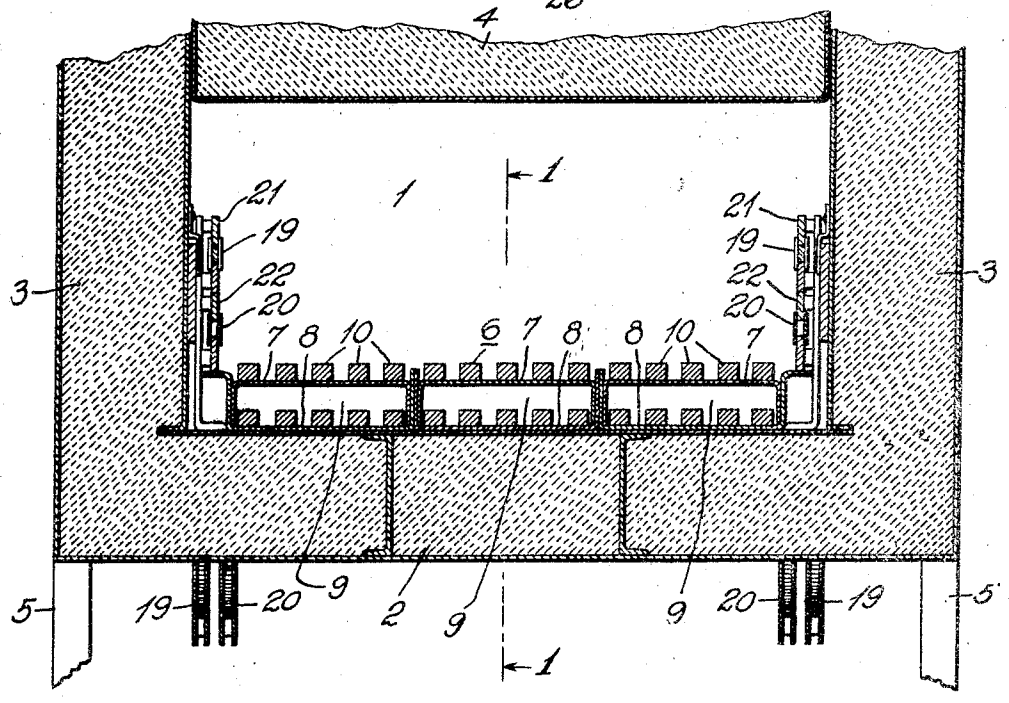


Fig. 2.



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APPARATUS FOR ANNEALING GLASSWARE.

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The invention relates to apparatus for annealing glassware and it has particular relation to lehrs of the tunnel type, through which ware is transported by an endless conveyor and subjected, while in the tunnel, to varying temperature environments, in order to relieve tresses and strains existing therein.

Heretofore, some difficulty has been encountered in the operation of lehrs, of the type described, occasioned by the conveyor becoming dogged and jammed by broken glass resulting from the displacement and breakage of ware through frictional engagement with the walls of the tunnel during its passage therethrough.

One of the objects of the present invention is to avoid the difficulty above referred to by providing means mounted adjacent to the side walls of the tunnel, and driven at substantially the same linear speed as that of the conveyor, for preventing the ware from frictionally engaging the walls of the tunnel and becoming displaced and broken during its passage therethrough.

Other objects will appear from the following description and the appended claims.

In the accompanying drawings:

Figure 1 is a fragmentary longitudinal sectional view through the exit end of a tunnel lehr, the section being taken on line 1—1 of Fig. 2; and

Fig. 2 is a vertical transverse sectional view through the tunnel, the section being taken on line 2—2 of Fig. 1.

Referring to the drawings, a portion of the exit end of a lehr embodying the invention is shown as comprising a tunnel 1 having a heat-insulated bottom 2, side walls 3 and a vertically movable top 4, the tunnel being mounted upon a supporting framework 5.

Ware is transported through the tunnel by an endless conveyor 6, the ware-bearing strand of which is supported within the tunnel directly by a flat metallic floor consisting of a plurality of upper and lower channel members 7 and 8, respectively, arranged to form a plurality of passageways 9 beneath the floor through which the idle strand of the conveyor returns to the entrance end of the tunnel.

The conveyor 6 comprises a plurality of parallel and unconnected sprocket chains 10 which are independently driven at the same linear speed by sprocket wheels 11 which are fixed to a common shaft 12. This shaft is journalled in a frame 13 and is, in turn, driven from a suitable source of power, not shown, through intermeshing gear wheels 14 and 15. The return strand of the conveyor is supported as it enters the passageways 9 by a plurality of sprocket wheels 16 carried by a shaft 17 journalled in brackets 18 mounted adjacent to the exit end of the tunnel.

The ware is prevented from frictionally engaging the sidewalls of the tunnel during its passage therethrough by upper and lower chains 19 and 20, respectively, which are mounted in guideways 21 and 22 carried by the side walls of the tunnel. These chains are driven at the same speed as the conveyor by sprocket wheels 23 which are mounted in pairs on the shaft 12 at each side of the conveyor, only one of these sprocket wheels being shown in Fig. 1.

The return strands of the chains 19 and 20 return to the entrance end of the tunnel beneath the lehr and are supported at intervals by idler sprocket wheels 24 carried by shafts 25 journalled in brackets 26 fixed to the frame 5.

From the foregoing it will be apparent that a very simple and efficient means is provided to prevent the ware from engaging the side walls of the tunnel during its passage therethrough and, although separate therefrom and independently driven, is, in effect, a side wall of the conveyor moving at the same speed.

The invention may be modified in construction and arrangement without departing from the scope of my invention as set forth in the appended claims.

What I claim as my invention is:

1. Apparatus for annealing glassware comprising a tunnel, a conveyor for transporting articles of glassware through said tunnel, a flexible metallic member extending along each side of said tunnel for preventing frictional engagement between the ware and the walls of the tunnel, guideways for providing lateral and vertical support for said members, and means for driving said conveyor and said members at the same linear speed.

2. Apparatus for annealing glassware comprising a tunnel, a conveyor for trans-

porting articles of glassware through said tunnel, guideways extending along each side of said tunnel, chains slidably mounted in said guideways and having portions extending beyond said guideway for preventing the displacement of said chains from said guideway and adapted to engage said ware to prevent the frictional engagement thereof with the walls of said tunnel, and means for driving said conveyor and said chains at the same linear speed.

Signed at Long Island City, N. Y., this 11th day of Jan., 1926.

OTTO C. KUHRT.