

UNITED STATES PATENT OFFICE

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APPARATUS FOR TEMPERING GLASS

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In a prior application filed by me I have described the advantages in tempering sheet glass by shifting the points of application of the blasts of air to the sheets.

5 The present application has for its end to provide an efficient means whereby the points of impact of the jets upon the sheet are shifted during the cooling of the sheet by utilizing a perforated rotary air-distributing plate. My invention for these purposes consists in the construction, arrangement and combination of the several parts as will be hereinafter more fully described and claimed.

15 Referring to the accompanying drawing in which corresponding parts are designated by corresponding marks of reference,—

Figure 1 is a vertical section through an apparatus embodying my invention.

20 Figures 2, 3 and 4 are details of different forms of distributor plates that may be used with my invention.

25 In the drawing *a* represents a sheet of glass to be tempered. This sheet, as now known in the art, should be at a relatively high temperature. It is seated between two cooling elements, only one of which is shown and only one of which will be described, as such elements are identical. Each element consists of an air conduit *f* having a bell-mouth *d* whose diameter is at least as great as the major diagonal of the sheet to be tempered. Cooling air under pressure is forced through the conduit and out of the bell-mouth.

30 Mounted in the mouth of the conduit is a distributing plate *b*, the plate being carried on the horizontal shaft *g* in suitable bearings *i* and *j* and being driven by any suitable means, such as by the pulley *k*. The distributor plate runs in an annular channel *l* surrounding the interior of the bell-mouth.

40 The distributor plate *b* is perforated, the holes being of selected size and of any desired shape. In Figure 2 are shown circular holes so distributed that their number increases proportionally with their distance from the center.

5 In Figure 3 the holes are shown as elongated to form radial triangular slots with their apexes pointing inwardly, the effective width of the slots being regulated by shutters *r* slidable on the distributor plate by means of pins *s* moving in slots *t*.

10 In Figure 4 the orifices are furnished with nozzles *u* inclined to the axis of rotation of the disc. The nozzles near the center of the disc are, as shown, more inclined to the axis of rotation thereof than those more remote from the center for the purpose of accentuating the movement of the points of contact with the sheet of air from the nozzles near the center of the disc and also for the purpose of neutralizing to a greater or less extent the centrifugal force of the air drawn along by the rotation of the disc.

15 Interposed between the bell and the sheet of glass is shown a masking diaphragm *q*. This diaphragm is removable and has an opening therein of a size and shape suitable for the size and shape of the glass to be tempered.

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

1. In a device for tempering glass sheets, the combination of a series of nozzles rotating around a center, the nozzles adjacent to such center being more inclined to the axis of rotation than are the nozzles remote from such center and conduit supplying air to said nozzles.

2. In a device for tempering glass sheets the combination of two conduits facing each other, means for supporting a sheet of glass between the ends of the conduits, a rotating distributing plate at the end of each conduit, triangular slots in the said plates, dampers carried by the plates controlling the width of the slots, and means for rotating said plates.

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