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HEATING OVENS, PARTICULARLY THOSE
FOR HARDENING GLASS PLATES
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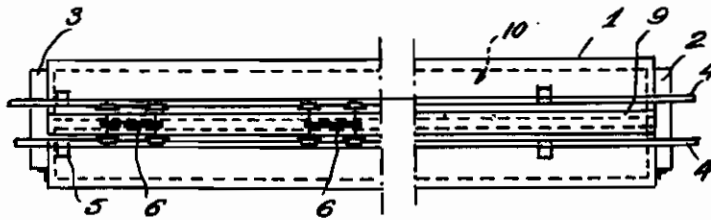
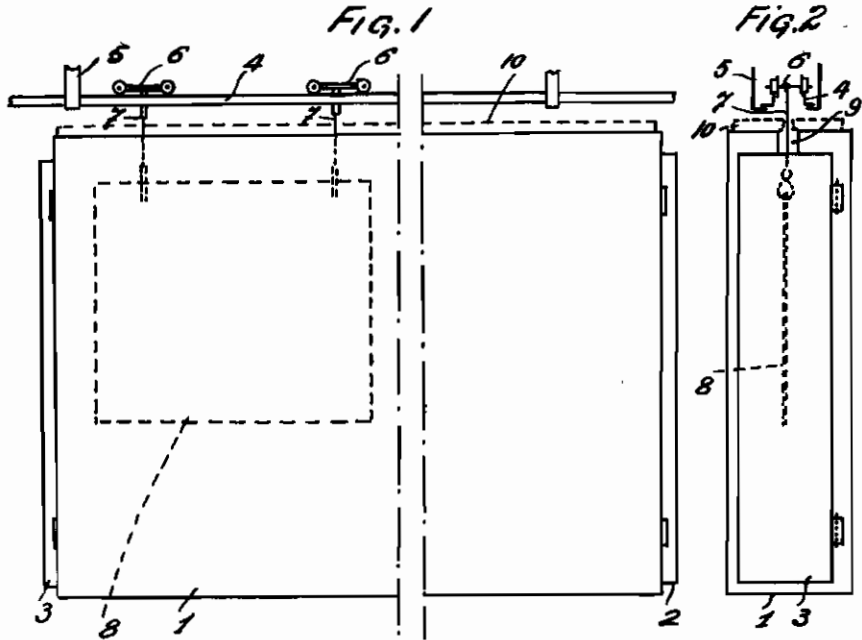


FIG. 3.

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HEATING OVENS, PARTICULARLY THOSE FOR HARDENING GLASS PLATES

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The invention relates to heating ovens and concerns more particularly, amongst such ovens those used for heating glass plates for hardening purposes.

In heating ovens as actually used, in which the articles, and particularly the glass plates, to be heated, are introduced at one end and delivered at the opposite end of the oven, these articles are generally supported by means of a suspension device including a movable carriage moving on a fixed supporting track.

This track, as well as the supporting carriage pass through the oven and are thus subjected to high temperatures, which are not favorable to the good functioning of the device and the maintenance of the parts. These actions are so much the more marked that in the upper portion of the oven, where the supporting track is located, there is a heat accumulation due to the fact that the top of the oven is closed.

The main purpose of the invention is to avoid these drawbacks.

To this end the invention mainly consists to arrange the supporting track outside the oven thus ensuring largely lower working temperatures for the members of the suspension device and, together with a correct operation, a practically unlimited life of these members.

The invention also consists in causing the members connecting the sustained articles, and particularly the glass plates, to the suspension device to enter the oven through a split or slot provided in a wall, and particularly the top wall of the oven, and which may further be adjusted as desired.

A further advantage of this arrangement lies in that an accumulation of heat in the upper portion of the oven is avoided, the adjustment of the split or slot enabling to a certain extent the temperature to be adjusted in the said upper portion of the oven.

And in order that the manner in which the characteristic arrangements of the invention may be practically carried out, to be understood, such arrangements will be described hereafter with more detail in their application to the ovens for use in hardening glass plates and with reference to the annexed drawing showing diagrammatically:

Fig. 1 a side elevation view of a heating oven;
Fig. 2 a corresponding end elevation view;
Fig. 3 a top plan view of the oven.

Referring to the drawing, 1 designates an oven which may be of any desired type, for example heated by means of electrical resistances, pro-

vided at its ends with doors 2 and 3 of any convenient construction, and for example so arranged as to open and close by tilting laterally on hinges or the like or by vertical or lateral sliding, the tilting or sliding movement being ensured by means of devices actuated either automatically or manually.

Above the oven there is provided a transporting track formed by means of a pair of rails or other iron sections 4 suitably suspended for example by means of brackets 5.

On this track move supporting carriages 6, provided with members 7 for supporting the glass plates 8, these members including rods or the like associated with tongs of any known type in the selected example.

The suspension members 7 enter the oven through a split or slot 9 formed in its top wall and opening to the outside on the outer surfaces of the end walls of the oven so as to enable the glass plates to be introduced into and removed from the oven.

In principle, this split or slot 9 may receive a width which is only somewhat greater than the thickness (or width) of the members 7, so as to enable the passage thereof with the necessary working clearance, but according to the invention the width of this split or slot is made more important.

As above indicated it has been observed that in ovens closed at the top heat accumulates in the upper portion, which may become detrimental to the uniform heating of the articles, particularly the glass plates, in the oven.

Through the split or slot 9 giving passage to the suspension members 7, passage is afforded, from the inside to the outside, for a portion of the heat of the oven, and this escape of heat has the result to reduce or to remove the said heat accumulation.

By suitably proportioning the width of the split or slot 9 and the thickness (or width) of the members 7, any desired compensation may be obtained.

However, it is preferable to have the split or slot 9 made wider than necessary for the passage of the members 7, so as to dispose from a discharge which in any case will be sufficient and which may then be adjusted by providing on the top surface of the oven and as illustrated in dotted lines in the drawing, movable members 10 such as plates made of metal or refractory material, which may be moved as desired towards or away from each other so as to reduce or increase the value of the heat escape.

Further to the advantage of permitting the escape and the adjustment of the excess of heat in the upper portion of the oven, the invention also avoids a complicated arrangement of the closing doors 2 and 3 which in the actual constructions with internal supporting track generally used includes not only a laterally tiltable opening member but also a flap hinged on this member and adapted to recover, in the closed position of the door, the part of the oven opening which is located on the other side of the transporting track relatively to the hinges.

The advantage lies not only in a more simple construction of the doors, but also in the time re-

quired for the operation thereof, which is already important for the regularity of the heating of the oven but yet more important for the good execution of the hardening operation.

5 Although one single method of carrying out the invention has been described in detail, it is to be understood that the invention is not limited to this embodiment but to the contrary that it includes the alternatives and the modifications; also the invention is not limited to heating ovens for glass plates to be hardened but is generally applicable to the heating of articles of various description.

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