

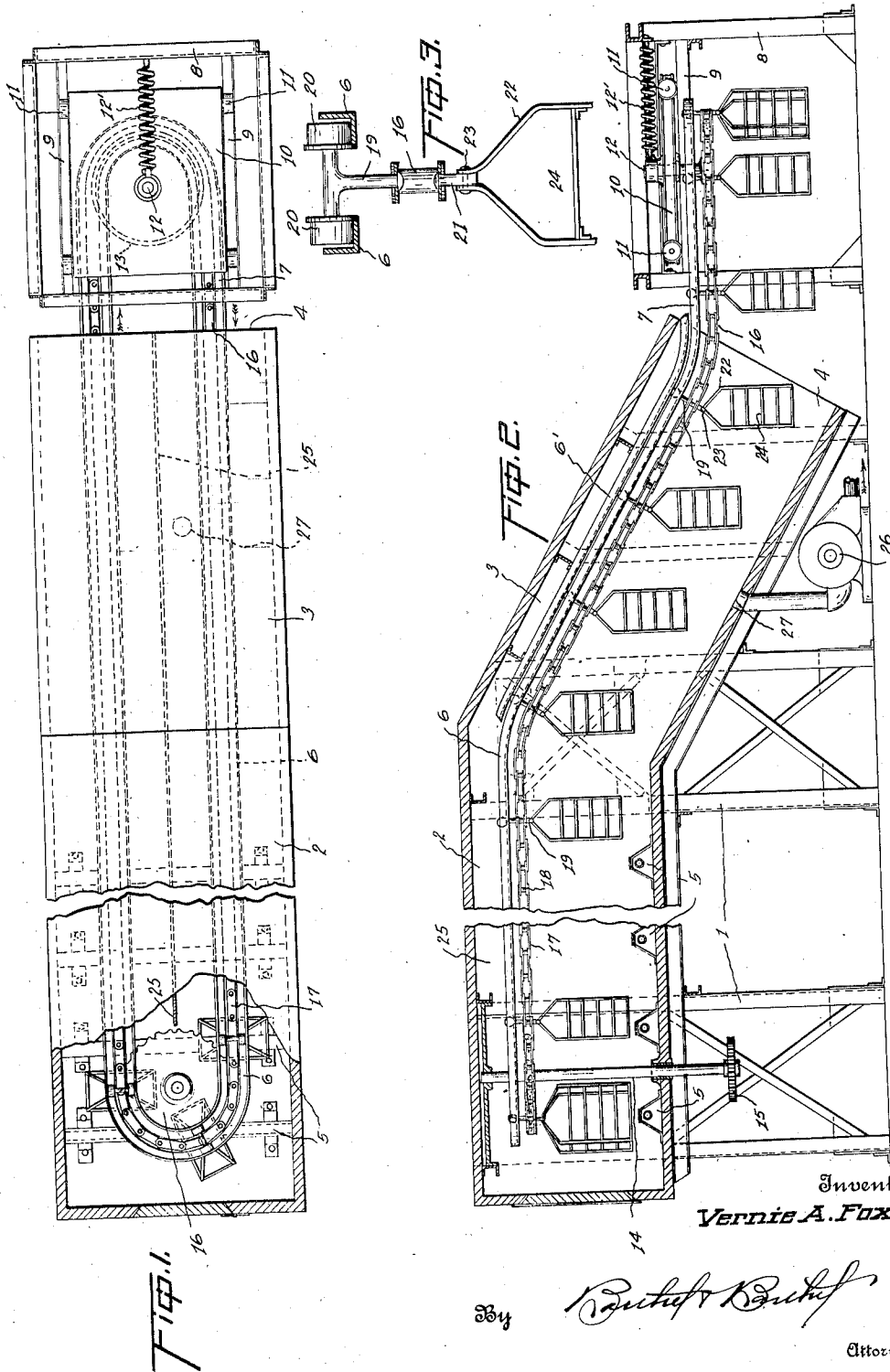
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OVEN

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UNITED STATES PATENT OFFICE

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OVEN

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The present invention pertains to a novel oven of the type designed for drying metal plates that have been painted, enameled, japanned or similarly treated.

5 In an oven of this type it is desired to prevent the heated air from escaping through the openings for the entrance and exit of the work. This result is obtained in the present invention by forming the oven with a down-
10 wardly sloping portion which has the work inlet and outlet at its lower end. The remainder of the oven is obviously elevated with respect to this end, and the heated air which has a tendency to rise will not descend
15 to this opening and consequently will not escape therethrough.

The invention is fully disclosed by way of example in the following description and in the accompanying drawing, in which—

20 Figure 1 is a plan view of the device, partly broken away;

Fig. 2 is a longitudinal section thereof; and

Fig. 3 is a detail transverse section of the conveyor.

25 Reference to these views will be made by use of like characters which are employed to designate corresponding parts throughout.

The oven is built upon a supporting structure 1 and includes a horizontal or upper portion 2 from which a communicating portion 3 slopes downwardly. The lower end 4 of the sloping portion is open for the passage of a conveyor therethrough as will presently be described. On the floor of the upper portion
35 is provided a series of heating elements 5 for affording the hot air required in the drying process.

40 An endless track consisting of a pair of opposed angle members 6 is supported along the top of the portions 2 and 3 and extended outwardly for some distance beyond the opening 4 as indicated by the numeral 7. Over the section 7 is built a platform 8 having a pair of rails 9 at a height slightly above this section as shown in Figure 2. A carriage 10
45 is mounted slidably on the rails by means of rollers 11 which rest on the rails. In the carriage is journaled a vertical stub shaft 12 carrying a sprocket wheel 13 in a plane slightly
50 below the section 7. A spring 12' connect-

ing the shaft to a fixed part of the platform tends to draw the shaft away from the opening 4.

Another shaft 14 is journaled vertically in the remote end of the section 2. This shaft 55 carries a drive pinion 15 below the floor of the section 2 and a sprocket 16 slightly beneath the endless track. An endless chain consisting of links 17 united by pins 18 is trained over the sprockets 13 and 16.
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At regular intervals along the length of the chain, T-members 19 have their stems secured to the upper part of the chain and their heads equipped with rollers 20 riding on the angle members 6. Beneath each T-member, a
65 pin 21 is fixed securely in the lower part of the chain and has a rack or basket 22 pivotally attached thereto by a loose rivet 23. The baskets are formed with transverse bars 24
70 on which the work may be laid and thus carried through the oven. Guide members 6' are laid over the rollers 20 in the inclined section 3 for the purpose of preventing the conveyor assembly from being raised off the
75 tracks 6 in this area.

A partition 25 extends longitudinally through both sections 2 and 3 of the oven from the sprocket 16 to the open end 4. The shaft 14 is driven to move the endless chain in the direction indicated by the arrows, and
80 at the entrance side of the baffle an exhaust fan 26 is connected to the base of the sloping section, drawing through a port 27.

The air which is heated by the elements 5 is eventually drawn through the port 27, and
85 consequently fresh air will enter through the opening 4 at the chain outlet side of the baffle. The work which has passed through the hot zone in the vicinity of the heating elements 5
90 will be somewhat cooled during its outward travel in a path opposite to the direction of the incoming fresh air. Also, the work which is entering the oven will be initially heated on coming into contact with the warm air
95 which is being drawn towards the port 27. The spring 12' obviously maintains the chain taut at all times in response to changes in its length due to expansion and contraction.

Although a specific embodiment of the invention has been illustrated and described,
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it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claim.

What I claim is:—

- 5 An oven comprising an elevated portion and a downwardly sloping portion, the latter portion being open at its lower end and closed at the upper end, an endless chain extending through both portions and adapted
10 to enter and leave the oven at said end, a partition dividing said portions longitudinally and disposed between the laps of said chain, heating means in the elevated portion and air exhaust means in the sloping portion.
15 In testimony whereof I affix my signature.

VERNIE A. FOX.

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