J. A. CAREY.

OVEN FOR DRYING PLATES.

APPLICATION FILED DEC. 21, 1920.

1,432,839.

Patented Oct. 24, 1922.

FIG. 1.

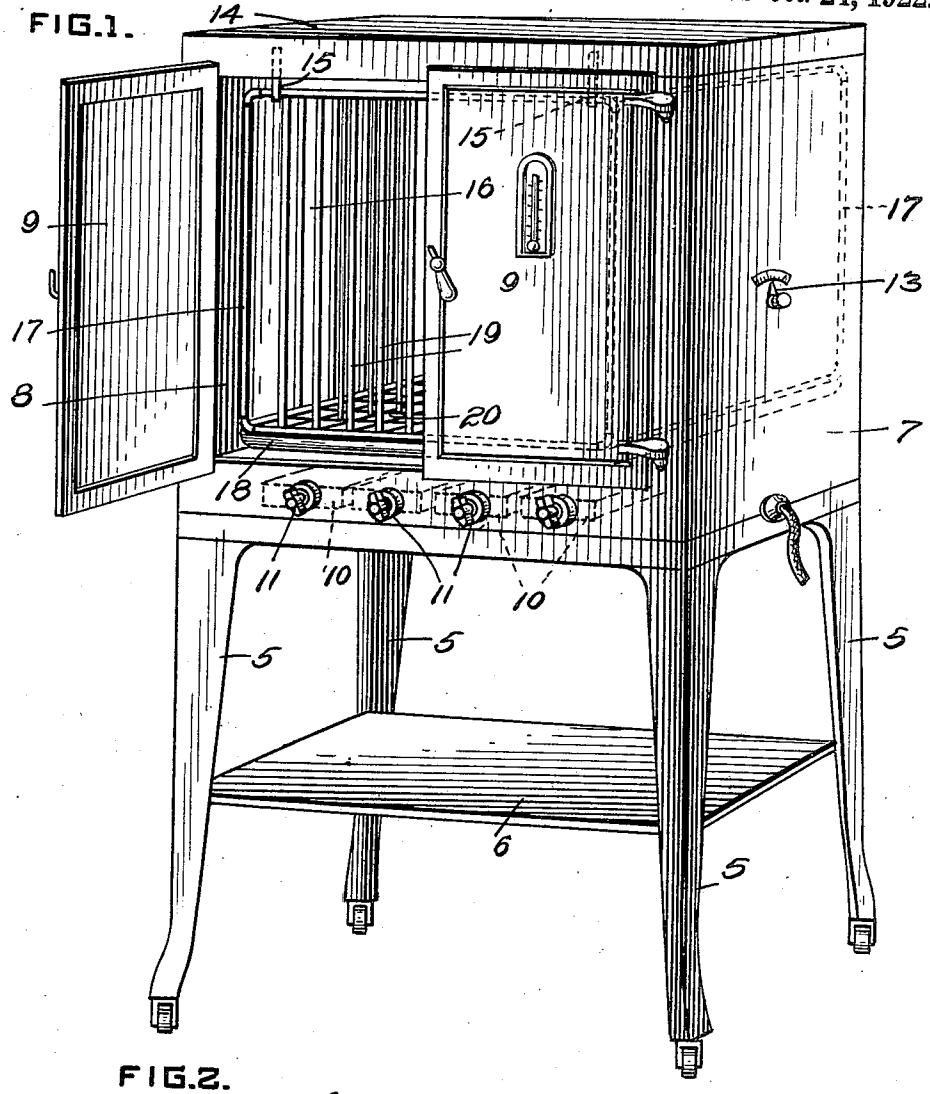



FIG. 2.

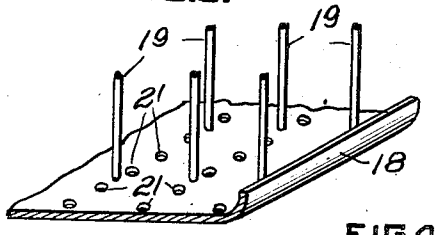



FIG. 3.

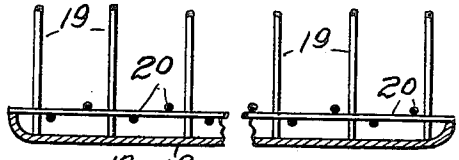
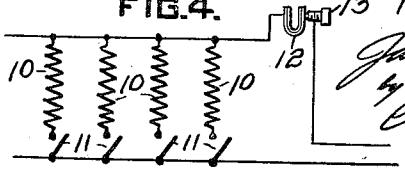



FIG. 4.




WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES A. CAREY, OF PITTSBURGH, PENNSYLVANIA.

## OVEN FOR DRYING PLATES.

Application filed December 21, 1920. Serial No. 432,360.

*To all whom it may concern:*

Be it known that I, JAMES A. CAREY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Ovens for Drying Plates, of which the following is a specification.

My invention relates to a plate drying oven particularly adapted for use by photo-engravers.

In photo engraving establishments, a reproduction of an object is made on a photographic negative. The negatives usually employed are prepared by the engraver, and comprise glass plates to which he applies a sensitive coating, which is dried, usually after being developed. In some processes of photo-engraving, the sensitized coating remains on the glass, in other processes, the coating with the negative must be transferred to other glass. For effecting the transfer, the negative must be thoroughly dried, after which it is given one or more coatings of material, and each coating must be separately dried. The negatives, at any stage in the treatment, should be kept free of dust.

It is the object of the present invention to provide an oven for drying the plates at any one of the various stages in such manner as to keep them free of dust, and in which they are kept in such a position that any excess of coating may drain off, the oven being so constructed that a plurality of plates may be dried simultaneously without their touching each other, or contacting with the excess material that drains off.

Apparatus for this purpose has generally been more or less crudely constructed and has usually been heated by gas. The drying racks have generally been built in the oven and could only be cleaned with difficulty, so that they would become gummed with the coating from the plates.

According to the present invention, the oven is so arranged that it is preferably heated electrically, and the rack is one that may be easily and readily removed, whereby it can be conveniently cleaned.

In the drawings, which illustrate my invention,

Fig. 1 is a perspective view of the plate drying oven;

Fig. 2 shows in perspective a portion of the tray and rack;

Fig. 3 shows a transverse section through the rack; and

Fig. 4 indicates diagrammatically the wiring circuit for the electric heating means.

In the drawings, 5 indicate legs, 6 a shelf connecting the legs, and 7 is the oven. If desired, the oven and supporting frame might be formed separately, as indicated. The oven is preferably rectangular in shape and is provided with an opening 8 in one side thereof, hinged doors 9 providing a closure therefor.

In the bottom portion of the oven are a plurality of heating elements 10, which are preferably electric heating units, and may be manually controlled by switch devices 11. A thermostat 12 (see Fig. 3) may be included in the circuit to prevent the oven from becoming overheated, and a controlling means for the thermostat is indicated at 13. Suspended within the oven space from the top 14 of the oven by means of hooks 15, is the drying rack 16.

The drying rack comprises frame members 17 to which is hung a tray 18. Arranged in rows to form partitions for the photographic plates are upright rods 19. Resting on the flanges of the tray 18 is a heavy wire net 20 of coarse mesh, or other similar plate supporting means. In alinement with the transverse rows of vertical rods 19, openings 21 may be formed. It will be seen that when the plates are placed in the rack, one between each transverse row of rods 19, they will rest on the net 20, which will allow the excess coating to run off and drop into the tray 18. The holes 21 are so positioned that practically none of the coating will drop through them onto the heating units, but heated air can pass through the perforations up between the plates. The coating, being viscous or gummy, will have a tendency to dry where it falls on the tray and therefore will not run through the openings. Thus, the heating elements may be kept free of the coating, and the rack and trays can be readily removed for cleaning by disengaging the hooks. The wire net 20 prevents the plates from resting in the excess material that collects at the bottom of the tray. The wire net has not been shown in Fig. 2 in order that the arrangement of rods and perforations may be seen. Means similar to a wire net could be used in its stead.

From the foregoing, the method of using the oven will be apparent. The coated plates

are placed in the rack, either before or after the rack is placed in the oven. Once the rack is in position and the plates are put in place, the doors are closed and the plates dried. By reason of the construction of the oven, the plates are not exposed to dust and dirt, and better results can therefore be obtained.

While the oven is particularly adapted for use by plate engravers, yet I do not limit myself to such use.

What I claim is:

1. An oven having an opening in one side thereof, a closure for the opening, means in the bottom of the oven for heating it, a plate receiving rack suspended from the top thereof above said heating means and a tray below the rack and suspended therefrom for catching the excess coating material which drips from the plates.

2. In combination with an oven, a plate drying rack therein for supporting coated plates to be dried, said rack comprising a tray having a bottom and sides, transverse rows of rods on said tray, and means above the tray on which the plates may rest and permitting excess coating to drain from the plates to the tray.

3. In combination with an oven, a plate drying rack therein for supporting coated plates to be dried, said rack comprising a tray having a bottom, transverse rows of rods supported on the tray, and a wire net above the bottom through which the rods pass and on which the plates are supported.

4. In combination with an oven, a plate drying rack therein for supporting coated plates to be dried, said rack comprising a tray having a bottom, transverse rows of vertical rods supported on said bottom, said bottom having perforations therein arranged in alinement with the rods, and a wire net supported above the tray and through which the rods pass and on which the plates are supported.

5. In combination with an oven having heating means at the bottom thereof, of a plate drying rack suspended in said oven, said rack comprising a tray having perforations in the bottom thereof, transverse rows of rods on said tray, and a wire net above the tray on which the plates to be dried are adapted to be supported.

6. In combination with an oven having heating means in the bottom thereof and hooks at the top thereof, of a removable drying rack therein for supporting coated plates to be dried comprising frame members suspended from the hooks, a tray secured to the bottom of the frame members, transverse rows of vertical rods on said bottom, and a wire net supported above the tray through which said rods pass and on which the plates to be dried rest.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. CAREY.

Witnesses:
WM. H. PARMELEE,
LOIS WINEMAN.