To all whom it may concern:

Be it known that I, Leo McCue, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Driers for Sensitized Plates, of which the following is a specification.

My present invention relates to driers and more particularly to driers constructed for use in providing sheets of glass, metal or other suitable material with a sensitized film surface. In devices of this kind it is particularly desirable that the film forming material after being placed upon the plate be dried uniformly and that the film be distributed at an even depth over the entire surface covered by the film.

It is a principal object of my invention to provide a drier which will accomplish these results and at the same time dry the film rapidly.

It is a further object of the invention to provide a device of the character described of simple and economical construction which may be readily manipulated without the need of skilled operators.

In devices of this character constructed prior to my invention it has been necessary to accurately gauge the time that the film remains in the oven and to take it out at the end of a predetermined interval. It is a further purpose of my invention to construct an oven where the film may be left in an indefinite period without damage or danger of deterioration.

Other objects and advantages of the invention will be apparent as it is better understood from the following description which considered in connection with the accompanying drawing, illustrating a preferred embodiment thereof.

On the drawing

Figure 1 is a top plan view of an oven or drier embodying my invention and Fig. 2 is a vertical sectional view taken substantially on the line 2—2 of Fig. 1.

The embodiment of my invention shown on the drawing consists, primarily of a casing, a plate support generally designated at 4, a plurality of burners 5 and means 6 for actuating the plate support.

The casing consists in the present instance of a box-like sheet metal container 7 mounted upon suitable supports 7' and open at its top and having an aperture 8 disposed through the central point of its bottom. Within the bottom of the casing a layer 9 of sand or other suitable heat retaining material is placed. The plate support 4 is carried upon the upper end 11 of a vertically disposed shaft 12 which is driven from the motor as will be later understood. The shaft 12 has a bearing at 8 in the bottom of the casing and a second bearing at 13 beneath the burners 5. In order that the sand may not sift through the aperture 8 in the bottom of the casing a sleeve or collar 14 is provided about the shaft to prevent contact with the sand and to keep the sand from the aperture 8. The plate support consists in the present instance of a plurality of radially extending arms 15 disposed horizontally from the top of the shaft 9 to which they are secured and with which they rotate. The arms 15 are preferably constructed of angle irons and are arranged so that one flange 16 of each is horizontal. Through the flange 16 are disposed a number of set screws 17 having relatively sharp points upon which the plate may rest. These set screws are adjustable vertically to maintain the plate in horizontal position and for another purpose which will be later described. The other flange 18 of each of these angle irons serves as a reinforce to prevent the warping of the horizontal flange under heat.

The burners 5 are mounted beneath the bottom of the casing 3 and may have any preferred construction or arrangement. I prefer, however, to inclose them in a sheet metal box-like oven 19 closed at its bottom by a wall 21 and having a plurality of ventilating apertures 22 to permit the necessary combustion.

The top of the casing 3 is open to the atmosphere and mounted above it upon suitable posts or other supports 23 is a ventilating screen preferably of cheese-cloth 24 car-
ried in a frame 25 which rests upon or is secured to the tops of the posts 28. The plate support 4 is caused to rotate slowly and continuously by the motor 6 which for this purpose if geared to the shaft 12 in the present instance by a pair of beveled gears 26, 27, the gear 26 fastened upon the shaft being materially larger than the gear 27 to impart a rotation to the shaft slower than that of the motor armature.

The operation and use of the drier is substantially as follows:—The plate 28 having received its coating is placed upon the pointed ends of the set screws in the support 4; either while the support is rotating or before the motor is started. The rotation of the support causes the heated air in the drier to pass over the wet film on the plate and to rise above the plate and pass out through the screen 24. The rotation of the plate gives this air an upward spiral movement which experience has proven to be of particular advantage in drying plates of this kind.

The cloth 24 serves also to prevent any dust settling upon the plate while it is being dried.

In order that the heat may be distributed evenly over the bottom of the casing 30 secure to its under face a sheet of asbestos or other suitable material 29.

It will be manifest that as the amount of heat supplied within the casing may be accurately gaged, and as the rate of movement of the plate support may be readily determined the regulation of this heat may be easily accomplished to prevent damage to the plate even should the plate be left in the drier an indefinite time, the circulation of the heated air in the manner described being able to dry the plate at a relatively low temperature.

While only a single plate is shown in position on the drier it will be apparent that a number of plates of smaller size may be dried in the drier simultaneously. If the drier be constructed with exceedingly long arms in order to accommodate a large number of plates the set screws at the ends of the arms may be turned to slightly elevate the points of the set screws above the sand located more nearly the center of rotation to prevent the accumulation of the film adjacent the outer edge of the plate.

It is thought that the invention and many of its advantages will be apparent from the foregoing without further description and it will be obvious that numerous changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing any of its material advantages, the form herein disclosed being merely a preferred embodiment thereof.

What I claim is:

1. A drier for sensitized plates comprising a heating chamber, and a member within said chamber for carrying a plurality of plates, the portions of said member engaging said plates being individually adjustable.

2. A drier for sensitized plates comprising a heating chamber in which the plates may be dried, heating means below said chamber, and means on the bottom of said chamber for receiving and distributing the heat of said means evenly.

3. A drier for sensitized plates comprising a chamber, a rotatable element provided with means for adjusting the plate in accurate horizontal position, and means for supplying heat to said chamber.

4. A drier for sensitized plates comprising a chamber receiving heat at its bottom and having an open top, a porous sheet disposed above said open top, and means for supporting a plate within said chamber.

5. A drier for sensitized plates comprising a chamber in which the plates may be dried, heating means below said chamber, and means on the bottom of said chamber for receiving, storing and evenly distributing the heat of said means.

6. A drier for sensitized plates comprising a chamber, a rotatable member in said chamber, a device for constantly rotating said member, sand in the bottom of said chamber, and a thinly woven cloth stretched across the top of said chamber.

7. A drier for sensitized plates comprising a chamber in which the plates may be dried, heating means therebelow, and a layer of sand on the bottom of the chamber to evenly distribute said heat to said plates.

8. A drier for sensitized plates comprising an open top chamber in which the plates may be dried, heating means therebelow, and a layer of sand between said chamber and said heating means for evenly distributing and projecting vertically upward the heat.

9. A drier for sensitized plates comprising an open top chamber in which the plates may be dried, heating means therebelow, a layer of sand between said chamber and said heating means for evenly distributing and projecting vertically upward the heat, and means moving the plates over said sand.

10. A drier for sensitized plates comprising a heating chamber, and a spider having horizontally disposed arms for supporting said plates in said chamber.

11. A drier for sensitized plates comprising a heating chamber, and a spider having horizontally disposed arms for supporting said plates in said chamber.

12. A drier for sensitized plates compris-
In a drier for sensitized plates comprising a heating chamber, and a member providing a horizontally disposed surface for supporting plates during drying, individual portions of said surface being independently adjustable.

LEO McCUE.

Witnesses:

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