Dec. 7, 1937. E. NESTLER 2,101,267

HUMIDIFIER

Filed May 15, 1936

Fig. 1

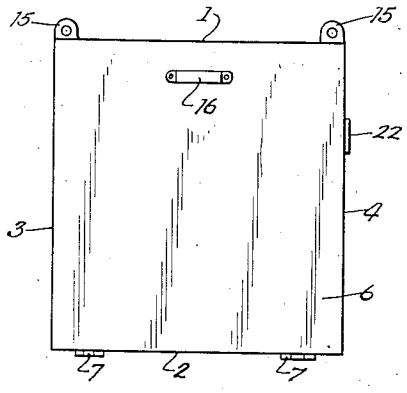


Fig. 2

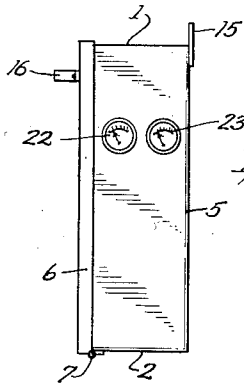


Fig. 3

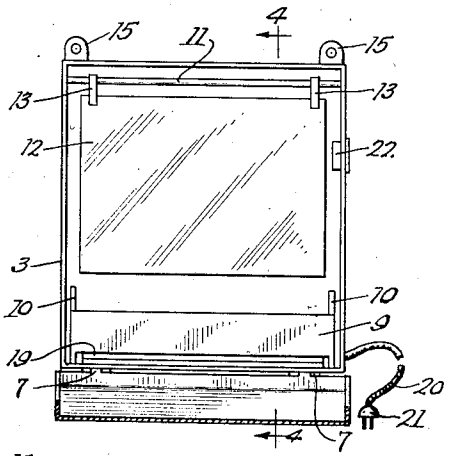


Fig. 4

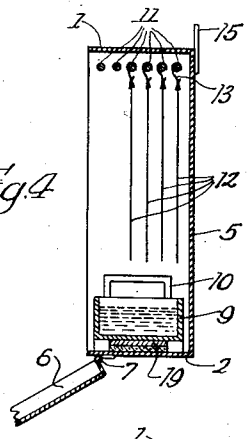


Fig. 7

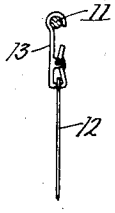


Fig. 5

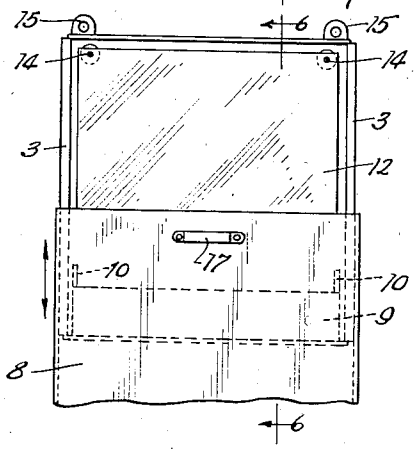
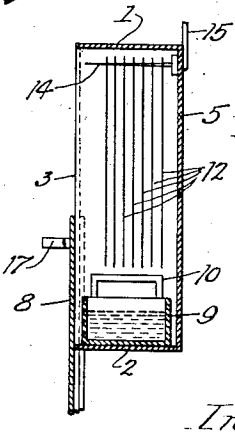


Fig. 6



Inventor:
Edmund Nestler
by B. Singer
his Atty.

Patented Dec. 7, 1937

2,101,267

UNITED STATES PATENT OFFICE

2,101,267

HUMIDIFIER

Edmund Nestler, Dresden, Germany

Application May 15, 1936, Serial No. 79,880
In Germany June 11, 1935

7 Claims. (Cl. 219—38)

The invention relates to improvements in humidifiers for storing and conditioning sheets of reprinting paper used in the lithographic art.

It is an object of the invention to provide a storage container in which the sheets of reprinting paper are maintained in a moist condition ready for use.

Another object of the invention is to provide a storage container for reprinting paper with means adapted to provide reprinting paper sheets which have become too dry with a sufficient amount of moisture to recondition the same for reprinting purposes.

Still another object of the invention is to provide a storage container in which a plurality of sheets of reprinting paper are each uniformly provided with sufficient moisture across their entire area as required to prepare the paper for use and to keep the same in a moistened condition.

It has been proposed heretofore to store stacks of reprinting paper sheets in a container in which also a water containing trough or the like is arranged for moistening the air in the container caused by the evaporation of the water in said trough. Since, however, the sheets of reprinting paper are laid directly one upon the other the moistened air can pass only around the edges of the stack of reprinting paper and along the top sheet of the stack, thereby preventing a uniform saturation of all the sheets in the stack. It will be found that only the edges of the sheets of reprinting paper have been moistened, while the center portions of the sheets remain dry. Furthermore, the sheets on top of the stack are apt to be more moist than the sheets in the center or in the lower portion of the stack, so that generally speaking the sheets of reprinting paper are moistened very irregularly and to varying degree.

The present invention overcomes these disadvantages of the known humidifier devices of this type and provides a device in which each reprinting paper sheet is exposed to moistened air across its entire area and on both sides which provides the entire paper sheet in a very short time uniformly and properly with an amount of moisture as is necessary for its use.

It is also an object of the invention to provide a humidifier of the type referred which can be manufactured at low cost, is easy and convenient to use and is especially adapted and useful for smaller shops.

The drawing shows by way of example a few embodiments of the humidifier of the present invention:

Fig. 1 is a front view of the closed humidifier;

Fig. 2 is a side view of the same;

Fig. 3 is a front view of an opened humidifier, which is equipped with a heating device to facilitate the evaporation of the water;

Fig. 4 is a vertical cross section of the opened humidifier on line 4—4 of Fig. 3;

Fig. 5 is a front view of a modified humidifier in open position;

Fig. 6 is a vertical cross section on line 6—6 of Fig. 5, and

Fig. 7 shows in enlarged scale a clip which may be used in the embodiment of the invention as illustrated in the Figs. 3 and 4.

In accordance with the invention the humidifier consists of a box-shaped container with the top wall 1, bottom wall 2, the side walls 3 and 4 and a rear wall 5. The front of the container is formed by a cover 6 having a handle 16. In the embodiments of the Figs. 1 to 4 the cover 6 is pivotally connected to the bottom wall by a hinge 7 as particularly shown in Figs. 3 and 4. The container and its cover are preferably formed of sheet metal, for instance galvanized iron or any other corrosion-resisting material. An alternate arrangement for closing the container is illustrated in the Figs. 5 and 6, in which the front wall is formed by a slidable cover 8 having a handle 17.

A trough 9 adapted to be filled with water and preferably removable from the container is provided with a handle 10 at each end and is positioned within the container upon the bottom thereof. As shown in the Figs. 3 and 4, the upper portion of the container is provided with a plurality of horizontal rods 11 from which the reprinting paper sheets 12 are suspended by means of clamps or clips 13 which engage the upper edge of the paper sheets. This embodiment of the invention is provided with an electric heating element 19 which is positioned in the recessed bottom portion of the trough 9 and is connected to an electric cord 20 adapted to be attached to any desired source of current by a plug 21. If desired, the electric heating device may be substituted by an open flame burner, for instance a gas burner.

In the embodiment of the invention as illustrated in the Figs. 5 and 6 the horizontal rods 11 are substituted by a pair of pointed pins 14 which are secured to the inner face of the rear wall 5 of the container adjacent the top wall 1 thereof. The upper edge of the reprinting paper sheets 12 is pierced by these pins 14 when the sheets are suspended in the container.

It will be noted that the reprinting paper sheets 12 are suspended in a vertical position in the container directly above the water trough 9 and that each reprinting paper sheet is separated from the adjacent sheets by a narrow vertical air space in which the vapors arising from the trough 9 may enter to penetrate the reprinting paper sheets and moisten the same. In the embodiment of the invention as shown in the Figs. 5 and 6 a greater number of paper sheets can be suspended in the container, owing to the use of the pointed pins 14, but greater care has to be exercised in arranging the paper sheets on the pins 14, so that there is always an air space between each two adjacent sheets.

The upper end of the rear wall 5 of the container may be provided with apertured lugs 15 so that the humidifier may be suspended from hooks or nails on a wall or the like.

If desired, there may be provided a thermometer 22 and a humidistat 23 which indicate the temperature and relative humidity respectively within the container.

What I claim as my invention is:

1. A humidifier for reprinting paper comprising a box-shaped container, a cover forming the front wall of said container, horizontal rods within said container, detachable clips for suspending reprinting paper sheets severally on said rods, and a removable water trough within said container and below the reprinting paper sheets when the same are suspended within the container for storing and evaporating water.

2. A humidifier for reprinting paper comprising a box-shaped container, a cover for said container, horizontally spaced and pointed pins within said container adapted to pierce reprinting paper sheets at a number of spaced places for supporting the same in a vertically suspended position within said container, and means within said container for storing water and permit evaporation of the same.

3. A humidifier for reprinting paper comprising a box-shaped container, a cover for said container and forming the front wall of the same, means in the upper portion of said container for suspending a plurality of reprinting paper sheets severally in spaced and parallel relation, a removable water trough in the lower portion of said container, and means for electrically heating said water trough.

4. A humidifier for reprinting paper comprising a box-shaped container, a pivoted cover for said container and forming the front wall of the same, means in the upper portion of said container for suspending a plurality of reprinting paper sheets severally in spaced and parallel relation, a removable water trough in the lower portion of said container and an electrical heating element extending along the bottom of said water trough.

5. A humidifier for reprinting paper comprising a box-shaped container, a slidable cover for said container and forming the front wall of the same, means in the upper portion of said container for suspending a plurality of reprinting paper sheets severally in spaced and parallel relation, a removable water trough provided with a recessed bottom in the lower portion of said container and an electrical heating element in said recessed bottom.

6. A self-contained humidifier for reprinting paper, comprising a container in the shape of a wall cabinet, means for mounting said container on a wall, a cover for said container and forming the front wall of the same, a plurality of spaced and horizontally arranged longitudinal members mounted in the upper portion of said container for suspending thereon in parallel and spaced relation a plurality of reprinting paper sheets, and a removable water trough in the lower portion of said container.

7. A humidifier for reprinting paper, comprising a container in the shape of a wall cabinet, means attached to said container for mounting it on a wall, a hinged cover for said container and forming the front wall of the same, a plurality of horizontally spaced and horizontally arranged longitudinal members mounted in the upper portion of said container for suspending thereon in parallel and spaced relation a plurality of reprinting sheets, each sheet being suspended from at least two suspension points, and a removable water trough provided with an electrical heating element on its bottom in the lower portion of said container.

EDMUND NESTLER.