The present invention relates to a combined rapid drier and stretcher for curtains, blankets and similar articles and to the method of drying and stretching such articles, and aims to provide certain improvements therein.

Devices heretofore employed for drying and stretching articles of the character described are all of large size, require considerable time for applying, drying and removing the articles therefrom, usually leaving the edges thereof scalloped and irregular, and are objectionable from many other angles. Certain of said devices employ steam under high pressure as the heating medium, thus necessitating the services of a licensed engineer and thereby rendering their operation and maintenance very costly.

According to the present invention, I provide a device of the class described which overcomes practically every objection to the devices heretofore employed. My device is electrically heated; it is extremely simple in construction and highly efficient in operation; it can be manipulated by any laundress or unskilled worker, and it is relatively inexpensive both in its initial cost and maintenance.

According to my present invention, the device consists of an elongated housing provided with electric heating units for maintaining the interior of the housing at predetermined temperatures, means for deflecting the heat from the heating units around the sides of the housing, a perforated drum upon which the article to be dried and stretched can be quickly mounted and removed, means constituting an adjustable frame for accommodating and stretching articles of various dimensions, and means for distributing and forcing the heated air outwardly through the openings in the drum into contact with the article mounted thereon.

The invention also embodies the method of drying and stretching articles of the class described, as well as other features of novelty which will be hereinafter more fully described.

A preferred embodiment of my invention is disclosed in the accompanying drawings, wherein:

Figure 1 is a front elevation of the device of my invention, the front of the casing being removed and the lower half of the device being shown in longitudinal section.

Fig. 2 is a section taken substantially along the line 2—2 of Fig. 1.

Fig. 3 is a transverse section taken substantially along the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the circumferentially extending adjusting means.

Fig. 5 is a perspective view of the longitudinal extending adjusting means.

Referring to the drawings, in the several figures of which like reference characters are employed to designate the same parts, let A indicate a horizontally disposed, elongated housing within which is mounted a drum B, a plurality of heating elements C, a reflector D, a pair of fans E, E, and baffles F, F.

The housing A is preferably of substantially cylindrical contour with flat end walls α, α, each of which is formed with a central opening within which is mounted the fans E, E. The housing is supported upon a base α' and is provided with a false bottom α'' in spaced relation thereto for a purpose which will presently appear. The housing at its front is preferably formed with a hinged door α which opens downwardly into substantially horizontal position, as best shown in Fig. 2, to provide access to the drum B, said door in open position serving as a supporting table for the curtain or other article while being applied and removed from the drum. A similar door may be provided at the rear of the housing and in cooperation with the front door serve for gaining access to the interior of the housing when necessary.

The drum B is also preferably of cylindrical contour and is mounted for rotation within the housing in spaced relation to the walls thereof. To accomplish this the drum is provided at each of its ends with a spider β, which spiders support a shaft β' which in turn is mounted in suitable bearings G disposed within the housing. As herein shown these bearings rest upon the base of the housing in proximity to the end walls thereof.

The body or cylindrical wall of the drum B may be formed of wire mesh, netting, grill, lattice or perforated material of any kind whatsoever, all of which substances are such as will permit the free passage of air under pressure therethrough. These various drum body substances may be grouped under the generic term of foraminated material. For lending rigidity to the drum its ends may be reinforced with hoops β'.
The drum B is intended for having mounted thereon the articles to be dried and stretched, such as curtains. In order to secure said articles thereon suitable means are provided, and as herein shown these means are in the nature of circumferentially and longitudinally extending elements at least one of which are adjustable on the drum. More specifically, these means consist of circumferentially extending members H, H', the former two of which are fixed adjacent the ends of the drum and the latter of which is slidable and adjustable longitudinally of the drum, and longitudinally extending elements J and J', the former of which is fixed upon the drum and the latter of which is removably adjustable upon the drum. Each of these elements H, H', J and J' are provided on their top surfaces with standard file carding. To provide for the slidable and adjustable engagement of the member H' upon the drum said member carries a hook-like element b' in laterally spaced relation thereto, which element is provided on its inner circumference with spaced inwardly projecting lugs b" which are slidable in grooves or tracks b' extending longitudinally of the drum. Preferably the frictional engagement between the lugs b" and the grooves b' is sufficient to hold the element H' in any adjustable position upon the drum. Where the hoop b' extends over the element J it is provided with an offset portion b". For adjusting the element J' upon the drum one end is offset as shown at j and provided with a groove j' and the other end is provided with a hook-like element j". To secure the element J' upon the drum the groove j' is engaged under the intersection of one of the longitudinally, and one of the circumferentially extending wires of the wire mesh or grille adjacent one of the elements H, and the end j seated under said element H. The hook j" at the other end is then engaged around the reinforcing hoop b" at the other end of the drum. If found necessary the hoops b" may be provided with any preferred form of guiding means for insuring the proper positioning of the member J'.

The electric heating elements C may be of any standard construction and any number may be employed depending upon the temperature it is desired to obtain within the housing. These heating elements C are preferably positioned between the false bottom a' of the housing and the drum B, and as herein shown they may be mounted on the underside of the deflector D, which is mounted in spaced relation to the false bottom a'' through the medium of supports d, d. The deflector D is preferably arcuate in transverse cross section and of substantially the same radius as the housing so that it will deflect the heat from the elements C upwardly around the opposite sides of the housing.

In order to prevent undue heating of the floor underneath the device due to the heat produced therein, I line the false bottom a' with a sheet of asbestos a" and provide the walls of the housing between the false bottom and the base with a plurality of spaced openings a'c.

To insure a proper circulation of the heated air and the passage thereof through the openings in the drum and the curtain or similar material mounted upon said drum from the interior thereof, outwardly, the fans E, E' are so mounted as to operate in opposition to one another. To accomplish this said fans are mounted upon a common axis which is coincident with the shaft b'. To further insure the proper circulation of the air, baffles F, F' are provided and positioned between the ends of the drum and the planes of the fans. These baffles, as shown, are supported from the inner walls of the housing by suitable brackets f.

In the use of the machine, for example, for drying and stretching a curtain the interior of the housing is first heated by the elements C. When sufficiently warm the door a' is opened to the position shown in Fig. 2 and the damper curtain K placed thereon. The adjustable element H' is then set in spaced relation to an end element H corresponding to the width of the curtain. The top edge of the curtain is then placed upon the file carding of the securing means J and held in contact therewith by being brushed thereagainst. The longitudinal edges of the curtain are then brushed over the file carding upon the elements H and H', the drum B being rotated in the direction of the arrow as the curtain is progressively removed upon said drum. When the lower edge of the curtain is reached the adjustable securing means J' is mounted upon the drum and the lower edge of the curtain brushed over the file carding on said member J'. The curtain is now in stretched condition upon the drum ready for drying. The door a' is closed and the electric fans set in operation. These fans blowing in opposition, force the heated air from the interior of the drum substantially radially outwardly through the openings in the drum and through the curtain on the drum, which air then passes along the space between the drum and the housing toward the opposite ends thereof and down behind the baffles F to again be acted upon by the fans. To remove the curtain from the drum it is merely necessary to lift it off from the file carding as the drum is rotated. A curtain stretched on the device hereinbefore described will be found to be free from scalloped edges and other irregularities and will be ready for rehanging. I have found in practice that a curtain can be completely dried and stretched in less than five minutes.
While I have shown and described a preferred embodiment of my invention, I do not wish to be limited to the specific details of construction herein disclosed, since the same are only illustrative of the principle and the mode of operation thereof and various modifications may therefore be resorted to without departing from the spirit of my invention.

What I claim is:

1. A device of the character described comprising a housing having a substantially cylindrical portion, a rotatable foraminated drum supported in said housing in spaced relation to the walls thereof, means for mounting an article to be dried on said drum and means for producing a continuous circulation of air within the housing through the openings in the drum, then through the space between the drum and the housing, around the ends of the drum into the drum and out again through the openings in the drum to the space between the drum and the housing.

2. A device of the character described comprising a housing having a substantially cylindrical portion, a rotatable drum coaxially supported in said housing in spaced relation to the walls thereof, heating means mounted between the housing and the drum in spaced relation to both at the bottom of the housing and an arcuate deflector of substantially the same radius as the housing disposed between the heated means and the drum for deflecting the heat from the bottom of the housing upwardly along the sides thereof.

3. A device of the character described comprising a housing having a substantially cylindrical portion, a substantially cylindrical foraminated drum supported in said housing in spaced relation to the walls thereof, heating means mounted in the space between the drum and the housing, and a pair of fans at the opposite ends of the housing mounted substantially on the axis of the drum and adapted to operate in opposition to each other to provide a circulation of heated air through the drum, outwardly through its openings and then through the space between the drum and the housing back into the drum.

4. A device of the character described comprising a housing having a substantially cylindrical portion, a substantially cylindrical foraminated drum supported in said housing in spaced relation to the walls thereof, heating means mounted within the housing, a pair of fans at the opposite ends of the housing mounted substantially on the axis of the drum and adapted to operate in opposition to each other and a baffle extending at a right angle to the axis of the drum disposed between each end of the drum and the end of the housing and extending between the plane of the fan and the end of the drum.

5. A device of the character described comprising a substantially longitudinally disposed cylindrical housing formed of rigid material, a rotatable drum supported in said housing in spaced relation to the walls thereof, means for mounting an article to be dried upon said drum, and said housing having a hinged door at its front which opens downwardly into substantially horizontal open position to provide access to the drum and to serve as a supporting table for the article while being applied to and removed from the drum.

6. A device of the character described comprising a housing, a foraminated drum supported in said housing in spaced relation to the walls thereof, a pair of fans at the ends of the housing mounted substantially on the axis of the drum and adapted to operate in opposition to each other and a baffle extending at a right angle to the axis of the drum disposed between each end of the drum and the end of the housing between the plane of the fan and the end of the drum, said baffles being open at their center and having an outer diameter substantially equal to the diameter of the drum.

7. A device of the character described comprising a housing, a foraminated drum supported in said housing in spaced relation to the walls thereof, a pair of fans at the ends of the housing mounted substantially on the axis of the drum and adapted to operate in opposition to each other and a baffle extending at a right angle to the axis of the drum disposed between each end of the drum and the end of the housing between the plane of the fan and the end of the drum, said baffles having an outer diameter substantially equal to the diameter of the drum and a central opening with a radius substantially equal to the length of the fan blades.

In witness whereof, I have hereunto signed my name.

ROBT. C. JONES.