March 15, 1966 R. R. KENREICH ETAL 3,239,947

FABRIC DRYER

Filed June 13, 1962

Fig. 1.

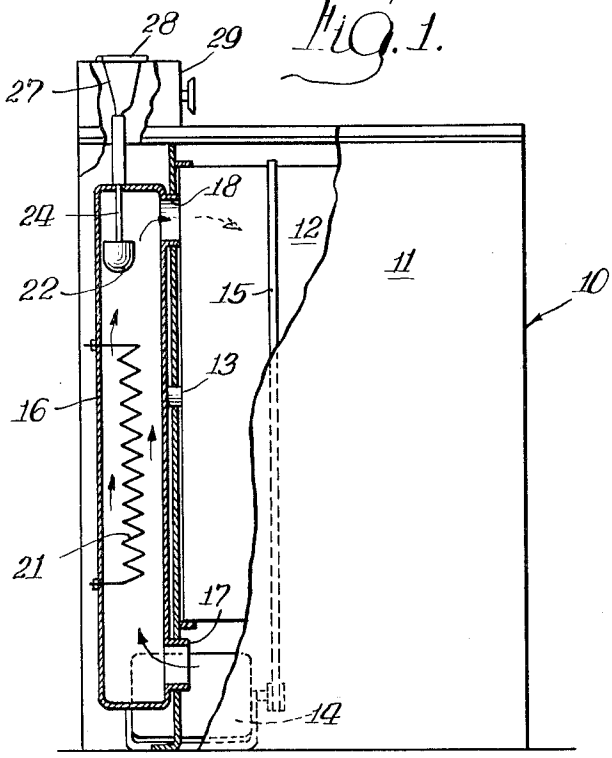
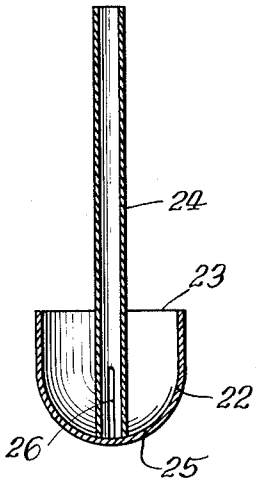


Fig. 3.



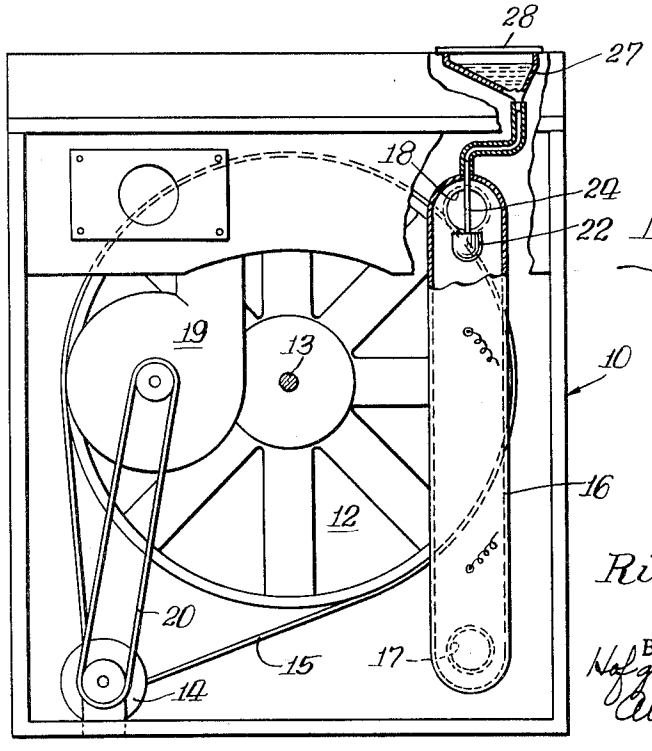


Fig. 2.

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FABRIC DRYER

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This invention relates to a fabric bleaching apparatus and method for use in a fabric dryer such as a clothes dryer.

Many types of clothes dryers, particularly for household use, have a fabric receiving container or section usually a rotatable drum, a heated air passage means including this receiving container and a passage section exteriorly of the receiving container with an exit leading to the receiving container and an entrance leading from the receiving container. This provides a path for circulating the heated air and also for heating the air in an area exteriorly of the fabric receiving container.

One of the features of this invention is to provide a fabric bleaching apparatus comprising a receptacle for a volatile treating material heated by air in the air passage with the receptacle having a vapor outlet leading to the air passage means so that the volatilized bleach material is passed into the circulating heated air stream with the result that the fabric is bleached at the same time it is dried.

Other features and advantages of the invention will be apparent from the following description of one embodiment thereof taken in conjunction with the accompanying drawings. Of the drawings:

FIGURE 1 is a fragmentary side elevational view of a household fabric or clothes dryer embodying the invention with portions broken away and in section for clarity of illustration.

FIGURE 2 is a rear elevational view of the dryer of FIGURE 1 with portions broken away and in section.

FIGURE 3 is an enlarged longitudinal sectional elevation of a detail of the apparatus.

In the illustrated embodiment the clothes dryer **10** includes an outer cabinet **11** and a rotatable drum or container **12** within the cabinet. This drum is rotated about a horizontal axis **13** by an electric motor **14** which rotates the drum through the usual belt **15**.

Within the cabinet **11** opposite one vertical end of the drum **12** there is provided an air passage section or duct **16** having a bottom air inlet **17** leading from the space within the cabinet **11** exteriorly of the drum **12** and a heated air outlet **18** communicating with the interior of the drum. As the drum **12** is perforated there is thus provided an air circuit including the interior of the drum **12**, the space between the exterior of the drum and the cabinet **11**, the air duct **16** and back to the interior of the drum **12**. Air is circulated through this circuit by means of a blower **19** also operated by the motor **14** through a belt drive **20**.

As is customary in dryers of this type, any desired means can be used to heat the air in the dryer and this heating means may be operated in conjunction with the air duct **16**. The usual heating means is either household gas or electric power. In the embodiment shown, the heating means is an electric resistance heater **21** located in the passage **16** at about the center thereof.

In order to bleach the clothes within the dryer at the same time they are being dried, the apparatus of this invention is provided. In the embodiment shown it includes a receiving cup **22** positioned in the air duct **16** above the heater **21** with the cup having an open top **23** and an upwardly extending tube **24** extending from the bottom **25** of the cup. This tube **24** at its end is

provided with a pair of upwardly extending slots **26** so that liquid flowing down the tube **24** can pass out the slots **26** into the cup **25**. The upper end of the tube **24** extends into a funnel shaped dispenser **27** having a lid **28** thereon. This dispenser is located behind the usual control panel **29** at the top rear of the dryer.

This disclosed fabric treating apparatus is particularly useful for bleaching clothes within the dryer by means of a volatile oxygen containing bleach. One such liquid bleach that has been found eminently suitable is the ordinary hydrogen peroxide sold by drugstores. When the solution is fed into the cup **22** by way of the tube **24** and dispenser **27** the heat from the heater **21** volatilizes or breaks down the hydrogen peroxide so that oxygen is liberated for bleaching the clothes within the dryer. Ordinarily, oxygen bleaches require temperatures above 140° F. to do an effective bleaching job. Clothes dryers provide this required elevated temperature since dryers normally operate in the 160° F. to 180° F. range. Also, clothes dryers are particularly adaptable to oxygen bleaching because the moisture in the fabrics to be dried assists in the uniform migration, by capillary action, and absorption of the bleach throughout the fabrics to do an effective bleaching job. It is obvious, however, that any volatile oxygen bleaching material such as a perborate may be used so long as it volatilizes or sublimes at the drying temperature.

While the disclosed invention is directed to and is particularly unique to bleaching with oxygen bleaches in clothes dryers, it is recognized that other selected materials may be volatilized in a similar manner for purposes of disinfecting, deodorizing, waterproofing, perfuming, sanitizing, mothproofing, etc. In such latter fabric treating operations, the treating operation may be performed in an air fluff cycle when no heat is required or desired.

Having described our invention as related to the embodiment shown in the accompanying drawings, it is our intention that the invention be not limited by any of the details of description, unless otherwise specified, but rather be construed broadly within its spirit and scope as set out in the accompanying claims.

The embodiment of the invention in which an exclusive property or privilege is claimed is defined as follows:

1. A fabric drying means comprising: a fabric receiving container for fabrics to be treated; means for rotating said fabric receiving container; air passage means communicating with said fabric receiving container; air translation means for circulating an air stream through said air passage means into said container; means for heating said air stream in said air passage means; and a fabric treating apparatus including fixed receptacle means for receiving fabric treating material and positioned in said air passage means to have substantially the entire air stream flow against the receptacle means, said receptacle means being heated by said heated air to vaporize said fabric treating material therein, and vapor outlet means in said receptacle means for allowing vaporized treating material to escape from said receptacle means to said air stream at substantially the maximum temperature of the air stream for subsequent delivery into different portions of the fabric receiving container as it rotates or substantially uniform deposition on said fabrics and absorption thereby for treatment thereof.

2. The fabric dryer of claim **1** wherein said receptacle means is spaced closely above said air stream heating means in said air passage means.

3. The apparatus of claim **1** wherein the fabric treating material is an oxygen bleach preselected to form nascent oxygen at the temperature of the heated air.

4. The apparatus of claim **1** wherein the fabric treat-

ing material comprises an oxygen bleach and the heat of said heated air further breaks down the vaporized oxygen bleach to release the oxygen in said bleach to effect the bleaching of said fabrics in said container.

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