United States Patent [19]

Bell

[11] **3,834,530**

[45] **Sept. 10, 1974**

[54] **PERMANENT WAVE HAIR ROLLER WASHER**

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[22] Filed: **Nov. 7, 1972**

[21] Appl. No.: **304,405**

[52] **U.S. Cl.** **209/3,** 209/10, 209/135, 209/152, 134/104

[51] **Int. Cl.** **B07b 4/06**

[58] **Field of Search** 209/152, 473, 134, 135, 209/3, 10; 134/104, 120

[56] **References Cited**

UNITED STATES PATENTS

883,278	3/1908	Belt	209/152
1,518,031	12/1924	Waterman	209/152
1,581,240	4/1926	Stebbins	209/152
1,673,848	6/1928	Stebbins	209/152
2,600,837	6/1952	Boyer	209/3 X
3,620,369	11/1971	Steen et al.	209/3

Primary Examiner—Frank W. Lutter
Assistant Examiner—Ralph J. Hill

[57] **ABSTRACT**

An apparatus for washing permanent wave hair rollers and method for using same wherein prior to washing said rollers wave solution saturated papers are removed therefrom in the washer which is in the form of a rotating drum through which a blast of air is forced. Baffles cause the curlers to fall into the air stream so that the curlers' papers are driven into an exhaust cannister.

4 Claims, 3 Drawing Figures

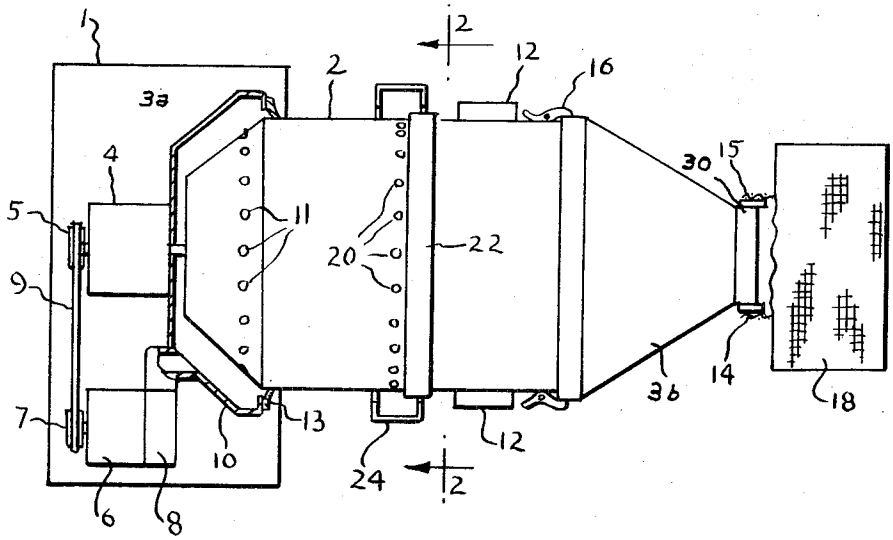
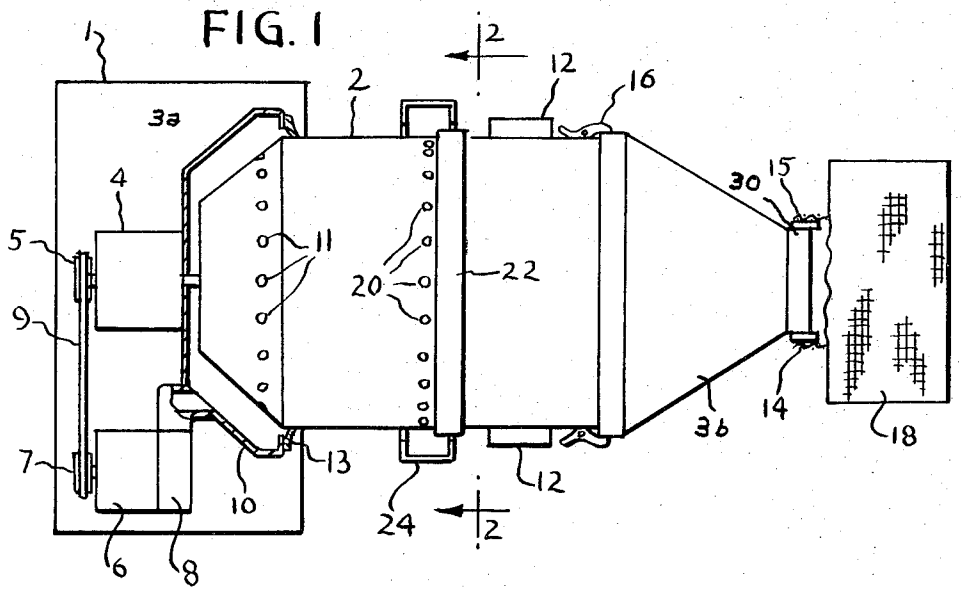


FIG. 1



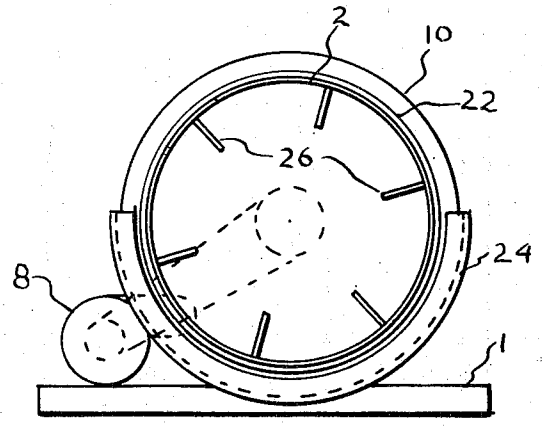


FIG. 2

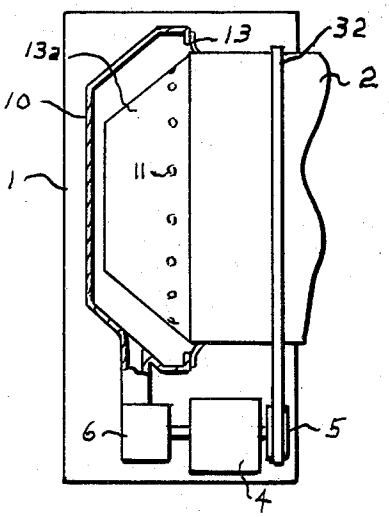


FIG. 3

PERMANENT WAVE HAIR ROLLER WASHER

BACKGROUND OF THE INVENTION

In permanent waving a number of strands of hair are wrapped in a small permanent wave paper which in turn is rolled around a hair roller. One of the less desirable tasks in a beauty shop is that of washing these permanent wave rollers. Generally when the rollers are removed from the hair the permanent wave curler papers cling to them. The papers must then be pulled off one or a few at a time, by hand, before the curlers can be washed. For this reason it is common practice to have a large supply of curlers or hair rollers, to be washed at some later time. By then the permanent wave papers have dried, stiffened, and become even more stuck to the rollers. The chore of washing permanent wave rollers is even more undesirable. There is, therefore, a need for an apparatus which eliminates this job.

Washers for eggs and other articles are the subject of such U.S. Pat. Nos. 2,966,159, 3,031,363 and 2,770,123. However, the apparatus described in those patents does not provide a means for separating the permanent wave papers from the hair rollers being washed. In accordance with this invention an apparatus is provided which includes means for separating permanent wave papers from the hair rollers, desirably before the curlers are washed.

SUMMARY OF THE INVENTION

The apparatus herein for separating permanent wave papers from curlers entwined therewith includes a tubular rotatable drum. This drum has a hollow center portion, an air inlet end and an air exhaust end. The drum is provided with means for inserting permanent wave curlers along with their papers in its hollow inside portion. Means are included for admitting forced air into the air inlet end of said drum and for exhausting air from the air exhaust end of the drum, after an air stream has passed therethrough. The drum is rotated while forcing said air stream through the drum. Baffle means in the hollow inside portion of the drum are disposed to disperse curlers and permanent wave papers in said forced air stream during drum rotation. A porous catch vessel removably attached over the air exhaust end of the drum catches permanent wave papers carried out of the exhaust end by said forced air stream.

DETAILED DESCRIPTION OF THE INVENTION

In my copending applications (Ser. No. 304,403, filed Nov. 7, 1972) and (Ser. No. 304,404, filed Nov. 7, 1972) permanent wave curler washers are described which include means for automatically lifting wet permanent wave papers out of a wash solution. In accordance with the practice of this invention an apparatus is provided for blowing the permanent wave papers from dry curlers which are subsequently washed either in the same apparatus or in a separate vessel.

The apparatus and its operation can, perhaps, be better understood from the following description which is in terms of the accompanying drawing.

FIG. **1** is a top view of one embodiment of the invention.

FIG. **2** is a cross-sectional view taken along **2—2** of FIG. **1.**

FIG. **3** is a partial view of still another form of the invention.

Referring now to the drawings, washer drum **2** is in the form of a cylinder having tapered ends **3***a* and **3***b*, resembling truncated cones. As is apparent from FIG. **2,** drum **2** is hollow, and is provided with radial baffles **26** integral with the inside surface of the drum and extending inwardly toward the axis of the drum. Drum **2** is supported on frame **1** in such a way that it is capable of rotation. This is best accomplished by rollers **12** and motor **4.** Frame **1** is bifurcated so that the periphery of drum **2** extends between its two arms. Rollers **12** are mounted in these arms (not shown). Drum **2** lies on these two rollers, and hence can be rolled thereon. The drum is further supported by the shaft of motor **4** which is also mounted on frame **1.**

It will be noted that motor **4** is the type having a double shaft. One shaft effects the rotation of drum **2** as described. The other shaft carries pulley drive wheel **5** which through belt **9** and driven pulley wheel **7** operates blower **6** which provides the forced air for the apparatus. If desired, heater **8** can be incorporated in fan **6** to dry any permanent wave papers which may still be moist.

To convey the forced air to the air inlet end **3***a* of drum **2** a stationary chute or bonnet **10** is connected to forced air fan **6.** The bonnet fits slidably around the outside of end **3***a* through sealing means **13** permitting drum **2** to rotate within the bonnet. Truncated conical drum end **3***a* is provided with peripheral openings **11** to admit the forced air from chute **10** to the inside of drum **2.**

We now refer to air exhaust end **3***b*. This truncated conical end terminates in sleeve **30** adapted to receive screen canister **18** or similar catch vessel so perforated that exhausted forced air is emitted therethrough. Canister **18** is fabricated with a tubular inlet **15** which snaps or otherwise snugly fits on sleeve **30.** Air exhaust end **3***b* is also removably attached to drum **2** being held on the drum by latch means **16.** Exhaust end **3***b* can thus be removed with or without canister **18** being attached thereto. The removal of this end permits entry into the rotating drum for inserting or removing permanent wave curlers.

The operation of the apparatus of this invention will now be considered. Air exhaust end **3***b* is removed by releasing latches **16,** and permanent wave curlers along with permanent wave papers intermingled therewith are inserted in the unit. By suitable switch means in an electrical circuit (not shown) motor **4** is actuated. As a consequence, drum **2,** rolling on rollers **12,** begins rotating. Concomitant with this drum rotation fan **6** is actuated by drive wheel **5** acting on driven wheel **7** through belt **9.** This forces air through drum **2** from air inlet end **3***a* through air exhaust end **3***b*.

During drum rotation baffles **26** lift curlers and permanent papers and tumble them into forced air stream passing through rotating drum **2.** Fan **6** forces air through the drum with sufficient velocity to drive curler papers, tumbled into the forced air stream by baffles **17,** through exhaust outlet and into catch vessel **18.** This canister is fabricated of a screen material so that the forced air escapes therefrom after permanent wave papers collect on the canister walls.

The curlers, now separated from their permanent wave papers, are ready to be washed. They can either be removed to a sink or other vessel, or, in the embodi-

ment shown in FIG. **1**, washed in the unit. Water is admitted by a coupling connection, not shown, or through exhaust end **3***b*, by removing canister **18**. Rotation of the drum is then begun, to tumble the curlers in the wash water. After the curlers are cleansed slip ring **22** is moved off of drain holes **20** so that the wash water flows out through drain **24** (FIG. **2**) beneath the drain holes.

Given the teachings of this invention modifications and variations will occur to those skilled in the art. As an example, different drive means can be employed as shown in FIG. **3**. Motor **4** and drive wheel **5** can be used to drive a belt **32** which surrounds drum **2**. Various other washing means will also occur to those skilled in the art. Thus after removal of the papers the curlers can be moved into canister **18**, and the canister placed in a spray or steam of running water. These and other ramifications are deemed to be within the scope of this invention.

What is claimed is:

1. In the washing of permanent wave curlers having permanent wave papers entwined therewith the process for separating the permanent wave papers from the curlers comprising inserting the permanent wave curlers along with their papers into a tumbling zone, forcing an air stream through said zone, tumbling the curlers and papers into said air stream to disperse curlers and permanent wave papers in the air stream, driving the permanent wave papers out of the tumbling zone, collecting the permanent wave papers in an exhaust zone, and subsequently washing said curlers while in said tumbling zone.

2. Apparatus for separating permanent wave papers from curlers entwined therewith comprising a supporting frame; a tubular rotatable drum carried thereby, having a hollow center portion, an air inlet end, and an air exhaust end; means for inserting permanent wave curlers along with their papers, in the hollow inside portion of the rotatable drum; means for admitting forced air into the air inlet end of said drum; means for exhausting air from the air exhaust end of the drum after an air stream has passed therethrough; means for rotating said drum while forcing said air stream through the drum; baffle means in the hollow inside portion of said drum, disposed to disperse curlers and permanent wave papers in said forced air stream during drum rotation; a porous catch vessel removably attached over the air exhaust end of the drum to catch permanent wave papers carried out of the exhaust end by said forced air stream; and means for admitting a wash solution into the hollow portion of the rotatable drum and drain means therefor.

3. The apparatus of claim **2** wherein the catch vessel is a closed wire drum having an open end adapted to fit over the exhaust end of the drum.

4. The apparatus of claim **2** wherein the drum rests on rollers carried by the supporting frame, wherein the means for rotating the tubular drum is a motor with a double drive shaft, one drive shaft being coupled to the rotatable drum, the other shaft being coupled to an air blower which in turn is connected through a chute to the air inlet end of said drum.

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