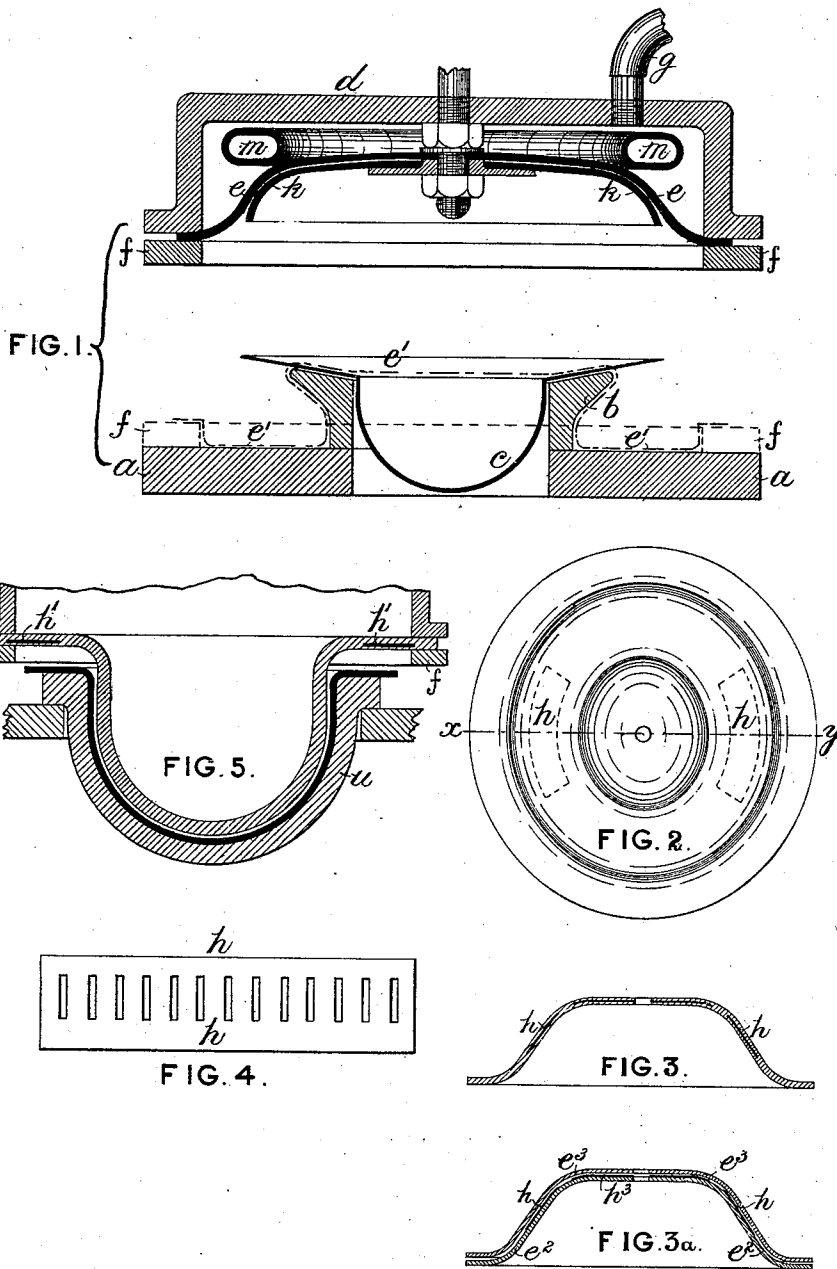


(No Model.)

W. H. BLACKWELL.
APPARATUS FOR CURLING HAT BRIMS.

No. 565,956.

Patented Aug. 18, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY BLACKWELL, OF GUIDE BRIDGE, ENGLAND.

APPARATUS FOR CURLING HAT-BRIMS.

SPECIFICATION forming part of Letters Patent No. 565,956, dated August 18, 1896.

Application filed December 31, 1895. Serial No. 573,862. (No model.) Patented in England November 22, 1894, No. 22,584, and in Austria May 27, 1895, No. 45/2,501.

To all whom it may concern:

Be it known that I, WILLIAM HENRY BLACKWELL, a subject of the Queen of Great Britain and Ireland, and a resident of 24 Manor Street, Guide Bridge, county of Lancaster, England, have invented certain Improvements in Apparatus Used in the Manufacture of Hats, (for which I have obtained a British patent, No. 22,584, dated November 22, 1894, and an Austrian patent, No. 45/2,501, dated May 27, 1895,) of which the following is a specification.

My said invention has for its object certain improvements in the india-rubber bags and appliances used in combination therewith in the presses in which hats are placed in or on a mold or shape and subjected to the pressure of water contained in a bag for the purpose of pressing the body of the hat and for shaping and curling the brim.

Reference is hereinafter made to the accompanying drawings, which are to be understood as forming part of the present description.

In the said drawings, Figure 1 represents a vertical central section of a press and mold embodying my invention for curling the brim of a felt hat. Fig. 2 represents a plan view of the curling-bag used in and forming part of the same. Fig. 3 represents a section on the line xy of Fig. 2. Fig. 3^a is a section similar to that of Fig. 3, but taken through the bag before it is finished by pressing the layers into one. Fig. 4 represents in elevation an enlarged detail view of one of the leather strengthening-strips embodied sometimes in said bag; and Fig. 5 represents a central vertical section of a modified form of mold in which the bag is used for pressing the entire hat and provided with strengthening-strips at the points exposed to wear, in accordance with my invention.

Resting on a table a is a mold or shape b , on which the hat c is laid. The cover d of the press is hollow and is closed by a rubber bag e , securely held to the cover by a ring f . When the cover d is clamped to the table a , water under pressure is admitted through a pipe g . The water-pressure causes the rubber bag e to descend and to expand so as to assume the shape indicated by the dotted

line e' , and the edges of the hat-brim are thereby forced to curl under.

Owing to the great and irregular stretching of the india-rubber at certain places, as, for instance, where the bag curls under the edges of the mold b , the bags soon burst or tear at such places and become useless, although the rest of the bag remains perfectly sound. The object of one part of my said invention is to provide against this evil by inserting at certain points only in the india-rubber bag layers or strips h of wire-gauze, leather, or other suitable strengthening material. Such insertions are made just at the points where the destructive action is most operative, and by being inserted nowhere else the elasticity of the rubber between such insertions is not interfered with.

I first put on the lower rubber part of the bag e^2 the insertion h , and also at h^3 at the top part. I then cover the same with a covering part of rubber e^3 . The whole is then vulcanized together to form a solid mass.

When leather is used, the layer thereof is preferably slit, as shown in Fig. 4. The slits not only contribute to the flexibility of the bag, but by allowing the rubber to pass through in the process of vulcanizing help to more securely hold the leather.

In some cases I use strips composed of plaited laces of leather.

My said invention is also in part applicable to protectors or hoods, such as k , Fig. 1, used in conjunction with a bag. In such case gauze or leather is locally inserted at the place where it is bent around the rim and also at the top or center, where it is attached to the press. Strengthening insertions of leather, wire-gauze, or other suitable material are placed in the flanges of the bags used for pressing the entire hat in a mold or dish u , (see Fig. 5,) where the bag descends between the edges of the dish and the securing-ring f . At this point I insert the strengthening layer h . The strengthenings may be placed only at the sides, as seen in Fig. 2, or may extend as an annular strip right around the bag.

Another part of my said invention relates to an appliance for facilitating the discharge of the water from the bag after pressing. For this purpose I insert a closed tubular ring m

(containing air) in the press-cover over the bag. On the water being admitted under great pressure the ring will collapse, owing to the contraction of the air. On the water-
5 pressure being released the air in the ring *m* will expand and aid in expelling the water from the bag.

Instead of wire-gauze, leather, stiff fabric, thin metal, or any other thin reinforcing ma-
10 terial suitable to the purpose may be inserted at the points of greatest strain.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A disk of rubber for use in a bag hat-
15 brim-curling machine, having inserted in its body at points between the center and the periphery reinforcing or strengthening strands of wire-gauze substantially as and for the pur-
pose set forth.

20 2. In combination with a hat-press com-

prising a closed receptacle embodying a rubber bag within the same and means for expanding the same by water, an air-tube *m* arranged in the said press behind the bag, the said air-tube being of flexible material and 25 normally filled and closed, in order that the pressure of the inflowing water may compress the air contained in the said tube and that the expansion of the air in said tube when the said pressure is withdrawn may expedite 30 the outflow of the water substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HENRY BLACKWELL.

Witnesses:

JOHN HALL,
JOSEPH BENTON.