

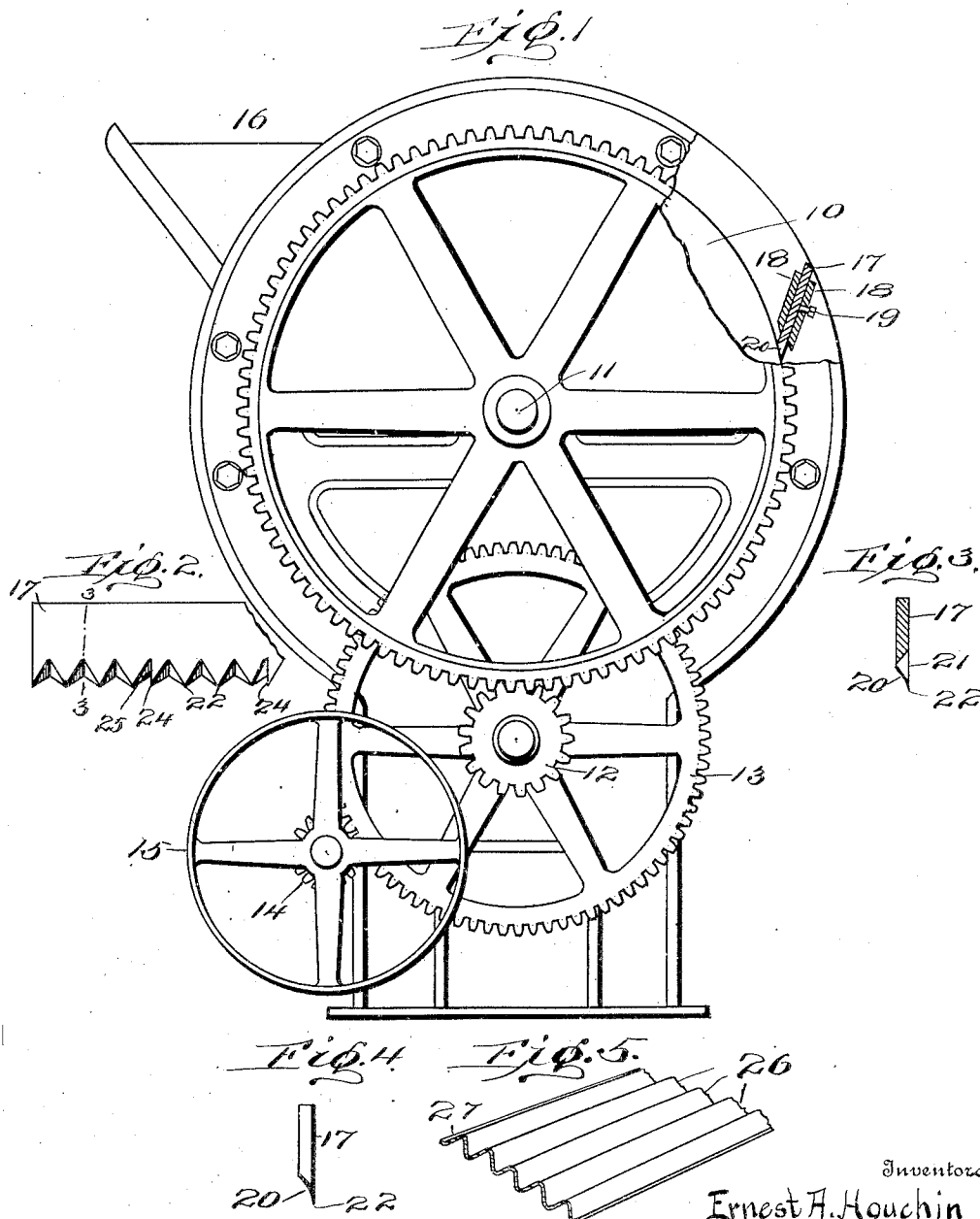
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E. A. HOUCHIN & A. HUBER.

PROCESS OF FORMING FLUTED SOAP SHEETS AND ARTICLES RESULTING THEREFROM.

APPLICATION FILED APR. 27, 1906.



Witnesses  
*J. M. Fowler*  
*Geo. L. M. Eathman*

Inventors  
Ernest A. Houchin  
and Anthony Huber  
By *Mason Fenwick & Lawrence*  
Attorneys

# UNITED STATES PATENT OFFICE.

ERNEST A. HOUCHIN AND ANTHONY HUBER, OF BROOKLYN, NEW YORK.

PROCESS OF FORMING FLUTED SOAP SHEETS AND ARTICLES RESULTING THEREFROM.

No. 850,003.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, ERNEST A. HOUCHIN and ANTHONY HUBER, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Processes of Forming Fluted Soap Sheets and Articles Resulting Therefrom; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the process of forming soap films into fluted sheets and the article resulting from the practice of such process.

The object of the invention is to remove the soap film from the soap-chilling cylinder in fluted strips; whereby the said strips may be subjected to the influence of the drying-air within the drying apparatus.

A further object of the invention is to provide a sheet of soap so fluted that in passing through the drying apparatus only the ridges of the corrugations will bear upon the conveyor-surface and whereby a circulation of air is permitted under and beneath the corrugated surface.

With these and other objects this invention consists in the several steps of the process, hereinafter described, together with the article resulting from the practice of such process.

In the drawings forming a part of this application is shown one of a large number of devices which may be employed in carrying into effect the present invention.

In the said drawings, in Figure 1 is shown in end elevation a conventional soap-chilling cylinder and a scraper in contact with the peripheral surface of said cylinder of a form to remove the soap film from the said cylinder in fluted sheets. Fig. 2 is a view in side elevation of a scraper shown in Fig. 1 as in contact with the cylinder and embodying one form of scraper which may be employed for fluting the said sheets. Fig. 3 is a transverse sectional view through the knife shown at Fig. 2, taken on line 3 3 of said figure. Fig. 4 is a view in end elevation of the knife shown at Fig. 2. Fig. 5 is a view in perspective of the sheet of soap resulting from the practice of this process.

While the process herein described may be carried out by the use of a large variety of

mechanical apparatus, the device shown in the drawings is found to be a desirable device for the purpose, wherein the several characters of reference indicate corresponding parts throughout the several views.

In carrying into effect the process forming the subject matter of this invention by means of the apparatus shown in the drawings the cylinder 10, mounted to rotate, as upon the shaft 11, and operated in any approved manner, as by the train of gears 12, 13, 14, and 15, is arranged to take up a film of liquid soap in any approved manner, as by rotating in a tank of such material or by means of the hopper 16, as shown. The cylinder 10 as it rotates and carries with it a film of soap chilled in the usual and approved manner comes in contact with the scraper 17, secured in any approved manner, as by the guides 18, set-screw 19, disposed at any approved angle to the periphery of the cylinder, preferably approximately forty-five degrees from a tangent to the surface.

In the apparatus shown the scraper 17 is formed with a beveled edge, as 20, struck on a curve conforming to the periphery of the cylinder in contact with which it is arranged to operate, as shown in Fig. 1. The edge formed by the bevel 20 is indented in any approved manner, as at 21, as by filing or milling, so that points 22 are formed with reversely-inclined chisel edges 23 in contact with the cylinder from the points 22 to the angle of the V-shaped indentation.

It is sometimes found desirable to produce narrow sheets of the fluted soap material, for which purpose the scraper is provided with means for splitting the soap film, and are here shown as the points 24 and the perpendicular edges 25.

The sheet of soap formed by the practice of this process comprises longitudinally-disposed corrugations 26, which in the use of the apparatus shown are formed by the points 22 first raising the soap film at the point of contact with the surface of the cylinder, the said film continuing to adhere to such cylinder at other points until raised therefrom by the inclined edges 23 and formed thereby into corrugations. The soap sheet is split, forming the longitudinal edges 27 substantially parallel with the corrugations 26, said splitting being performed by the edge 25, which being perpendicular to the surface of the cylinder cuts the sheet.

It will be obvious that while the apparatus

here shown is found desirable for carrying into effect this invention yet the sheets shown in Fig. 5 may be corrugated or fluted, as therein shown, by any other approved and convenient apparatus, the said apparatus forming no part of the present invention.

It is well-known that in the manufacture of hard soap a chilling-cylinder is used, and the film of soap is caused to adhere thereto by rotating the cylinder in a vessel containing liquid soap or by means of a hopper or other similar device in operative contact with the surface of the said cylinder, whereby a film of the liquid soap is taken up by the rotating cylinder, and by reason of the material from which such cylinder is formed or a cooling fluid contained therein the said film during the rotation of the said cylinder is cooled and hardened to a considerable extent. The film of soap is removed from the cylinder and dumped upon a conveyer-belt and by the said belt conveyed through the heating and drying oven or chamber, wherein the moisture of the soap film is evaporated and the film is discharged from the oven or drier containing but from ten to fifteen per cent. of moisture.

It has been found in practical operation that with the film of soap formed in a plain sheet the said sheets pile one upon another or their plain surfaces come into contact with some surface of the drying apparatus, whereby only one side of the film is exposed to the drying action of the air within the drying-chamber.

With the soap film fluted in accordance with the present invention the strength is greatly increased in accordance with the well-known principle, and the said film is supported upon the ridges of the corrugations, whereby nearly the entire surface of the film is exposed to the drying action with-

in the drier. In case of one film or sheet being discharged upon another the said corrugations will hold the two sheets of films in such relation to each other that the air may freely circulate between the said films and evaporate the aqueous contents.

What we claim is—

1. The herein-described process consisting in removing from a smooth surface a sheet of plastic material in the form of a plurality of strips corrugated longitudinally upon both sides.

2. The herein-described process consisting in removing from a smooth curved surface a sheet of plastic material in the form of a plurality of strips corrugated longitudinally upon both sides.

3. The herein-described process consisting in removing from a soap-chilling cylinder a film of plastic soap in the form of corrugated strips.

4. The herein-described process consisting in removing from the exterior surface of a soap-chilling cylinder a sheet of plastic soap in the form of strips corrugated longitudinally thereof.

5. The herein-described process consisting in removing from the exterior of a soap-chilling cylinder a sheet of plastic soap by means of a scraper arranged to produce longitudinal corrugations in said strips.

6. As an article of manufacture, a sheet of plastic soap formed into strips and with corrugations extending longitudinally of the strip.

In testimony whereof we affix our signatures in presence of two witnesses.

ERNEST A. HOUCHIN.  
ANTHONY HUBER.

Witnesses:

H. G. DISQUE,  
ARTHUR FALK.