

UNITED STATES PATENT OFFICE.

CHARLES WAGER HULL, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MANUFACTURE OF SOAP.

Specification forming part of Letters Patent No. 102,546, dated May 3, 1870.

To all whom it may concern:

Be it known that I, CHARLES WAGER HULL, of the city, county, and State of New York, have invented a new and Improved Soap and Process for Making the Same; and I hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable one skilled in the art to use said process in the manufacture of said article.

It is well known that soaps of different colors have been combined together in the same bar; but the shape and direction of the outlines of each color have hitherto been irregular and indeterminate, so that no two pieces were exactly alike in appearance. Variegated or mottled soap is made by mixing together melted soaps of different colors, a quantity of soap of one color being used as a base, into which soaps of other colors are poured, and by various means stirred, drawn, or spread through the mass, so that a section of the cooled material shows the colors distributed in irregular waves or curves. By this process there is no manner of controlling the design so as to secure similarity of appearance. The colors of castile-soap are due to chemical action, and cannot be arranged according to a fixed pattern.

My invention is of such nature that it can be fully explained without the aid of drawings; and it consists in a manufacture of soap wherein two or more soaps differing in kind, color, or perfume, or in either, any, or all of said qualities, are combined together in one bar or cake, the several different kinds or colors extending entirely through the bar or cake, and showing a well-defined design, capable of exact reproduction and changeable at will in the act of manufacture.

The process of making such soap consists in placing in a soap-mold displacement-pieces of such size and shape that the remaining space corresponds in the shape of its section to that of one of the kinds or colors desired in the finished bar or cake. This space is then filled with melted soap, which is allowed to cool, after which any desired number of the inserted pieces are removed, so as to leave an opening or openings in the cooled soap, or at the side thereof, of a sectional shape, which has previously been determined upon. This opening is then filled with melted soap of the desired kind or color, and of a sufficiently high tem-

perature to melt the surface of the cooler soap with which it comes in contact, and thereby, in cooling, join the two soaps firmly together. To insure the fusion of the hot soap with the cooled soap I sometimes roughen or corrugate such surfaces of the latter as come in contact with the heated soap by scratching or cutting those surfaces with a knife or sharp-pointed instrument. The smaller particles forming the roughened surface are more easily melted and the junction is made with greater ease and certainty than when the roughening is omitted. By withdrawing other pieces previously placed in the mold and filling the spaces as before still another kind or color of soap may be introduced; and in like manner any number of soaps of different kinds or colors may be united to form any desired pattern. When cooled, the compounded mass of soap is removed from the mold and cut across into bars or cakes, each of which is stamped with any desired device or characters.

The process may be varied by inserting in the mold prisms of soap of any desired kind or color, and then filling the remaining spaces with some different soap. The process is completed by cutting up and stamping the soap the same as before. Suppose, for instance, that it is desired to make an oval cake of soap with a yellow-colored border and a rose-colored center of diamond shape. To accomplish this I employ the ordinary soap-mold used in the manufacture of oval cakes, and which consists simply of a tube of oval section and closed at one end. Into this mold, and extending to the bottom thereof, I insert centrally a rod of diamond section, and then fill the mold with melted soap of a yellow color. After this soap has cooled, I withdraw the central rod, which leaves a diamond-shaped hole, into which I pour hot rose-colored soap, which melts the surface of the cooler soap with which it comes in contact, and the two soaps are, upon cooling, found to be united firmly together, the colors gradually blending into each other. After cooling, the whole mass of soap is, as before mentioned, removed from the mold and cut across into cakes of the desired thickness, which are afterward stamped in some ornamental shape. The same result may also be produced by forming a prism of rose-colored soap in a mold of diamond shape, and then

placing this prism in the oval mold in the place of the rod mentioned, and completing the process the same as before.

By inserting properly-shaped pieces into a mold a central figure may be made of any desired size or shape, or bands of different colors may be run in any direction across the finished bar, or the color may be arranged to form any desired pattern.

By this process soaps differing in kind, color, or perfume may be combined together in the same bar. For instance, part of the bar may be ordinary toilet-soap and the remainder may contain pumice-stone or sand. The color and perfume may both differ in the same bar, or the same perfume be used in soaps of different colors combined in one bar, or a different perfume be used in different parts of a bar of a uniform color.

In combining in the same cake soaps of different colors the best effect is produced in transparent soaps, but my invention is equally applicable to opaque soaps. In some cases the effect may be heightened, especially in transparent soaps, by cutting the mass of soap, after it comes from the mold, diagonally instead of directly across, or by so adjusting the displacement-pieces that the colors run diagonally through the cake of soap. When two or more soaps of different colors are joined together in the manner stated, the extent to which one color runs into and blends with the other depends upon the temperature of the soap which is last poured in. When the soap is simply melted and not very hot, the junction after cooling is in a distinct line, on which

the bars may be broken readily, which I take advantage of in making bars of soap which are ordinarily required to be broken up for use by combining the different colors in sections of nearly equal size. When the soap last poured in is very hot, the soap first introduced is melted to a greater extent, the junction is more firm, and the two colors are found, after cooling, to be beautifully blended for a distance depending on the difference of temperature.

I am aware that colored soap-figures have been suspended in a soap-mold and entirely surrounded by a transparent soap. My manufacture is distinctive from this, in that the colors extend entirely through the bar or cake from one side to the other, and consequently show not only when the bar is held up to the light, but at all times, and remain the same as the bar or cake is reduced in thickness by use.

I claim as new and desire to secure by Letters Patent—

1. The process of making soap substantially as herein specified.

2. The new article of manufacture of a bar or cake of soap composed of two or more parts differing in kind, color, or perfume, or in either of said qualities, the line of junction or contact between the different kinds, colors, or perfumes being definite and distinct, substantially as herein specified.

CHAS. WAGER HULL.

Witnesses:

CHAS. E. EMERY,
T. B. BEECHER.