

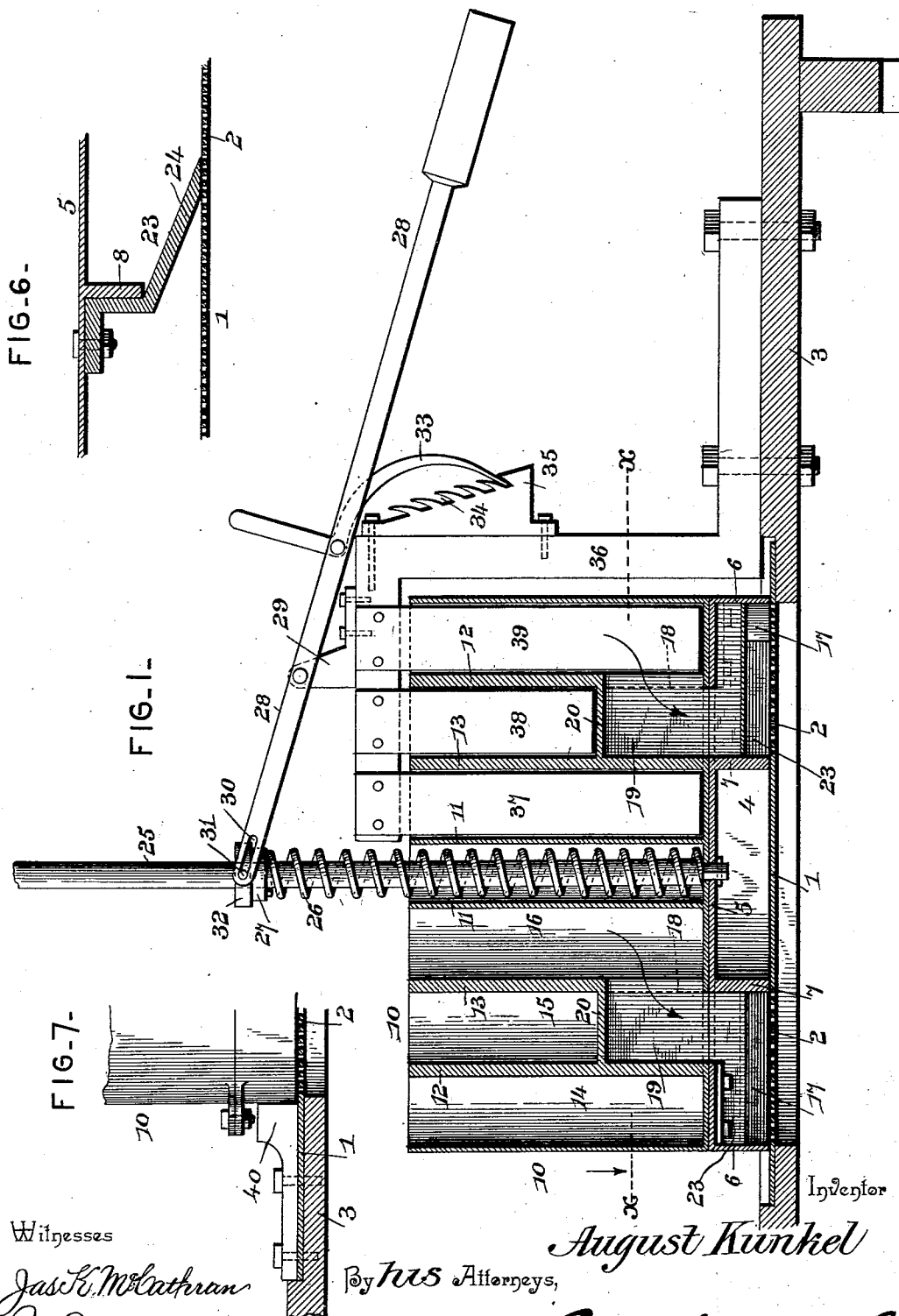
(No Model.)

3 Sheets—Sheet 1.

A. KUNKEL.
APPARATUS FOR MOTTLING SOAP.

No. 563,186.

Patented June 30, 1896.



Witnesses
Jas. E. McLathran
V. B. Willyard.

By *his* Attorneys,

August Kunkel

Chas. Snow & Co.

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FIG. 2.

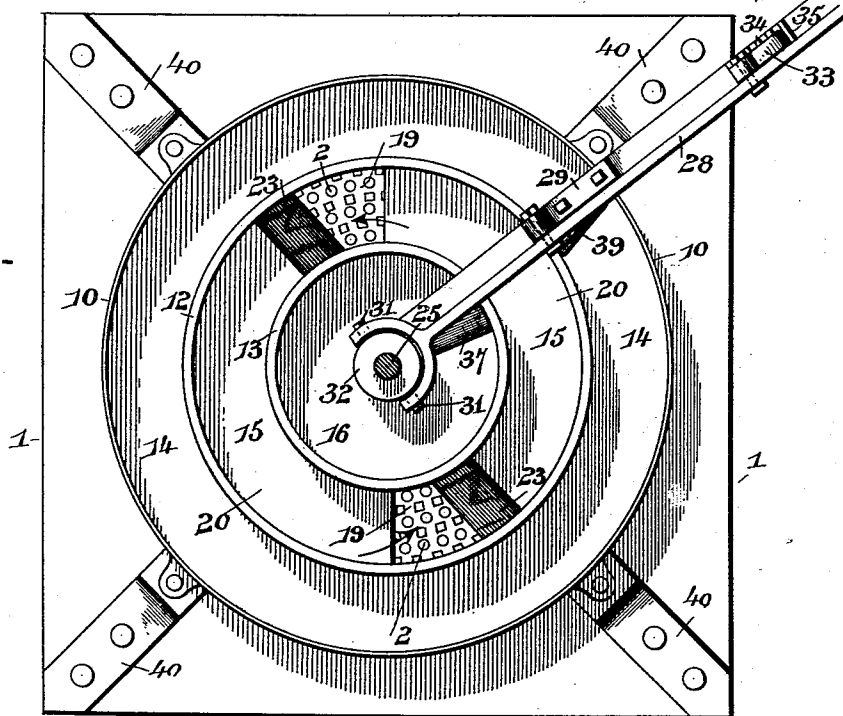
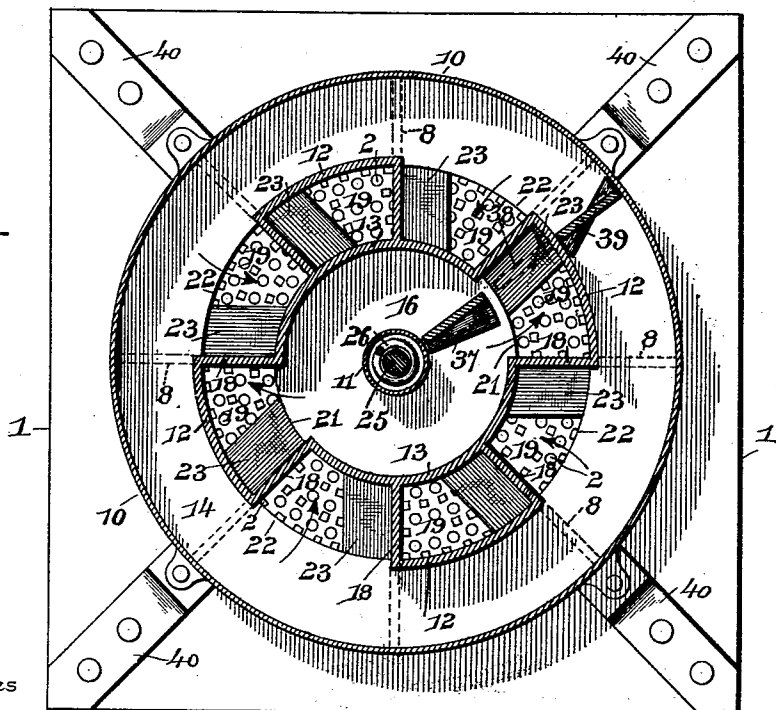


FIG. 3.



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(No Model.)

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FIG. 4.

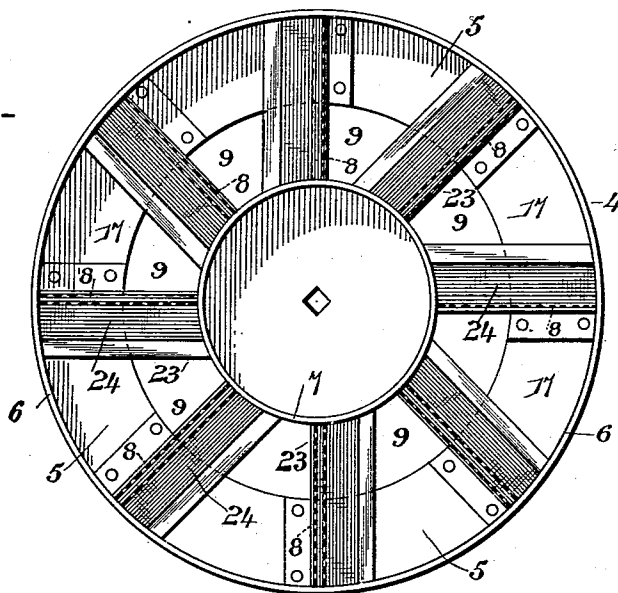
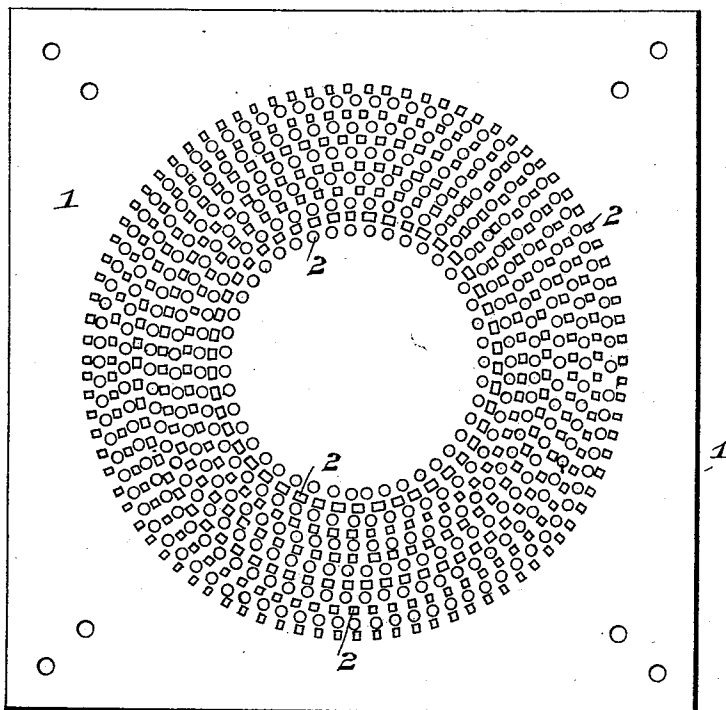


FIG. 5.



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Inventor

UNITED STATES PATENT OFFICE.

AUGUST KUNKEL, OF JOHNSTOWN, PENNSYLVANIA.

APPARATUS FOR MOTTLING SOAP.

SPECIFICATION forming part of Letters Patent No. 563,186, dated June 30, 1896.

Application filed February 4, 1896. Serial No. 578,031. (No model.)

To all whom it may concern:

Be it known that I, AUGUST KUNKEL, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Apparatus for Mottling Soap, of which the following is a specification.

The object of the present invention is to variegate soap and give thereto the mottled appearance which is pleasing to the eye and which for some purposes is preferred to plain soaps. The primary end to be attained is the provision of a machine or apparatus for effecting the desired end in a commercial way, so that the cost of preparing the soap for the market will be very little more than the expense attendant upon the preparation of plain soaps.

The apparatus comprises, essentially, a plate having a series of openings, hoppers for containing the different-colored soap, agitators to prevent the caking or sticking of the soap in the hoppers, and means for forcing the soap through the openings of the aforesaid plate, whereby the different-colored soap will commingle and produce the maculated effect.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a vertical central section of an apparatus for attaining the object of this invention. Fig. 2 is a top plan view thereof. Fig. 3 is a plan section on the line X X of Fig. 1. Fig. 4 is a bottom view of the base. Fig. 5 is a top plan view of the perforated plate. Fig. 6 is a detail view showing the relative disposition of the force-feeders. Fig. 7 is a detail view showing the relation of the guide-blocks.

Corresponding and similar parts are designated in the following description and all the figures of the appended drawings by the same reference-characters.

The numeral 1 represents a plate sufficiently stout for the purpose designed and which may have any required form, and as shown is rectangular or square in outline and provided with a series of openings 2 of proper size and desired shape and arranged in a circle. This plate 1 is secured to a table or support 3, having a circular opening opposite the ring of openings 2 for the escape of the soap into a mold or receptacle placed beneath the plate 1 for the reception of the soap as it is forced through the openings 2.

A base 4 is placed upon the plate 1 and comprises a plate 5 and pendent rings 6 and 7, the latter being concentric and spaced apart a distance corresponding to the width of the circle of openings 2, so that the latter will come opposite the space formed between the rings 6 and 7. A series of radius or brace bars 8 are secured to the lower side of the plate 5 and extend across the space formed between the rings 6 and 7, and serve to brace the said rings as well as the outer portion of the said plate 5, and these brace-bars are spaced at equal distances apart and have their lower edges a short distance above the surface of the plate 1, so as not to interfere with the free passage of the soap from the hoppers through the openings 2. The number of the brace-bars will depend largely upon the size and capacity of the apparatus, but for the sake of convenience in describing the operation of the machine eight of these brace-bars are provided and are located at a point between the openings 9, formed in the plate 5, said openings 9 being segmental shaped and arranged adjacent to the ring 7 and extending outward about half the distance between the rings 6 and 7. It will thus be seen that there are eight openings 9 and eight brace-bars 8.

A reservoir 10 is placed upon the base 4 and is secured thereto, and is circular in outline to correspond with the circular form of the said base, and is provided at its center with a vertically-disposed tube 11 and with circular partitions 12 and 13 intermediate of its vertical wall and the said vertical tube, the said partitions dividing the space equally and forming in effect three circular hoppers 14, 15, and 16, which receive the different-colored soap. That portion of the reservoir bottom

inclosed between the circular partitions 12 and 13 is formed with openings corresponding to the openings 9 to allow for the passage of the soap from the several circular hoppers into the annular space 17, formed between the rings 6 and 7. Radial partitions 18 subdivide the lower portion of the circular hopper 15 into chambers 19, and these partitions 18 come directly above the inner end portions of the brace-bars 8 and between the openings 9 and extend from the bottom of the reservoir to a point a short distance therefrom. Two of the chambers 19 are left open at their upper ends, and these open chambers are located at diametrically opposite points, and the remaining six chambers are closed at their upper ends by plates 20. Openings 21, two in number, are formed in the lower portion of the circular partition 13 at diametrically opposite points and establish communication between the circular hopper 16 and two of the chambers 19, whereby the soap from the hopper 16 can pass freely through the openings 21, adjacent chambers 19, and the annular space 17 to the circular series of openings 2, as will be readily understood. Four openings 22 are formed in the lower portion of the circular partition 12 and extend into the chambers 19, adjacent to and upon each side of the aforesaid two open-top chambers 19, whereby the soap from the circular hopper 14 can pass freely therefrom to the annular space 17 in a similar manner to the soap from the circular hopper 16. It will be noted that the several circular hoppers have separate and independent communication with the different chambers 19. Hence the different-colored soap will be kept separated until forced through the openings 2 of the plate 1.

A force-feeder 23 is had for each opening 9 and brace-bar 8, and is secured to the plate 5 and comprises a plate having its upper portion secured in any convenient way to the plate 5, and having its lower portion 24 inclined in an opposite direction to the travel or motion of the reservoir 10, so as to compel the soap by a wedging action to pass through the openings 2 in strings or jets. The lower edge portion of the feeders trails upon and touches the top side of the plate 1, thereby insuring the forcing of the soap through the openings 2 when the apparatus is in operation. These feeders extend the full width of the annular space 17 and subdivide the latter into compartments corresponding with the openings 9 and the chambers 19, so that each colored soap will be prevented from mixing with any other colored soap prior to the passage of the different-colored soap through the openings 2 of the plate 1.

The reservoir 10 and base 4 being bolted or otherwise secured together will move as one part, and in the operation of the apparatus will be rotated upon the plate 1, and to effect this result a shaft 25, driven by hand or other power, passes through the vertical tube 11 and has its lower end engaged positively with

either the plate 5 or the bottom of the reservoir 10, or with both, and in order to hold the base 4 upon the plate 1 a tension-spring 26 is mounted upon the shaft 25 and its lower end bears upon the bottom of the reservoir 10 and its upper end engages with a collar 27, mounted upon the said shaft 25. A lever 28, fulcrumed to a block 29, is cleft at its front end, and the forked portions have longitudinal slots 30, which receive studs 31, projecting laterally from the sides of a ring 32, mounted upon the shaft 25 and adapted to engage with the top side of the collar 27, the outer end of the lever 28 projecting so as to be conveniently grasped to depress the ring 32 for compressing the spring 26 when it is required to increase the tension of the said spring for holding the base more closely upon the plate 1. A latch 33 is pivoted to the lever 28, and its free end is adapted to engage with a series of teeth 34, formed on a block 35, for the purpose of holding the lever 28 in the required position. The outer face or edge of the block 35 inclines to approximate the movement of the end of the latch 33, incident to the movement of the lever 28 upon its fulcrum, thereby adapting the latch to make positive engagement with the teeth 34 at all stages of movement of the said lever within certain limits. The spring 26, as also the shaft 25, is located within the tube 11 and is protected from contact with the soap contained in the reservoir 10.

A bracket 36 is secured to the table or support 3, and its upper portion extends horizontally over about one-half of the reservoir 10 and supports the blocks 29 and 35 and a series of blades 37, 38, and 39, which blades extend into the circular hoppers 16, 15, and 14 and act in the capacity of stirrers or agitators to insure a feed of the soap to the several discharge-openings. The blades 37 and 39 are of equal length and extend to the bottom of the hoppers 14 and 16, and their lower end portions are given a partial twist to cause them to incline toward the respective circular partitions 12 and 13 to direct the soap through the openings 22 and 21 therein during the rotation and operation of the apparatus. The blade 38 is shorter than the blades 37 and 39, so as to operate over the plates 20, and is radially disposed so as to move the soap to the open-topped chambers 19, and which have direct communication with the respective compartments of the annular space 17.

The different-colored soap is placed in the circular hoppers 14, 15, and 16, and since the white soap predominates it is placed in the hopper 14, since the latter has twice as many discharge-openings as each of the other two hoppers, and of the latter the red soap is placed in the hopper 16 and the blue soap in the hopper 15. Upon rotating the superstructure upon the plate 1 the different-colored soap will pass from the respective hoppers into the communicating chambers, thence to the compartments of the annular space 17,

and will be caused to pass through the openings 2 by the action of the force-feeders in the manner set forth, and will be received in a mold or receptacle placed beneath the plate 1 and produce a soap having the required mottled appearance. Blocks 40 are secured to the plate 1, and their inner ends touch the outer peripheral surface of the base 4 and serve to prevent lateral displacement of the superstructure during its rotation and when the apparatus is performing efficient service.

Having thus described the invention, what is claimed as new is—

1. An apparatus for producing mottled soap, comprising a plate having a circular series of openings, a rotatable base mounted upon the plate and having an annular space subdivided into compartments, and a reservoir having a series of hoppers to receive the different-colored soap and having separate and independent connection with the several compartments of the base, substantially as set forth.

2. An apparatus for producing a mottled soap, comprising a plate having a series of openings, a base rotatably mounted upon the plate and subdivided into compartments, a reservoir having connection with the base and formed with a series of hoppers having separate and independent connection with the several compartments of the base, and feeders for securing a positive discharge of the soap through the openings of the said plate, substantially as specified.

3. In an apparatus for mottling soap, the combination of a plate having discharge-openings, a base rotatably mounted upon the plate and subdivided into compartments, force-feeders carried by the base and adapted to travel upon the said plate, means for holding the base upon the plate with a greater or less degree of pressure, and a reservoir supported by the base and having a series of hoppers in communication with the several compartments of the base, substantially as and for the purpose set forth.

4. The combination with a plate having a series of discharge-openings, of a base adapted to travel over the plate and provided with compartments, a series of hoppers movable with the base, and feeders constructed to secure a positive discharge of the soap from the hoppers through the openings of the aforesaid plate, substantially as set forth.

5. In combination, a plate having a series of openings, a base movably supported upon the plate, a reservoir movable with the base and having a series of hoppers, and partitions subdividing the intermediate hopper into a series of chambers, which latter have separate and independent communication with the respective hoppers, substantially as set forth for the purpose described.

6. In combination, a plate having a series of openings, a base movably supported upon the plate and having a series of compartments, a reservoir supported upon the mov-

able base and comprising a series of hoppers, and partitions subdividing the intermediate hopper into a series of chambers which have communication with the respective hoppers and the several compartments of the base, substantially as set forth for the purpose described.

7. In an apparatus for treating and preparing soap, the combination of a plate having a series of openings, a reservoir rotatably mounted upon the plate and subdivided into a series of circular hoppers, and a series of blades extending into the several hoppers, substantially as set forth for the purpose described.

8. In an apparatus for preparing soap, the combination of a plate having a series of openings, a reservoir rotatably mounted upon the plate and subdivided into a series of circular hoppers, the intermediate hopper having its lower portion formed with a series of chambers, and blades stationarily mounted and extending into the several hoppers, the extreme blades being of greater length or extending to a greater depth than the intermediate blade, substantially as and for the purpose set forth.

9. In an apparatus for preparing soap, the combination of a plate having a series of openings, and a reservoir mounted upon the plate and subdivided into a series of hoppers, the intermediate hopper having its lower portion provided with a series of chambers which have separate and independent communication with the several hoppers so as to direct the soap properly to the plate having the openings, substantially as specified.

10. The combination with a plate having a series of openings, of a structure movably supported upon the plate and adapted to receive the soap, and a series of feeders carried by the structure to trail upon the plate and effect a positive discharge of the soap through the openings thereof, substantially as described.

11. In apparatus for preparing soap, the combination of a plate having a series of openings, a base rotatably mounted upon the plate, a reservoir mounted upon the base and adapted to receive the soap and having a centrally-disposed tube, a shaft passing through the said tube and adapted to transmit a rotary movement to the reservoir and base, a spring mounted upon the shaft and arranged to exert a downward pressure upon the reservoir, and means for varying the tension of the said spring, substantially as and for the purpose set forth.

12. In an apparatus for preparing soap, the combination of a plate having openings, a base rotatably mounted upon the plate and provided with force-feeders, a reservoir placed upon the base and adapted to contain the soap, a spring for holding the base and the force-feeders thereof in intimate contact with the said plate, and means for varying the tension of the spring, whereby the feeders will

be held in engagement with the plate with a greater or less pressure, substantially as set forth.

13. In a machine for preparing soap, the
5 combination of a plate having a series of openings, a base rotatably mounted upon the plate, a reservoir supported upon the base, a shaft for transmitting motion to the base and reservoir, a spring encircling the shaft and adapted
10 to hold the base upon the said plate, a lever, a ring mounted upon the shaft and having adjustable connection with the lever, and adapted to bear downward upon the said spring, and means for holding the lever in an
15 adjusted position, substantially as set forth for the purpose described.

14. An apparatus for preparing mottled soap, consisting of a plate having a circular series of openings, a base rotatably mounted
20 upon the plate and subdivided into a series of compartments, force-feeders to secure a

positive discharge of the soap from the said compartments, a reservoir mounted upon the base and subdivided into a series of circular
25 hoppers, the intermediate hopper having its lower portion formed with a series of chambers which have separate and independent communication with the several hoppers and the different compartments of the base, blades
30 stationarily mounted and extending into the said hoppers, actuating mechanism for rotating the reservoir and base, and means for holding the base upon the plate with a variable pressure, substantially as set forth.

In testimony that I claim the foregoing as
35 my own I have hereto affixed my signature in the presence of two witnesses.

AUGUST KUNKEL.

Witnesses:

JOSEPH H. JOY,
MAURICE CLARK.