(No Model.)

E. G. BROWN.

PROCESS OF MANUFACTURING COMPRESSED CAKES OF SOAP.

No. 461,973. Patented Oct. 27, 1891.

Fig. 1.

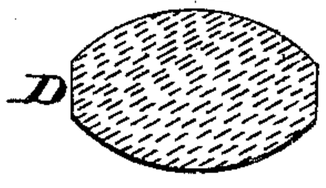


Fig. 2.

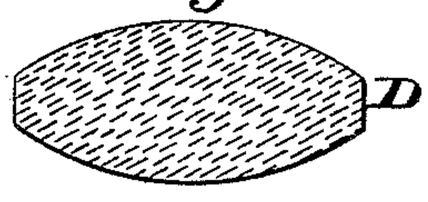


Fig. 3.

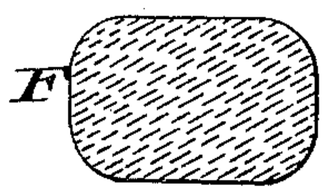


Fig. 4.

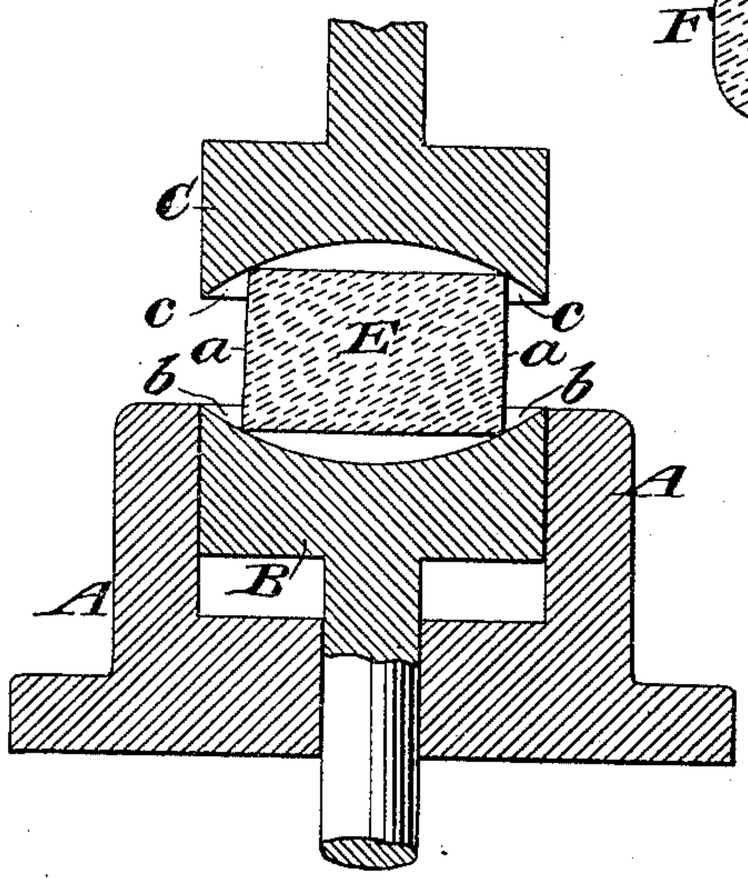


Fig. 5.

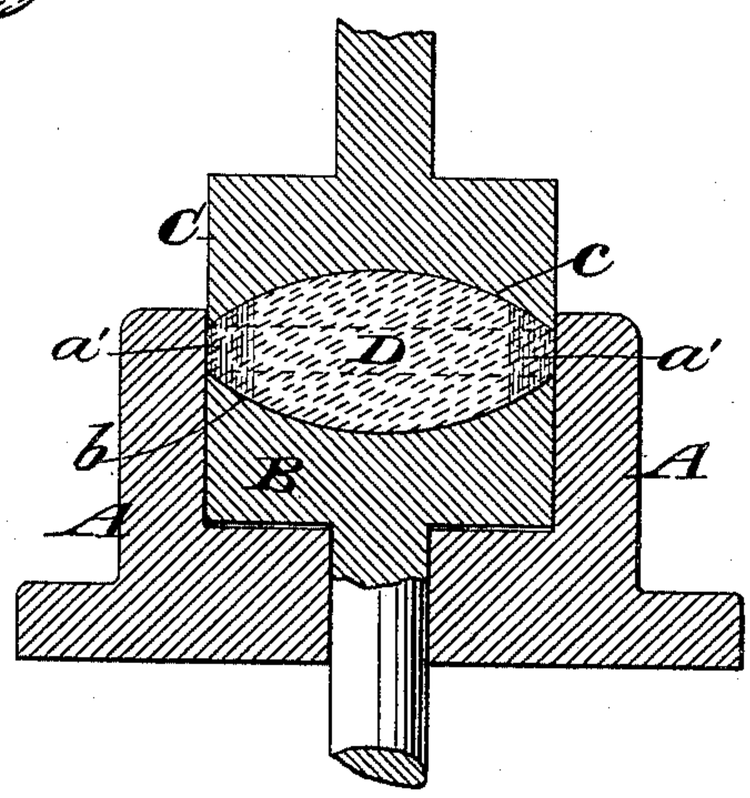


Fig. 6.

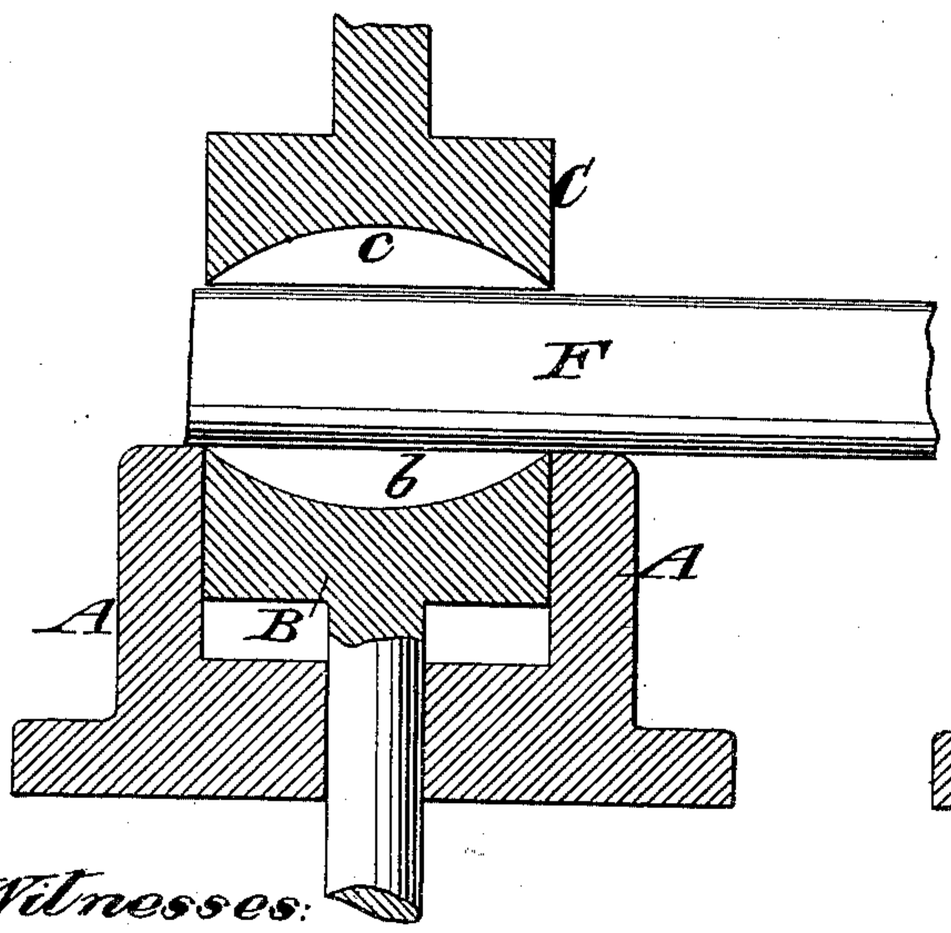
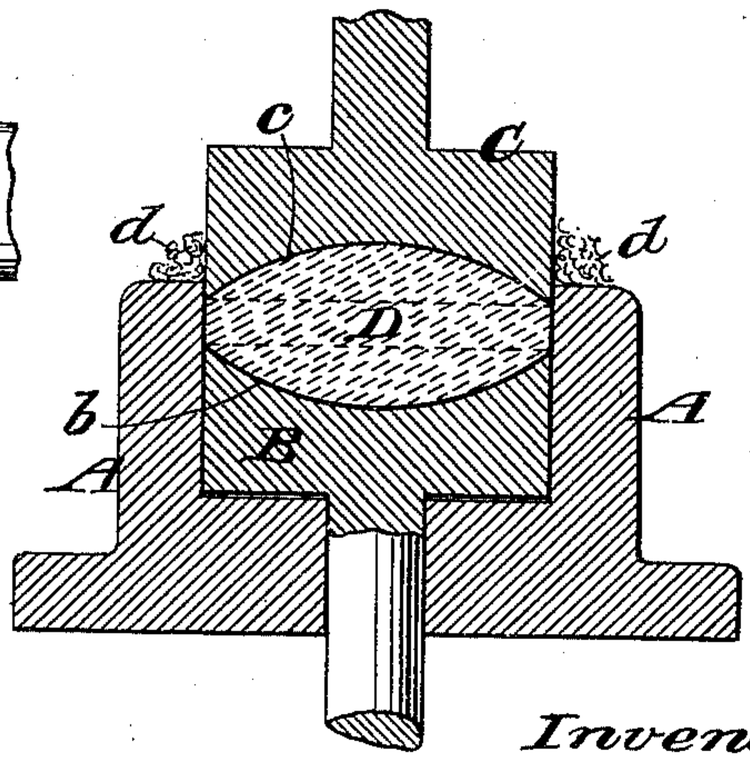


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD GRAHAM BROWN, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE CHESEBROUGH MANUFACTURING COMPANY, CONSOLIDATED, OF SAME PLACE.

PROCESS OF MANUFACTURING COMPRESSED CAKES OF SOAP.

SPECIFICATION forming part of Letters Patent No. 461,973, dated October 27, 1891.

Application filed June 4, 1890. Serial No. 354,193. (No specimens.)

To all whom it may concern:

Be it known that I, EDWARD GRAHAM BROWN, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in the Manufacture of Compressed Cakes of Soap, of which the following is a specification, reference being had to the accompanying drawings.

The object of this invention is to remedy a defect which exists and is plainly visible in compressed cakes of soap, particularly in toilet-soap, as heretofore manufactured, the said defect consisting in a want of homogeneity in the different parts of the cake, the parts at the ends and the parts in the middle having different densities or consistencies. This want of homogeneity or difference of density shows itself in the different colors or tints of the body or bulk of the cake and the ends thereof, between which there is a plainly-visible line of demarcation.

The above-mentioned defect results from the method commonly practiced of producing the cakes from the bars into which the soap is previously made by the press, generally known as a "plodder," from which the soap is forced in the form of a continuous bar through a die of a form approximating to the form of the transverse section in one direction of the cakes of soap to be produced. This method consists in cutting the bars squarely across into blocks of a length less than that of the intended length of the cakes and afterward transferring the said blocks into dies of proper form, in which by pressure the parts of the soap at the ends of the block are forced out endwise to fill the ends of the dies. In this operation the first action of the dies in their closing movement is to displace the parts of the soap at the ends of the block to make it fill the ends of the dies, and by this displacement the said parts are so broken up that in the compression to which they are subjected in common with the rest of the block or cake during the continuation and completion of the closing movement of the dies the said parts are not made as dense as the rest of the block or cake, and hence the difference of appearance.

According to the present invention the bars of soap are not cut into blocks previously to being placed in the dies, but they are taken directly to the compressing-dies, by which portions of them of the proper length for the cakes of soap are cut off and compressed into the desired form at one operation, and the cakes so produced are homogeneous and of uniform color or tint.

In order to explain more fully the nature of my invention, I have illustrated in the accompanying drawings both the method commonly practiced of producing the cakes and my improved method.

Figures 1 and 2 of the drawings represent vertical sections at right angles to each other of a cake of toilet-soap of ordinary form, such as is produced by my invention. Fig. 3 represents a transverse section of the bar from which such cakes are produced both by the common method and by my invention. Fig. 4 represents a central vertical section of a pair of compressing-dies such as are used according to the old method and may be used according to my method for compressing the cakes, and shows the said dies open and having placed between them a block of soap previously cut from a bar ready to be compressed according to the old method. Fig. 5 is a vertical sectional view corresponding with Fig. 4 and showing the said dies closed and the block of soap compressed between them into a cake. Fig. 6 represents a vertical section of a pair of dies similar to those shown in Fig. 4, showing them open and having the end of a bar of soap placed between them ready to have a portion cut off and simultaneously pressed into a cake according to my invention. Fig. 7 is a sectional view corresponding with Fig. 6, but showing the dies closed and the cake completed.

Similar letters of reference designate corresponding parts in all the figures.

The dies represented are box-dies. A is the box, B is the lower die fitted to the box, and C is the upper die, the horizontal section of the box corresponding in form with the broad profile of the cake of soap to be produced and the faces of the dies B and C having the form of the faces of the cake D.

E, Fig. 4, is one of the blocks into which,

according to the common method, the bars of soap are made by cutting the latter squarely across at regular intervals. It will be observed that this block is not long enough to fill the dies, and it will be understood by reference to Figs. 4 and 5 that in order to make the soap in the block E fill the dies and form the cake D the parts *a a* must be displaced and forced into the parts *b c* of the dies. In Fig. 5 the parts designated by *a' a'*, so displaced and which by reason of the breaking up or crushing or disintegrating action to which they were first subjected by the action of the dies, are tinted of a darker shade.

In Fig. 6 the bar of soap F is represented as placed directly between the open dies and shown with its end projecting slightly beyond the dies B C. By the closing movement of the dies the portion of soap between them is cut from the bar and pressed to form the cake by the one operation of closing the dies, and if there be more cut off than is sufficient to fill the dies when they are completely closed, as shown in Fig. 7, the surplus will be forced out from between the dies, as indicated at *d d* in the latter figure. The cake thus formed is perfectly homogeneous throughout and the whole of its exterior is of uniform color.

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

The herein-described method of forming machine-made tablets of soap, which consists in feeding to the die soap bars of the full length of the die and longer than the completed tablet and subjecting the bars to the cutting and pressing action of said die moving at right angles to the bar, substantially as set forth.

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