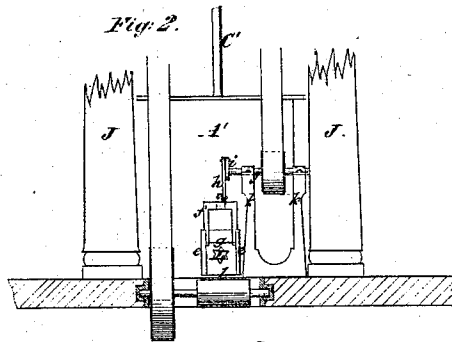
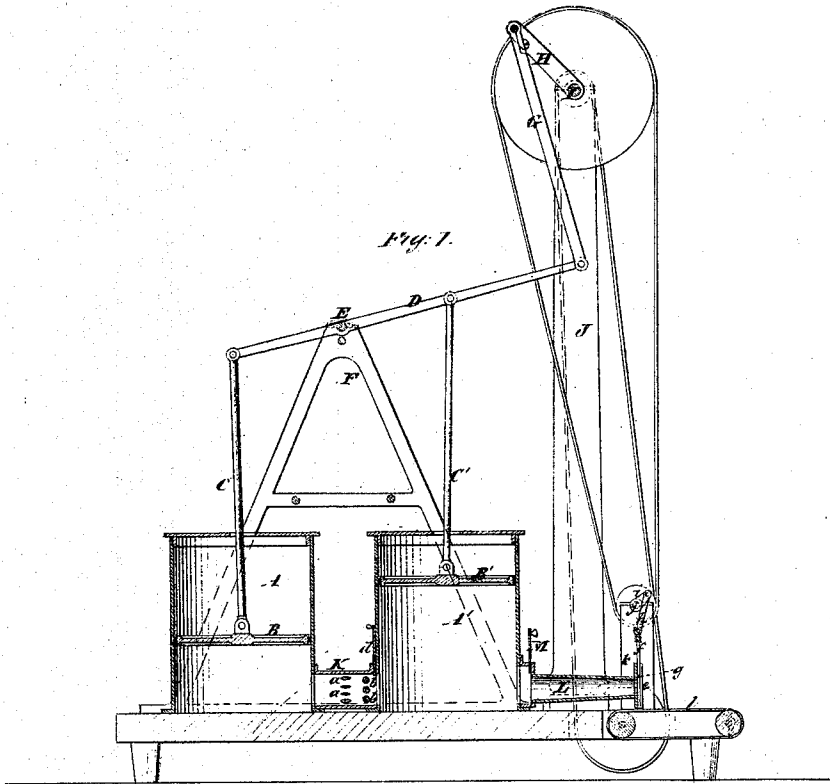


L. Groux,

Manf. Sout.

No. 105670.

Patented July 26. 1870.



Witnesses:

Fred. Hayes
R. Baber

Louis Groux

United States Patent Office.

LOUIS GROUX, OF NEW YORK, N. Y.

Letters Patent No. 105,670, dated July 26, 1870.

IMPROVEMENT IN THE MANUFACTURE OF SOAP.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LOUIS GROUX, of the city, county, and State of New York, have invented certain new and useful Improvements in the Manufacture of Soap; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification.

This invention consists, first, in the mixing of soaps while cold by means of cylinders, from one to another of which the soap is driven by the action of pistons fitted to them.

It also consists in the employment, in the passage between such cylinders, of a series of rollers between which the soap is caused to pass on its way from one cylinder to another, and which are caused to rotate by the friction and adhesion of the soap passing between them, and are thereby caused to facilitate, expedite, and render more perfect the mixing process.

It further consists in the combination of a reciprocating cutter with a die or tube arranged in or at the mouth of a passage through which the soap is forced from a cylinder by means of a piston in the shape of a bar of the same transverse sectional form as the die, whereby the said bar, as it issues from the die, is cut into cakes which are delivered upon an endless apron or other carrying device, by which the said cakes are removed.

Figure 1 of the drawing is a vertical section of a mixing and cake-making machine embracing my improvements.

Figure 2 is a front view of the cake-making apparatus.

Similar letters of reference indicate corresponding parts in both figures.

A A are two upright cylinders, having air-tight bottoms and loose lids or covers, and fitted with air-tight pistons, B B', and having their pistons connected by rods, C C', with a lever or beam, D, which works on a shaft or gudgeon, E, supported in two standards, F, in such position that the connections of the rods with the lever or beam are on opposite sides of the said shaft or gudgeon, and at equal distances therefrom.

The said lever or beam is extended beyond one of the rods, and its so-extended end is connected, by a rod, G, with a crank, H, on a shaft, I, which is supported in bearings in standards, J J, and which has a slow rotary motion imparted to it by any suitable means.

Between the lower parts of the two cylinders there is a passage, K, of square or other form, in which there is arranged, in the form of a grating, a series of stationary knives, a a, fig. 1, which are set edge-wise with the said passage.

There is also arranged in the said passage a series of rollers, b b, fig. 1, the axes of which are in a plane transverse to the passage, and the journals or axes of which are supported in suitable bearings in or close to the sides of the passage. These rollers are free to be turned by any substance passing between them.

The passage K is furnished with a sliding shutter, d, by which communication between the cylinders may be closed.

To the side of the cylinder A' furthest from the cylinder A, near the bottom thereof, there is attached a horizontal tube, L, which is fitted, at its connection with the cylinder, with a sliding gate, M, and the mouth of which may have the star-shape shown in fig. 2, or any other shape which it is desired to give to the cakes of soap to be produced.

Outside of the mouth of this pipe, which forms a die, there is arranged, in vertical guides, e e, a sliding cutter-frame, f, which is furnished with a wire or other cutter, g.

The cutter-frame is connected by a rod, h, with a crank, i, on a shaft, j, which is supported in suitable bearings, k k, and which has a very rapid rotary motion imparted to it by any suitable means, for the purpose of producing a reciprocating movement of the cutter-frame and cutter.

Under the mouth of the pipe and cutter, and extending some distance forward in front of them, is an endless apron, l, whose upper surface moves outward from under the tube and cutter.

During the operation of mixing the soap the cutter-shaft j is thrown out of gear, the gate M is closed, and the gate d open.

This operation is performed in the following manner:

The covers are first taken off the cylinders and the pistons removed, and soap in a cold state is placed in the cylinder, soap of one color in one, and soap of another color in the other, when soaps of different colors are to be mixed. The pistons and covers are then replaced, and the pistons are set in operation by motion imparted to the lever D from the crank H, each piston being, in turn, depressed while the other is raised. By this means the soap is forced backward and forward from one cylinder to the other through the passage K, and between the knives a a and rollers b b, and thereby thoroughly mixed, the rollers being caused to rotate by the adhesion and friction of the soap passing between them, and thereby being made to assist very greatly in effecting the mixture.

When the mixture has been sufficiently effected, and while the piston B is depressed, and that, B', raised, the shutter d is closed, the gate M opened, and the cutter g set in operation, and, as the descent of the piston A' causes the soap to issue through the tube L' in the shape of a bar, the transverse section

of which corresponds with the form of the cakes to be produced, the cutter cuts it up into cakes, which fall on and are carried off by the endless apron *l*, whence they are removed by hand or otherwise.

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

1. The process of mixing soaps by means of pistons and cylinders with communicating passages, substantially as herein described.

2. The rollers *b b*, arranged and operating substan-

tially as herein described, in the passage *K* between the cylinders.

3. The reciprocating cutter *g*, in combination with the tube *L*, cylinder *A'*, and piston *B'*, substantially as and for the purpose herein specified.

LOUIS GROUX.

Witnesses:

FRED. HAYNES,
R. E. RABEAU.