H. N. HUMISTON.

Improvement in Apparatus for Mixing Soap.

No. 125,736. Patented April 16, 1872.

Fig. 1

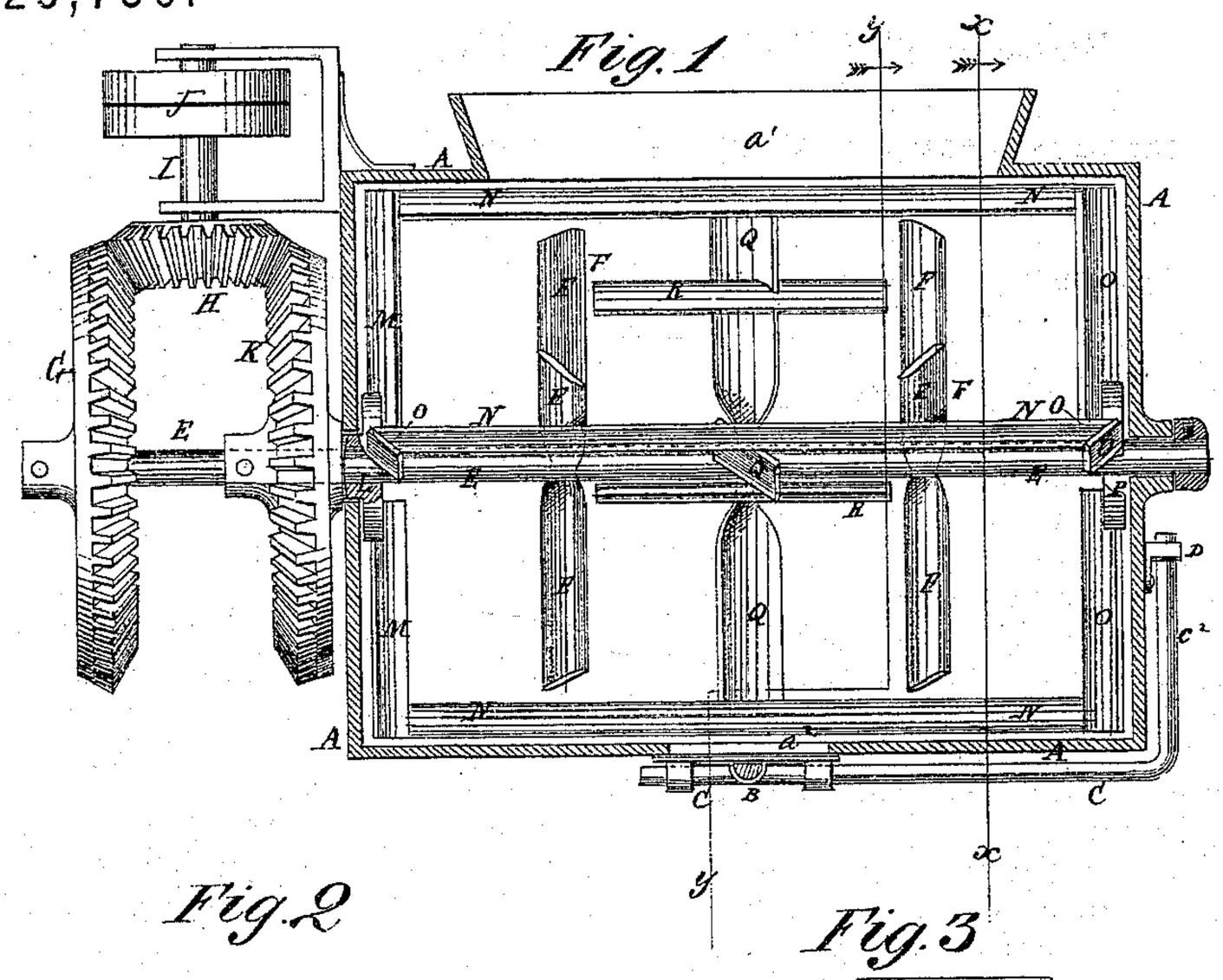


Fig. 2

Fig. 3

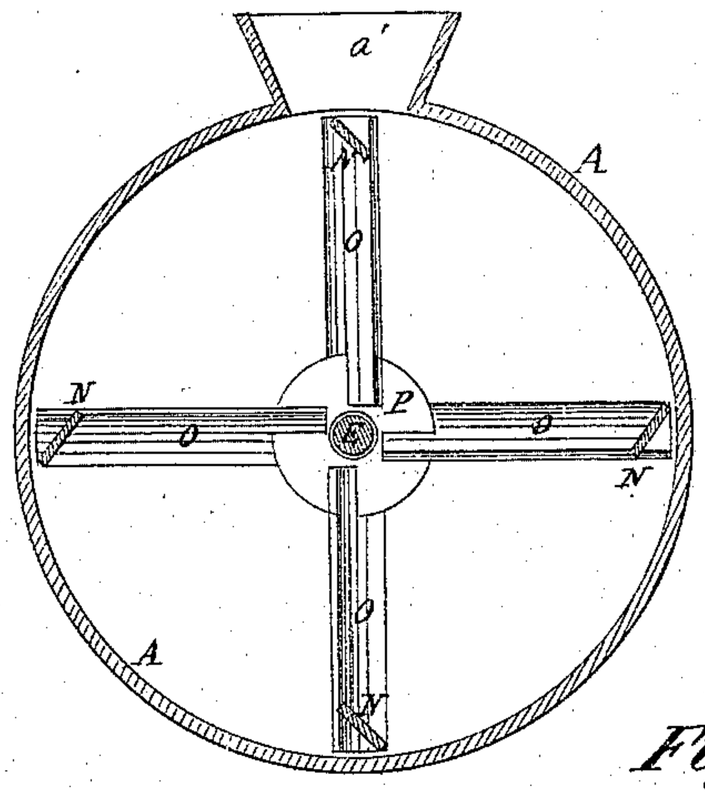
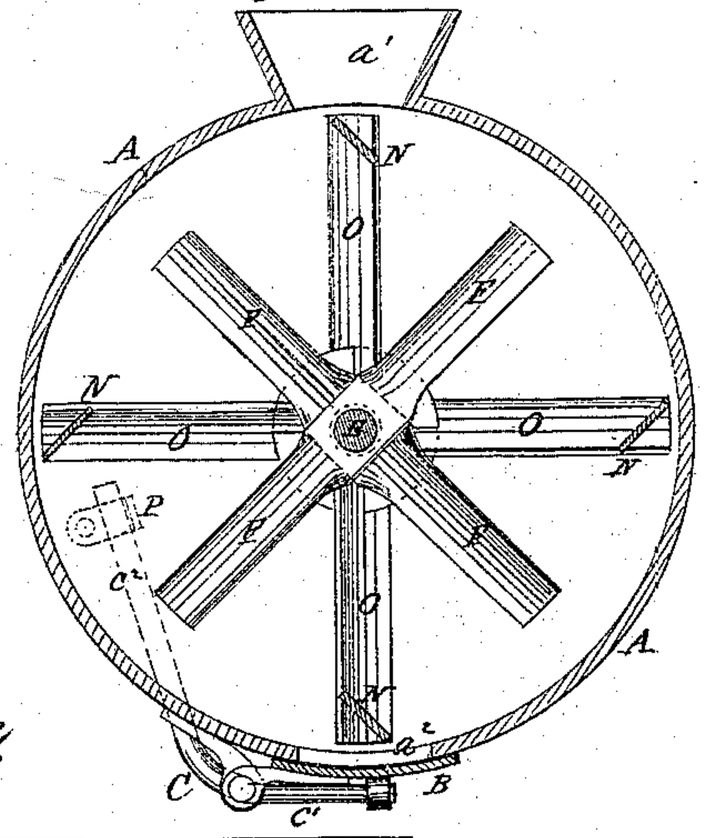
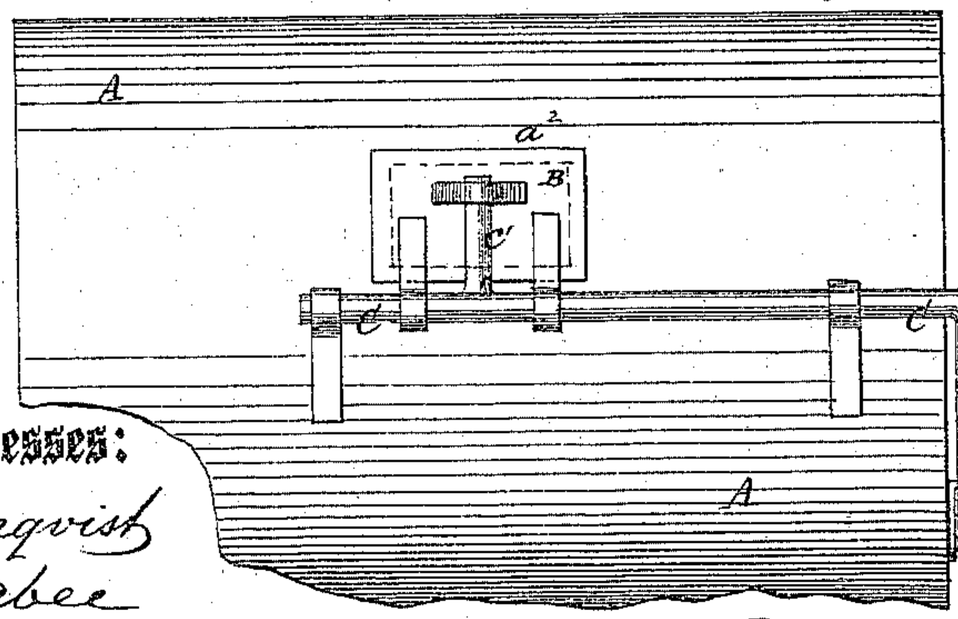


Fig. 4





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UNITED STATES PATENT OFFICE.

HORACE N. HUMISTON, OF TROY, NEW YORK.

IMPROVEMENT IN APPARATUS FOR MIXING SOAP.

Specification forming part of Letters Patent No. 125,736, dated April 16, 1872.

Specification describing a certain Improvement in Soap-Mixing Apparatus, invented by HORACE N. HUMISTON, of Troy, in the county of Rensselaer and State of New York.

Figure 1 is a side view of my improved apparatus, partly in section, through the case or vat. Fig. 2 is a detail vertical cross-section of the same taken through the line *x x*, Fig. 1. Fig. 3 is a detail vertical cross-section of the same taken through the line *y y*, Fig. 1. Fig. 4 is a detail view of the device for closing and opening the discharge-opening.

My invention has for its object to furnish an improved apparatus for mixing soap which shall be simple in construction, convenient in use, and effective in operation, and which shall be so constructed as to raise the heavy insoluble material to be incorporated with the soap and distribute them thoroughly through all parts of the mass, and keep them from settling into the lower parts of the mass before the mass has become sufficiently stiff to hold said materials; and it consists in the construction and combination of the various parts of the apparatus, as hereinafter more fully described.

A represents the case or vat in which the mixing is done, and which I prefer to make in the form of a short cylinder placed upon its side, and having a hopper, a^1, in its upper side, to enable the ingredients to be conveniently poured in. The soap is drawn off through an opening, a^2, in the bottom of the cylinder A, which opening is closed with a valve, B, attached to the arm c^1 of a bent lever, C, which lever works in eyes attached to the cylinders A, and its outer end c^2 is bent upward along the end of the cylinder A for convenience in operating it, and is provided with a button, D, pivoted to said end to lock the valve when closed and enable it to be conveniently opened to discharge the soap. E is a shaft, passing horizontally through the center of the cylinder A, and which has two series of radial arms or blades, F, rigidly attached to it, which arms or blades are made flat with beveled edges, and are inclined in different directions, so as to thoroughly stir up and mix the soap. To the outer end of the shaft E is attached a bevel-gear wheel, G, the teeth of which mesh into the teeth of a smaller gear-wheel, H, attached to the inner end of the shaft I, which revolves in bearings attached to some suitable support, and to which are attached the fast and loose pulleys J, that receive the driving-belt. The teeth of the small bevel-gear wheel H also mesh into the teeth of the large gear-wheel K, through the center of which the shaft E passes, so that the wheels G and K may be revolved in opposite directions by the revolutions of the wheel H. The gear-wheel K is attached to the sleeve L, which passes in through the end of the cylinder A, and through which the shaft E passes, so that the said shaft and sleeve may revolve at the same time in opposite directions. To the inner end of the sleeve L is attached the inner ends of a series of arms or blades, M, which are made narrow and flat, and are set at an incline, so as to throw the soap from the ends of the cylinder A toward its middle part. To the outer ends of the radial arms or blades M are rigidly attached the ends of the horizontal bars or blades N, which are made narrow and flat, and are set at an incline, so as to raise the materials in the lower part of the case or vat A, carry them up, and leave them in the upper part of said case or vat A. The other ends of the bars or blades N are rigidly attached to the outer ends of the radial arms or blades O, the inner ends of which are securely and rigidly attached to the sleeve or collar P, through which the shaft E passes, and which revolves upon said shaft E. To the middle part of the horizontal bars or blades N are rigidly attached the outer ends of a series of radial arms or blades, Q, the inner ends of which are attached to a sleeve or collar, through which the shaft E passes, and which revolves upon said shaft E. The blades or arms Q are made wide and flat, and are so set as to incline alternately in opposite directions. To the arms or blades Q, at different distances from the shaft E, may be attached short cross-bars or blades R. The blades R are made narrow and flat, and should be set at an inclination, so as always to tend to raise the material and distribute it through the upper part of the case or vat A.

By this peculiar construction of the stirring or mixing apparatus the heavy and insoluble materials are raised from the lower part of the case or vat, where they would naturally settle, and are kept thoroughly mixed through the

mass until the mass has acquired such a consistency as to hold them in place by its cohesion.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the radial arms or blades M Q O, rigidly attached to collars or sleeves revolving upon the shaft E, and rigidly connected with each other by the bars or blades N, and the radial arms or blades F, rigidly attached to the shaft E, with each other and with the shaft E, gearing G H K, and case or vat A, substantially as herein shown and described, and for the purpose set forth.

2. The arrangement of the valve B, bent lever C c^1 c^2, and stop D, in connection with the discharge-opening of the case or vat A, substantially as herein shown and described, and for the purposes set forth.

HORACE N. HUMISTON.

Witnesses:

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