Dec. 4, 1928. 1,693,935

L. H. NELLES

ROTARY MIXER

Filed Feb. 25, 1928

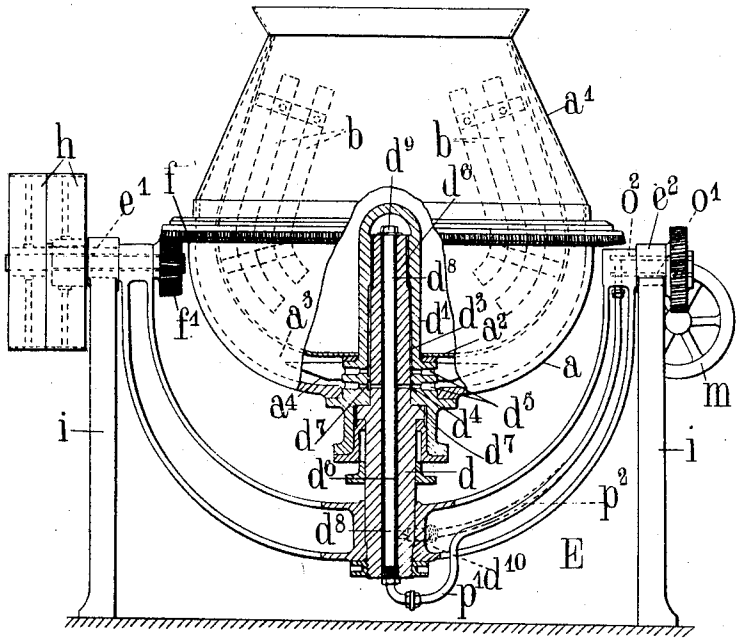


Fig. 1.

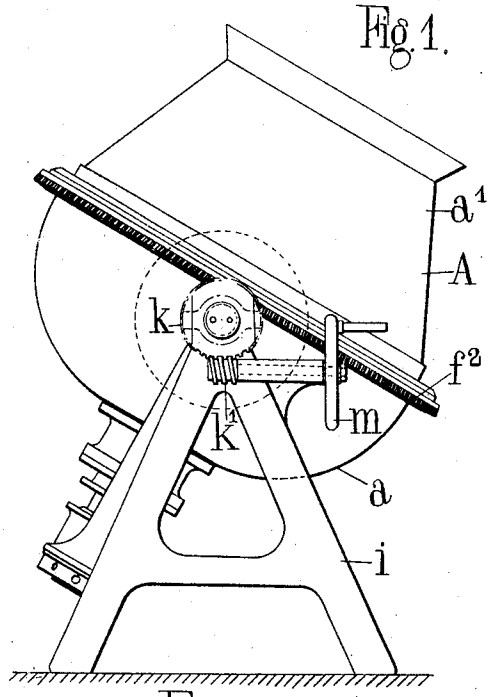


Fig. 2.

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Patented Dec. 4, 1928. 1,693,935

UNITED STATES PATENT OFFICE.

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ROTARY MIXER.

Application filed February 25, 1928, Serial No. 256,988, and in Great Britain November 16, 1926.

The invention relates to rotatable cauldrons suitable for soap-making, a main object of the invention being to provide an improved apparatus for making soap at the desired temperature.

With this object, the invention consists in the combinations of elements hereinafter described and particularly pointed out in the claims.

Referring to the accompanying drawings, which illustrate one form of the invention by way of example:—

Figure 1 shows a front elevation of the cauldron in the upright position while

Figure 2 shows a side elevation with the cauldron inclined.

In carrying the invention into effect according to the form shown, the cauldron, A, may be roughly hemispherical or deeply dished as regards its lower portion, a, and formed as a converging cone as regards its upper portion, a^1. The cauldron is provided with integral internal webs or fins, b, or like stirrers and also an inner shell, a^2, to form a jacket, a^3, into which an appropriate heating medium may be introduced by suitable means such as are hereinafter described.

The cauldron is carried on a hollow shaft or spindle, d, mounted on a trunnion yoke or frame, E, the cauldron being rotatable in relation to the shaft, d, by means, for example, of the bevel gearing, f^1, f^2, (the pinion, f^1, of which is co-axial with a trunnion) and the belt pulleys, h, h.

The trunnions, e^1, e^2, are carried as shown in bearings on the standards, i, i, one of the trunnions being provided with a worm-wheel, k, with which gears a worm, k^1, operated by a convenient hand-wheel, m, mounted on one of the standards so that the whole unit comprising the cauldron and its carrying frame may be tilted about the horizontal axis defined by the trunnion centres.

The hollow shaft or spindle, d, projects axially as shown into the interior of the cauldron and is covered by a cap or the like, d^1, secured as shown to the latter and forming the actual member which rotates on the spindle, d. The cap, d^1, is in contact with the spindle, d, at d^2, but above and below that point, annular spaces, d^3, d^4, respectively are provided. The annulus, d^3, is in communication with the jacket, a^3, above a baffle or diverter, a^4, by way of the holes, d^5, d^5, above the part, d^2, while the annulus, d^4, is connected to the jacket below the baffle, a^4, by way of the holes, d^5, d^5, below the part, d^2; in addition, the annulus, d^4, is connected to the axial hollow, d^6, in the spindle, d, by means of the holes, d^7, d^7. Ducts, o^1, o^2, are provided in the trunnion, e^2, the duct, o^1, being connected by the pipe, p^1, running along the yoke, E, to a second pipe, d^8, secured in the base of the spindle, d, and running axially to the top thereof through the axial hollow, d^6, closed by the washer, d^9, while the duct, o^2, is connected by the pipe, p^2, likewise running along the yoke, E, and hole, d^{10}, to the axial hollow, d^6. Suitable flexible pipes are connected to the ducts, o^1, o^2, or alternatively direct to the hollow spindle, d.

By the means described, the jacket, a^3, can be supplied with a suitable heating medium, for example, superheated steam at a low pressure, to maintain the soap mixture at the desired temperature.

Thus, the steam enters through the duct, o^1, and passes through the pipes, p^1 and d^8, to the top of the spindle, d^6, where it reverses its direction of flow and reaches the jacket, a^3, above the baffle, a^4, by way of the annulus, d^3, and upper holes, d^5; similarly the steam and condensate are withdrawn from the jacket, a^3, below the baffle, a^4, by way of the lower holes, d^5, annulus, d^4, holes, d^7, axial hollow, d^6, hole, d^{10}, pipe, p^2, and duct, o^2.

The cap, d^1, within the cauldron likewise assists in heating the soap-making mixture.

In the described form of the invention, by rotating the cauldron with its axis preferably in an inclined position, an intimate admixture of the raw material of the soap is secured while at the same time, the mixture is subjected to the heat of the jacket steam.

On the conclusion of the soap-making operation the cauldron together with its frame may be tilted as a unit about its trunnions, by the means described or other suitable mechanism so that the liquid soap may be poured into any desired receptacle.

The power for rotating the cauldron may be supplied from any suitable source.

It will be understood that modifications of detail can be made in the machine above described without exceeding the scope of the invention.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A mixing machine comprising a pair of spacedly arranged frame members, a yoke

rotatably mounted in said frame members, a mixing drum rotatably mounted in said yoke and adapted to rotate about its vertical axis, stirring means in said drum, means for rotating said drum, means for rotating said yoke, a jacket disposed in said drum, conduit means in said yoke connecting with said jacket for supplying a medium to said drum, and a discharge conduit in said yoke for discharging said medium whereby said medium may be supplied to said drum and discharged therefrom during the rotation and tilting of said drum.

2. A mixing machine comprising a pair of spacedly arranged frame members, a yoke having trunnions rotatably mounted in said frame members, a mixing drum rotatably mounted in said yoke and adapted to rotate about its vertical axis, stirring means in said drum, means for rotating said drum, means for rotating said yoke, a jacket disposed in said drum, conduit means in said yoke communicating with said jacket, and conduit means in said trunnions communicating with the conduit means in said yoke for supplying and discharging a medium to said drum whereby said medium may be supplied to said drum and discharged therefrom during the rotation and tilting of said drum.

In testimony whereof I have signed my name to this specification.

LAFAYETTE HENRY NELLES.