

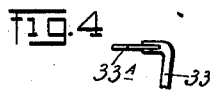
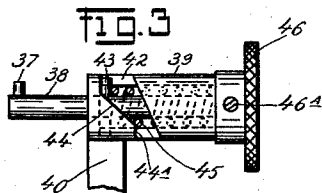
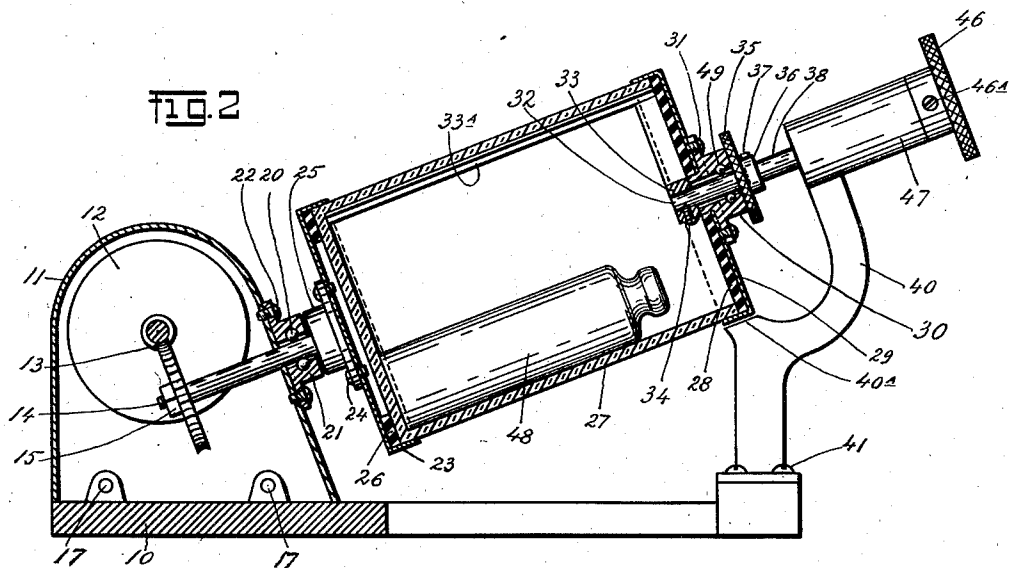
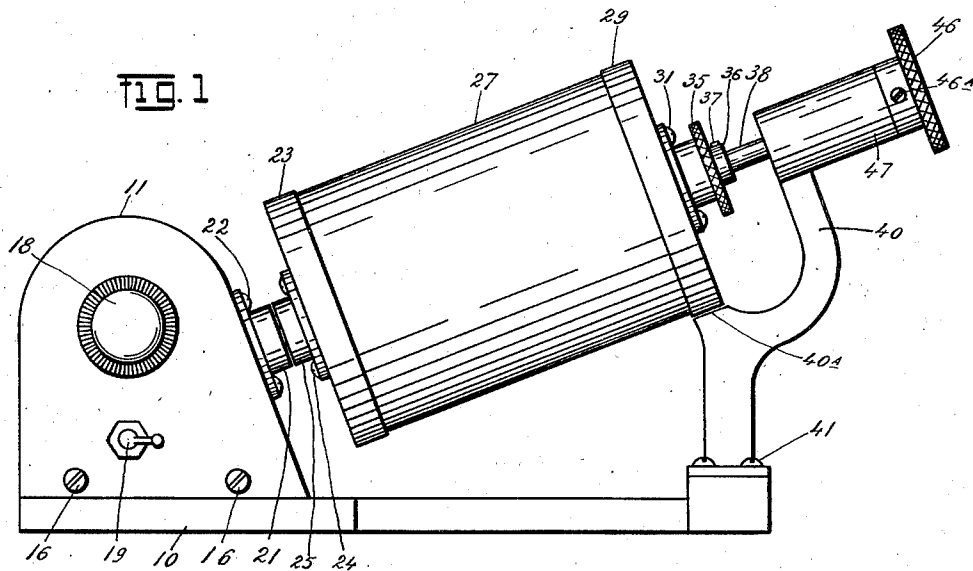
June 4, 1940.

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2,203,430

PORTABLE MIXER

Filed Sept. 3, 1938



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UNITED STATES PATENT OFFICE

2,203,430

PORTABLE MIXER

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Application September 3, 1938, Serial No. 228,315

2 Claims. (Cl. 259—81)

This invention relates to mixing devices for any substance it is so desired to treat, but more particularly to portable machines for grinding, mixing and blending face powder.

We have found that vertically or horizontally rotating devices are unsatisfactory, because the powder circulates in horizontal or vertical layers only.

An important object of our invention consists, therefore, in providing a device which will grind, mix and blend face powder in such a manner as to thoroughly intersperse the particles of the substances used, creating a fine homogenous mixture.

We accomplish the foregoing object of our invention by providing a device having a rotating chamber supported at an angle to the horizontal. Thus the particles are not only being rotated, but in addition, the material is forced from the bottom by the centrifugal force and ascends the inclined surfaces, where it is given a circulatory motion with the remaining particles resulting in a longitudinal, transverse, and rotational motion.

The powder, however, is extremely light and its own weight is insufficient to break up the particles into the fineness desired. Accordingly, a further object of our invention consists in providing an auxiliary means within the rotating chamber for grinding the particles where the weight of the particles is insufficient.

Further, in the case of face powder, we have found that the centrifugal motion tends to cause an accumulation of the particles along the peripheral surface.

An additional object, therefore, is to provide a peripheral scraper which will redirect the particles from the inner peripheral surface of the mixer towards the center of the rotating mass, insuring a thorough mix.

Other objects are to provide a transparent container for mixing the substances to acquaint the operator with the condition of the contents; to provide a rotating means adapted to support the transparent container and to permit it to be removed without difficulty; to provide convenient means for detachably locking the container to the mixer; to provide means for varying the speed of the mixer; to provide means whereby the container will be rotated and the scraper held stationary, all contained in a portable device easily carried by hand.

We accomplish these and other objects and obtain our new results as will be apparent from the device described in the following description, particularly pointed out in the attached claims, and

illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevation of our novel mixer, grinder and blender used for face powder.

Fig. 2 is a sectional view thereof.

Fig. 3 is a side view of our locking device with its cover removed.

Fig. 4 is a view of our scraper.

In the drawing, reference numeral 10 designates the platform upon which our device is mounted. It consists of a motor housing 11 for the motor 12, having a worm and gear reduction 13, driving the shaft 14 locked to the gear by means of nut 15.

Screw 16 locks the housing 11 to the platform 10 through threaded perforated integral studs 17.

A rheostat 18 is provided for varying the speed of the motor and the on and off switch 19 controls the flow of current to the motor through leads, not shown.

A thrust bearing 20 mounted on the support 21, supports the shaft 14. The support is positioned on the housing 11 by means of screws 22.

A rotating platform 23, bolted as at 24 to collar 25 is mounted on the shaft 14.

A cushion 26 resiliently supports the glass container 27, on the rotating platform 23. A washer 28 within the cover 29 seals the contents of the container during rotation. The cover is attached to a collar 30, by means of screw 31, and a cover pin 32 is rotatably and centrally positioned thereon, extending to the inside thereof, to permit the scraper arm 33 to be rigidly connected transversely thereto by means of set screw 34. A scraper blade 33A is attached to the scraper arm and extends longitudinally engaging lightly the inside surface of the container. A knurled disc 35 is integrally mounted on the pin 32, having an extending sleeve 36, slotted to receive the engaging pin 37, in turn mounted transversely on the extending end of supporting shaft 38.

The shaft 38 is supported on the covered collar 39, mounted on base arm 40, upwardly extending from base 10. The base arm may be cast integrally with the base or attached thereto, as shown by base screws 41.

The collar 39 is axially apertured (see Fig. 3) to receive the shaft, and slotted through to the outer surface as at 42 to receive pin 43, mounted transversely in the shaft and extending through the slot. The slot is inclined as at 44 to permit the pin 43 to be cammed thereon, and is provided with a shoulder 44A to lock the pin in its cammed position. Within the collar, and around

the shaft is housed a spring 45, compressed thereon by the pin 43 and the inside transversely extending wall of the knurled handle 46 integrally mounted on the shaft 38 by set screw 46A. A cover 47 completes the assembly.

The device is operated as follows: The handle 46 is rotated forcing pin 43 to ride cam 44 and until it is engaged by shoulder 44A, against the action of spring 45. In this position the pin 37 is withdrawn from sleeve 36, and the cover 29 engages the supporting rest 40A of the base arm 40, preventing the container from dropping.

The cover 29 may be removed from the container 27, which is withdrawn as a unit with it, from its supporting platform 23. The scraper and its arm are removed together with the cover, and the substances it is desired to mix, grind or blend are inserted into the container. A cylindrical weight 48 is inserted therein resting on the lower curved wall of the container as shown in Fig. 2, and the cover replaced, with the scraper inserted in the upper position, similarly shown. The container is then replaced on the platform 23, handle 46 rotated to cause pin 43 to be cammed back into its extreme position shown in Fig. 3, actuated by spring 45, thus locking pin 37 in collar 36. The scraper arm 33 is locked in the position shown, to the pin 32, which prevents rotation of the scraper.

Switch 19 is then manipulated together with rheostat 18 to obtain the desired speed. The motor causes platform 23 to be rotated together with container 27, cover 29, and collar 30. Bearings 49 may be positioned between the collar 30, and the pin 32 to insure frictionless movement.

We have found that the cylindrical weight 48 will rotate within the revolving inclined container, riding on a layer of the powder particles, crushing them.

The stationary scraper causes the particles adhering to the walls of the container to drop vertically, thus changing their position with respect to the longitudinal axis of the container, all resulting from the inclined axis of revolution.

The device illustrated and described is extremely compact, and light in weight, rendering it portable. The powder or other substance placed within the container, is expeditiously mixed or ground, utilizing the cylindrical weight as described, rotated on an angle inclined to the horizontal. Face powder inserted therein in various color combinations, may be blended into a single shade with a minimum amount of effort. The

device is simple to operate and an unskilled person may perform the necessary steps without difficulty.

We have thus described our invention, but we desire it understood that it is not confined to the particular forms or uses shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from the spirit of our invention, and, therefore, we claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which, objects of our invention are attained and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of the many that can be employed to attain these objects and accomplish these results.

What we claim and desire to secure by Letters Patent, is as follows:

We claim:

1. A mixer comprising a support rotating on an axis at an angle to the horizontal, a container mounted on said support and rotated therewith a removable cover for said container for enclosing the contents during rotation, means for securing said cover to said container permitting said cover and container to rotate simultaneously, a scraper rotatably mounted with respect to said cover and engaging the inner wall of the container for removing adhering particles therefrom, a non-rotatable shaft for engagement with said scraper for preventing the rotation of the scraper with said container; and means for disengaging said shaft from said scraper.

2. A device for blending face powder, comprising a base section, a housing mounted at one end thereof and enclosing a motor; a shaft rotated by said motor and supported in said housing with its axis inclined to the horizontal, a platform mounted on said shaft; a glass container supported on said platform and adapted to be rotated thereby, a cover for said container adapted to rotate therewith, having a central aperture, a pin positioned therein; a scraper for engaging the inner surface of said container and fixedly mounted to one end of said pin; a second shaft non-rotatably supported on said base in spaced relation to the first and on the same axis, and means for locking said shaft to said pin for preventing the rotation of said scraper.

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