July 14, 1936. E. ESSLEN 2,047,317

POWDER MIXING DEVICE

Filed Dec. 7, 1934

Fig. 1

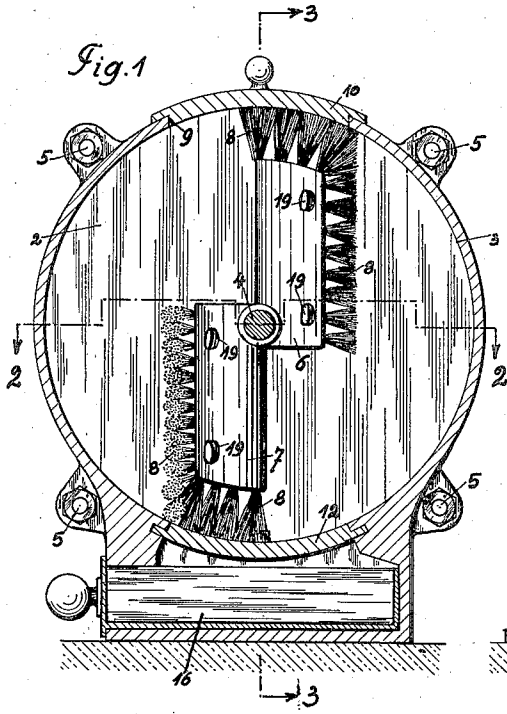
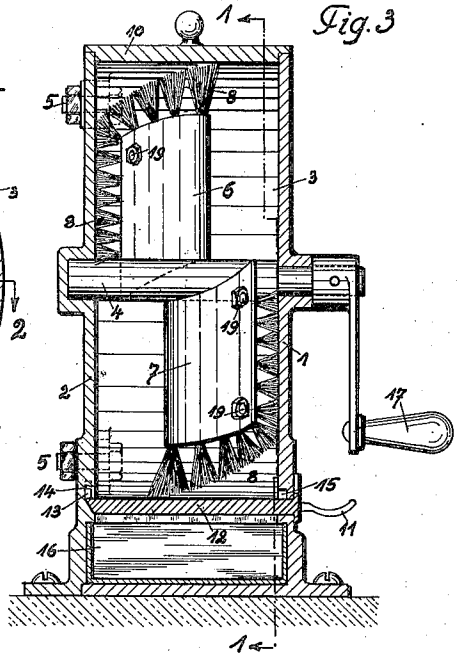


Fig. 3



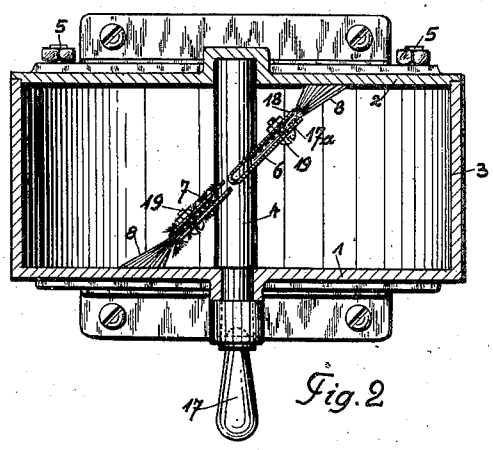


Fig. 2

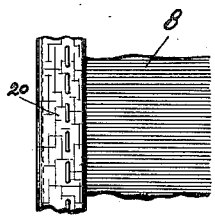


Fig. 4

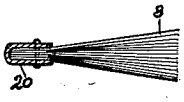


Fig. 5

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Patented July 14, 1936 2,047,317

UNITED STATES PATENT OFFICE

2,047,317

POWDER MIXING DEVICE

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Application December 7, 1934, Serial No. 756,499
In Germany July 16, 1934

4 Claims. (Cl. 259—109)

This invention relates to a powder mixing device for thoroughly mixing small amounts of face powder of different colors so as to rapidly and conveniently adapt the powder to the complexion.

The invention attains its object by arranging in a stationary cylindrical casing closed on all sides and provided with powder charging and discharging openings a plurality of rotary propeller-like brushes which are staggered and diametrically opposed to each other and whose hairs are in contact with the circumference and the faces of the casing.

This construction affords the advantage that the propeller-like brushes produce an eddy air current which thoroughly mixes the powder in a very short time, i. e., after a few revolutions. Furthermore, the brushes afford the additional advantage that they sweep out the mixed powder through the discharge opening, including the powder adhering to the inner circumference and faces of the casing, so that the latter is thoroughly cleaned and ready for a new mixing operation.

By way of example, the invention is illustrated in the accompanying drawing, in which Figure 1 is a sectional elevation of the device on the line 1—1, of Fig. 3; Fig. 2, a section on the line 2—2, of Fig. 1; Fig. 3, a section on the line 3—3, of Fig. 1; Fig. 4, an elevation showing how the hairs of the brushes are secured to an elastic strip; and Fig. 5, a sectional plan of Fig. 4.

Referring to the drawing, the shaft 4 is rotatably disposed in the faces 1, 2 of the cylindrical casing 3, the wall 2 being detachably secured to the casing 3 by means of the screws 5. On the shaft 4 the helical brush bodies 6, 7 are arranged diametrically opposed to each other and so that their hairs 8 are in contact with the walls 1, 2 and the inner surface of the casing 3. The casing 3 has a charging opening 9 closed by the cover 10 during the mixing operation and a discharge opening for the mixed powder, which is shut during mixing by a slide 12 provided with a handle 11. To prevent accidental withdrawal of the slide 12 from the wall 1 it possesses a projection 13 which engages a recess 14 in the wall 2 when the slide 12 is in closing position and which rests in a recess 15 in the wall 1 when the slide 12 is in opening position. Below the discharge opening a collector 16 having the form of a withdrawable box is provided. The free end of the shaft 4 passing through the wall 1 carries a crank 17.

To mix varicolored powders they are charged, when the slide 12 is in closing position, through the opening 9 into the cylindrical casing 3 which is then closed by the cover 10, whereupon the crank 17 is turned to rotate the brushes 6, 7 in the casing 3. The result is that the powder to be mixed is thoroughly whirled about and will be intimately mixed already after a few revolutions, owing to the action of the hairs 8 on the brush bodies 6, 7, so that, after withdrawal of the slide 12, the ready mixture can be passed into the collector 16. When the slide 12 is then kept open for a while and the brushes 6, 7 are slowly rotated, they will sweep the inner surfaces of the walls 1, 2 and the cylinder 3 and lead the sweepings to the collector 16, so that nothing is lost and the cylinder is thoroughly cleaned after mixing and ready for a new operation without requiring special cleaning means.

Each brush body 6, 7 consists of two elastically connected tongues 17a, 18, between which the hairs 8 are clamped by means of the screws 19, so as to facilitate the adjustment or exchange of the hairs when worn. The hairs 8 are preferably secured to a yielding strip of fabric, such as linen, or to a cord, etc., to facilitate their insertion and adjustment in the bodies 6, 7 and to prevent single hairs from dropping out.

I claim:—

1. In a powder mixing device, a cylindrical container having peripheral and end walls, a shaft journalled in said end walls axially of the container, means to rotate said shaft, brush holders fixed to said shaft, each having a side confronting an end wall of the container and an end confronting the peripheral wall of the container, said brush holders each consisting of a pair of jaws resiliently connected at the side remote from the container end walls, said jaws being urged apart at their free edges by the resiliency of said connection, means to draw the jaws of each pair together against the action of the resilient means, and brushes carried by the sides and ends of said brush holders and sweeping over the peripheral and end walls of the container.

2. In a powder mixing device, a cylindrical container having peripheral and end walls, a shaft journalled in said end walls axially of the container, means to rotate said shaft, brush holders fixed to said shaft, each having a side confronting an end wall of the container and an end confronting the peripheral wall of the container, said brush holders each consisting of a pair of jaws resiliently connected at the side remote from the container end walls, said jaws being urged apart at their free edges by the resiliency of said connection, means to draw the jaws of each pair together against the action of the resilient means,

and brushes carried by the sides and ends of said brush holders and sweeping over the peripheral and end walls of the container, said brushes being arranged to sweep over the entire inner surface of the container in one revolution of the shaft.

3. In a powder mixing device, a cylindrical container having peripheral and end walls, a shaft journalled in said end walls axially of the container, means to rotate said shaft, brush holders fixed to said shaft, each having a side confronting an end wall of the container and an end confronting the peripheral wall of the container, said brush holders being arranged on the shaft to lie in a plane intersecting the shaft at an acute angle, said brush holders each consisting of a pair of jaws resiliently connected at the side remote from the container end walls, said jaws being urged apart at their free edges by the resiliency of said connection, means to draw the jaws of each pair together against the action of the resilient means, and brushes carried by the sides and ends of said brush holders and sweeping over the peripheral and end walls of the container.

4. In a powder mixing device, a cylindrical container having peripheral and end walls, a shaft journalled in said end walls axially of the container, means to rotate said shaft, brush holders fixed to said shaft, each having a side confronting an end wall of the container and an end confronting the peripheral wall of the container, said brush holders being arranged on the shaft to lie in a plane intersecting the shaft at an acute angle, said brush holders each consisting of a pair of jaws resiliently connected at the side remote from the container end walls, said jaws being urged apart at their free edges by the resiliency of said connection, means to draw the jaws of each pair together against the action of the resilient means, and brushes carried by the sides and ends of said brush holders and sweeping over the peripheral and end walls of the container, said brushes being arranged to sweep over the entire inner surface of the container in one revolution of the shaft.

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