

April 26, 1949.

P. WOLFERS

2,468,153

COMPACT

Filed July 17, 1946

2 Sheets-Sheet 1

FIG. 1

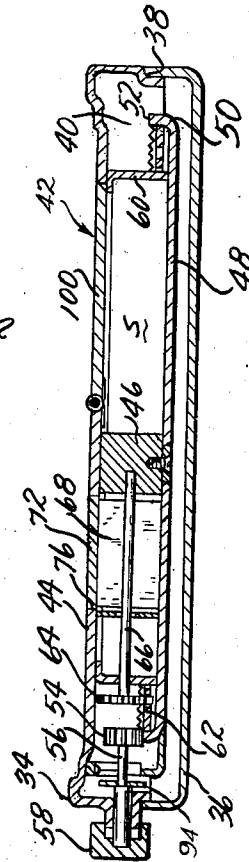
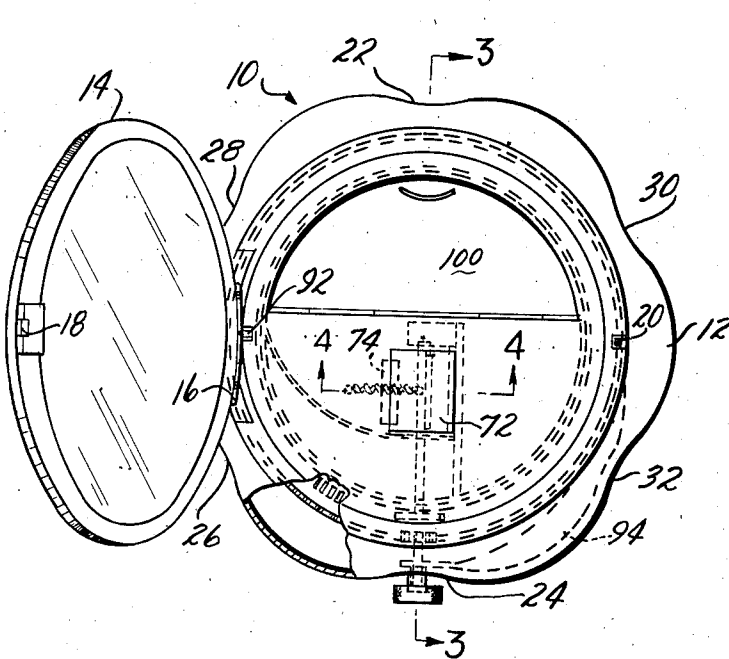


FIG. 3

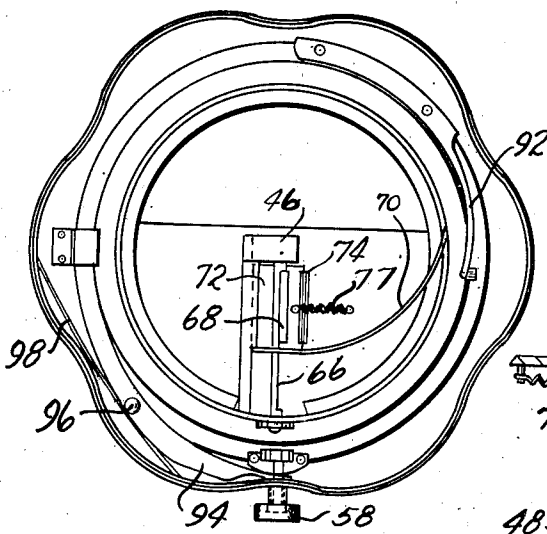


FIG. 2

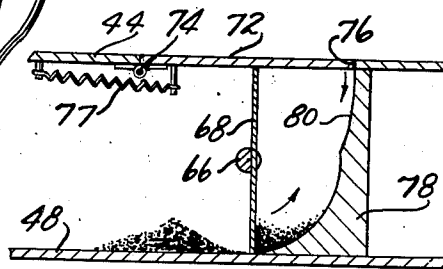


FIG. 4

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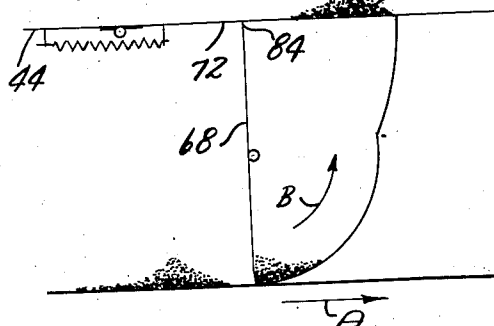
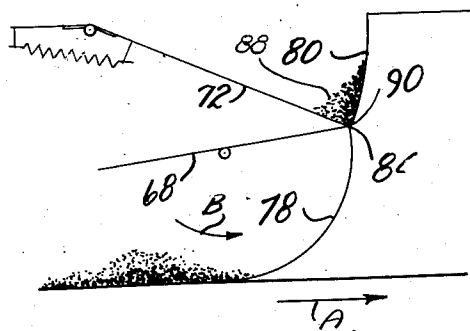
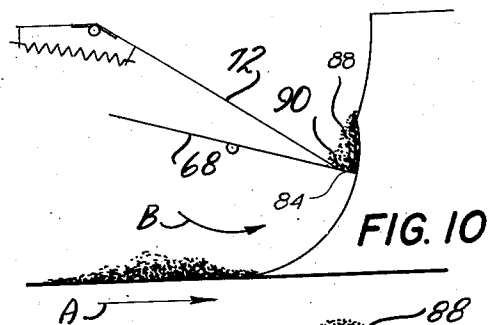
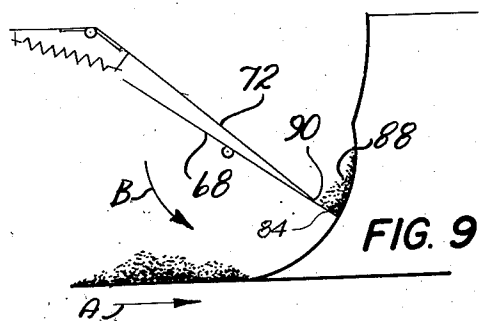
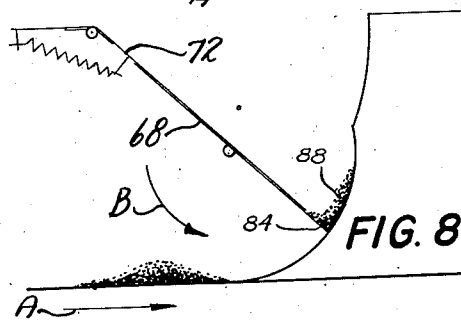
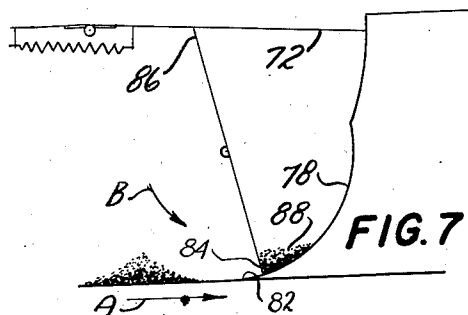
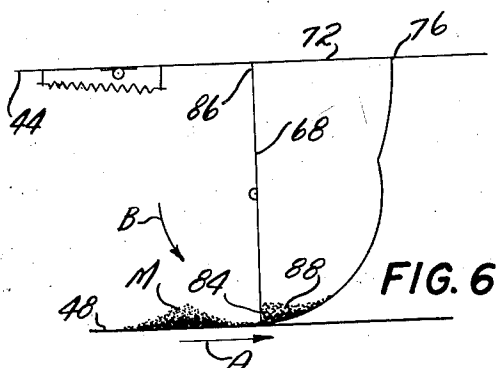
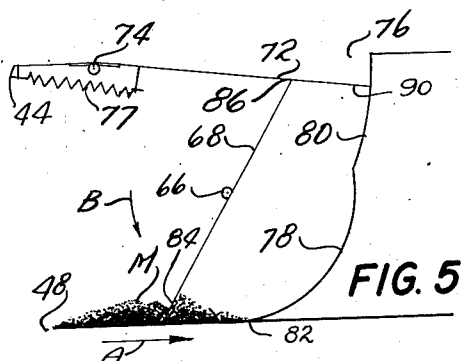


FIG. 12

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COMPACT

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Application July 17, 1946, Serial No. 684,361

15 Claims. (Cl. 132—82.2)

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This invention relates to ladies' portable powder dispensers commonly known and hereinafter referred to as "compacts." More particularly the invention pertains to compacts having powder storage compartments and separate compartments in which the powder puffs are contained.

Heretofore in compacts of the character described, it has been the custom to force powder from the storage compartment through constricted passageways into the puff or dispensing compartment. I have found out that powder thus dispensed tends to agglomerate and is only with difficulty finely divided again.

It is a primary object of the present invention to provide a compact of the character described in which powder is moved from the storage to the dispensing compartment in such fashion that the powder never loses its loose and fluffy nature.

It is another object of my invention to provide a compact of the character described, in which the powder is lifted rather than pressed from the storage to the puff compartment.

It is a further object of my invention to provide a compact of the character described which comprises relatively few and simple parts, is inexpensive to manufacture and is rugged in use.

Other objects of my invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described and of which the scope of application will be indicated in the appended claims.

In the accompanying drawings, in which is shown one of the various possible embodiments of this invention,

Fig. 1 is a top view of a compact embodying my invention;

Fig. 2 is a bottom view of the compact with the lower half of the base and the bottom wall of the powder storage compartment removed to show the powder dispensing mechanism;

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 1;

Fig. 4 is an enlarged sectional view taken substantially along the line 4—4 of Fig. 1, and is explanatory of the mechanism employed to lift powder from the storage to the puff compartment; and

Figs. 5-12 are schematic views of the mechanism shown in Fig. 4 in successive stages of its operation.

Referring now in detail to the drawings 10 denotes a compact embodying my invention and,

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in general, similar to the compact shown and disclosed in my copending application Serial No. 561,508 for Ladies' portable powder dispenser, filed November 2, 1944, but differing therefrom in that a new type of mechanism is employed for transferring powder from the storage to the puff compartment.

Said compact 10 comprises a base 12 and cover 14 pivotally secured to the base by a hinge 16. The cover is detachably held in closed position by a latch 18 on the cover and a detent 20 in the base. The plan contour of the base is approximately that of a hexagon with corners rounded and sides concave. This provides a configuration of such character that two indentations 22, 24 are disposed approximately 90° to either side of the hinge and four other indentations 26, 28, 30, 32 are disposed approximately 60° away from the indentations 22, 24 and to both sides thereof, thereby imparting a pleasing and symmetrical appearance to the compact and furnishing lateral holds or grips for the thumb and fingers. It is pointed out that in the illustrated compact the plan contour is controlled by the base 12 inasmuch as it is larger than the cover. However, it will be appreciated that if the base and cover are of like size then the contour of both will control the plan contour of the compact.

The outer casing, which comprises the base and cover, may be fabricated from any suitable material, for example, plated brass, a precious metal or a plastic material (e. g., cellulose acetate, acrylic resin or a phenolic condensate). The base 12 is made in two parts, to wit, an upper half 34 and a lower half 36, both of which have peripheral skirts interfitted at a joint 38 to provide a hollow space 40 between the two halves.

The upper half has a large shallow central indentation 42 constituting the puff compartment whose bottom wall 44 comprises the powder dispensing station. Said bottom wall supports a dependent central post 46 on whose lower end a disc 48 is transversely journaled. The outer periphery of said disc is turned up to provide a flange 50 whose rim is shaped to constitute a ring gear 52. Said gear meshes with a pinion 54 fixed to a shaft 56 journaled in the upper half 34 of the base and protruding outwardly to receive a knob 58. It will be seen that turning the knob 58 causes the disc 48 to rotate. Said disc forms the bottom wall of a powder storage compartment S whose side walls are defined by a squat tube 60 permanently secured as by spot

welding to the underside of the bottom wall 44 of the powder dispensing station.

The disc carries a second ring gear 62 concentric with the ring gear 52 and optionally in the form of an annular flat disc having a series of radial perforations, the portions of the disc between the perforations serving as the teeth of the gear. Said gear 62 is in mesh with a pinion 64 fixed on a shaft 66 journaled in the tube 60 and post 46, as clearly shown in Fig. 3. From the foregoing it will be understood that rotation of the knob 58 will cause the shaft 66 to rotate.

The shaft 66 serves as the axle for a rotary paddle 68 which turns in the space between the disc 48 and bottom wall 44 of the powder dispensing station, that is to say, as the paddle revolves it sweeps through a cylindrical space approximately tangent at its lower side to the disc 48 and approximately tangent at its upper side to the wall 44. The sweeping action of the paddle takes place at the same time that the disc 48 is revolving about the post 46 so that powder lying on said disc 48 in the storage compartment S is brought up to the paddle 68 and then raised by said paddle toward the wall 44 without compressing the same.

Preferably the length of the paddle 68 does not exceed the radius of the storage compartment and some powder therefore may be carried past the outer end of the paddle when the disc rotates. To prevent this I employ a guiding blade 70 secured to the undersurface of the wall 44 and extending in a sweeping line from the tube 60 to the outer end of the paddle as seen in Fig. 1.

Means also is provided to transfer to the upper surface of the wall 44, without compression, powder picked up from the disc 48 by the paddle 68. Such means comprises an oscillatory member such as the plate 72, which is pivoted to the wall 44 at a hinge 74 and which rests on the rotary paddle, said member being sufficiently long to extend beyond the shaft 66 but short enough so that its free end can rest on an upper surface of the paddle well in from a rotating edge thereof at some stage during the rotation of the paddle. With a construction such as this, powder picked up by the paddle from the disc 48 will be transferred without compression to the upper surface of the plate 72 at a free edge thereof and subsequently said plate will be raised by continued rotation of the paddle to a horizontal position in an opening 76 in the wall 44 and flush with said wall. A spring 77 keeps the plate in contact with the paddle.

Although the paddle 68 and plate 72 as thus far described are capable without any additional mechanism of raising powder from the storage compartment to the powder dispensing station without compressing the same, their action will be substantially aided by the provision of means to prevent powder from falling off the paddle and plate during the raising thereof and to accumulate powder for the paddle to pick up. Such means as illustrated herein constitutes a scoop 78 which may be fabricated from sheet metal and is supported from the wall 44. The lower edge of said scoop scrapes against the disc 48 or is disposed very close thereto so that, as the disc rotates, the scoop will accumulate in a pile at its lower edge a mound of powder disposed in the path of travel of the paddle. The scoop is curved to approximately the path through which the outer edge of the paddle sweeps so that said paddle edge will ride along or bear against the scoop

and thereby prevent any powder from falling off the paddle.

The scoop may also have integrally formed therewith a portion 80 along which the free edge of the plate 72 is adapted to ride or bear when said edge leaves the paddle, as will later be pointed out in detail. The portion 80 extends from the wall 44 to that part of the scoop along which the paddle edge rides.

To better understand the manner in which the compact operates in raising powder from the storage compartment to the powder dispensing station without compression, attention is directed to Figs. 5-12 in which this action is shown schematically with respect to the wall 44, disc 48, shaft 66, paddle 68, plate 72, hinge 74, recess 76, scoop 78, and portion 80.

In Fig. 5 these elements of the compact are shown in the position they occupy as the disc 48 moves in the direction indicated by the arrow A to pick up a mound M of powder at the lower edge 82 of the scoop. It is seen that at such time the lower edge 84 of the paddle is approaching the mound M in the direction of the arrow B while the upper edge 86 of the paddle is supporting the plate in the position indicated.

Continued rotation of the paddle brings the parts to the position indicated in Fig. 6 at which time the lower edge 84 of the paddle pushes the mound M on to the scoop 78 thereby segregating a small quantity 88 of powder from the mass of powder in the storage compartment.

Fig. 7 shows a succeeding stage at which the paddle has raised the small segregated quantity 88 of powder a short distance up on the scoop 78 and the upper edge 86 of the paddle has rotated slightly so as to permit the plate 72 to drop from the position occupied in Fig. 6.

In Fig. 8 the rotation of the paddle has continued to a point where the plate 72 has dropped to its lowermost position in which it lies flat on the paddle.

As rotation continues further, the position shown in Fig. 9 obtains in which the free edge 90 of the plate 72 has line contact with the upper face of the paddle and said edge is moving toward the small segregated quantity 88 of powder, although possibly still out of contact therewith depending upon the depth of the powder in the storage compartment and the resulting size of the mass of powder segregated.

Continuing rotation of the paddle brings the free edge 90 of the plate into contact with the segregated quantity of powder as indicated in Fig. 10. At such time said free edge slides along the paddle underneath the segregated mass of powder thereby transferring the powder from the tip of the paddle to the tip of the plate.

This action continues until the free edge 90 of the plate reaches the edge 84 of the paddle as seen in Fig. 11, it being noted that as the paddle passes beyond this position the scoop 78 need no longer confine the powder so that the scoop may be omitted above this point. Also at this point the portion 80 becomes effective, confining the segregated quantity of powder to the free edge 90 of the plate.

Finally, as the paddle continues to rotate the free edge of the paddle will ride along the under surface of the plate until the segregated mass 88 of powder and the plate are raised up into the plane of the wall 44, as seen in Fig. 12. It may be mentioned that a position of plate and other elements intermediate that seen in Figs. 11 and

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12 is shown in Fig. 1, reference being had particularly to the upper edge of the paddle.

Although it has been assumed throughout the foregoing description that the disc 48 and paddle 68 are turned by rotating a manually manipulatable member such as the knob 58, it should be clear that my invention is not thus limited and that the powder transferring mechanism may be modified so that any type of movement of the manually manipulatable member, e. g. swiveling, radial shifting of circumferential shifting, will cause the paddle to turn and relative rotation of the disc and scoop to occur.

Optionally, the knob may be arranged to move to detent 20 clear of the latch 18 so that the cover can open under the action of a spring 92. For this purpose the shaft 56 may be enlarged where it is journaled in the base and the forked end of a lever 94 may bear against the shoulder thus formed. Said lever is pivoted on a stud 96 and the other end thereof carries the detent 20. A spring 98 urges the forked end of the lever outwardly thus normally maintaining the knob 58 in a position spaced from the base 12. Pressing the knob inwardly turns the lever 94 and releases the latch. The knob can be rotated in either idle or depressed position to dispense powder.

Powder can be inserted into the storage compartment through an opening in the wall 44 normally covered by a pivoted lid 100.

It will thus be seen that there is provided a compact which achieves the several objects of the invention and is well adapted to meet the conditions of practical use.

As various embodiments might be made of the above invention and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein described or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

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

1. In combination in a compact, a hollow base including a concealed powder storage compartment, a powder dispensing station above said storage compartment, said station including an opening, a manually manipulatable member accessible from the exterior of said compact, means to mount said member for movement relative to the compact, and means effective upon such motion of said member for lifting powder from the storage compartment to the dispensing station through said opening without compression of the powder during transferal thereof.

2. In combination in a compact, a hollow base including a concealed powder storage compartment, a powder dispensing station above said storage compartment, said station including an opening, a manually manipulatable member accessible from the exterior of said compact, means to mount said member for movement relative to the compact, and means effective upon such motion of said member for lifting powder from the storage compartment to the dispensing station through said opening without compression of the powder during transferal thereof, said means comprising a member movable between two extreme positions in one of which it lies in said opening flush with said powder dispensing station and in the other of which it lies beneath powder in the storage compartment.

3. In combination in a compact, a hollow base including a concealed powder storage compartment, a powder dispensing station above said

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storage compartment, said station including an opening, a manually manipulatable member accessible from the exterior of said compact, means to mount said member for movement relative to the compact, and means effective upon such motion of said member for lifting powder from the storage compartment to the dispensing station through said opening without compression of the powder during transferal thereof, said means comprising a plate hingedly mounted at said powder dispensing station and adapted to be oscillated between two extreme positions in one of which it is disposed in said opening at said station and in the other of which it is disposed beneath powder in the storage compartment.

4. In combination in a compact, a hollow base including a concealed powder storage compartment, a powder dispensing station above said storage compartment, said station including an opening, a manually manipulatable member accessible from the exterior of said compact, means to mount said member for movement relative to the compact, means effective upon such motion of said member for lifting powder from the storage compartment to the dispensing station through said opening without compression of the powder during transferal thereof, said means comprising a paddle mounted for rotation about an axis substantially parallel to the base of the storage compartment and adapted upon rotation to lift powder upwardly therefrom toward the powder dispensing station, and means to lift from the paddle to said station through said opening the powder lifted upwardly by the paddle from the storage compartment.

5. A mechanism for transferring powder from the storage compartment of a compact to the powder dispensing station thereof, said mechanism comprising a pick up station in said storage compartment, said pickup station being disposed in fixed relationship to said dispensing station, means to relatively move said pickup station and said storage compartment, an opening in the base of said powder dispensing station, said opening being disposed above said pick up station, a paddle mounted to rotate about an axis midway between said pick up station and said opening, a member mounted for oscillation at said powder dispensing station, said member being rotatable to a position in which it is disposed in said opening and is flush with said dispensing station, said member resting upon said paddle, extending over the axis of rotation thereof and having its free edge resting upon said paddle intermittently during rotation of the paddle whereby as the paddle turns the free edge of the member will approach an edge of the paddle on which powder is being lifted upwardly so as to transfer said powder from the paddle to the member and the member will thereafter be lifted by the paddle to its position flush with the dispensing station.

6. A mechanism as set forth in claim 5 wherein the rotating edge of the paddle as it lifts powder rides along an element providing a curved surface to prevent the powder from falling off the paddle, said element occupying a fixed position with respect to the axis of rotation of the paddle.

7. A mechanism as set forth in claim 5 wherein the oscillating edge of the member as it lifts powder rides along an element providing a curved surface to prevent powder from falling off said member, said element occupying a fixed position with respect to the axis of oscillation of said member.

8. A mechanism as set forth in claim 5 wherein the rotating edge of the paddle as it lifts powder rides along an element providing a curved surface to prevent the powder from falling off the paddle, said element occupying a fixed position with respect to the axis of rotation of the paddle, and wherein the oscillating edge of the member as it lifts powder rides along another element providing a curved surface to prevent powder from falling off said member, said second element occupying a fixed position with respect to the axis of oscillation of said member.

9. A mechanism for transferring powder from the storage compartment of a compact to the powder dispensing station thereof, said mechanism comprising a pick up station in said storage compartment, an opening in the base of said powder dispensing station, said opening being disposed above said pick up station, a paddle mounted to rotate about an axis midway between said pick up station and said opening, a member mounted for oscillation at said powder dispensing station, said member being rotatable to a position in which it is disposed in said opening and is flush with said dispensing station, said member resting upon said paddle, extending over the axis of rotation thereof and having its free edge resting upon said paddle intermittently during rotation of the paddle whereby as the paddle turns the free edge of the member will approach an edge of the paddle on which powder is being lifted upwardly so as to transfer said powder from the paddle to the member and the member will thereafter be lifted by the paddle to its position flush with the dispensing station, a scoop at the pick up station having a curved surface on which the rotating edge of the paddle rides as it lifts powder so as to prevent the powder from falling off the paddle, said scoop occupying a fixed position with respect to the axis of rotation of the paddle, and means to relatively move said scoop and the base of the storage compartment whereby a mass of powder will pile up at the pick up station ready to be lifted up by the paddle as it rotates.

10. A compact comprising a hollow base including a top wall constituting a powder dispensing station, an opening in said wall, a disc beneath and spaced from said wall, means to rotatably support said disc, said disc constituting the base of a powder storage compartment having side walls, a scoop beneath said opening and adjacent said disc, means to rotate said disc so that said scoop will pile up powder, a paddle, means to mount said paddle for rotation about an axis midway between said disc and said opening, said scoop having a curved surface along which the edges of the paddle ride as it rotates, said scoop occupying a fixed position with respect to the axis of rotation of the paddle, a plate whose contour matches that of the opening, means to mount said plate for oscillation about an axis supported by the wall of the powder dispensing station, said plate resting on said paddle and extending over the axis of rotation thereof, the free edge of said plate resting upon the paddle intermittently during rotation of the paddle whereby, as the paddle turns, the free edge of the plate

will approach an edge of the paddle at which powder is being lifted so as to transfer said powder from the paddle to the plate, and the plate will thereafter be lifted by the paddle to a position filling the opening and flush with the wall of the powder dispensing station.

11. A compact as set forth in claim 10 wherein in a single manually manipulatable means is provided to jointly rotate the disc and the paddle.

12. A compact as set forth in claim 10 wherein the paddle and the disc are kinematically interconnected for joint rotation.

13. A compact as set forth in claim 10 wherein the disc carries a ring gear and the paddle turns with a pinion meshing with said ring gear so that the paddle and disc will jointly rotate.

14. A compact as set forth in claim 10 wherein the disc carries a ring gear and the paddle turns with a pinion meshing with said ring gear so that the paddle and disc will jointly rotate and wherein the disc carries a second ring gear in mesh with the pinion rotatable with a manually operable member accessible from the exterior of the compact.

15. A compact comprising a hollow base including a top wall constituting a powder dispensing station, an opening in said wall, a disc beneath and spaced from said wall, means to rotatably support said disc, said disc constituting the base of a powder storage compartment having side walls, a scoop beneath said opening and adjacent said disc, means to rotate said disc so that said scoop will pile up powder, a paddle, means to mount said paddle for rotation about an axis midway between said disc and said opening, said scoop having a curved surface along which the edges of the paddle ride as it rotates, said scoop occupying a fixed position with respect to the axis of rotation of the paddle, a plate whose contour matches that of the opening, means to mount said plate for oscillation about an axis supported by the wall of the powder dispensing station, said plate resting on said paddle and extending over the axis of rotation thereof, the free edge of said plate resting upon the paddle intermittently during rotation of the paddle whereby, as the paddle turns, the free edge of the plate will approach an edge of the paddle at which powder is being lifted so as to transfer said powder from the paddle to the plate, and the plate will thereafter be lifted by the paddle to a position filling the opening and flush with the wall of the powder dispensing station, said scoop including a second curved surface along which the free edge of the plate rides as the plate oscillates, said scoop also occupying a fixed position with respect to the axis of oscillation of the plate.

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