

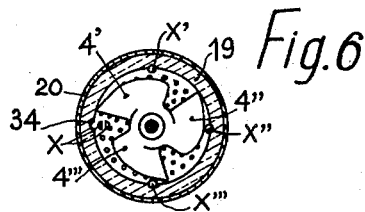
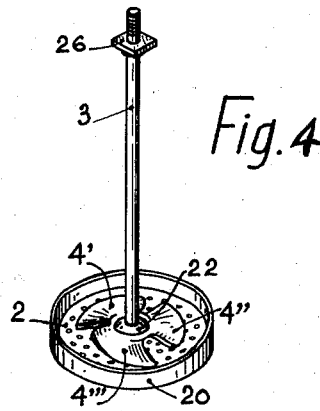
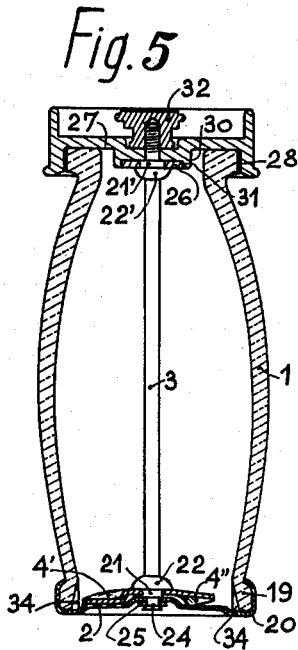
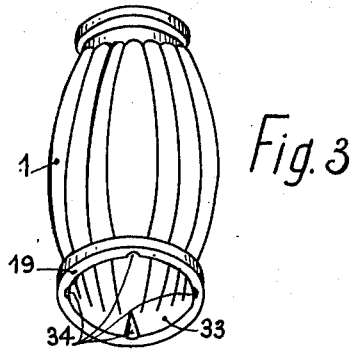
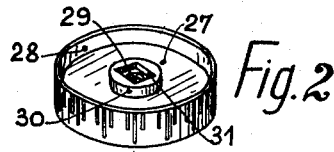
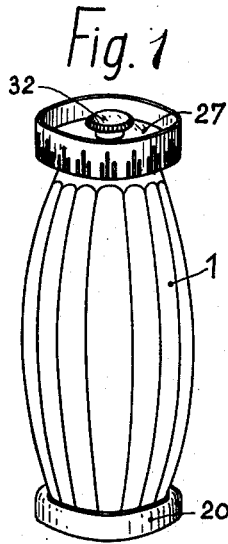
March 23, 1937.

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2,074,795

MILL FOR PEPPER, SALT, SUGAR, COFFEE, AND THE LIKE

Filed Dec. 10, 1935



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UNITED STATES PATENT OFFICE

2,074,795

MILL FOR PEPPER, SALT, SUGAR, COFFEE, AND THE LIKE

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Application December 10, 1935, Serial No. 53,804
In Luxemburg December 15, 1934

5 Claims. (Cl. 83—13)

The present invention has for its object a mill for pepper, salt, sugar, coffee and other similar products and articles.

It is known that mills of this kind generally consist of a metallic solid part of suitable shape pivotally mounted inside a container, above a metallic cooperating part cut of corresponding shape. With this construction, mills of the type above referred to are, as a rule, rather expensive. Furthermore, the cooperating metallic parts are rapidly worn on their edges. Finally, as the mill cannot include a sieve, the grains that are obtained are of nonuniform size.

The object of the present invention is to provide a mill which obviates these drawbacks.

The mill according to the present invention consists of a container, closed at its lower part by a sieve made of perforated metal and at its upper part by a removable lid, the central part of which centers the spindle carrying a crushing helical member mounted inside said container and the lower edge of which rubs, in rotation against the sieve, the central part of said sieve forming a journal for the lower end of said member.

One or several recesses are provided in a stationary part located opposite the peripheral edge of the crushing member, so that the particles of the matter to be crushed, pepper grains for instance can, by partly engaging into these recesses, be held by said recesses so that they are cut by the peripheral edge of the crushing member when said edge moves past said recesses.

A preferred embodiment of the present invention will be hereinafter described, with reference to the accompanying drawing, given merely by way of example, and in which:

Fig. 1 is a perspective view of the device;

Figs. 2 and 3 are perspective views of the plug or cover, and the body of said mill, seen from below;

Fig. 4 shows, before setting on the body of the container, the end element forming the sieve, on which the crushing member and its spindle are journaled;

Fig. 5 is an axial sectional view of the parts of the mill assembled together;

Fig. 6 is a horizontal sectional view of this mill.

In the embodiment shown by Figs. 1 to 6, the body 1, of any suitable shape, is supposed to be made of glass, although it might be made of any other material. The sieve 2 is fixed, by setting or otherwise, through its raised edge 20, upon the lower annular projection 19 of this body. The rotary crushing element includes several helical blades, three for instance 4', 4'', 4''', adapted to

scrape against said sieve and carried by a spindle 3.

In this example, said crushing member is provided, in its central part, with a hole of non-cylindrical shape fitting around a collar 21 of spindle 3 and against a shoulder 22 of said spindle. The fixation of said crushing member is obtained by deformation (crushing) of the end of said collar 21. The end 24 of said spindle 3, which is engaged in a central hole of the sieve, is riveted under an annular disc permitting said spindle to rotate with respect to said sieve. A square part 26 is fixed, in a similar manner, on an upper portion of spindle 3, owing to the provision of a collar 21' and a shoulder 22' on said spindle 3.

The plug or cover 27 the bent flange 28 of which fits over the upper end of body 1 includes, around a central hole 29 provided in a boss 30, a hollow recess 31 in which square part 26 is adapted to fit. A nut 32, screwed on the threaded end of spindle 3, fixes said plug on said piece 26, whereby the crushing member is driven in rotation by the plug.

Around the lower orifice 33 (Fig. 3) of body 1, there are provided, in the thickness of the wall of said body, one or several recesses 34. These recesses, supposed to be four in number in the embodiment shown by the drawing, are obtained by milling of the lower part of the inner wall of the body. This arrangement greatly facilitates the construction.

Recesses 34 (Figs. 3, 5 and 6) are intended to receive the small pieces of the matter to be crushed, for instance pepper grains. The portions of these pieces of matter that project from these recesses are thus cut off by the lateral edges of the crushing elements when the latter move past said recesses.

It should be noted that, in the embodiment above described and illustrated by the drawing, the recesses in question are located at the ends of two diameters at right angles to each other, at the lower part of body 1. Therefore, their angular positions do not correspond to the arrangement of the blades 4', 4'' and 4''' of the crushing member around spindle 3 (Fig. 6). Owing to this arrangement, these three blades successively attack particles x , x' , x'' , x''' of the matter to be crushed (pepper grains for instance). This lack of simultaneity in the attack of these particles by the blades reduces the resistance which would otherwise be produced by the simultaneous attacking of all these particles.

Of course the shape of the helical crushing

member may be varied in accordance with the circumstances. In a likewise manner, the sieve may be plane, concave, convex, conical, corrugated, or of any other suitable shape, the shape of the helical crushing member being in accordance with that of the sieve.

In a general manner, while I have, in the above description, disclosed what I deem to be practical and efficient embodiments of the present invention, it should be well understood that I do not wish to be limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of the present invention as comprehended within the scope of the accompanying claims.

What I claim is:

1. A mill for hard matters such as pepper, salt, sugar, coffee and the like, which comprises, in combination, a container forming the body of the mill, a sieve constituting the lower end of said container, a helical crushing member journaled in said container about an axis substantially at right angles to said sieve having its lower part in contact with said sieve so as to rub thereon when rotated about said axis, said helical crushing member including a plurality of distinct elements rigidly connected together, and a part in said container having a plurality of recesses formed in the inner periphery thereof, located opposite the peripheral edge of said crushing element, said recesses being so positioned that said elements of the crushing member cooperate successively, and not simultaneously, with the corresponding recesses for crushing particles of matter partly engaged in said respective recesses and projecting across the path of said elements of the crushing member.

2. A mill for hard matters for table use which comprises, in combination, a container forming the body of the mill, a sieve constituting the lower end of said container, a removable lid forming the upper end of said container, a helical crushing member axially disposed in said container with its lower part in contact with said sieve so as to rub thereon when rotated about its axis, said helical crushing member including a plurality of distinct elements rigidly connected together, a spindle for said helical member guided at the top in axial relation with respect to said body by said lid and journaled at the bottom in the central part of said sieve, and a part in said container having a plurality of recesses

formed therein along the inner periphery thereof, located opposite the outer peripheral edges of said elements of the crushing member, said recesses being so positioned that said elements of the crushing member cooperate successively, and not simultaneously, with the corresponding recesses for crushing particles of matter partly engaged in said respective recesses and projecting across the path of said elements of the crushing member.

3. A mill for table use for hard matters such as pepper, salt, sugar, coffee, and the like, which comprises, in combination, a container forming the body of the mill, a sieve constituting the lower end of said container, a removable lid forming the upper end of said container, a helical crushing member axially disposed in said container with its lower part in contact with said sieve so as to rub thereon when rotated about its axis, said helical crushing member including a plurality of distinct elements rigidly connected together and distributed at regular intervals around its axis, a spindle for said helical member guided at the top in axial relation with respect to said body by said lid and journaled at the bottom in the central part of said sieve, and a part in said container having a plurality of recesses formed therein at regular intervals along the inner periphery thereof, located opposite the outer peripheral edges of said elements of the crushing member, the number of said recesses being different from that of said distinct elements of the crushing member in such manner that said elements of the crushing member cooperate successively, and not simultaneously, with the corresponding recesses for crushing particles of matter partly engaged in said respective recesses and projecting across the path of travel of said elements of the crushing member.

4. A mill according to claim 2 in which said spindle carries a collar of non-cylindrical shape, and a shoulder next to said collar, said helical crushing member being engaged on said collar, and a means for fixing said member on said collar.

5. A mill according to claim 2 in which said spindle carries a collar of non-cylindrical shape at its upper part, and a shoulder next to said collar, said movable lid being engaged on said collar against said shoulder, and means for applying said lid against said shoulder.

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