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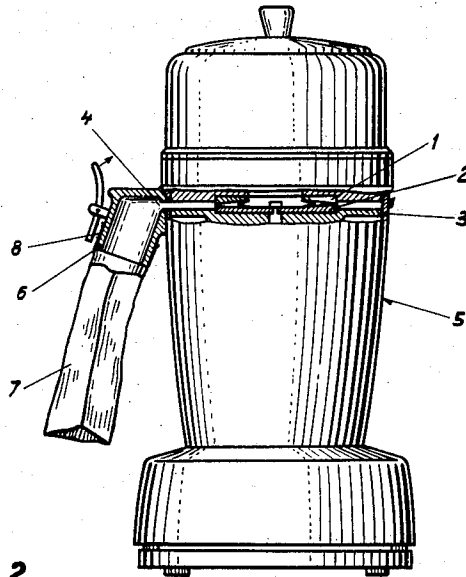
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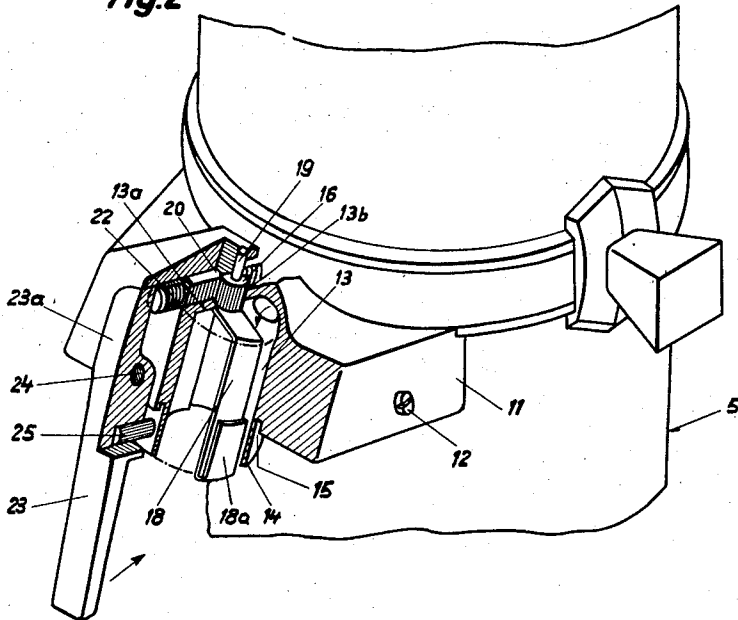
ATTACHMENT FOR COFFEE AND SPICE MILLS AND THE LIKE

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**Fig. 1**



**Fig. 2**



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## ATTACHMENT FOR COFFEE AND SPICE MILLS AND THE LIKE

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6 Claims. (Cl. 141—90)

The present invention relates to an attachment for coffee and spice mills and the like.

In such mills, which are commonly employed for grinding and bagging of the ground substance in detail business, it is of particular importance that no residues remain in the delivery tube of the mill when the substance is being bagged. It has been suggested to equip the delivery tube with a manually operated scraper which removes the residue of the ground material which adheres to the delivery tube prior to removal of the bag, so that it may drop into the said bag. The effectiveness of this device is, however, dependent on the reliability of the staff and is often not employed so that complaints owing to short weight or mixing various materials are received.

The present invention has for its object to eliminate this drawback. It is characterized by the fact that the bag holder is positively coupled with the scraper in such a manner that the scraper is actuated by the movement of the bag holder when the bag is removed.

An embodiment of the invention is illustrated, by way of example, in the enclosed drawing, in which:

Fig. 1 is a longitudinal section of the arrangement of the delivery tube for the ground material, and

Fig. 2 is a perspective view, partly in section, of the material delivery tube equipped with a scraper.

In Fig. 1, the numerals 1 and 2 designate the grinding discs of which the latter, 2, is arranged on the rotating holding disc 3. Through an opening 4 in the container wall 5 and the material delivery tube 6 engaging the same, the ground material is tangentially delivered into the latter as in a cyclone, where it loses the centrifugal power generated by the grinding disc 2 and the holding disc 3 owing to its circular movement along the wall of the tube, and drops into the bag 7. By means of a spring-biased rubber pad 8 the bag 7 is held against the material delivery tube 6.

While the quantity of ground material adhering to the material delivery tube is insignificant with this arrangement, a portion may, depending on the structure and possible static charge in the material, adhere to the material delivery tube. The air in the bag, which is forced out during the filling operation, carries coffee dust with it, which collects on the exterior wall of the filling tube between the latter and the bag. It is therefore advantageous to scrape the dust of the ground material collecting between the exterior tube wall and the bag into the latter as well.

This is achieved by a scraping device as shown in Fig. 2. Arranged on the container wall 5 according to Fig. 1 is a casting 11 attached by means of screws 12. The said casting 11 is provided with a cylindrical bore 13 which opens into a tubular extension 14 of the casting 11. Where the exterior wall of the tubular extension 14 passes into the casting 11, a groove 15 is provided. Through the opening 4, the ground material enters bore 13. Provided in the top area 13a of bore 13 is a bore

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13b extending axially to the bore 13, which bore 13b is engaged by the bearing pin 19 attached to casting 11. Arranged on this bearing pin so as to be freely rotatable but axially undisableable is a gear 16 of which the lower face is flush with the top area 13a of the bore 13. Diametrically arranged on the face of the gear 16 is the scraper 18 which is formed as a steel band. This steel band engages the surface 13a and the side wall of bore 13, and its upturned ends 18a (one of which is shown in Fig. 2) wipe the exterior wall of the tubular extension 14, ending in the groove 15, which is designed to guide the ends 18a of the scraper 18. The gear 16 is engaged by the rack 20 which is equipped with a longitudinal bore in which helical spring 22 is seated, of which one end rests on the wall of the container 5 forcing the rack 20 away from the container wall. This pressure is taken up by the arm 23a of the two-arm lever 23, which is pivoted in the casting 11 on pin 24 and which is equipped with a rubber pad 25 holding the bag. The pad 25 located below the pin 24, is pressed against the bag by the pressure of the spring 22 against the upper arm 23a of the lever 23.

When the lever 23 is pulled outward, the empty bag 7 is slid over the tube end 14 and the bent-over ends 18a of the scraper 18. The lever 23 is then released. In this clamping position of lever 23, its rubber pad 25 presses the bag against the tube end 14, between the two scraper ends 18a, thus securing the said bag. When the material placed in the machine for grinding, such material is ground and discharged into the bag, and the mill is stopped. With one hand holding the bag 7, the lever is pulled outward. Against the pressure of helical spring 22, the rack 20 is displaced and the gear 16, together with the scraper 18, rotated by approximately 180°. The angle of this rotary movement depends on whether the scraper is equipped with one, two or more scraper strips. This rotary movement scrapes the ground material from the inner wall of the bore 13 while the grinding dust collected between the bag and the tube end is released as well and drops into the bag.

Having now particularly described and ascertained the nature of my present invention and in what manner the same is to be performed, I declare that what I claim is:

1. An attachment for coffee or spice mills, comprising a supporting block having a delivery bore therein, a scraper movably mounted on said block for removing residues of ground material from the walls of the bore, a spring biased bag holder movably mounted on the block, and a rack and pinion connecting the bag holder and the scraper, whereby movement of the bag holder to release a bag actuates the scraper.

2. An attachment according to claim 1 characterized by the fact that the scraper is formed of a steel band shaped in such a manner that it wipes both the entire inner surface of the delivery bore and the outer surface of the said bore within a bag applied thereto.

3. An attachment for coffee or spice mills, comprising a supporting block having a delivery bore therein, a scraper movably mounted on said block for removing residues of ground material from the walls of the bore, a spring biased bag holder movably mounted on the block, a rotary gear wheel connected with said scraper, and a rack connected with said bag holder and meshing with said gear wheel, whereby movement of the bag holder to release a bag actuates the scraper.

4. An attachment for coffee or spice mills, comprising a supporting block having a delivery bore therein, a scraper movably mounted on said block for removing residues of ground material from the walls of the bore, a bag holder movably mounted on the block, a rack and pinion connecting the bag holder and the scraper, and

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a helical spring urging said rack outwardly from said block.

5. An attachment for coffee or spice mills, comprising a supporting block having a delivery bore therein, a scraper movably mounted on said block for removing residues of ground material from the walls of the bore, a bag holder movably mounted on the block and having the form of a two-armed lever, a spring-biased rack carried by one arm of said bag holder, a pinion engaging said rack and connected with said scraper, and a bag-engaging rubber pad carried by the other arm of said bag holder.

6. An attachment for coffee or spice mills, comprising a supporting block having a delivery bore therein, a

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scraper movably mounted on said block for removing residues of ground material from the walls of the bore, a spring biased bag holder movably mounted on the block and having the form of a two-armed lever, said bag holder having an integral extension member constituting a handle, and a rack and pinion connecting the bag holder and the scraper, whereby movement of the bag holder to release a bag actuates the scraper.

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