April 5, 1932. O. HOELSCHER 1,852,522

DUST DISTRIBUTING ATTACHMENT

Filed March 11, 1929

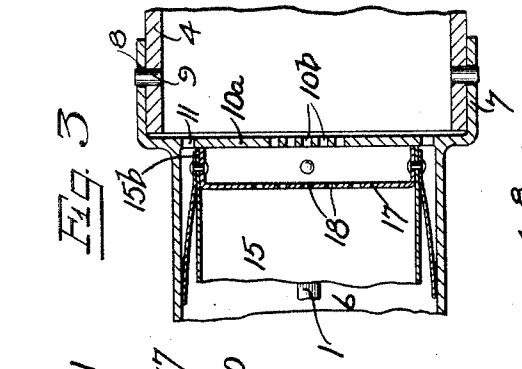

Fig. 3

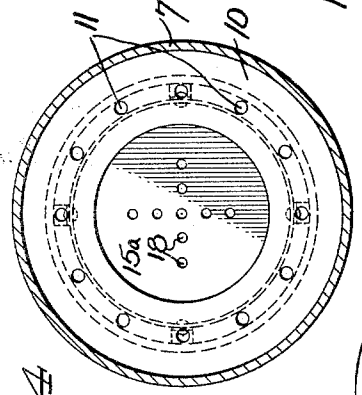

Fig. 4

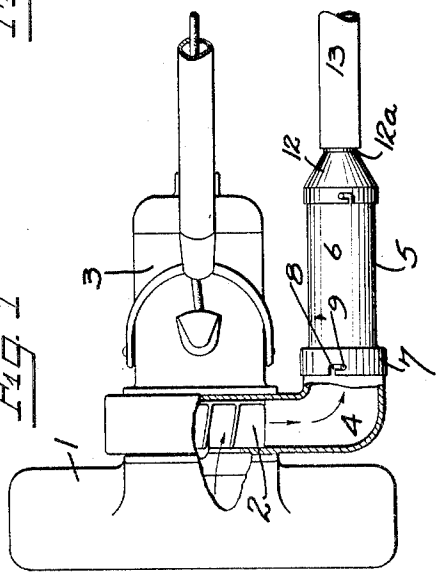

Fig. 1

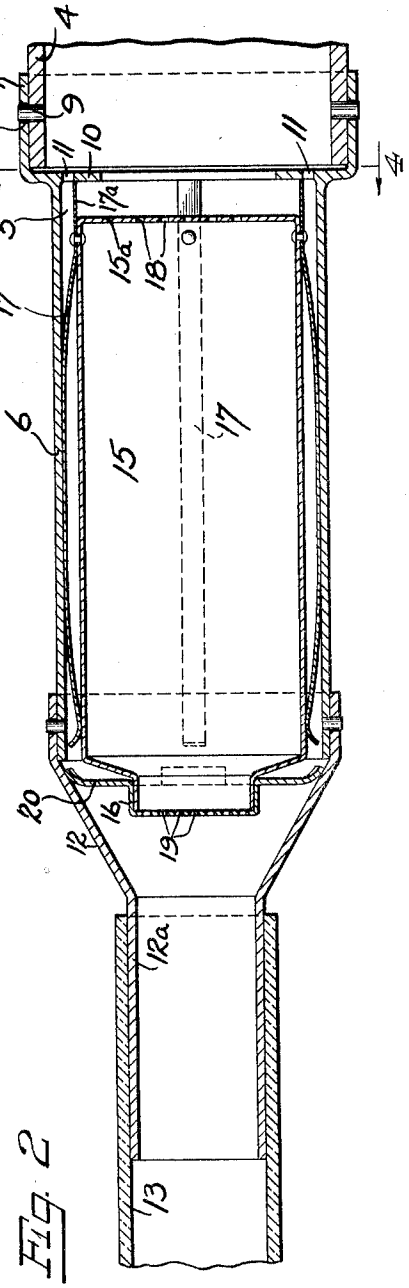

Fig. 2

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DUST DISTRIBUTING ATTACHMENT

Application filed March 11, 1929. Serial No. 346,042.

This invention relates to improvements in dust distributing attachment, and, in its preferred form, consists in an attachment adapted to be mounted on a vacuum cleaner, though it may also be utilized in connection with any other mechanism by which an air blast is produced.

It is an object of the invention to provide a dust distributing attachment with which insect powder may be discharged not merely onto floors and walls, but which discharges the powder with such velocity that it is dispersed through cracks into the spaces between floors and walls where cockroaches and other vermin live and breed.

Another object of the invention is to provide a dust distributing attachment which is simple and cheap to manufacture and can be made to fit any one make of vacuum cleaner or other air blast producing mechanism.

With these and other objects and advantages in view which will become apparent as the specification proceeds, the invention is hereinafter more fully described with the aid of the accompanying drawings, in which:

Figure 1 illustrates a vacuum cleaner on which the attachment is mounted.

Figure 2 is an enlarged sectional view of the invention.

Figure 3 shows a slight modification, and Figure 4 is a section on the line 4—4 of Figure 2.

Referring to the drawings, 1 designates a conventional type of vacuum cleaner having a fan 2 therein driven by an electric motor 3, and a discharge connection 4 from the fan through which air is blown.

The dust distributing attachment is generally referred to by the ordinal 5, and consists of a tubular body or casing 6 one end 7 of which is enlarged to fit over the discharge connection 4 of the vacuum cleaner. Any suitable method of holding the body 6 on the discharge connection 4 may be employed. In the present instance the connection 4 has outwardly projecting pins 9 which engage bayonet slots 8 in the end 7 of the body 6. A transverse wall 10 or 10*a* is formed within the body 6 at the inner end of the enlarged portion 7; this wall may either be annular as shown at 10 in Figure 2 or continuous as illustrated at 10*a* in Figure 4. In either case the wall is provided with a plurality of perforations 11 arranged substantially in a circle adjacent the inner side of the wall of the casing 6. Through the continuous wall 10*a* shown in Figure 4 other apertures 10*b* are also provided.

Detachably arranged on the other end of the body or casing 6 is a cone-shaped fitting 12 having a pipe nipple 12*a* at its outer end. On the latter a flexible pipe 13 is arranged which terminates in a mouthpiece 14 having an outlet opening 14*a*. The latter should be preferably long and narrow so that when the mouthpiece is held against a crack in a floor or wall the powder ejected may be readily directed into the said crack.

In the body 6 a removable cartridge 15 is provided in which insect powder is placed, and 16 denotes a lid on the cartridge which may be removed for filling purposes. On the sides of the cartridge, which is smaller than the bore of the casing 6, a plurality of outwardly flexed springs 17 are longitudinally arranged. These springs engage the inner surface of the body or casing 6 and hold the cartridge substantially concentric with the casing and spaced from the sides of the latter. The end 15*a* of the cartridge is spaced from the transverse wall 10, or 10*a*, either by the projecting ends 17*a* of the springs 17 as shown in Figure 2, or by the annular extension 15*b* on the cartridge 15 as shown in Figure 4. Through the end 15*a* a few openings 18 are provided.

The lid 16 of the cartridge has a number of holes 19 through it. In order to prevent both accidental disengagement of the lid from its cartridge and to hold the latter against longitudinal movement in the casing arms 20 may be provided on the lid to engage the inner side of the cone-shaped fitting 12. These arms 20, when employed, also assist in holding the front portion of the cartridge central within the casing.

It is believed that the operation of the device will be readily understood from the foregoing, briefly it is as follows: Air is blown through the connection 4 of the vacuum

cleaner and enters the enlarged portion 7 of the body; most of it passing around the exterior of the cartridge 15 since the arms 20 and spring 17*a* exhibit only a small obstructing effect. The insect powders are mostly very light and fluffy compositions as witness Paris-green, calcium arsenate, hellebore, lycopodium, pyrethum, etc., and the effect of the air pressure is to pile the entire mass of powder against the further end of the receptacle, after which no further air can pass through the receptacle itself. However, the air stream can and does continue to pass freely around the outside of the receptacle and the constriction of the shape of the casing just beyond the further end of that receptacle causes a swirling and eddying of the air at this point which assists the pressure behind in removing a graduated supply of this powder from the apertures 19; and this effect is substantially aided and facilitated and increased by the vibration always communicated from a rapidly rotating fan 2 to the chamber to which this casing is rigidly attached. As a result of these actions the rate of feed of the powder into the air stream remains constant so long as any powder remains in the receptacle or cartridge.

While in the foregoing the preferred embodiments of the invention have been described and shown, it is understood that the invention is subject to such further modifications as fall within the scope of the appended claims; and it is further understood that the invention may be utilized in combination with any type of air blast mechanism.

What I desire to secure by Letters Patent and claim as my invention is:

1. An exterminating attachment comprising a hollow casing having a transverse apertured wall therein, a cartridge in said casing of lesser diameter than the latter, springs longitudinally arranged on the periphery of said cartridge having outwardly flexed portions to engage the casing bore and hold the cartridge substantially concentric therein, the apertures in the transverse wall opening into the annular space formed between the periphery of the cartridge and the casing bore, a lid having holes therethrough on the end of said cartridge remote from said transverse wall, a cone-shaped fitting on said casing around said cover, arms on said lid bearing against the inside of said cone-shaped fitting, means for spacing the end of the cartridge remote from the lid from the transverse wall, openings through the end of the cartridge remote from the lid, means for admitting air through said transverse wall to said openings, a flexible discharge pipe on said fitting, a mouthpiece on said discharge pipe, and means on the end of the casing remote from the fitting for attaching a blast mechanism thereto.

2. A dust distributing nozzle comprising a separable hollow casing having a discharge mouth at one end, and provisions at the other end for attachment to a blast mechanism, a hollow cartridge in said casing of less diameter than the bore thereof, said cartridge having imperforate side walls and foraminous end walls, and means for supporting said cartridge with its walls spaced from the casing walls so that air may pass through the surrounding space so defined.

3. A dust distributing attachment comprising in combination a hollow, substantially cylindrical casing made in longitudinally separable parts and having at one end an axial outlet mouth and at the other end an axial inlet connection, a cylindrical cartridge in said casing of greater diameter than said mouth or inlet and smaller diameter than the casing bore and means for spacing the side wall of said cartridge from the side wall of said casing, said casing having imperforate side walls and foraminous end walls, the space between said side walls being at all times in free communication with both said inlet and said outlet.

4. In a dust distributing attachment, a cartridge to receive a pulverulent material having an imperforate side wall and opposed foraminous end walls in combination with a chamber member loosely receiving said cartridge and spaced from its side walls and having provisions for the longitudinal passage of aeriform fluid therethrough, past the exterior of said cartridge.

5. An exterminating attachment comprising a hollow metallic casing formed for attachment to the outlet neck of an electric vacuum cleaner, means for securing said casing to said cleaner, a hose leading from the casing, and a powder containing cartridge carried by said fitting and adapted under influence of the vibration of said cleaner to deliver powder gradually into the air stream.

OTTO HOELSCHER.