

June 23, 1953

J. A. JONES
DUST MOP CLEANER

2,642,600

Filed May 10, 1949

2 Sheets-Sheet 1

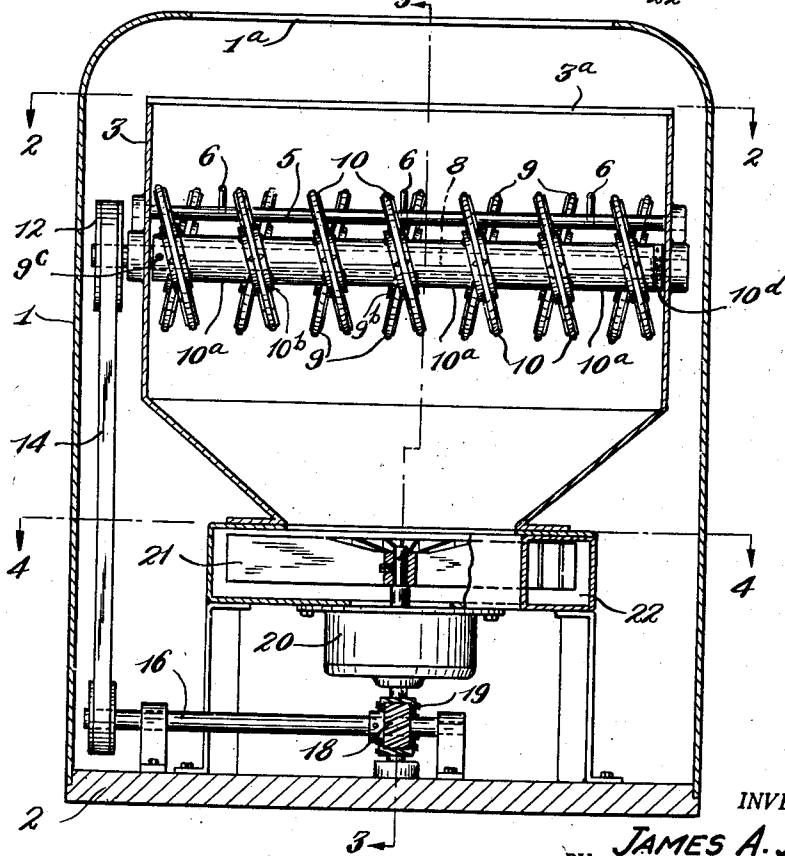
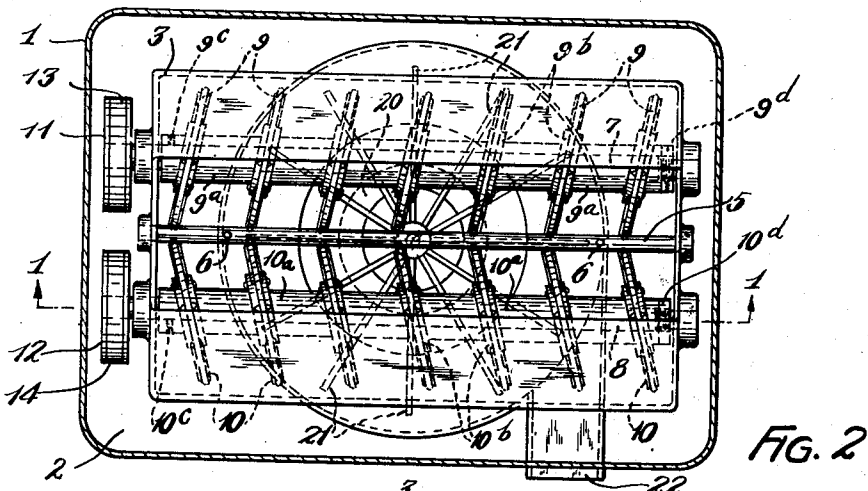


FIG 1

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2 Sheets-Sheet 2

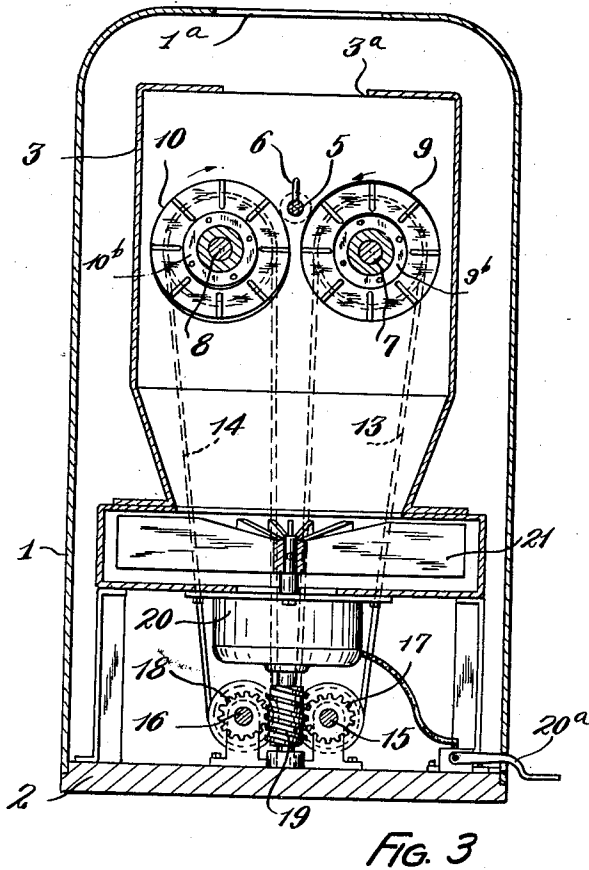


FIG. 3

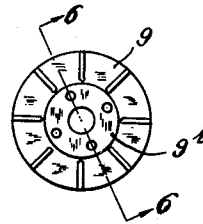


FIG. 5

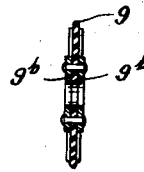


FIG. 6

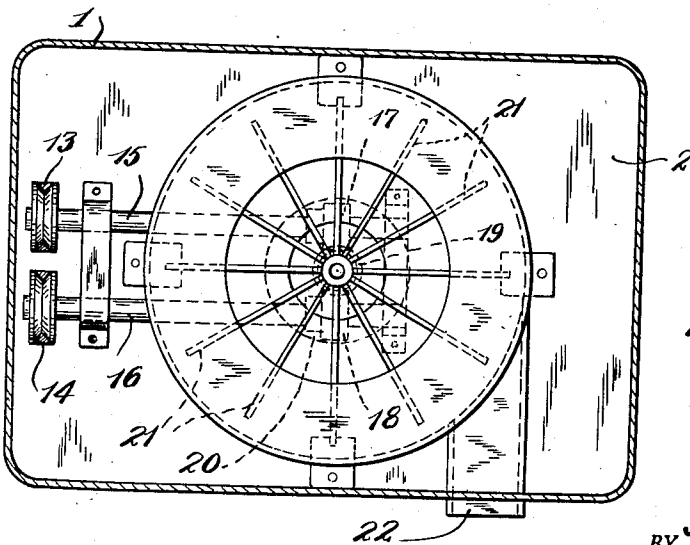


FIG. 4

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2,642,600

DUST MOP CLEANER

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2 Claims. (Cl. 15—91)

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This invention relates to the art of dust mop cleaners and is an improvement upon my United States Patent No. 2,188,717 of January 30, 1940, and my United States Patent No. 2,466,771, April 12, 1949.

As in my prior devices, above referred to, so here also the general object is to provide a readily portable housing with means therein for loosening dirt from a standard floor dust mop in an efficient manner and discharging the same from the housing through a suitable outlet; the purpose of my present improvement being to simplify the mechanism by which this operation is performed.

More specifically, the object of my present form of device is to provide simplified and improved means for effecting a thorough beating action upon the fabric mop simultaneously in different directions while it is held in operative position within the housing of my device, so as to loosen the dirt from the mop and permit the same to be removed therefrom by force of suction provided in the lower part of the housing.

Still more specifically, my present object is to provide such a device which consists of a suitable form of housing within which the mop may be positioned and held in operative relation and in which there is arranged unitary oppositely disposed rotatable means for subjecting the opposite sides of the mop to combined vertical and back-and-forth lateral beating action for loosening the dirt therefrom, together with means located therebeneath for discharging the same from the lower part of the housing.

Another object is to so arrange such dust-loosening means in the upper part of the housing and the dust-discharge means in the lower part of the housing as to obtain most efficient operation in a comparatively simple manner and at comparatively low cost from the standpoints of construction and operation.

Another object is to provide such a device in such simple and compact form that it can be embodied in a unitary, self-contained housing which may be conveniently moved from place to place according to the requirements or desire of the user at any given time.

Other objects will appear from the following description and claims when considered together with the accompanying drawings.

Fig. 1 is a view taken on line 1—1 of Fig. 2 with the shafts in different angular positions from Fig. 2 for the sake of illustration.

Fig. 2 is a view taken on line 2—2 of Fig. 1;

Fig. 3 is a view taken on line 3—3 of Fig. 1;

Fig. 4 is a view taken on line 4—4 of Fig. 1;

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Fig. 5 is an elevation of one of the beater disks; and

Fig. 6 is a view taken on line 6—6 of Fig. 5.

It is to be understood that the present form of disclosure is merely for the purpose of illustration and that there might be devised various modifications thereof without departing from the spirit of my invention as herein set forth.

Referring now to the accompanying drawings in detail, the outer casing 1 has a substantial supporting base 2 and is adapted to be moved from place to place in a convenient manner so as to be operated by the user at any desired point. The casing 1 has the comparatively restricted opening 1a in the top thereof so as to permit insertion of the standard floor dust mop and also to concentrate the force of suction, as will later more fully appear. Within the casing 1 there is the inner housing 3 which encloses directly the operating mechanism now to be described, this housing having a restricted top opening 3a for the same combined purpose as just stated in connection with the opening 1a. The fabric mop will be supported upon the fixed transverse rod 5 which has upstanding pins 6 for lateral holding engagement with the mop during the cleaning operation, as will be explained.

The supporting means 5 is located midway of the housing 3; and, upon opposite sides thereof, I have provided the parallel shafts 7 and 8, each of which has mounted thereupon a plurality of spaced parallel beating disks 9 and 10. The disks, upon each of these two shafts 7 and 8, are inclined with respect thereto; and the disks of one shaft will assume inclined relation with respect to those of the other shaft during operation of the same, as clearly indicated in the present drawings. These disks are of duplicate form and structure and each one may consist of any suitable flexible material, preferably rubber or rubber-like material, which may be smooth or roughened, so as to be most suitable for efficient beating engagement with the fabric mop which will be so positioned and held upon the rod 5 and its upward projections 6 as to be most effectively subjected to the combined action of these rotating disks. If so desired, each rubber disk 9 and 10 may have its central portion reinforced by means of metal disks upon opposite sides thereof. These disks, upon each shaft 7 and 8, are spaced by means of the tubular sleeves 9a and 10a which have their ends inclined in accordance with the inclination of the disks with respect to their shafts; and these sleeves may preclude the necessity of the central reinforcing metal disks 9b and 10b above referred to. This combination of disks 9 and 10 and the

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sleeves 9a and 10a may be held in such assembly upon each shaft by means of suitably formed end sleeves, one of which is fixed upon the shaft by a set screw 9c or 10c and the other of which is held in clamped assembly by a nut 9d or 10d.

The two shafts 7 and 8 have the pulleys 11 and 12 at the one end thereof for operation by the belts 13 and 14 from the parallel shafts 15 and 16 at the bottom of the housing, the shafts 15 and 16 in turn being driven through the gears 17 and 18 by the vertically disposed gear 19 of the electric motor 20 of the ceiling fan type. This motor is adapted to drive also the suction fan 21 which is enclosed within the lower part of the housing and is adapted to draw the loosened dust from beneath the mop, down through the hopper and out through the discharge opening 22 in the bottom part thereof and to expel the same out through an opening. If so desired, a bag may be provided for receiving the dust from the discharge opening. The electric motor 20 may have a cord with electric plug for insertion at any suitable point in the familiar manner and there may be provided a suitably located switch lever 20a for starting and stopping the motor according to the requirements of the user at any given time.

By having the top openings in the housing and casing of restricted size, there will be afforded a suitable guard means over the rotatable disks 9 and 10 and also there will be obtained most effective force of suction through the mop for removal of the loosened dust from the mop, as above explained.

It is to be understood that the shafts 7 and 8 are spaced a suitable distance apart to ensure most thorough beating action of the rotating disks 9 and 10 upon the entire fabric body of the mop.

Thus it will be seen that, with this device in operation, a mop may be inserted through the top of the housing so as to be supported and held in proper operative position with respect to the beater disks 9 and 10 at opposite sides of the mop-supporting means. The operating parts are so constructed and arranged that the two shafts 7 and 8 will be rotated in opposite directions, downwardly and towards each other, as indicated in the accompanying drawings. By virtue of the inclined arrangement of the disks 9 and 10 upon each shaft 7 and 8 and the inclined relation between the disks of the two oppositely arranged shafts, the rotation of the shafts in the manner described will produce a side-wise back-and-forth beating engagement of the flexible disks

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9 and 10 with the fabric body of the mop while at the same time there will be effected a constant downward vertical sweeping engagement of the disks with the mop body. This combined action will take place simultaneously. As above indicated, the rod 5 will support the mop in proper effective position so far as the vertical sweeping action is concerned, and the pins 6 will hold the mop body in proper position so far as the side-wise beating action is concerned. With my present form of device, there may be obtained the greatest possible effect and benefit of the combined beating action of the inclined disks 9 and 10 upon the mop body for loosening the dust and dirt therefrom so that it may the more readily be withdrawn by the force of suction therebeneath, and with comparatively simple mechanism and at comparatively low cost.

What I claim is:

1. A cleaner of the character described, comprising a housing having an upper opening for insertion of a mop downwardly therein to be cleaned and having an outlet from the bottom thereof, spaced parallel horizontally disposed rotatable shafts mounted in said housing, sets of disk-shaped beaters mounted co-axially in spaced relation and parallel to each other upon each of said shafts and inclined with respect thereto, said beaters being accessible through said opening for effecting beating engagement of the mop longitudinally and laterally thereof when introduced downwardly through said opening, the outer portions of said beaters being flexible, and means for rotating said shafts simultaneously downwardly and inwardly towards each other.

2. The same structure as recited in claim 1 hereof and with the addition of means extending longitudinally of and equidistant between said shafts and at an elevation above the axes thereof for supporting the mop in proper position with respect to said beaters.

JAMES A. JONES.

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