

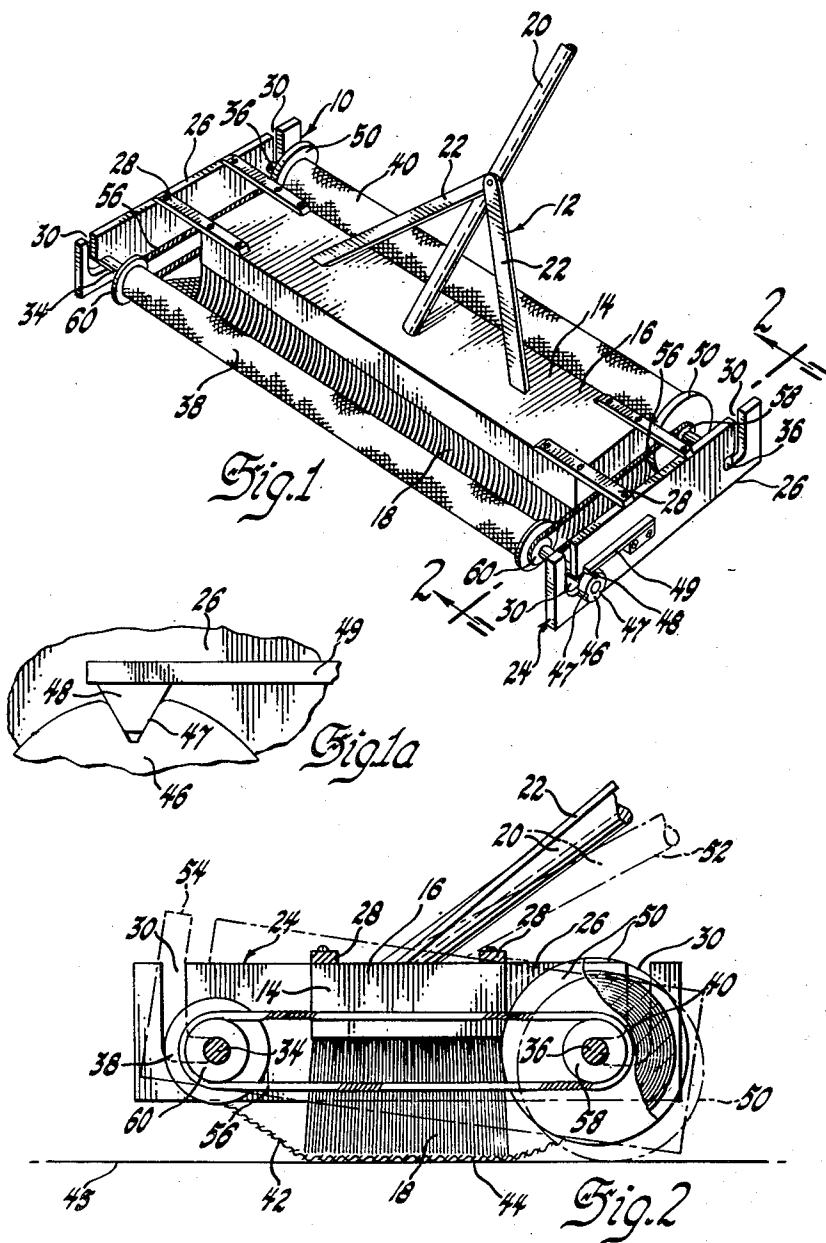
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CLEANING DEVICE

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4 Claims. (Cl. 15—114)

The present invention relates to cleaning devices and more particularly to a device for cleaning floor coverings having a smooth surface such as linoleum.

In order to prolong the useful life and protect the appearance of a floor covering such as linoleum, it is necessary that the surface be kept as clean as possible. It is a common practice to sweep such a surface with a broom having a plurality of resilient fibers. Due to the resilient nature of these fibers they remain in contact with the floor regardless of any surface irregularities. However, the fibers frequently fail to remove fine particles such as dust and grit which tend to adhere to the floor. Although a mop having a large number of pliable fabric members tends to pick up fine particles, it is very difficult to maintain the proper contact between the mop and the floor. Also a mop very rapidly becomes saturated with dirt to the point where its usefulness is greatly impaired.

It is proposed to provide a highly improved cleaning device which includes a frame that may be secured to the head of a broom. The frame is adapted to place a portion of a strip of cloth across the ends of the resilient fibers for wiping contact with the surface that is to be cleaned. The portion of the cloth that is in contact with the surface will provide the desired wiping characteristics and the fibers will provide a resilient action which insures that the cloth is maintained in proper contact with the surface. Means may also be provided to facilitate advancing clean portions of the cloth across the ends of the resilient fibers.

In the one sheet of drawings:

Fig. 1 is a perspective view of a cleaning device that embodies the present invention.

Fig. 1a is a side view of the roller detent means.

Fig. 2 is a cross-sectional side elevational view taken substantially along the plane of line 2—2 of Figure 1.

Referring to the drawing in more detail, a device 10 embodying the present invention may be secured to a broom 12. The broom 12 includes a head 14 that comprises an elongated member 16 having a plurality of fibers 18 projecting from one side thereof and a handle 20 that projects or slopes upwardly from the other side thereof. Since the handle 20 is used to operate the broom 12 it may be desirable to provide a pair of braces 22 that are diagonally disposed between the head 14 and the handle 20 in order to reinforce the connection therebetween. The fibers 18 may comprise a plurality of resilient members that project from the under side of the head 14 so as to engage the surface to be cleaned.

The cleaning device includes a supporting framework 24 that comprises a pair of end members 26 and a plurality of links 28. The links are secured between the end members 26 and the ends of the head 14 so that the end members 26 will be disposed adjacent the opposite ends of the head 14. The end members 26 may be provided with mounting means 30 that are positioned adjacent each end thereof. In the present instance the mounting means 30 are a pair of notches that have a

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vertical portion and a horizontal portion which are adapted to rotatably receive the ends of the shafts 34 and 36 projecting from the rollers 38 and 40. It will be observed that when the rollers 38 and 40 are positioned in the mounting means 30, they will be disposed on the opposite sides of the head 14. These notches 30 are preferably of such size and shape that the rollers 38 and 40 are not only free to rotate but may also be readily removed therefrom.

The rollers 38 and 40 which are preferably positioned on the opposite sides of the head 14 may be substantially cylindrical members that have the shafts 34 and 36 projecting from the opposite ends thereof. Each of the rollers 38 and 40 is adapted to have one end of a strip of cloth 42 or other pliable fabric material wound thereon so that the center portion 44 of the strip will be positioned across the ends of the resilient fibers 18 so as to be in wiping contact with the surface 45 to be cleaned. As the cleaning device 10 and the cloth strip 42 move across the surface, there may be a tendency for the cloth to unwind from the rollers 38 and 40. Accordingly, it is advisable to provide a detent for preventing the strip 42 from being accidentally unwound. In the present instance this comprises a cylindrical hub 46 having notches 47 adapted to receive a catch 48 on the end of spring 49. This spring 49 forces catch 48 into the notches 47 with just enough force to prevent the cloth unwinding from the roller 38 during normal operation. Since it is intended that the present device will only travel in one direction, it is only necessary to lock the leading roller 38 as there will normally be no tendency for the rear roller 40 to unwind. However, if it is thought advisable, a detent may be placed on each roller.

Although any means such as a crank may be provided for winding the cloth from one roller to the other, in the present instance a pair of enlarged discs 50 are provided on the rear roller 40. These discs 50 have a diameter that is larger than the roll of cloth on the roller 40 but small enough to normally be out of engagement with the floor. When the handle is lowered to the position shown by dotted lines 52, the frame will tilt to position 54. This will cause the discs 50 to carry the weight of the broom 12. Thus as the broom moves forward the disc will rotate and wind the cloth onto the rear roller 40. To assist in unwinding the cloth from the front roller 38, a pair of endless belts 56 may ride in pulley 58 on the rear roller 40 and pulleys 60 on the front roller 38. Thus as the rear roller 40 is rotated the front roller 38 will be rotated also.

To use the cleaning device 10 the framework 24 is first secured to the head 14 of a broom 12 by fastening the links 28 to the head 14 thereof. A strip of cloth 42 is then wound onto the leading roller 38. The roller 38 is then placed in position on the mounting means 30 and the free end of the cloth 42 is threaded across the ends of the resilient fibers 18 and secured to the other roller 40. After the device 10 has been assembled on the broom 12 it is pushed across the surface 45 to be cleaned. As the device progresses across the surface the cloth 42 will be in wiping contact therewith and will pick up any dirt or dust. Due to the spring action of the fibers 18, the cloth 42 will be held in intimate contact with the floor 45 at all times irrespective of any irregularities that may occur therein. During this cleaning operation a considerable amount of dirt and lint will collect on the cloth 42. When the cloth 42 in contact with the surface 45 has become saturated with dirt, the operator may lower the handle 20 and tilt the frame to position 54 so as to place discs 50 in contact with the floor. If the broom is moved forward while in this position the discs 50 and belts 56 will cause clean cloth to be drawn from the front roller 38 across the fibers

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18 onto the roller 40. The force from discs 50 engaging the floor will be great enough to cause the catch 48 to lift from the notches 47. As the dirty cloth is wound from the forward roller 38 onto the rear roller 40 any dirt that has collected on the cloth 42 will be trapped between the successive layers of the cloth and accordingly will be prevented from falling back onto the cleaned floor 45. Also since the cloth on the end of the resilient fibers 18 may be kept clean, a highly improved wiping action will be provided.

What is claimed is:

1. A device for cleaning a surface and being adapted to be secured to a broom having an elongated head with a handle projecting from the center of one side thereof and a plurality of bristles projecting from the other side thereof, said device comprising a framework adapted to be secured to said head, said framework including a pair of members adapted to be positioned adjacent the ends of said head when said framework is secured thereto, mounting means positioned adjacent the ends of said members, a pair of rollers rotatably mounted in said mounting means and adapted to be positioned on opposite sides of said head, said rollers being adapted to have the opposite ends of a piece of fabric thereon whereby the center portion of said fabric will extend across the ends of the bristles, a detent on one of said members positioned to engage one of said rollers and lock said rollers in a fixed position, a disc connected to one of said rollers to rotate said roller, the periphery of said disc extending downwardly below the lower extremity of said framework to be disposed adjacent the plane of said center portion but slightly thereabove whereby said periphery will normally be out of engagement with said surface when said surface is being cleaned but will engage said surface when said head is tilted out of its normal cleaning position, the center portion of said piece of fabric being adapted to be positioned across the ends of the bristles of said broom when said framework is secured to said head.

2. A device adapted to be secured to a broom for cleaning a floor, said device comprising an elongated head having a handle projecting from the center of one side thereof and a plurality of bristles projecting from the other side thereof, a framework adapted to be secured to said head, said framework including a pair of members adapted to be positioned adjacent the ends of said head when said framework is secured thereto, mounting means positioned adjacent the ends of said members, a pair of rollers rotatably mounted in said mounting means and adapted to be positioned on opposite sides of said head, said rollers being adapted to have the opposite ends of a piece of fabric wound thereon so that the center portion of said fabric will extend across the ends of said bristles, detent means on one of said rollers adapted to lock said roller in a fixed position, said detent means comprising a hub connected to one of said rollers and having at least one notch therein, and a spring urged catch adapted to engage said notch, at least one disc connected to one of said rollers with the periphery thereof normally out of engagement with said floor, the periphery of said disc extending downwardly below the lower ex-

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trinity of said framework to be disposed adjacent the plane of said center portion but slightly thereabove whereby said periphery will normally be out of engagement with said floor when said floor is being cleaned but will engage said floor when said head is tilted out of its normal cleaning position to thereby rotate said rollers as a result of movement of said broom and advance said fabric across the ends of said bristles.

3. A cleaning device adapted to clean a surface, said device comprising an elongated member having a plurality of resilient bristles projecting from one side thereof and a handle projecting from the other side thereof, a pair of rollers carried by said elongated member and being disposed on the opposite sides thereof, a pliable fabric member having the opposite ends thereof wound about said rollers and the center portion thereof being disposed across the ends of said resilient bristles for wiping engagement with said surface, said fabric being adapted to be wound from one of said rollers to the other of said rollers across the ends of said bristles, a disc drivingly connected to one of said rollers and having the periphery thereof disposed adjacent the plane of said center portion but slightly thereabove so as to be out of engagement with said surface when said device is in its normal cleaning position but being positioned to engage said surface and rotate said last-mentioned roller as a result of movement of said device across said surface when said device is tilted out of its normal position.

4. A floor cleaning device for use on a broom having an elongated head with a handle projecting from the center of one side thereof and a plurality of bristles projecting from the other side thereof, said device comprising a framework including a pair of members adapted to be positioned adjacent the ends of said head when said framework is secured thereto, mounting means positioned adjacent the ends of said members, a pair of rollers rotatably mounted in said mounting means and adapted to be positioned on opposite sides of said head, a piece of fabric having the opposite ends thereof wound on said rollers and the center portion extending across the ends of said bristles for wiping contact with said floor, at least one disc drivingly connected to one of said rollers and having the periphery thereof adjacent to the plane of said center portion but slightly thereabove so as to normally be out of engagement with said floor, said periphery being adapted upon tilting of said broom to engage said floor and rotate said rollers as a result of movement of said broom and thereby advance said fabric across said bristles, detent means adapted to retain said rollers stationary and hold said fabric in a plurality of predetermined fixed positions.

References Cited in the file of this patent

UNITED STATES PATENTS

391,167	Lewis	Oct. 16, 1888
1,278,606	Deam	Sept. 10, 1918
1,995,685	Perkins	Mar. 26, 1935
2,601,537	Lofgren	June 24, 1952

FOREIGN PATENTS

729,574	Germany	Dec. 18, 1942
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