March 10, 1925. 1,529,144

D. REYAM

SWEEPER

Filed July 14, 1922

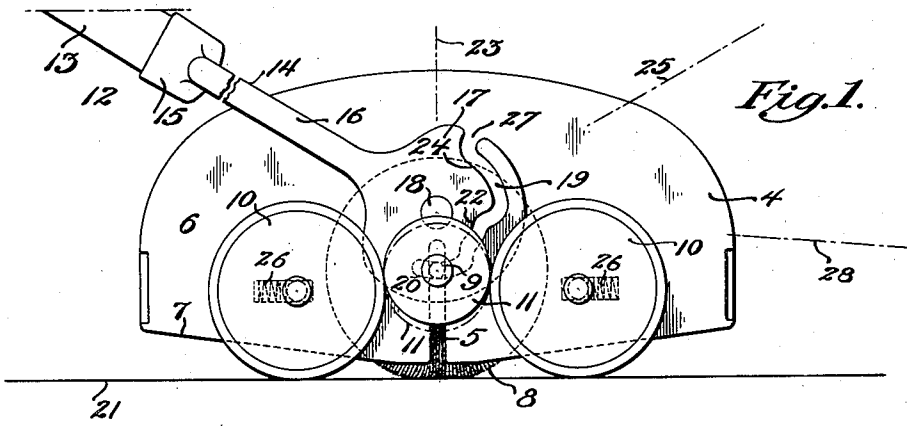


Fig. 1.

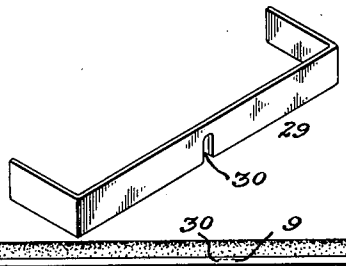


Fig. 3.

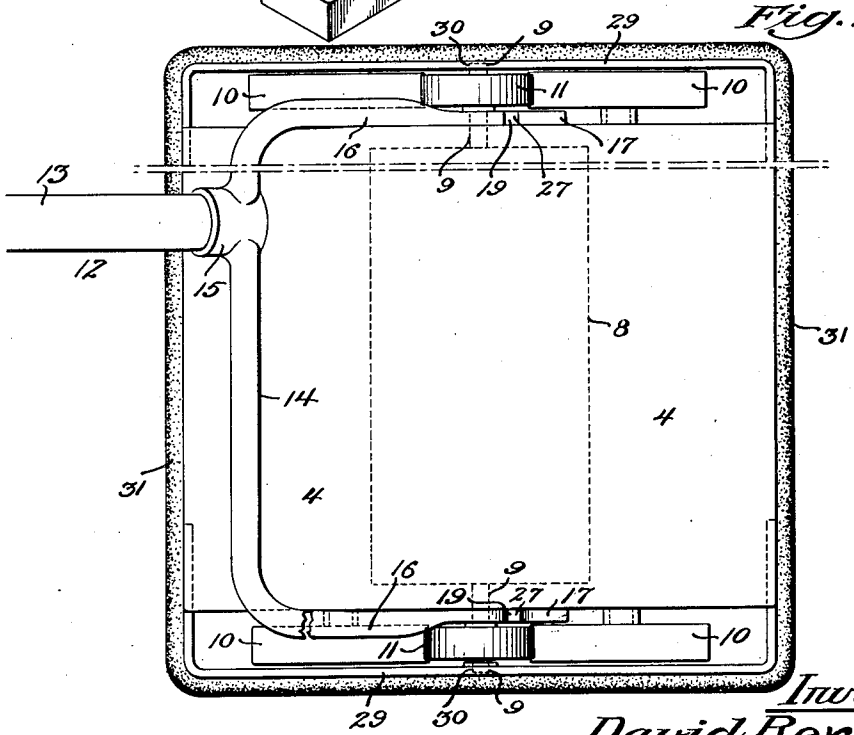


Fig. 2.

Witnesses,
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Patented Mar. 10, 1925. 1,529,144

UNITED STATES PATENT OFFICE.

DAVID REYAM, OF HOLLYOAK, DELAWARE.

SWEEPER.

Application filed July 14, 1922. Serial No. 574,991.

To all whom it may concern:

Be it known that I, DAVID REYAM, a citizen of the United States, residing in Hollyoak, Delaware, have invented certain Improvements in Sweepers, of which the following is a specification.

One object of my invention is to provide an improved sweeper of the general type known as "carpet sweepers" including a brush and operating handle; the handle of my improved sweeper being operative to directly effect the movement of the brush to bear upon the floor, carpet or rug with various degrees of friction so that the same sweeper can be used for "light" or "heavy" sweeping merely by a movement of the handle into different positions.

Another object is to so construct the parts of my improved sweeper that when the handle is moved into an upright position the brush will be moved upward into such position that it will not contact with the floor; thereby relieving the bristles of the pressure and preventing flattening of the brush when the sweeper stands idle for any length of time.

Another object is to make the parts of my invention of a simple and durable construction so that they can be easily and quickly manufactured and applied to a sweeper.

A still further object is to so arrange the parts of my invention that they can be easily moved into said various positions merely by a swinging movement of the operating handle.

These objects and other advantageous ends which will be set forth hereinafter I attain in the following manner reference being had to the accompanying drawing in which—

Figure 1 represents an end elevation of a sweeper having my invention thereon, the guard means being omitted for clearness,

Figure 2 is a fragmentary top plan view of the sweeper shown in Figure 1, and

Figure 3 is a perspective view of a yoked end guard which I preferably employ.

Referring to the drawing, 4 represents a sweeper case which can be made of sheet metal, wood or other suitable material, said case having notches or slots 5 in its opposite ends 6, said notches extending upward from the bottom edges 7 of said ends as clearly shown in Figure 1 of the drawing. A rotatable brush 8 has its axle trunnions 9 extending outward through the notches 5; the brush proper being located within the case 4.

Floor-engaging wheels 10 support the case 4 in a manner illustrated in Figure 1. A brush wheel 11 is secured to each of the axle trunnions 9 and is located outside of the case in the present instance, so as to engage each of the floor-engaging wheels 10. Thus when the case is moved over the floor on the wheels 10 the latter will impart rotation to the brush wheel 11 and to the brush 8 in a manner common with floor sweepers of this type, the axes of the wheels 11 being in a plane slightly above the axes of the wheels 10.

A handle 12 consists of a pole or stick 13 and a bail or forked member 14, said bail having a socket 15 or other suitable attaching device for the pole 13. The bail 14 has arms 16 which embrace the opposite ends 6 of the case 4, said arms terminating in cams 17, the cams being pivotally secured by pivots 18 to the opposite ends of the case 4. Each cam 17 has a cam slot 19 of such width as to allow the respective axle trunnion 9 which projects through the adjacent end 6 of the case, to pass therethrough so that each axle trunnion is located within a cam slot 19. Each cam slot includes a portion 20 located at such distance from its pivot that when the respective axle trunnion is located therein the brush will engage slightly with the floor in a manner shown in Figure 1, the plane of the floor being illustrated by the line 21, this arrangement being possible when the handle 12 is in the full line position shown in Figure 1. The portion 20 of the cam slot leads into another portion 22 of said cam slot, said portion 22 being located closer to the pivot 18 than is the portion 20 so that when the handle is swung into an upright position, shown by the dot-and-dash line 23, the brush will be raised clear of the floor or in other words above the line 21. Each cam slot 19 includes another portion 24 which communicates with the portion 22 and this portion 24 is located a greater distance from the pivot 18 than is the portion 20 so that when the handle is swung into the position indicated by the dot-and-dash line 25, the axle trunnion will pass into the portion 24 of the cam slot and will cause the brush to bear with a greater degree of friction upon the floor than when the trunnions are in the portions 20 of the cam slots. The portions 20, 22 and 24 of the cam slots are preferably made concentric so as to allow a certain amount of movement of the handle, necessary for the proper ma-

nipulation of the sweeper, without varying the height of the brush. For example, as shown in Figure 1 the handle, when in any of the full and dot-and-dash line positions, can be swung slightly upward and downward without raising or lowering the brush. Thus the necessary movements of the handle by a person operating the sweeper will not change the height of the brush.

To compensate for the vertical movement of the brush wheels 11, the floor-engaging wheels can be resiliently mounted in any suitable manner so that the wheels at each end of the case can move further apart or closer together and I have illustrated springs 26 bearing against the axles of the floor-engaging wheels so that the floor-engaging wheels will always contact with the brush wheels 11 with sufficient friction to cause the rotation of the brush.

The cam slot 19 of each of the cams 17 has a mouth or opening 27 which can be moved into such position as to allow the brush to be removed from the case. This can be done by swinging the handle 12 until the mouths 27 register with the notches 5 or in other words by swinging the handle 12 into the position indicated by the dot-and-dash line 28.

Owing to the construction illustrated and above described it will be noted that when the sweeper is operated by pushing on the handle when in the full line position shown in Figure 1, the brush will sweep the floor lightly and if the sweeper is operated when the handle is in the position indicated at 25 the brush will sweep heavily or with a greater amount of friction. Thus when it is desired to sweep heavy carpets or rugs and it is desired to cause the brush to bear heavily upon the same, the sweeper can be operated by moving it in one direction and if it is desired to sweep lightly the sweeper can be actuated by pushing it in an opposite direction. Also when the sweeper is not in use the handle can be moved into an upright position and the portions 22 of the cam slots will raise the brush axle trunnions and the brush will be lifted clear off the floor.

It will be noted that the raising and lowering movements of the brush can be accomplished directly by the handle without any interposed means and furthermore the device can be cheaply and quickly manufactured.

As a means for forming a guard and also serving as a buffer or protecting means to prevent the marring of furniture, I have illustrated yoked guards 29 which can be secured to the case and I preferably provided said guards with notches 30 for embracing the outer ends of the trunnions 9; thus providing additional bearing for the brush axle. I have also illustrated a band 31 which can be made of soft felt, rubber or other suitable material which acts as a cushion and surrounds the entire sweeper.

Any suitable receptacles or holding means (not illustrated) for the dirt can be positioned within the case 4 so that during the rotation of the brush the dirt will collect within the case.

While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a floor sweeper; a case; a brush; an operating handle; and means movable by the swinging of the handle, said means having cams thereon co-active with the brush to alter the height thereof relatively to the floor, said cams having parts operative, when the handle is swung into operating positions at opposite sides of its vertical position, to cause the brush to bear upon the floor with different degrees of pressure and to maintain said different degrees of pressure during the necessary movement of the handle through arcs caused by the movement of the arm of the operator when moving the sweeper backward and forward over the floor, said cams having other parts serving as the sole agents for moving and holding the brush out of contact with the floor when the handle is moved into a substantially vertical inoperative position.

2. In a sweeper, a case; a brush carried by the case and having projecting trunnions; and an operating handle having cam portions pivotally supported by the case in the form of cam grooves, said trunnions extending into said cam grooves, the parts of said grooves being at various distances from the pivotal axis and being operative to move the brush so as to contact with the floor with various degrees of friction when the operating handle is swung into various operating positions whereby the sweeper can be used for light or heavy sweeping, said parts of the cam grooves including portions of equal distances from said axis and of a length sufficient to allow the handle to swing through arcs without varying the pressure of the brush on the floor, said cam grooves including other portions operative to move said brush out of contact with the floor when the handle is swung into an upright position, said latter portions being located at distances from the pivotal axis differing from said other distances and being sufficiently extensive to allow the handle to

swing a prescribed distance out of its vertical position to allow the handle to lean against a wall without causing the brush to contact with the floor.

3. In a sweeper, a case; a brush carried by the case and having trunnions; and an operating handle including a bail pivotally connected to the case and having arms provided with cam grooves into which said trunnions extend, said grooves including three concentric portions at various distances from the pivotal connection of the bail with the case, two of said portions being effective upon the swinging of the handle into different operating positions to cause the brush to be moved into various positions relatively to the floor for light and heavy sweeping, the other of said concentric portions being positioned between said other two portions and being sufficiently extensive to hold the brush out of contact with the floor when the handle is vertical or nearly vertical.

4. In a sweeper, a case, a brush carried by the case, an operating handle, means operated by the handle to move the brush into contact with the floor when the handle is moved into a position to push the case in one direction and constructed to allow the swinging of the handle to a prescribed extent without varying the intensity of the pressure of the brush upon the floor during movement of the case in said direction, means operated by said handle to move the brush into contact with the floor under greater pressure when the handle is moved into a position to push the case in an opposite direction, said latter means being constructed to allow the swinging of said handle to a prescribed extent during movement of the case in said latter direction without varying the intensity of said greater pressure; and means operative by said handle when the handle is moved into another predetermined position to effect the release of said pressures of said brush upon the floor when said sweeper is not desired for use.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

DAVID REYAM.

Witnesses:
HARRY T. ROTENBURY,
MARGUERITE PAUSART.