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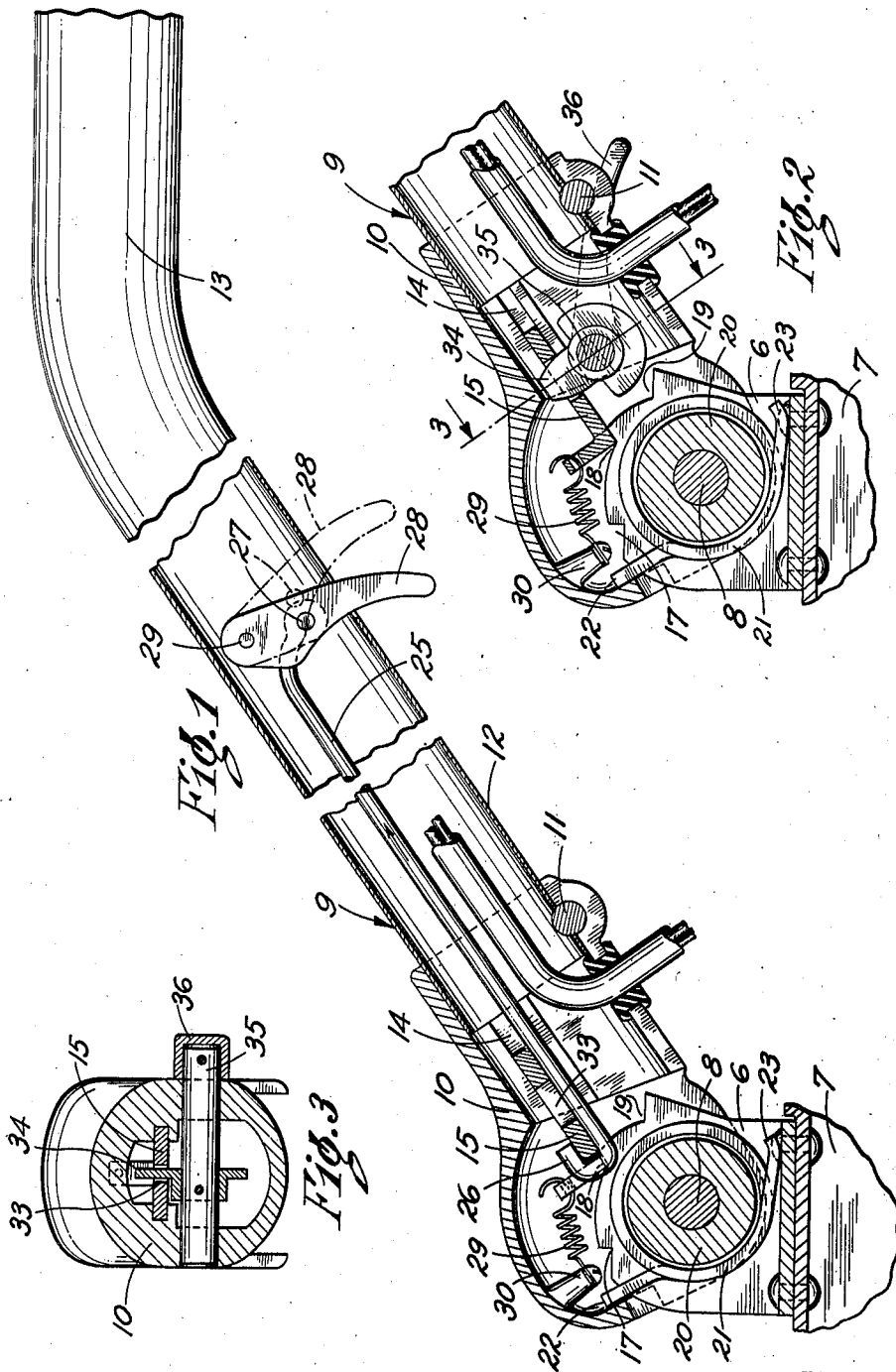
J. P. WIED

2,304,745

HANDLE AND LATCH CONSTRUCTION

Filed Feb. 25, 1941

2 Sheets-Sheet 1



INVENTOR.
JULIUS P. WIED.

BY

Donald W. Farrington
ATTORNEY

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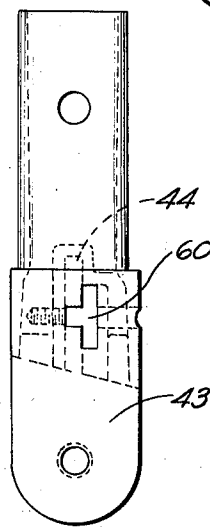
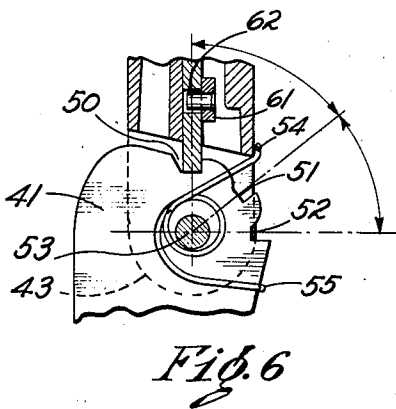
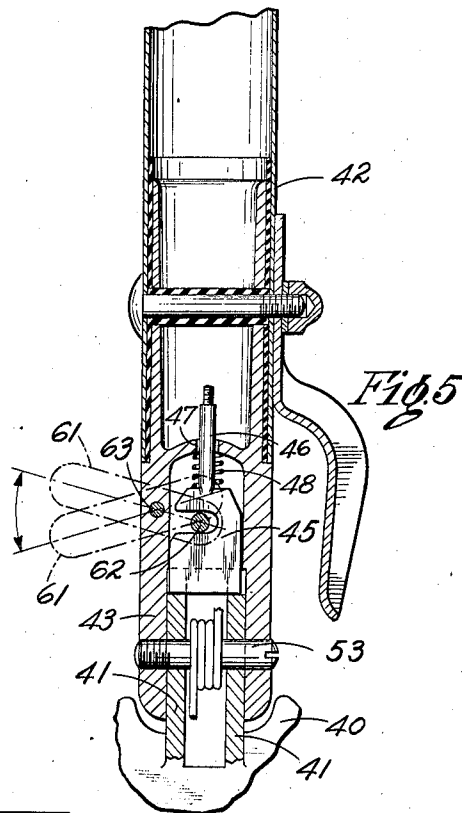
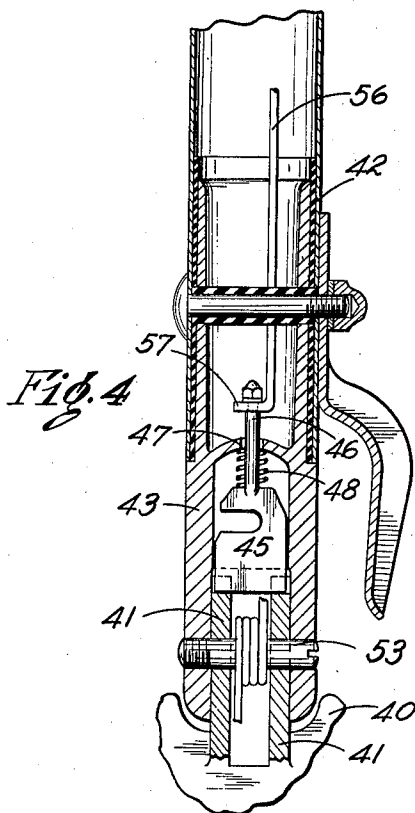
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HANDLE AND LATCH CONSTRUCTION

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2 Sheets-Sheet 2



INVENTOR.
JULIUS P. WIED

BY

Donald W. Farrington
ATTORNEY

UNITED STATES PATENT OFFICE

2,304,745

HANDLE AND LATCH CONSTRUCTION

Julius P. Wied, East Cleveland, Ohio, assignor to
The Apex Electrical Manufacturing Company,
Cleveland, Ohio, a corporation of Ohio

Application February 25, 1941, Serial No. 380,514

3 Claims. (Cl. 306—13)

This invention relates to improvements in handle construction and more particularly to improvements in handles adapted for use on suction cleaners.

It is among the objects of my invention to provide a handle adapted to be pivotally mounted on the cleaner body with spring means adjacent the pivot acting to swing the handle to an upright position.

It is a further object of my invention to provide a handle constructed according to the preceding object with a sliding latch to limit the arc of movement of the handle with respect to the body.

It is a further object of my invention to provide a handle construction according to the preceding objects in which the sliding latch may be actuated by a foot-operated release adjacent the handle pivot or by a hand-operated release remote from the handle pivot.

Further objects and advantages relating to simplicity in construction, ease of manipulation and economies in manufacture will appear from the following description and the appended drawings, wherein:

Figure 1 is an elevation with parts in section of a cleaner handle made according to my invention;

Figure 2 is an elevation with parts in section showing a foot-operated form of the device;

Figure 3 is a sectional view taken along the lines indicated at 3—3 of Figure 2;

Figure 4 is a sectional view of a modified form of the device;

Figure 5 is a sectional view of a foot-operated latch employed in the modified form;

Figure 6 is an elevation with parts broken away of the species shown in Figure 5; and

Figure 7 is an elevation taken at right angles to the view of Figure 5 showing the casting at the lower end of the handle.

Generally speaking I have obtained the advantages and achieved the objects above set forth by pivoting a tubular handle to a bracket carried by the cleaner body, arranging a coil spring about the pivot so as to swing the handle to an upright position and providing the handle with a longitudinally sliding latch adapted to engage portions of the bracket.

More specifically, my invention comprises a U-shaped bracket 6 riveted or otherwise secured to the cleaner body 7, said bracket provided with a pivot pin 8 adapted to extend transversely through the spaced vertical sides of the U-shaped bracket. The pivot pin 8 rotatably secures the

handle indicated in its entirety as at 9 to the bracket. The handle includes a casting 10 at its lower end having secured thereto as at 11 a metal tube 12 which terminates in a handle grip portion 13. The portion 10 is shaped by die casting or by machining therein opposed grooves 14 adapted to slidably receive the latch member 15.

The lower end of the latch member is proportioned to span the distance between the vertical edges of the sides of the bracket 6 and said vertical edges are notched as at 17, 18 and 19 to provide limits for the pivotal movement of the handle. The collar or spool 20 is arranged on the pivot pin 8 and this spool 20 is surrounded by a coil spring 21. One end of the coil spring as at 22 is arranged to bear against the inner wall of the casting 10 and the other end of the spring as at 23 is arranged to bear against the bight portion of the U-shaped bracket 6.

The spring is suitably tensioned in the position shown so that it urges the handle to an upright position where the latch 15 may enter the notch 17 of the bracket.

In the preferred form of my invention, a latch 25 extends downwardly within the tubular handle and is provided with a hook 26 at its lower end to engage the sliding latch 15. The upper end of the rod 25 is pivoted as at 27 to a hand-operated lever 28 suitably pivoted as at 29 within the tubular handle. A tension spring 29 is hooked to the sliding latch member at one end and to a boss 30 within the casting 10 at the other end, so as to constantly urge the latch 15 into engagement with one of the notches 17, 18 or 19. This construction provides that the latch may be conveniently operated by the user of the cleaner with that hand which is used to move the cleaner about the floor. The vertical position of the handle; that is, when the latch 15 engages the notch 17 is provided to maintain the handle in position for convenient carrying of the cleaner. The normal operating position of the handle is the angle of the handle with respect to the cleaner body provided when the latch 15 is in the notch 18. The extreme position of the handle when the latch is in notch 19 is provided for manipulating the cleaner under chairs, beds and the like. The coil spring 21 is constructed and arranged so as to substantially counter-balance the weight of the handle, with the result that whenever the latch 15 is released from the bracket 6, the handle moves to its vertical position without any appreciable manual effort on the part of the operator.

The handle latch made according to my inven-

tion is well suited for foot operation and to carry out this method of releasing the latch, the sliding latch member 15 is apertured as at 33 to receive an arm 34 fixed to a transverse pin 35 which is provided with a foot-operated pedal 36. The pin 35 is journaled for free rotating movement in the casting 10 and movement of the pedal 36 in a clockwise direction (Figure 2) will effect a movement of the latch member 15 upwardly against the tension of spring 29 so as to release the latch from the bracket 6.

It will be observed that most of the handle parts employed in the hand-operated and the foot-operated forms of the device are identical and thus my construction permits unusual economies in manufacture where it is desirable to provide cleaners with two different types of handle release operation.

In the modified form of my invention illustrated in Figures 4 to 7, inclusive, the cleaner body indicated at 40 is provided with upstanding bracket ears 41 which pivotally support the handle indicated in its entirety as at 42. The casting 43 at the lower end of the handle is shaped to provide a longitudinally extending groove 44 to mount a sliding latch member 45. A stem 46 formed on the latch member extends through an aperture 47 in the casting and a coil spring 48 surrounds the stem 46 in that portion of the stem between the body of the latch member and the upper wall of the chamber housing the latch member.

The above described arrangement is such that the member 45 is urged longitudinally into engagement with notches 50, 51 and 52 formed in the bracket 41. The pivot pin 53 is surrounded by a coil spring having ends 54 and 55 disposed to urge the handle to its vertical position such as shown in Figure 6.

The modification shown in Figures 4 to 7 is suited to hand operation and this method of operating the latch 45 is illustrated in Figure 4 wherein a longitudinally extending latch rod 56 is secured as at 57 to the stem 46 of the latch member. The rod 56 may be operated by a lever near the grip portion of the handle, substantially as shown and described in connection with the preferred embodiment.

To obtain a foot operation of the latch member 45, a T-shaped slot 60 is formed in the side of the casting 43 and a foot-operated pedal 61 having a pin 62 thereon is inserted through the T-slot 60. The pedal 61 is pivoted in the casting 43 as at 63 so that the pedal 61 may be moved to the two positions indicated in the dotted lines in Figure 5, whereby the latch 45 may be moved upwardly out of engagement with the bracket 41 to permit positioning of the handle. The handle positions provided by notches 50—51—52 cor-

respond functionally to the three positions described in connection with the preferred embodiment.

Although I have described two forms of my invention, both of which are suited to hand or foot latch operation, in considerable detail, it will be appreciated by those skilled in the art that numerous changes may be made therein without departing from the scope of the invention as defined in the following claims.

I claim:

1. In a suction cleaner, a body, a handle pivoted on said body, locking segment means rigidly mounted on said body, locking detent means movable with said handle and slidably mounted thereon in grooves therein at the lower end thereof adjacent the pivotal axis of said handle for engagement with said segment means, foot-operated means for actuating said detent means for removable engagement with said segment means and spring means connected to said body and to said handle on opposite sides of the pivotal axis of the latter for counter-balancing the weight of said handle.

2. In a suction cleaner, a body, a handle pivoted on said body, locking segment means rigidly mounted on said body, locking detent means movable with said handle and slidably mounted thereon above the pivotal axis of said handle for engagement with said segment means, foot-operated means for actuating said detent means for removable engagement with said segment means comprising a rotatable pin extending through said handle adjacent said locking detent means, a portion of the pin projecting beyond the wall of the handle and a foot pedal secured to said portion, an arm carried by said pin within the handle operatively connected to said locking detent means and spring means connected to said body and to said handle adjacent the pivotal axis of the latter for counter-balancing the weight of said handle.

3. In a suction cleaner, a body, a handle pivoted on said body, locking segment means rigidly mounted on said body, locking detent means movable with said handle and slidably mounted thereon above the pivotal axis of said handle for engagement with said segment means, foot-operated means for actuating said detent means for removable engagement with said segment means comprising a rotatable pin extending through said handle adjacent said locking detent means, a portion of the pin projecting beyond the outline of the handle, a foot pedal secured to said portion, and an arm carried by said pin within the handle operatively connected to said locking detent means.

JULIUS P. WIED.