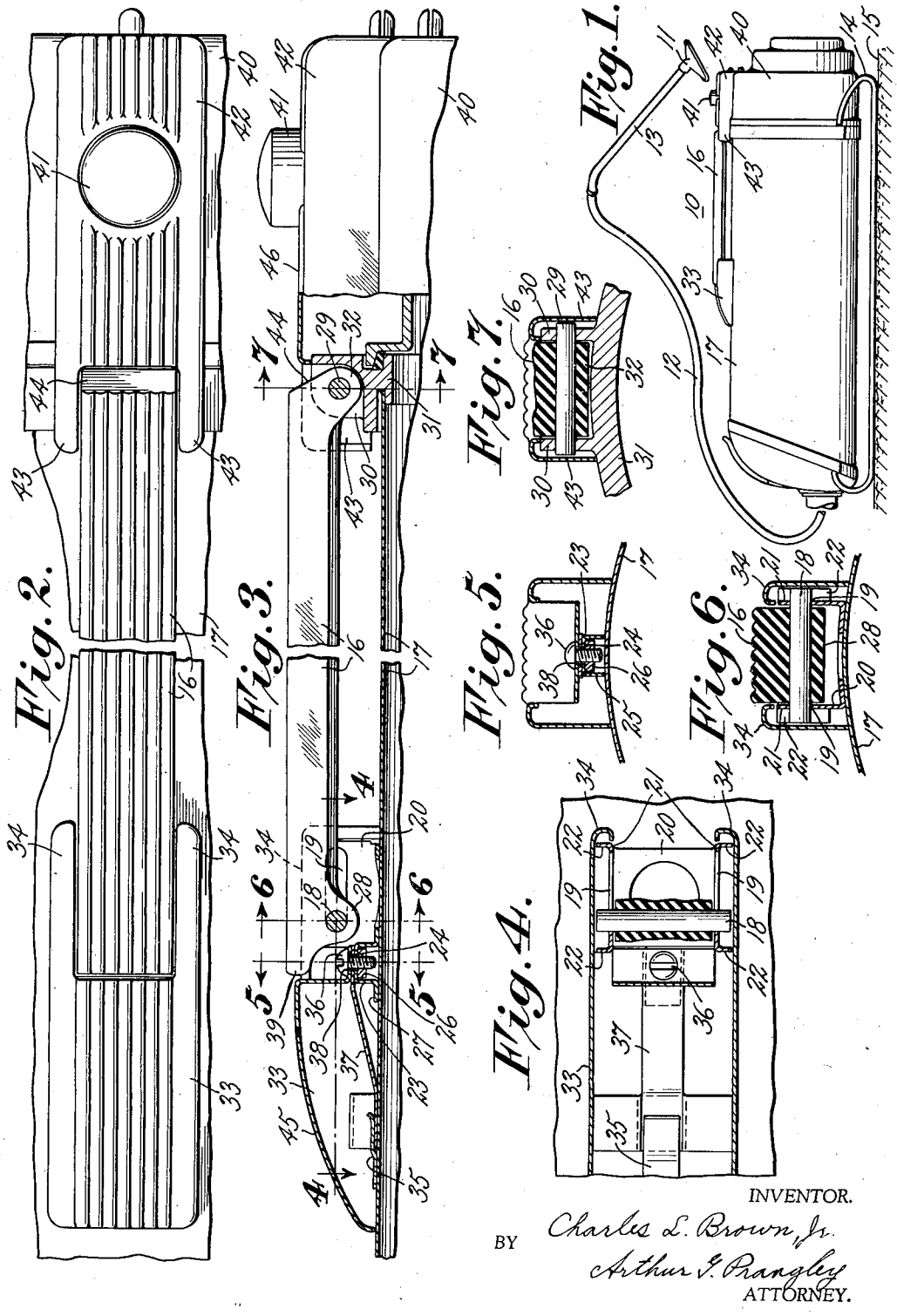
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VACUUM CLEANER

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VACUUM CLEANER

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6 Claims. (Cl. 16—115)

My invention relates to vacuum cleaners and more particularly to vacuum cleaners of the type having a cleaning tool connected to a cleaner unit by a flexible hose.

In vacuum cleaners of this type, the cleaner unit is customarily moved along the floor by pulling on the flexible hose. However, when it is desired to move the cleaning unit from one room to another or when moving it a relatively great distance, it is desirable to lift the cleaner unit and carry it.

In accordance with my invention an improved handle is provided for carrying the cleaner unit which is secured to the cleaner unit with a fixed pivot at one end and a sliding pivot at the other end.

My invention also contemplates means for securing the handle to the cleaner unit which permits its ready removal and assembly. The securing means for the handle are covered by removable covers.

What I consider to be novel and my invention may be better understood by reference to the following specification and appended claims when considered in connection with the accompanying drawing, in which:

Fig. 1 is a side view of a vacuum cleaner incorporating my improved handle;

Fig. 2 is a plan view of the handle;

Fig. 3 is a side sectional view of the handle and support;

Fig. 4 is a sectional view of the front handle support taken along the line 4—4 of Fig. 3;

Fig. 5 is a sectional view taken along line 5—5 of Fig. 3;

Fig. 6 is a sectional view taken along line 6—6 of Fig. 3; and

Fig. 7 is a sectional view of the rear handle support taken along line 7—7 of Fig. 3.

Referring to the drawing, 10 indicates generally a vacuum cleaner unit connected to a cleaning tool 11 by means of a flexible hose 12 and a substantially rigid tubular member 13. In normal use, the cleaning tool 11 is moved over the surface being cleaned by means of substantially rigid tubular member 13. When it is desired to clean a surface which cannot be reached simply by moving the cleaning tool 11, a pull on the flexible hose 12 will move the vacuum cleaner unit 10 in the desired direction, so that the cleaning tool 11 will reach the surface to be cleaned. The cleaner unit 10 is supported by means of sleighs 14, one of which is shown in Fig. 1, which serve to support the cleaner unit 10 on a substantially horizontal surface 15.

For carrying the cleaner unit 10 from one room to another or for moving it a relatively great distance, a handle 16 is provided and secured to the casing 17 of unit 10. When not in use the handle 16 rests in a substantially horizontal position close to the surface of the casing 17. When it is desired to lift the cleaner unit 10, the handle 16 is grasped by inserting the fingers between the casing 17 and the handle 16. As the handle 16 is grasped and moved upwardly the front sliding pivot, shown at the left in Fig. 3, moves toward the rear providing ample space between the casing 17 and the handle 16 for the hand grasping the handle. The sliding pivotal connection for the handle 16 is provided by a pivot pin 18 secured to the front end of the handle 16 engaging horizontal slots 19 provided in a bracket 20 secured to casing 17. Bracket 20 is formed of U-shape with the slots 19 located in the spaced arms 21. The ends 22 of the arms 21 are bent outwardly at right angles to the remainder of the arms to provide greater rigidity and strength to the arms and also to serve as spacers as will be pointed out below. Formed integrally with the bracket 20 is a retainer 23. Retainer 23 is of U-shape with a top aperture 24 and two depending side lugs 25. The two arms of the U-shaped retainer 23 and the lugs 25 form a socket for receiving a square nut 26. Bracket 20 is secured to casing 17 preferably by welding along the bottom of the U-shaped bracket between the arms 21 and along a flange 27 formed at the front of the retainer 23 shown at the left in Fig. 3. The nut 26 is inserted in the retainer 23 before the bracket 20 is secured to casing 17. Pivot pin 18 is carried in a depending lug 28 formed integrally with the body of the handle 16.

The fixed pivot for the rear of handle 16, shown at the right in Fig. 3, is formed by means of the pivot pin 29 carried by handle 16 and journalled in ears 30 which are formed integrally with a rear end ring 31 secured to casing 17. Pivot pin 29 is carried in a depending lug 32 which is formed integrally with the body of handle 16. Handle 16 is formed of flexible material and as it is grasped for lifting the cleaner unit 10, the pivot pin 18 slides rearwardly in slots 19 until it reaches the end of the slots, the handle 16 is then held in an arched form until the unit 10 again rests on a supporting surface. When the handle 16 is released it returns to its normal horizontal position with the pin 18 stopped at the left end of the slot 19.

In assembling the handle 16 to the vacuum cleaner unit 10, the pin 18 is inserted in the

depending lug 28 of handle 16 and then into the slots 19 of bracket 20. The pivot pin 29 is inserted through openings of ears 30 and through the opening provided in the depending lug 32. For enclosing the sliding pivotal connection of handle 16 and to prevent the pin 18 from falling out, a cover plate 33 is provided with rearwardly extending arms 34 which surround the sides of the front end of handle 16 and bracket 20. Cover plate 33 is secured to casing 17 by means of a clip 35 and a bolt 36 in threaded engagement with nut 26 carried in retainer 23. A transverse strap 37 of T-shape is within the cover plate 33 and the top of the T engages clip 35. In assembling the cover plate 33 to the casing 17 after the handle 16 has been secured thereto the cover plate is positioned and the strap 37 is slid under the raised end of clip 35 and bolt 36 is passed through an aperture 38 in the cover plate registering with aperture 24 and threaded into engagement with nut 26. The ends 22 of arms 21 serve to space apart the two arms 34 of cover plate 33. A forwardly projecting lip 39 formed integrally with the handle 16 overlies the bolt 36 when the handle 16 is in the normal horizontal position. For securing the cover plate 33 to the casing 17 or removing it therefrom, it is necessary to arch the handle 16 so that the lip 39 is moved rearwardly to uncover the bolt 36. By this arrangement the securing means for the front end of the handle is covered by the cover plate 33 and the securing means for the cover plate 33 is covered by the projecting lip 39 of the handle when in its normal position.

Secured to the rear of casing 17 is a housing 40 carrying a foot-operated switch 41. A switch cover 42 also carried by housing 40 has forwardly extending arms 43 surrounding two sides of the fixed pivot of the rear of handle 16. As best indicated in Fig. 7, the arms 43 extend along the sides of ears 30 and cover the ends of pivot pin 29 limiting the transverse movement of the pin and preventing its falling out. In the assembly of the unit 10, the housing 40 is secured to the casing 17 after the handle 16 has been secured thereto. The rear end of handle 16 is formed with an inclined wall 44 to permit clearance for the top end of handle 16, when it is arched upwardly for lifting the cleaner unit 10.

The cover plate 33 is formed with a top-arched surface 45 which extends from the casing 17 to substantially the top of handle 16. The top surface 46 of switch cover 42 is flat and located in substantially the same plane as the top of handle 16. The combination of the arched top surface 45 of cover plate 33 and the top surface 46 of switch cover 42 forms together with the handle 16 a smooth substantially continuous surface, when the handle is in its normal horizontal position, without any projecting sharp edges or corners. This is advantageous in protecting the handle and also in insuring a smooth surface without sharp edges which might damage or mark furniture with which the cleaner comes in contact.

What I claim is:

1. A device of the character described for attachment to the outside surface of a body to be carried comprising a handle, a pin carried by said handle and journalled in ears extending from said surface, a bracket secured to said surface having longitudinally extending slots, a pin carried by said handle loosely engaging said slots, a cover secured to said surface having arms extending along the sides of said first-mentioned pin, a plate secured to said surface adjacent said bracket having arms covering the sides of said bracket and preventing transverse movement of said last-mentioned pin, a bolt securing said last-named plate to said surface, and a lip integral with said handle overlying said bolt.

2. A device of the character described for attachment to the outside surface of a body to be carried comprising a handle, a pin carried by said handle and pivotally secured to said surface, a bracket secured to said surface having upstanding ears with longitudinally extending slots, a pin carried by said handle loosely engaging said slots, a retainer secured to said surface between said upstanding ears, a nut located in said retainer, a clip secured to said surface adjacent said bracket, a cover plate having arms extending along the sides of said bracket to cover said bracket and prevent end-wise movement of said last-mentioned pin, a transverse strap secured to said cover plate engaging said clip, a bolt passing through an opening in said cover plate in threaded engagement with said nut, and a lip formed integrally with said handle and overlying said bolt.

3. A device of the character described for attachment to the outside surface of a body to be carried comprising a handle, a pin carried by said handle and pivotally connected to said surface, a bracket secured to said surface having upstanding ears with longitudinally extending slots, a pin carried by said handle engaging said slots, a clip secured to said surface adjacent said bracket, a cover plate positioned adjacent the end of said handle having arms extending along the sides of said handle at one end in covering relation to said slots in said bracket, and a transverse strap secured to said cover plate and engaging said clip.

4. A device of the character set forth for attachment to a casing to be carried comprising a handle, a pivot pin carried by said handle and journalled in upstanding ears of said casing, a bracket secured to said casing and having longitudinally extending slots, a pin carried by said handle and engaging said slots, a cover plate secured to said casing having arms extending along the sides of said ears, a retainer secured to said casing adjacent said bracket, a nut located in said retainer, a second cover plate secured to said casing adjacent said handle having arms extending along the sides of said handle in covering relation to said slots in said bracket, and a bolt extending through an opening in said cover plate in threaded engagement with said nut for securing said cover plate to said casing.

5. A device of the character set forth for attachment to a casing to be carried comprising a handle, a pin carried by one end of said handle and pivotally secured to said casing, a bracket secured to said casing having upstanding ears with longitudinal slots and a retainer, a pin carried by the other end of said handle engaging loosely in said slots, a nut located in said retainer, a clip secured to said casing adjacent said bracket, a hollow cover plate secured to said casing adjacent said bracket and having arms extending along the sides of said handle and in covering relation to said slots in said bracket, a transverse strap secured within said cover plate and engaging said clip, a bolt passing through an opening in said cover plate in threaded engagement with said nut, and a lip formed integrally with said handle and overlying said bolt.

6. A device for carrying a casing comprising a

bracket secured to the top of said casing, a clip secured to the top of said casing adjacent said bracket, upstanding ears spaced longitudinally of the casing from said bracket, a handle, means for securing one end of said handle to said bracket, means to secure the other end of said handle to said upstanding ears, a cover engaging said clip and removably secured to said bracket and covering said bracket, a portion of said handle overlying said cover securing means, and a second cover secured to said casing having a portion covering said means for securing said handle to said upstanding ears, whereby the securing means for said handle are covered to present a smooth exterior without sharp edges or exposed securing means.

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