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SUPPORT FOR AIR METHOD CLEANERS

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The invention relates to improvements in cleaning systems commercially known under the registered trade-mark "Air-Way", in which a normally portable cleaner unit including a floor tool, a source of suction, a suction handle and means for interchangeably directing suction through the floor tool or through the handle, is provided with means whereby the portable cleaner may be converted into a semi-permanent system by supporting the portable unit with the suction handle in upright position with the upper end of the suction handle available for the attachment of extension hose or pipes, which extension pipes, when placed in communication with the source of suction, may be conveniently used for cleaning the walls or ceiling and for other purposes for which stationary suction cleaning systems may have been used in the past.

The present invention is in the nature of an improvement on the supports for cleaners of the "Air-Way" type disclosed in Replogle Patents Nos. 1,862,941, dated June 14, 1932, and 1,864,867, dated Oct. 25, 1933. The primary object of the invention is accordingly to provide improved supporting means for the cleaner whereby the same may be readily converted from a portable system into a semi-permanent system. Such supporting means may comprise means primarily adapted for supporting the body of the cleaner in such a position that the suction handle is upright, or it may constitute supporting means for the handle itself, but preferably our improved supporting means include a combination both of a body support and a support for the handle, since in this manner most efficient results may be obtained. It will, however, be understood that the body support and the handle support, while primarily intended for use in conjunction with each other, may also be used independently.

The present application is a division of our prior application Serial No. 604,246, filed April 9, 1932.

The invention will be more readily understood by reference to the accompanying drawing in which is shown an illustrative embodiment of the invention.

In the drawing,

Fig. 1 is a side elevation showing the cleaner provided with an improved form of hinged bracket which aids in supporting the cleaner in upright position;

Fig. 2 is a front view of the same;

Fig. 3 is a rear view of the cleaner, portions being broken away, and showing details of the hinged body support, and

Fig. 4 is a side view of the cleaner, showing the same in floor cleaning position with the hinged bracket folded up.

Referring to the drawing, A denotes generally a portable suction cleaner of the general type disclosed in the U. S. Patent to Daniel Benson Replogle, Reissue No. 16,324. The portable unit is adapted to be retained with its suction handle in substantially upright position by the combined operation of an upper flexible support B for the upper end of the hollow handle of the cleaner, and of a lower support hingedly connected to the cleaner and generally designated by the reference numeral C, which in conjunction with the upper and supporting rollers of the cleaner is designed to carry the weight of the body of the cleaner when the handle is in upright position. A cord reel D, which carries an electrical conduction cord for supplying current, is shown as carried upon a hook 30 mounted upon a base board 31 secured to a wall, door or the like. As shown, a pair of brackets 32-33 are carried by the base board, upon which is mounted a suitable shelf or tray 34 adapted to receive accessories of the cleaning system, such as extension pipes, extra dust collecting bags, cord reels, brushes, extension cords, and supplementary cleaning tools, nozzles and like detachable parts of the system.

The portable cleaning unit A includes a source of suction 10, which comprises an electric motor, and a fan operated thereby, both the motor and fan being housed in suitable casings. A valve 11 is provided for selectively directing suction either from a floor tool 12 or from an open-ended hollow suction handle 13, the upper portion of which is curved, as indicated at 14. The floor tool is preferably provided with detachable rollers 15 extending laterally from the body of the tool.

The support B serves the dual purpose of providing a convenient means for storing the cleaner when not in use, and also provides a ready means whereby the portable unit may be converted into a cleaning system of a semi-stationary type by permitting extension hose and other attachments to be secured to the upper open end of the hollow handle while the cleaner is firmly supported in upright position, thus enabling the extension hose and attachments to be used for cleaning walls, ceilings, articles of clothing and the like.

The flexible bracket B need not be described in detail as it forms the subject matter of our copending application Serial No. 604,246, filed April 9, 1932, and while intended to be used in
conjunction with the body support C in order to more firmly support the cleaner in upright position, it may nevertheless, if desired, be dispensed with and only the hinged support C employed, this latter device constituting the principal feature of the present invention.

As shown, the support C includes a hinged bracket, generally designated by the reference numeral 16, which is of web-like form and is provided with a pair of upper extensions 17, which are hingedly secured to ears 18 carried by a frame portion of the cleaner. Extending downwardly from the bracket are similar extensions 19 upon which are mounted rollers 20. The web is cut away at 21 to lighten the bracket and also to permit the same to be swung rearwardly, as indicated in Fig. 4, wherein the lower portion 22 of the motor housing extends through the opening 21 in the web. Preferably a yielding contact member 23 is provided at the rear of the motor for engagement with a cross web portion 24 at the bottom of the hinged bracket.

As shown, a yielding member or arm 25 composed preferably of resilient metal is secured adjacent the rear of the motor by suitable securing means 26, and is provided adjacent its opposite end with a hook or catch member 27. The yielding member 25 extends over the hinged bracket and normally holds the same firmly against the motor in the position shown in Fig. 4, owing to the engagement of the resilient arm with a cross web portion 28 at the upper portion of the bracket.

When, however, it is desired to support the cleaner with its handle in upright position as indicated in Figs. 1, 2 and 3, the bracket is swung toward the floor tool against the tension of the spring to the position shown in Fig. 1, whereupon the cross web portion 28 is engaged by the hook or catch 27 and firmly retained in this position with the handle of the cleaner upright.

The invention has been described in detail for the purpose of illustration, but it will be understood that variations and modifications may be resorted to without departing from the spirit of the invention as defined in the appended claims.

What we claim is:
1. A suction cleaner having a fixed frame portion, and a floor tool, and means cooperating with the floor tool for supporting the cleaner in various adjusted positions, said means comprising a bracket hingedly secured to the frame and including a cross arm, and a resilient arm also carried by said frame but mounted at a position remote from the bracket hinge, said resilient arm extending over and pressing against said cross arm, for normally holding said bracket in one adjusted position and having a hooked portion adapted to engage said cross arm for holding the bracket in another adjusted position.

2. In combination with a suction cleaner having a suction handle, casings for a fan and fan motor rigidly carried by and extending angularly from the handle, and means for supporting the cleaner with the handle in raised or lowered positions, said means including a bracket hinged to the fan casing and having a pair of spaced cross members, one of the cross members being adapted to engage the fan motor in the lowered or working position, and a resilient arm mounted on the motor casing and overlying the second cross member when in the lowered position, said arm having a hook for engaging the second cross member when the bracket is in raised position.

3. A suction cleaner having a suction handle, suction producing means for the cleaner having a casing extending angularly in a rearward direction from the handle and rigidly secured thereto, and means for selectively securing the cleaner with the suction handle in upright or lowered position, said means comprising a bracket hinged to the casing adjacent the suction handle, and including a pair of spaced cross members, a flexible arm secured to the casing at a point more remote from the handle than the point of attachment of the bracket, said arm when the cleaner is in lowered position engaging one of the cross arms while the second rests against the casing at a point beyond the point of attachment of the flexible arm, the flexible arm having a hook at its free end adapted to engage the first mentioned cross arm for holding the cleaner in raised position.

4. A suction cleaner having a suction handle, a fixed frame portion and a floor tool, and means cooperating with the floor tool for supporting the cleaner with its handle in upright or lowered position, said means comprising a bracket hingedly secured to the frame and of such length as to reach the floor when the cleaner is in working position, and having a hook adapted to engage the first mentioned cross arm for holding the cleaner in raised position.

5. In combination with a suction cleaner having a suction handle, casings for a fan and fan motor rigidly carried by and extending angularly from said handle, and means for supporting the cleaner with the handle in raised or lowered position, said supporting means including a bracket comprising a frame having an internal web portion centrally cut away, and having a pair of integrally formed ears hingedly connected to the fan casing and another pair of integrally formed ears for supporting floor engaging rollers, the central opening being so located and of such size as to permit a substantial portion of the motor casing to extend therethrough when the bracket is swung rearwardly to permit the handle to be lowered, and resilient means cooperating with the bracket for yieldingly retaining it either in said rearward position or in substantially upright position when swung forwardly to support the cleaner with its handle upright.

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