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Leland

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[54] **FLOOR MOP HAVING PIVOTABLE HANDLE FOR CHANGING DIRECTIONS**

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[52] **U.S. Cl.** ..... **15/231,** 15/144 A, 15/145, 15/229 B, 403/213

[51] **Int. Cl.** ... **A47l 13/46,** A47l 13/255, B25g 3/38

[58] **Field of Search** ..... 15/120 R, 144 R, 144 A, 15/172, 228, 229 B, 229 BC, 229 BP, 229 BW, 231, 232, 244 A, 147, 235.8, 257.4, 257.7; 306/2, 3, 11, 19; 16/114 R; 294/19 R, 24, 26; 224/45 F

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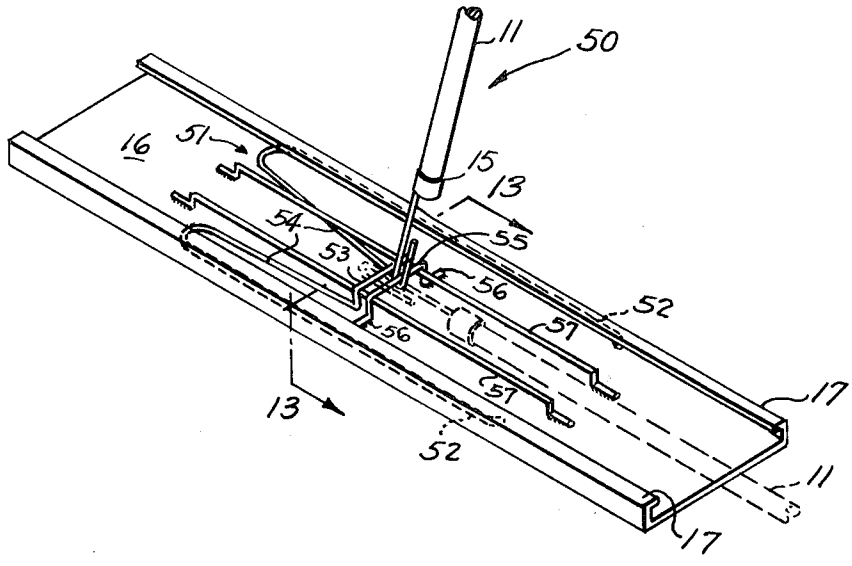
Primary Examiner—Daniel Blum

Attorney, Agent, or Firm—Berman, Bishoff & Platt

[57] **ABSTRACT**

An improved floor mop is described having a handle which is pivotably attached to the mop head and is readily attachable thereto and removable therefrom. In one embodiment of the invention, the mop handle is attached to an upstanding bracket mounted on the rear surface of the mop head, by means of a ring secured to the lower portion of the mop handle. Resilient spring means are provided which cooperate with channels provided on the rear surface of the mop head to secure the cleaning pad in place. In other embodiments of the invention, the handle is attached by a substantially U-shaped hook to an upstanding bracket which is permanently affixed to the rear surface of the mop head. A resilient holding member is provided which prevents the hook from being released from the bracket while at the same time holding the cleaning pad in place.

6 Claims, 14 Drawing Figures



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FIG. 1.

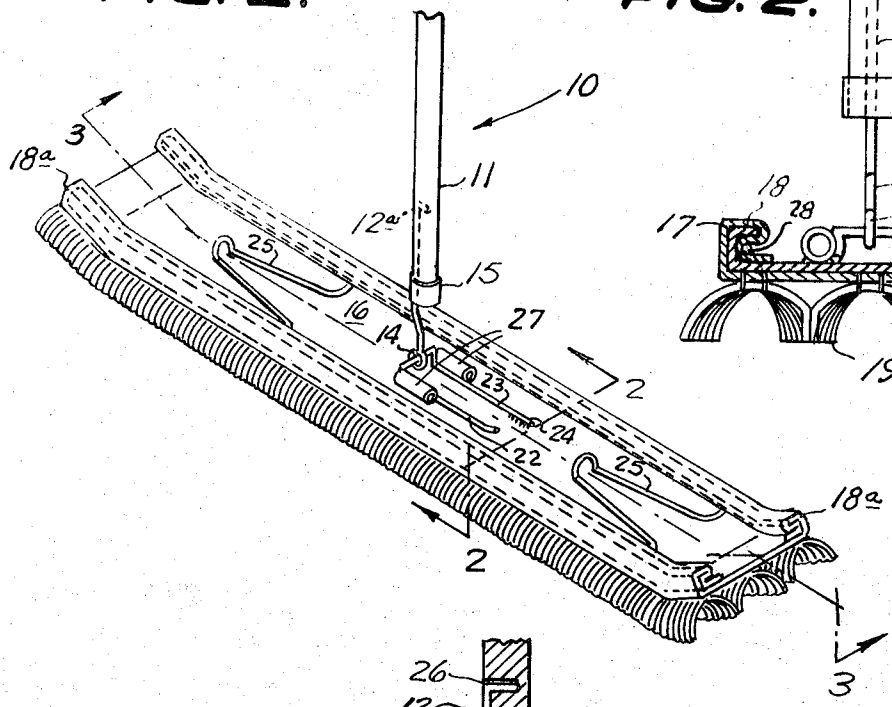


FIG. 2.

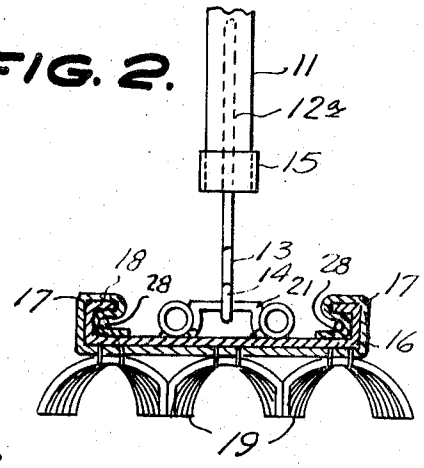


FIG. 3.

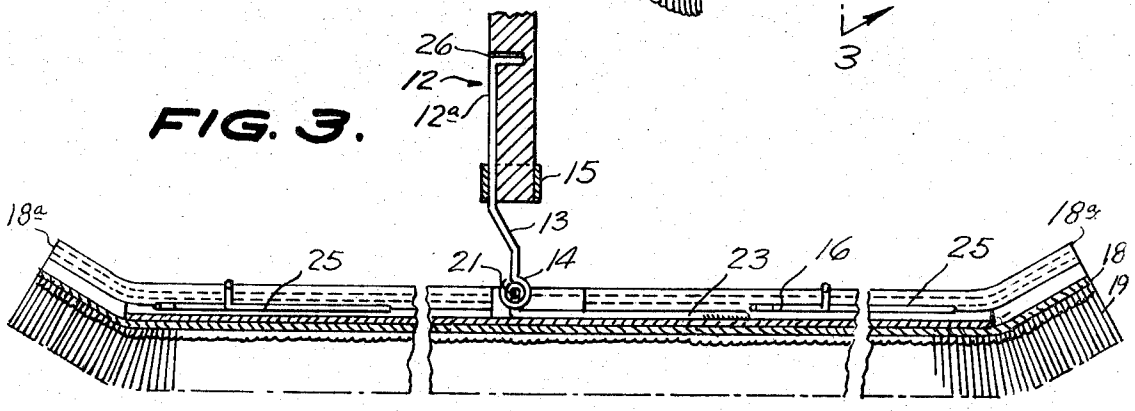


FIG. 4.

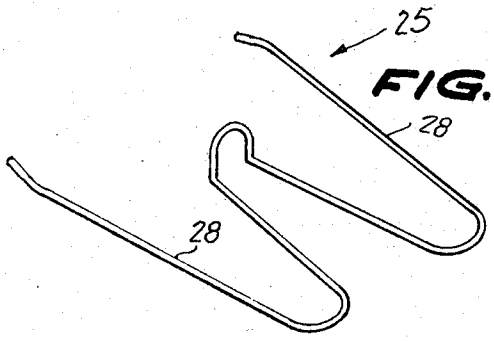


FIG. 5.

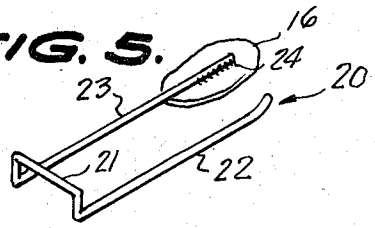


FIG. 6.

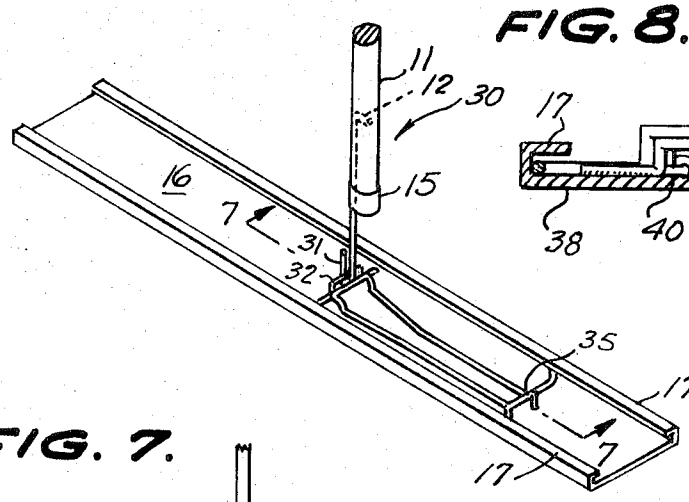


FIG. 8.

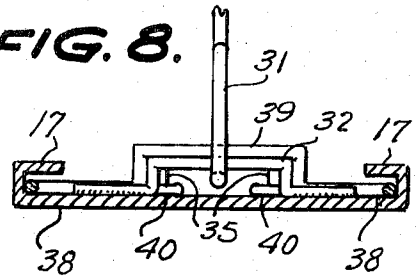


FIG. 7.

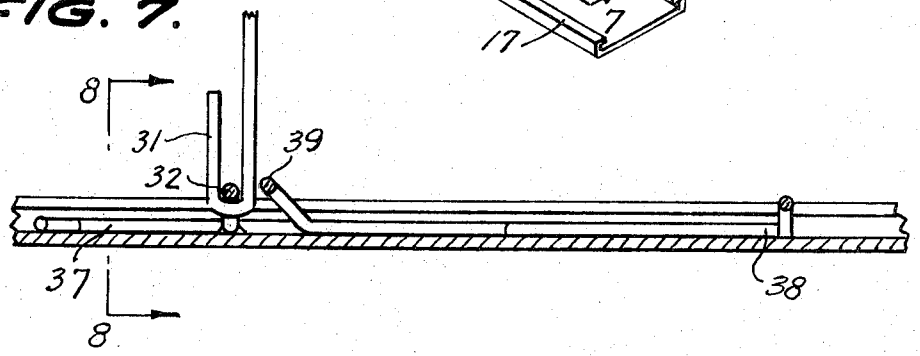


FIG. 9.

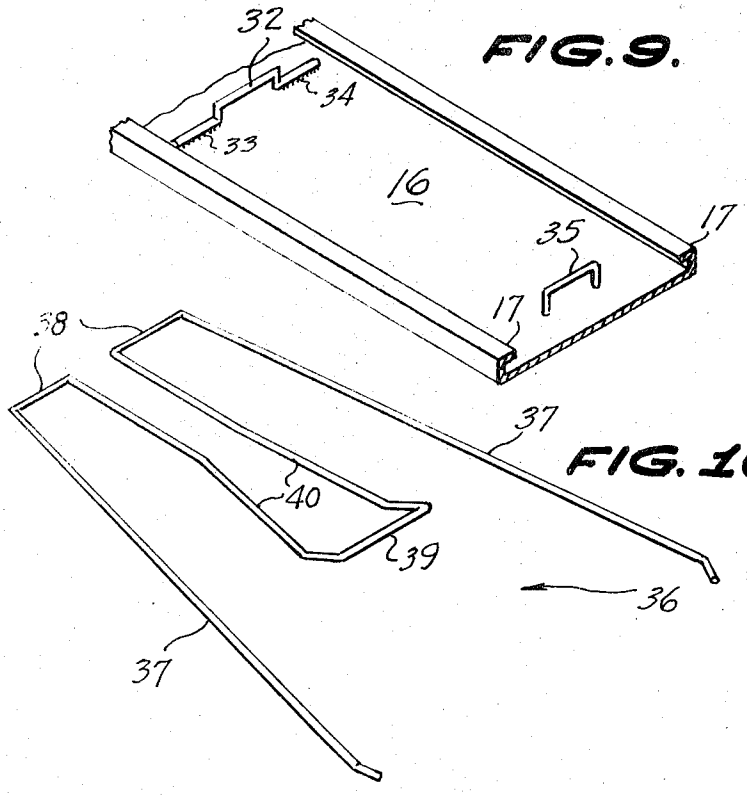
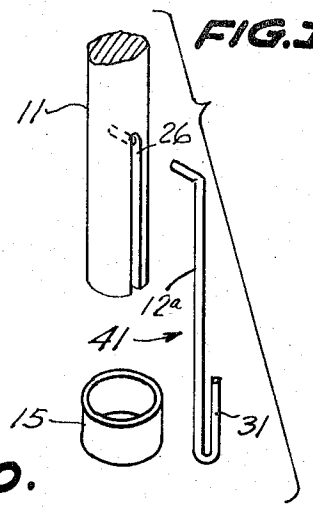


FIG. 10.

FIG. 11.



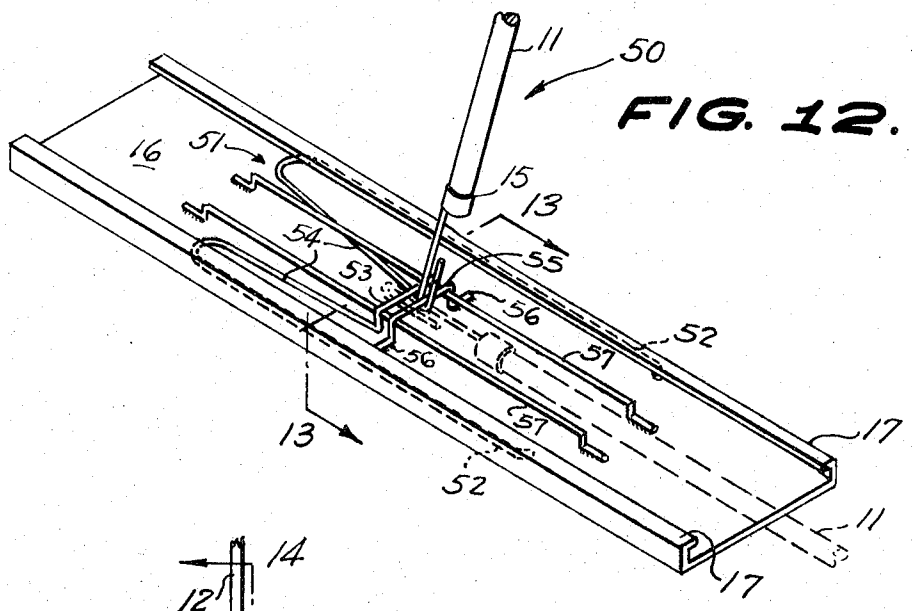


FIG. 12.

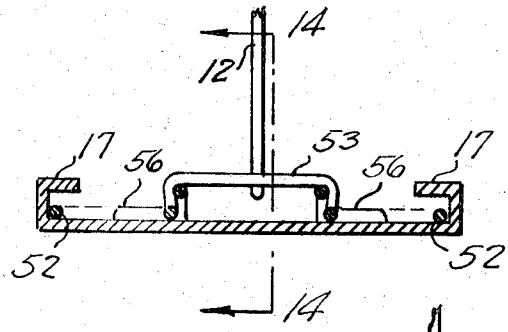


FIG. 13.

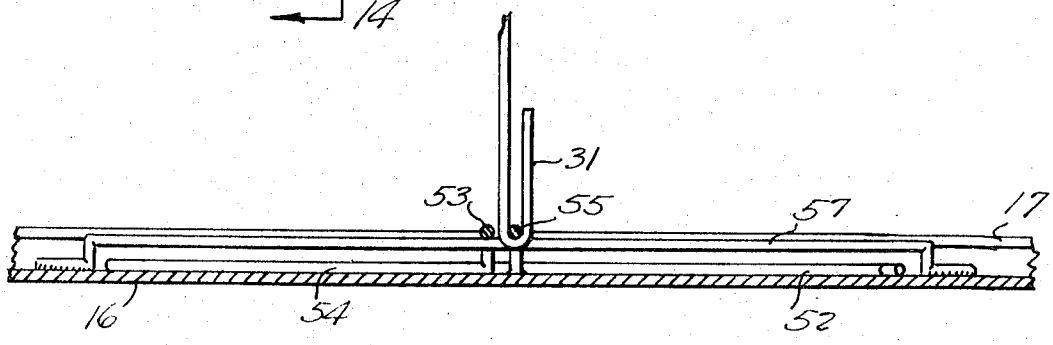


FIG. 14.

FLOOR MOP HAVING PIVOTABLE HANDLE FOR CHANGING DIRECTIONS

The present invention relates to cleaning devices and more particularly to floor mops having interchangeable heads and cleaning pads for industrial use.

The industrial mop generally in use today, suffers from a number of severe and critical disadvantages. Among these are its weight and clumsiness in operation. Moreover, the present day industrial mop does not have a flat base, but rather utilizes a wire frame which causes only a very small portion of the cleaning pad surface to effectively perform its function. In addition, this mop is not versatile in use since it is only capable of swiveling to a very limited degree due to a rather clumsy, inflexible mounting. Moreover, the cleaning pad itself is not readily adapted to efficient cleaning performance since it is held loosely in place on the wire frame by means of tie strings, which require an inordinate amount of time to secure in several places, and an equal, if not greater, amount of time to untie in order to remove and replace the cleaning pad.

Accordingly, it is a primary object of the present invention to provide a new and improved floor mop, intended principally for industrial use, which overcomes the above-stated disadvantages of the prior art mop.

A further and more specific object of the present invention is to provide a floor mop which is easily maneuverable and requires little effort on the part of the operator in order to change the direction of mop travel.

Another object of the present invention is to provide a new and improved mop construction which comprises a flat base in order to utilize the entire functional surface of the cleaning pad.

Yet another object of the present invention is to provide an improved mop construction in which the handle is readily removable from the mop head.

Still a further object of the present invention is to provide an improved mop construction in which the cleaning pad is easily secured to and removed from the mop head.

These and other objects, features and advantages of the present invention will be more readily appreciated from a consideration of the following detailed description, taken in conjunction with the drawings in which:

FIG. **1** is a perspective view of a first embodiment of the invention;

FIG. **2** is a transverse sectional view taken on the line **2—2** in FIG. **1**, looking in the direction of the arrows;

FIG. **3** is a longitudinal sectional view taken on the line **3—3** in FIG. **1**, looking in the direction of the arrows;

FIG. **4** is a perspective view of the resilient spring means for securing the cleaning pad to the mop head in the embodiment of FIG. **1**;

FIG. **5** is a perspective view of the handle mounting bracket with a portion of the mop head, of the FIG. **1** embodiment;

FIG. **6** is a perspective view of a second embodiment of the invention with the cleaning pad removed for clarity;

FIG. **7** is a partial longitudinal cross-sectional view taken on the line **7—7** in FIG. **6**, looking in the direction of the arrows;

FIG. **8** is a transverse sectional view taken on the line **8—8** in FIG. **7**, looking in the direction of the arrows;

FIG. **9** is a partial perspective view of the FIG. **6** embodiment with certain parts removed for clarity, illustrating in detail the construction of the mounting bracket for the mop handle and the stop means for the resilient spring means for securing the cleaning pad in place and restraining the mop handle mounting hook from becoming disengaged from the mounting bracket;

FIG. **10** is a perspective view of the novel resilient spring means utilized in the FIG. **6** embodiment;

FIG. **11** is an exploded partial perspective view illustrating the means by which the mop handle of the FIG. **6** embodiment is secured to the mounting bracket;

FIG. **12** is a perspective view of a third embodiment of the present invention;

FIG. **13** is a transverse section taken on the line **13—13** in FIG. **12**, looking in the direction of the arrows; and

FIG. **14** is a longitudinal section taken on the line **14—14** in FIG. **13**, looking in the direction of the arrows.

Referring now to the drawings in detail, wherein like reference characters indicate like parts throughout the several figures, and first to FIGS. **1** through **5**, there is illustrated a first embodiment of the invention wherein the reference numeral **10** indicates generally a cleaning device constructed in accordance with the invention.

Mop head **16** is of generally flat construction and formed of metal or like material, with side portions **17** which are generally L-shaped in cross-section. Folded over and into the grooves formed by side portions **17** is removable cloth cleaning pad **18** having a depending brush face **19** and overlapping ends **18***a* to protect furniture and the like. Cleaning pad **18** is secured in place on mop head **16** by means of holding springs **25** having resilient arms **28** which are forced into the grooves formed by side portions **17** of mop head **16** against the folded over portions of cleaning pad **18**, as seen most clearly in FIG. **2**.

Mop handle **11** is provided with L-shaped slot **26** for receiving L-shaped portion **12***a* of attaching hook **12** therein. Depending downwardly and at an angle from L-shaped portion **12***a* is portion **13** which is attached to ring **14**, the function of which will presently become apparent. Hook **12** is secured to handle **11** by means of slip ring **15**, which may be placed over the top of the handle and slid into place.

As illustrated in detail in FIG. **5**, mounting bracket **20** comprises a generally U-shaped upstanding portion **21**, a shorter arm **22** which is slightly turned up at its end and a longer arm **23** which is fixedly secured to the rear surface of mop head **16** as by a weld at **24**. Bracket **20** is formed of a resilient wire material, so that arm **22** may be slightly raised from the rear surface of mop head **16** and ring **14** slipped therealong and into engagement with upstanding U-shaped portion **21**, as illustrated in FIGS. **1**, **2** and **3**. To prevent ring **14** from slipping off portion **21** of bracket **20**, substantially cylindrical guard members **27** are welded or otherwise permanently affixed to the rear surface of mop head **16** in contiguous relationship with arms **22** and **23** and abutting upstanding portion **21**.

In the construction illustrated in FIGS. **1** through **5**, mop handle **11** may be readily attached to mop head **16**

by sliding ring portion **14** of hook **12** along arm **22** and into engagement with upstanding portion **21.** The L-shaped portion **12***a* of hook **12** is then inserted in L-shaped slot **26** in handle **11** and slip ring **15** is slid into place. Cleaning pad **18** may be then attached to mop head **16** by folding its side portions over the upstanding side portions **17***a* of mop head **16** and springs **25** may then be inserted in place to secure the cleaning pad to mop head **16.**

Since ring portion **14** of hook member **12** is free to swivel on upstanding portion **21** of mounting bracket **20,** a slight movement of handle **11** will readily enable the operator of the mop **10** to change the direction of mop travel with little or no effort. At the same time, positive engagement between the handle and the mop head is provided, with no possibility of the handle becoming disengaged from the mop head.

Referring now to FIGS. **6** through **11,** there is illustrated an alternative embodiment of the present invention, which operates on basically the same principles as the embodiment described above. Cleaning pad **18** has been eliminated in the interest of clarity.

In this embodiment of the invention, the mop assembly is generally designated by the reference numeral **30,** and like the above-described embodiment, comprises handle **11** having L-shaped slot **26** therein to receive L-shaped portion **12***a* of attaching hook **41.** In this case, however, the bottom of the attaching hook comprises an upturned elongated section **31,** rather than attaching ring **14,** as in the above-described embodiment. Slip ring **15** is provided as previously described for securing the attaching hook to handle **11.**

Fixedly secured to the rear of mop head **16** is upstanding substantially U-shaped bracket **32** having extending arms **33** and **34** which may be welded to mop head **16.** In alignment along the longitudinal axis of mop head **16** with bracket **32** is substantially U-shaped stop member **35,** the function of which will presently become apparent.

Referring now to FIG. **10,** there is illustrated spring member **36,** which in this embodiment of the invention performs the dual function of securing the cleaning pad (not illustrated) to mop head **16** and preventing hook member **41** from becoming disengaged from upstanding bracket **32.** Spring member **36** comprises resilient arms **37,** upstanding hook restraining member **39,** inner arms **40** and stop abutting members **38.**

In assembling mop **30,** as illustrated in FIGS. **6, 7** and **8,** cleaning pad **18** is folded over upstanding sides **17,** as described above, and spring member **36** inserted with arms **37** retaining the cleaning pad in place, much in the manner described above with respect to spring member **25** and arms **28.** Upturned portion **31** of hook member **41** is then slipped through bracket **32** and secured to handle **11** in the manner described above with respect to the FIG. **1** embodiment. Upturned handle restraining portion **39** of spring member **36** will abut against hook **41,** as illustrated particularly in FIG. **7,** while portions **38** will abut against stop member **35** and prevent the spring from moving longitudinally.

The construction described above with respect to the embodiment of FIGS. **6** through **11,** although somewhat different in construction, will afford the same ready maneuverability and ease of assembly as described with respect to the embodiment of FIGS. **1** through **5.** It should be realized that the use of spring member **36** and stop member **35** are not entirely necessary to this embodiment. For example, if upturned portion **31** were made long enough, there would be little chance of its disengaging from upstanding bracket **32,** and in this instance, spring members similar to those illustrated in FIG. **4** might be employed to retain the cleaning pad in place, since the handle restraining function of member **39** would no longer be required.

Referring now to FIGS. **12, 13** and **14,** there is shown a third embodiment of the present invention which is somewhat similar to the embodiment described above in connection with FIGS. **6** through **11.** Again, in this embodiment, pad **18** is not shown in the interest of clarity.

The mop embodiment of FIGS. **12, 13** and **14** is designated generally by the reference numeral **50** and comprises a handle substantially similar to that described above in connection with FIGS. **6** through **11.** The handle **11** includes slip ring **15** and an L-shaped hook **12** (not shown) having an upturned end **31.**

Mop head **16,** having portions **17** thereon for securing the cleaning pad, is provided with U-shaped hook-engaging member **55** having arms **56** welded, or otherwise permanently affixed to the rear surface of the mop head. Passing through U-shaped member **55** at substantially right angles thereto are elongated support members **57,** which are also welded or otherwise permanently affixed to the rear surface of mop head **16.**

Spring member **51,** somewhat similar in configuration to spring member **36,** shown in FIG. **10,** is provided for securing the cleaning pad in place (in a manner substantially the same as that described above with respect to the other embodiments) and to retain upturned portion **31** of hook **12** in place. Spring **51** comprises pad retaining arms **52,** upturned handle restraining portion **53** and inner arms **54.**

In assembling the mop **50,** pad **18** is first folded over upstanding sides **17** and spring member **51** is inserted with arms **52** retaining the pad in place. Handle **11** is then placed in the position shown in dotted lines in FIG. **12,** with upturned portion **31** of hook **12** passing between handle restraining member **53** of spring **51** and U-shaped member **55.** As handle **11** is then raised, handle restraining portion **53** of spring **51** will be lifted from the rear surface of mop head **16,** permitting the handle **11** to be slightly rotated and upturned portion **31** engaged with U-shaped member **55,** as shown in the full line position. Handle restraining portion **53** will then spring back to its original position and retain upturned portion **31** in place. Hook **12** will remain in engagement with member **55** until it is desired to remove it and this may simply be accomplished by reversing the above-described process.

The embodiment described in FIGS. **12, 13** and **14,** like the previously described embodiments, affords the user extreme flexibility in the use of the mop by the swivel action of the hook and hook-engaging means of the rear of the mop head.

While certain specific embodiments of the invention have been described and illustrated, it will be readily apparent to those skilled in the art that various modifications may be made therein without departing from the spirit of the invention. It is, therefore, intended that the scope of this invention be defined only by the claims appended hereinbelow.

I claim:

1. A cleaning device comprising in combination:

a. a substantially flat, substantially rectangular plate member wherein the longer sides are upturned for engagement with a cleaning pad;
b. bracket means having an upstanding inverted U-shaped portion secured to said plate member;
c. handle means;
d. mounting means secured to said handle means and having an upturned, substantially planar end portion removed from the portion engageable with said handle and readily engageable with and disengageable from said U-shaped portion of said bracket for hookingly mounting said handle means to said bracket; and
e. spring means engaging both said upturned sides of the plate member and said upturned end of the mounting means for retaining said cleaning pad in place and for preventing said upturned end from becoming disengaged from said U-shaped portion of said bracket.

2. The cleaning device set forth in claim **1,** wherein said handle means comprises a slot and said mounting means comprises a portion engageable in said slot.

3. The cleaning device set forth in claim **2,** wherein said engageable portion of said mounting means and said slot are substantially L-shaped.

4. The cleaning device set forth in claim **2** further including slip ring means mounted on said handle means for retaining said engageable portion in said slot.

5. The cleaning device set forth in claim **1** further including stop means mounted on said plate for retaining said spring in place.

6. The cleaning device set forth in claim **1** further including support means mounted on the rear of said plate member for supporting said U-shaped portion and said spring means.

* * * * *