(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
2 August 2012 (02.08.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/103453 A2

(51) International Patent Classification:
A47L 13/22 (2006.01) *A47L 13/17* (2006.01)
A47L 13/20 (2006.01) *A47L 13/12* (2006.01)

(21) International Application Number:
PCT/US2012/022931

(22) International Filing Date:
27 January 2012 (27.01.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/437,652 30 January 2011 (30.01.2011) US
61/439,008 3 February 2011 (03.02.2011) US
61/473,840 11 April 2011 (11.04.2011) US

(71) Applicant *(for all designated States except US)*: **QUICKIE MANUFACTURING CORPORATION** [US/US]; 1150 Taylors Lane, Cinnaminson, NJ 08077 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MANDLE, James, S.** [US/US]; 55 Lake Shore Drive, Lake Luzerne, NY 12846 (US). **BIRNBAUM, David, Philip** [US/US]; 1436 Innis Lane, Yardley, PA 19067 (US). **WEAVER, Jace, A.** [US/US]; 601 Swamp Picnic Road, Gilbertsville, PA 19525 (US). **SCHIFF, David, R.** [US/US]; 213 Valentine Street, Highland Park, NJ 08904 (US). **TURPAULT, Mathieu, D.** [FR/US]; 272 Pennington Titusville Road, Pennington, NJ 08534 (US).

(74) Agent: **LETCHFORD, John, F.**; Archer & Greiner, P.C., One Centennial Square, P.O. Box 3000, Haddonfields, NJ 08033 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,

[Continued on next page]

(54) Title: CLEANING IMPLEMENT

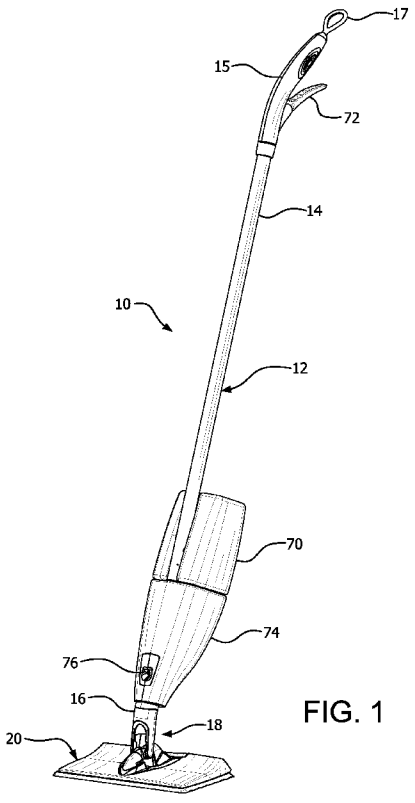

FIG. 1

(57) Abstract: A multipurpose cleaning implement that permits a user to remove at least one of loose matter, stains and stuck-on debris from floor surfaces. The device includes an elongate handle the lower end of which is connected to a cleaning head that carries cleaning material. In an embodiment, the cleaning head is selectively positionable between a broom/scrubbing position and a mop position. In various embodiments, the implement possesses characteristics of a broom, a scrubbing brush and/or a mop.

WO 2012/103453 A2

MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

CLEANING IMPLEMENT

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 61/437,652, filed January 30, 2011; U.S. Provisional Application No. 61/439,008, filed February 3, 2011; and U.S. Provisional Application No. 61/473,840, filed April 11, 2011, the disclosures of which are incorporated herein in their entireties by reference thereto.

FIELD OF THE INVENTION

The present invention relates in general to cleaning implements and in particular to floor cleaning devices.

BACKGROUND OF THE INVENTION

Various types of floor cleaning devices are known in the art including, for example, brooms, mops and scrubbing brushes. Exemplary brooms include sweeping brooms, push brooms, and so on. Regardless of their intended uses, brooms generally have the following features in common: an elongate handle and a cleaning head attached to the lower end of the handle. The cleaning head typically comprises a block which carries a plurality of natural and/or synthetic bristles. The handle may be grasped by a user in such a way as to enable pushing, pulling and/or sweeping motion of the broom about a floor surface. As is known, brooms are useful for removing loose coarse matter from a floor. However, a broom does not effectively remove dust and other fine solids, stains or matter which is stuck on a floor.

Two categories of mops are known in the art: “wet” mops and “dry” mops. Regardless of their intended uses, all mops generally have the following features in common: an elongate

handle and a cleaning head attached to the lower end of the handle, wherein the cleaning head includes a block which carries “wet” or “dry” cleaning material. The handle may be grasped by a user in such a way as to enable pushing, pulling and/or swabbing motion of the mop about a floor surface.

The cleaning materials associated with wet mops typically include substantially absorbent strands, sponges, cloths or pads, any of which may be fabricated from natural and/or artificial/synthetic materials. Wet mops may or may not include a cleaning fluid supply, which supply may be either a disposable or refillable reservoir. In the event they do, such mops are often referred to as liquid dispensing mops. Wet mops are commonly used to apply liquids to and/or remove liquids from a floor. Additionally, wet mops are used to cleanse floors with liquids in order to remove soluble stains or similar matter. However, wet mops are not ideal for removing loose coarse particulates and/or matter which is stuck on a floor.

In contrast to wet mop cleaning materials, commonly used dry mop cleaning materials include substantially non-absorbent strands, strips or fabric sheets. They may be fabricated from natural and/or artificial/synthetic materials, may be either disposable or reusable, and may be infused with one or more cleaning enhancement additives including, without limitation, oils, waxes, tackifiers, disinfectants and perfumes. In the alternative or in addition to the foregoing additives, dry mop cleaning materials may be electrostatically charged or otherwise treated to promote adhesion of dust and other fine particulates. Dry mops are commonly used to remove fine solids and dust from a floor and/or polish a floor. However,

dry mops are generally not useful for cleansing floors with liquids, applying liquids to and/or removing liquids from a floor, or removing loose coarse particulates and/or matter which is stuck on a floor.

As noted above, brooms and mops (whether wet or dry) are ineffective for removing stubborn stuck-on matter from a floor, especially matter residing in surface recesses and imperfections or in narrow areas such as tile grout lines. Usually, stiff-bristled scrubbing brushes must be used for this task.

Consequently, in order to perform the full array of cleaning procedures that may be required for effective floor cleaning, a user may need to be equipped with a broom, a wet mop and/or a dry mop and a scrubbing brush.

An advantage exists, therefore, for a multipurpose cleaning implement capable of realizing the benefits of bristled tools, such as brooms and scrubbing brushes, and mops while avoiding the deficiencies individually associated with such tools.

SUMMARY OF THE INVENTION

The present invention provides a multipurpose cleaning implement that permits a user to remove coarse and fine loose matter, soil, stains and stuck-on debris from floor surfaces. The device includes an elongate handle the lower end of which is connected to a cleaning head that carries cleaning material. The cleaning head is selectively positionable between a mop position and a broom/scrubbing position, and the handle and cleaning head are desirably pivotally connected by a universal joint. The implement

includes characteristics of a mop, a broom and a scrubbing brush.

Other details, objects and advantages of the present invention will become apparent as the following description of the presently preferred embodiments and presently preferred methods of practicing the invention proceeds.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will become more readily apparent from the following description of preferred embodiments thereof shown, by way of example only, in the accompanying drawings wherein:

FIG. 1 is a front elevational perspective view of a cleaning implement according to the invention with brush/broom bristles thereof omitted for clarity of illustration;

FIG. 2 is a top plan view of a cleaning of a cleaning implement according to the invention;

FIG. 3 is a side view of a cleaning of a cleaning implement according to the invention;

FIG. 4 is a side elevational view of a cleaning implement according to the invention with the cleaning head thereof in a mop position;

FIG. 5 is a side elevational view of a cleaning implement according to the invention with the cleaning head thereof in a scrubbing/broom position;

FIG. 6 is an enlarged rear perspective view of a cleaning implement according to the invention with the cleaning head thereof in a scrubbing/broom position and with brush/broom bristles thereof omitted for clarity of illustration;

FIG. 7 is a bottom plan view of a cleaning implement according to the invention with brush/broom bristles thereof omitted for clarity of illustration;

FIG. 8 is a rear perspective view of a cleaning implement according to the invention with the cleaning head thereof in a mop position and with brush/broom bristles thereof omitted for clarity of illustration; and

FIG. 9 is an enlarged view of the encircled portion of FIG. 8 with the movable segment of the cleaning head oriented in a different position than shown in FIG. 8.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings wherein like or similar references indicate like or similar elements throughout the several views, there is shown in the figures several embodiments of a cleaning implement according to the present invention. The implement, identified generally by reference numeral 10 in FIG. 1, is a multipurpose floor cleaning device. Implement 10 comprises an elongate handle 12 having an upper end 14 and a lower end 16. The upper end of the handle may include a hand grip 15 and means 17 such as a ring, hook, or the like, for hanging or suspending the implement when the device is in storage. The lower end of the handle is connected at 18 to a cleaning head 20 via means described in greater detail below. Similar to other

cleaning devices such as brooms and mops, handle 12 may be grasped by a user in such a way as to enable the implement to be pushed, pulled, swept and/or swabbed about a floor surface.

Cleaning head 20 includes a scrubbing/broom portion 22 (hereinafter “bristle portion”) and a mop portion 24. The cleaning head comprises a block 26 having an upper surface 28, a lower surface 30, a first longitudinal edge 32, a second longitudinal edge 34 and a longitudinal axis 36 (FIGS. 2, 3 and 6). Implement 10 includes means for selectively disposing the cleaning head into a mop position (FIG. 4) and a scrubbing/broom position (FIG. 5, hereinafter “bristle position”), wherein the selectively disposing means comprise means 38 (most clearly seen in FIGS. 2, 3 and 6) for pivotally connecting the cleaning head to lower end 16 of handle 12. In a preferred embodiment, the pivotally connecting means is a universal joint for permitting two degrees of relative rotational motion between the cleaning head 20 and handle 12. Universal joint 38 includes a first pivot shaft 40 extending substantially parallel to longitudinal axis 36 and a second pivot shaft 42 extending substantially transverse to the first pivot shaft 40. The ends of shafts 40, 42 are respectively journaled in a yoke 41 affixed to the lower end 16 of handle 12 and spaced apart standards 43 projecting upwardly from upper surface 28 of block 26.

The means for selectively disposing the cleaning head into a mop position and a bristle position further comprises means for releasably retaining the cleaning head in a bristle position. For example, such means, identified by reference numeral 44 (FIGS. 2, 3 and 6), may comprise cooperating means carried by cleaning head 20 and handle 12

such as yieldable structure situated atop upper surface 28 of block 26 adapted to firmly but releasably grip the yoke 41 via a friction fit, thereby releasably retaining the cleaning head in a substantially parallel orientation, i.e., bristle position, with respect to the handle, such as is shown in FIGS. 5 and 6. Likewise, the handle may carry structure for releasably retaining the cleaning head in the bristle position. In any event, the releasable connection may be a friction fit, a spring clip, a latch or other similar means.

Alternatively, the means for releasably retaining the cleaning head in a bristle position may comprise asymmetrical weighting of the cleaning head 20. More particularly, "asymmetrical weighting" shall mean providing the cleaning head with relatively greater weight toward bristle portion 22, i.e., toward first longitudinal edge 32, whereby the center of gravity of the cleaning head causes the cleaning head to pivot about first pivot shaft 40 in such a way that the first longitudinal edge of the bristle portion swings downwardly under the influence of gravity when the handle 12 is lifted upwardly. Upon such positioning, the asymmetrical weighting of the cleaning head effectively maintains the cleaning head in bristle position. When it is desired to return the cleaning head to the mop position, the user again lifts handle 12 and urges rotation of the cleaning head about pivot shaft 40 to separate the upper surface 28 of block 26 from contact with the handle. Once the cleaning head is released from the bristle position, the user simply lowers the handle whereby the lower surface 30 of block 26, and any mop material carried thereby, comes into contact with the floor, thereby urging the cleaning head into the mop position shown in FIG. 4.

It will be understood that with the cleaning head in the bristle position, cleaning implement 10 may be used either as a broom or a scrubbing tool. That is, when the cleaning head is in the bristle position, the user may manipulate the handle 12 in a sweeping motion to remove loose coarse matter from a floor surface or in a generally back and forth motion (while applying some measure of downward force) to abrade and remove debris that may be stuck to the floor.

Bristle portion 22 includes scrubbing/broom cleaning material 46 (FIGS. 2-5, hereinafter "bristle cleaning material") projecting substantially from, i.e., at or adjacent, at least one of the first longitudinal and second longitudinal edges 32, 34 of block 26. Bristle cleaning material 46 comprises bristles made of natural and/or synthetic materials. The bristles are preferably from about 0.125 inch to about 1.5 inches in exposed length and are preferably fabricated from polypropylene or other plastics that may be formed into generally stiff, yet resilient fibers suitable for use as scrubbing and/or broom bristles.

Mop portion 24 further includes mop cleaning material which covers lower surface 30 of block 26. Mop cleaning material may be either substantially absorbent material suitable for "wet" mopping, as discussed later herein, or substantially non-absorbent material suitable for "dry" mopping, discussed immediately herebelow.

Turning first to the dry mop cleaning material, identified by reference numeral 48a in FIG. 3, such material may assume any form suitable for removing fine solids and dust and/or polishing a floor including, without limitation, substantially non-absorbent strands, strips or, preferably,

fabric sheets. Material 48a may be fabricated from natural and/or artificial/synthetic materials, may be either disposable or reusable, and may be infused with one or more cleaning enhancement additives including, without limitation, oils, waxes, tackifiers, disinfectants and perfumes. In the alternative or in addition to the foregoing additives, dry mop cleaning material 48a may be electrostatically charged or otherwise treated to promote adhesion of dust and other fine particulates.

As noted, material 48a is desirably a fabric sheet, which sheet may comprise one or more layers or plys and is preferably releasably attached to block 26. In this regard, block 26 is provided with means 50 for releasably attaching the fabric sheet to lower surface 30. According to a preferred construction shown in FIG. 7, means 50 is an array of hooks formed in or otherwise secured to lower surface 30 that serve to engage the fibers of the fabric sheet or pad in the manner of hook-and-loop type fasteners such as Velcro®. So constructed, the fabric sheet may be easily applied to lower surface 30 and remain secured thereto until the user desires to replace the sheet or pad, once soiled, with a clean sheet.

Referring now to the wet mop cleaning material, identified by reference numeral 48b in FIG. 3, such material may assume any form suitable for applying liquids to and removing liquids from a floor including, without limitation, substantially absorbent strands, strips, sponges, cloths or, preferably, pads. Material 48b may be fabricated from natural and/or artificial/synthetic materials, and may be either disposable or reusable.

As noted, material 48b is desirably a substantially absorbent pad, which pad typically comprises a plurality of layers or plys. Preferably, pad 48b is releasably attached to block 26 via means 52 carried by the block. According to a preferred construction, again shown in FIG. 7, means 52 is an array of hooks formed in or otherwise secured to lower surface 30 that serve to engage the fibers of the pad in the manner of hook-and-loop type fasteners such as Velcro®. In the alternative, pad 48b may be provided with an array of dedicated "loops" arranged to engage with the array of hooks 52 in order to promote enhanced adhesion of the pad to the block 26. In either case, however, the pad may be easily attached to the block and remain secured thereto until the user desires to replace the pad, once soiled, with a clean pad.

Turning to FIGS. 2, 6, 8 and 9, there is shown details of bristle portion 22 of the cleaning implement according to the invention. More specifically, these figures show that the bristle portion desirably comprises at least one immovable segment 60 and at least one movable segment 62.

Both the immovable and movable segments 60, 62 carry the aforementioned bristle cleaning material 46 (such material not being shown in FIGS. 6, 8 and 9 in order to more clearly illustrate structural features of the immovable and movable segments). It is preferred that the exposed ends of the bristles of the immovable and movable segments 60, 62 present a relatively straight edge. As a result, when segments 60, 62 are aligned as discussed below, the bristles present an essentially continuous bristle "wall" suitable for either removing coarse loose debris or stuck-on matter from a floor surface.

It is also preferred that the bristles of the movable segment 62 include at least a portion having a stiffness that is not only different from but preferably greater than the stiffness of the bristles of the immovable segments 60 whereby the movable segment may be used to provide even greater scrubbing force when such may be necessary, as discussed below.

According to a preferred embodiment shown in FIGS. 8 and 9, cleaning head 20 includes means 64 for adjustably connecting movable segment 62 to block 26. Means 64 may include a shaft affixed to the movable segment and rotatably received in block 26 or a shaft affixed to block 26 and rotatably received in the movable segment 62. Additionally, cleaning head 20 further preferably includes means 66 for selectively retaining the movable segment into a first position and at least one second position. As seen most clearly in FIG. 9, means 66 may be constructed, for example, as cooperating opposed interference structure carried by block 26 and movable segment 62 such as recesses 66a provided on block 26 and corresponding protrusions 66b provided on movable segment 62, or vice versa. Additionally, although illustrated as a rotatable connection, the means 64 for adjustably connecting movable segment 62 to block 26 – which may also serve as selectively retaining means 66 – may assume other forms. For example, and not by way of limitation, means 64/66 may comprise a mating “peg and hole” type arrangement wherein a shaft having a non-circular cross-section extends from the rear of movable segment 62 and is adapted for reception in a socket provided in block 26, which socket has a cross-sectional configuration suitable to receive the shaft in such a way as to selectively dispose the movable segment in the aforementioned first position and at least one second

position. The shaft may be, but is not necessarily, received in the socket by a friction fit. If a friction fit is employed, at least a portion of the peripheral wall of the shaft may be constructed as a living hinge that may be appropriately manipulated by a user to slightly reduce the cross-sectional area of the shaft to facilitate release of the shaft from the socket. Other means for releasably retaining the shaft in the socket and/or selectively retaining the movable segment into a first position and at least one second position will be appreciated by those of ordinary skill in the art and are considered to be encompassed within the spirit and scope of the present invention as claimed herein.

According to a preferred embodiment, when disposed in the first position (FIG. 8), movable segment 62 is in substantial collinear alignment with the immovable segments 60. With the movable segment in this position, the bristles of the movable and immovable segments present a substantially collinear arrangement or "wall" of bristles the distal ends of which are substantially coplanar, whereby the bristles are suitable for general sweeping and/or scrubbing. In the at least one second position (FIG. 9), the movable segment 62 is inclined at an angle greater than 0° and less than 180° with respect to the first position.

As depicted in FIG. 9, in an exemplary but not limitative second position movable segment 62 is disposed at an angle of substantially 90° with respect to the immovable segments 60. So oriented, movable segment 62 is in an advantageous orientation for the user to exert substantial downward force through handle 12 to aggressively scrub stuck-on matter residing in floor surface recesses including, without limitation, grout lines. In this regard,

for even better crevice scrubbing effect it is further preferred that the distal ends of the bristles of the movable segment 62 protrude with respect to the distal ends of the bristles of the immovable segments 60 when the movable segment is disposed in the second position. Toward that end, block 26 preferably includes means 66c for displacing the movable segment 62 outwardly with respect the block, i.e., in the "Z" direction shown in FIG. 9, upon movement of the movable segment from the first position to a second position, thereby creating planar differentiation or separation between the distal ends of the movable segment bristles and the distal ends of the immovable segment bristles. Suitable means 66c may include, without limitation, cam surfaces, stepped surfaces or the like. When the movable section 62 is situated in a second position, the distal ends of its bristles preferably project a distance of greater than 0 inches and up to about 1.0 inch with respect to the distal ends of the immovable segment bristles whereby the movable segment bristles may more readily penetrate and clean floor surface recesses.

In a further embodiment, implement 10 is constructed as a liquid dispensing mop ("LDM"). In this embodiment, handle 12 carries a cleaning fluid supply, which supply may be either a disposable or refillable fluid reservoir 70 (FIGS. 1 and 4-8) for containing a solvent such as water either alone or in combination with a surfactant, detergent or other cleaning enhancement additive. In addition to reservoir 70, LDM 10 comprises means in communication with the reservoir for dispensing fluid from the reservoir onto a floor surface. Such means may comprise a trigger 72 (FIGS. 1, 4, 5 and 7) movably connected to the handle near upper end 14, an electronic or manual pump or other fluid pressurizing mechanism 74 (FIGS. 1 and 4-8, the structural

and functional details of which are known in the art and therefore not described in detail herein), and at least one nozzle 76 (FIG. 1). As is known, when it is desired to dispense fluid from the LDM, the user squeezes trigger 72 thereby causing the pressurizing mechanism 74 to increase pressure in reservoir 70 to a level sufficient to cause the pressurized fluid to be conveyed from the reservoir and discharged through nozzle(s) 76 and onto a floor.

It will be appreciated that LDM 10 carries substantially absorbent mop cleaning material at lower surface 30 of block 26 and bristles along at least the first longitudinal edge 32 of the block. Additionally, the LDM may include at least one movable segment 62.

Although the invention has been described in detail for the purpose of illustration, it is to be understood that such detail is solely for that purpose and that variations can be made therein by those skilled in the art without departing from the spirit and scope of the invention as claimed herein.

CLAIMS

What is claimed is:

1. A cleaning implement comprising:

a handle having an upper end and a lower end;

a cleaning head connected to said lower end, wherein said cleaning head comprises a mop portion and a bristle portion; and

means for selectively disposing said cleaning head into a mop position and a bristle position.

2. The cleaning implement of claim 1 wherein said means for selectively disposing comprise means for pivotally connecting said cleaning head to said lower end.

3. The cleaning implement of claim 2 wherein said means for selectively disposing further comprise means for releasably retaining said cleaning head in said bristle position.

4. The cleaning implement of claim 3 wherein said means for releasably retaining comprise cooperating means carried by said cleaning head and said handle

5. The cleaning implement of claim 3 wherein said means for releasably retaining comprise asymmetrical weighting of said cleaning head toward said bristle portion whereby said bristle portion swings downwardly when said handle is lifted upwardly.

6. The cleaning implement of claim 1 wherein said cleaning head comprises a block having an upper surface, a lower surface, a first longitudinal edge, a second longitudinal edge and a longitudinal axis.

7. The cleaning implement of claim 6 wherein said means for selectively disposing comprise means for pivotally connecting said cleaning head to said lower end.

8. The cleaning implement of claim 7 wherein said means for selectively disposing further comprise means for releasably retaining said cleaning head in said bristle position.

9. The cleaning implement of claim 8 wherein said means for releasably retaining comprise cooperating means carried by said cleaning head and said handle

10. The cleaning implement of claim 8 wherein said means for releasably retaining comprise asymmetrical weighting of said cleaning head toward said first longitudinal edge whereby said bristle portion swings downwardly when said handle is lifted upwardly.

11. The cleaning implement of claim 7 wherein said means for pivotally connecting comprise a first pivot shaft extending substantially parallel to said longitudinal axis.

12. The cleaning implement of claim 11 wherein said means for pivotally connecting comprise a second pivot shaft extending substantially transverse to said first pivot shaft.

13. The cleaning implement of claim 6 wherein said mop portion comprises mop cleaning material covering said lower surface, and wherein said bristle portion comprises bristle cleaning material projecting substantially from at least one of said first longitudinal and said second longitudinal edges.

14. The cleaning implement of claim 13 wherein said bristle cleaning material has an exposed length of from between about 0.125 inch to 1.5 inches.

15. The cleaning implement of claim 13 wherein said bristle cleaning material comprises first bristles having a first stiffness.

16. The cleaning implement of claim 15 wherein said bristle cleaning material comprises second bristles having a second stiffness.

17. The cleaning implement of claim 16 wherein said second stiffness is different from said first stiffness.

18. The cleaning implement of claim 17 wherein said second stiffness is greater than said first stiffness.

19. The cleaning implement of claim 1 wherein said cleaning head comprises a block and wherein said bristle portion comprises at least one movable segment and at least one immovable segment.

20. The cleaning implement of claim 19 further comprising means for rotatably connecting said at least one movable segment to said block.

21. The cleaning implement of claim 19 further comprising means for selectively retaining said at least one movable segment in a first position and at least one second position.

22. The cleaning implement of claim 21 wherein, when disposed in said first position, bristles of said at least one movable segment are in substantial collinear alignment with bristles of said at least one immovable segment.

23. The cleaning implement of claim 21 wherein said at least one second position is inclined at an angle greater than 0° and less than 180° with respect to said first position.

24. The cleaning implement of claim 21 further comprising means for displacing said at least one movable segment outwardly with respect to said block upon movement of said at least one movable segment from said first position to said at least one second position, whereby distal ends of bristles of said at least one movable segment protrude with respect to distal ends of bristles of said at least one immovable segment when said at least one movable segment is in said at least one second position.

25. The cleaning implement of claim 13 wherein said mop cleaning material comprises substantially non-absorbent cleaning material.

26. The cleaning implement of claim 25 wherein said substantially non-absorbent cleaning material is selected from a cleaning sheet and a pad.

27. The cleaning implement of claim 26 further comprising means for releasably attaching said cleaning sheet or pad to said block.

28. The cleaning implement of claim 27 wherein said substantially non-absorbent cleaning material is infused with at least one cleaning enhancement additive selected from oils, waxes, tackifiers, disinfectants and perfumes.

29. The cleaning implement of claim 13 wherein said mop cleaning material comprises substantially absorbent cleaning material.

30. The cleaning implement of claim 29 wherein said substantially absorbent cleaning material is a cleaning pad.

31. The cleaning implement of claim 30 further comprising means for releasably attaching said cleaning pad to said block.

32. The cleaning implement of claim 1 further comprising a fluid reservoir carried by said handle and means for dispensing fluid from said reservoir onto a floor surface.

33. The cleaning implement of claim 29 further comprising a fluid reservoir carried by said handle and means for dispensing fluid from said reservoir onto a floor surface.

34. A cleaning implement comprising:

a handle having an upper end and a lower end; and

a cleaning head connected to said lower end, said cleaning head comprising a block having a bristle portion, said bristle portion comprising at least one movable segment and at least one immovable segment.

35. The cleaning implement of claim 34 further comprising means for rotatably connecting said at least one movable segment to said block.

36. The cleaning implement of claim 34 further comprising means for selectively retaining said at least one movable segment in a first position and at least one second position.

37. The cleaning implement of claim 36 wherein, when disposed in said first position, bristles of said at least one movable segment are in substantial collinear alignment with bristles of said at least one immovable segment.

38. The cleaning implement of claim 36 wherein said at least one second position is inclined at an angle greater than 0° and less than 180° with respect to said first position.

39. The cleaning implement of claim 36 further comprising means for displacing said at least one movable segment outwardly with respect to said block upon movement of said at least one movable segment from said first position to said at least one second position, whereby distal ends of bristles of said at least one movable segment protrude with respect to distal ends of bristles of said at least one immovable segment when said at least one movable segment is in said at least one second position.

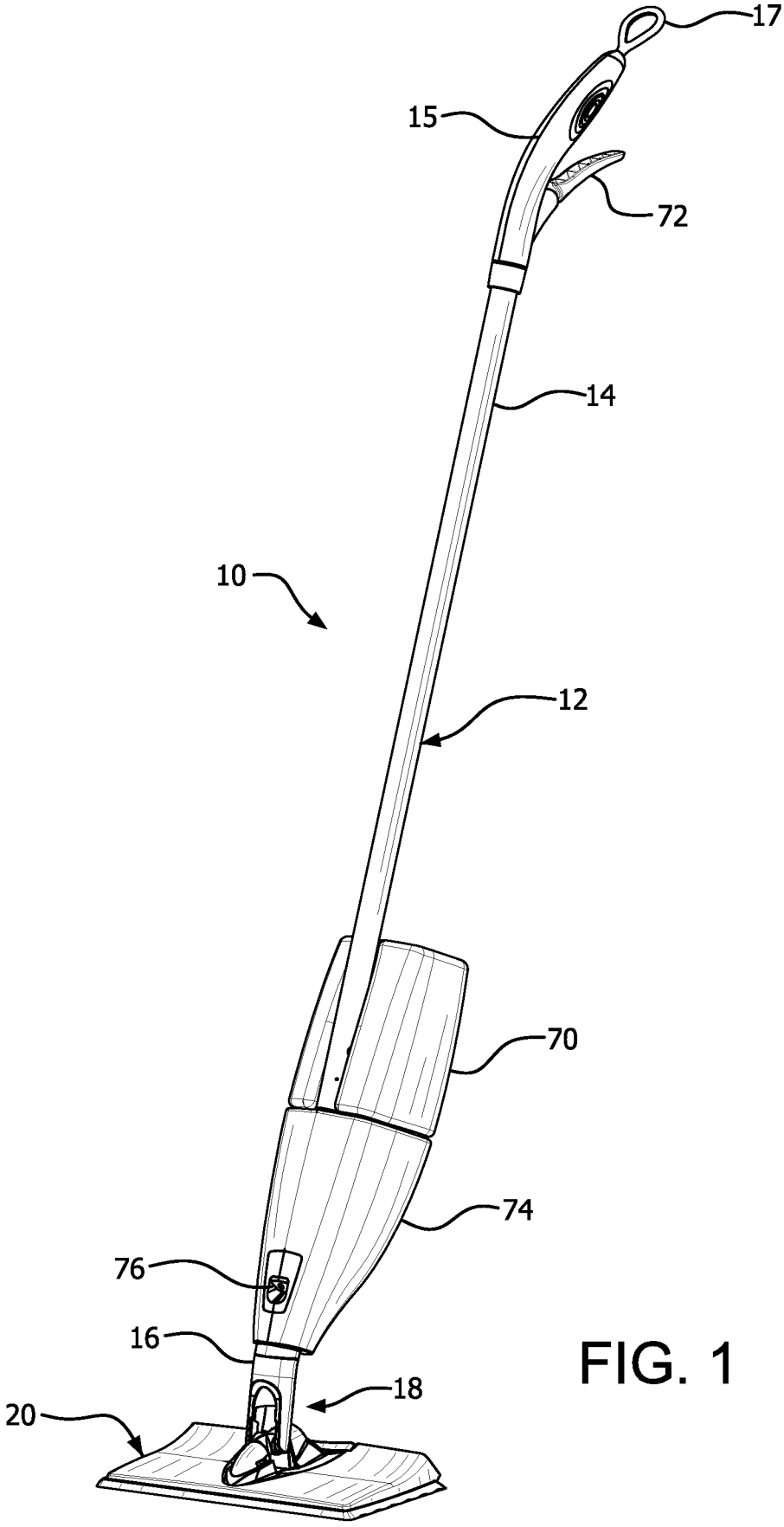

FIG. 1

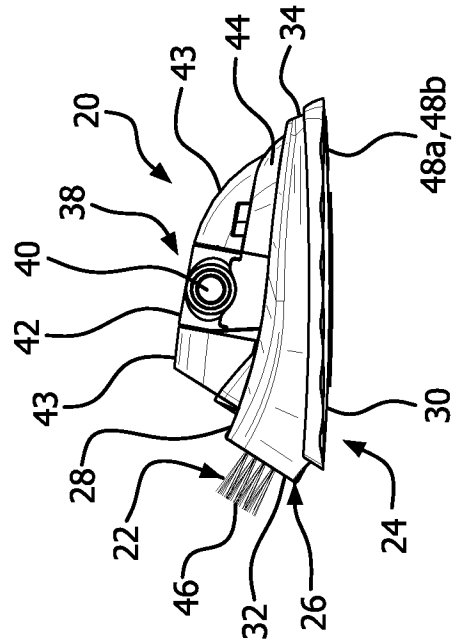
20
43
44
34
48a,48b
38
40
42
43
30
28
22
24
46
32
26

FIG. 3

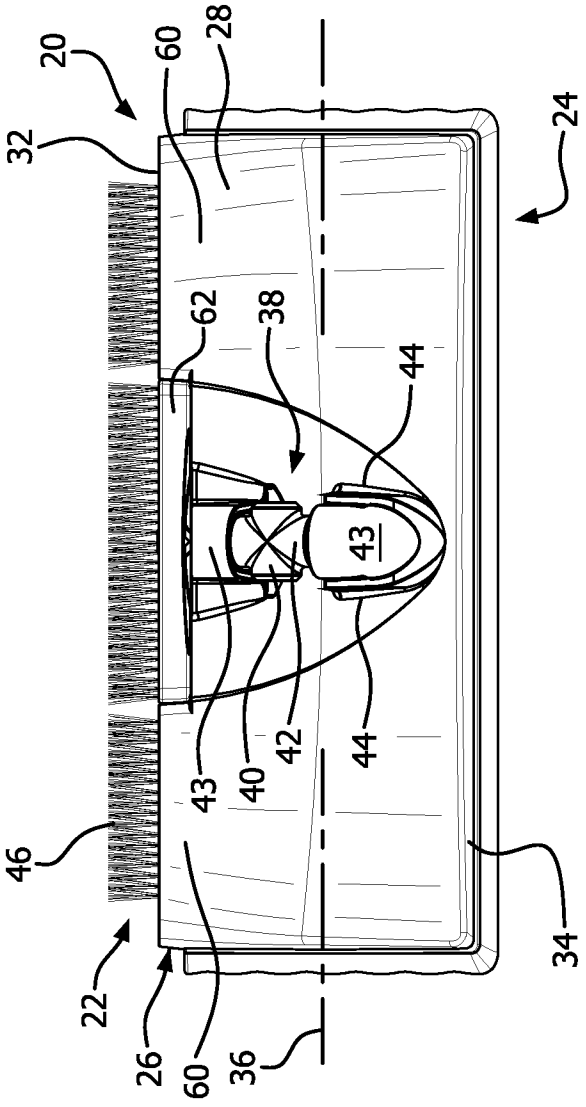
20
60
28
32
24
62
38
44
43
43
40
42
44
46
22
26
60
36
34

FIG. 2

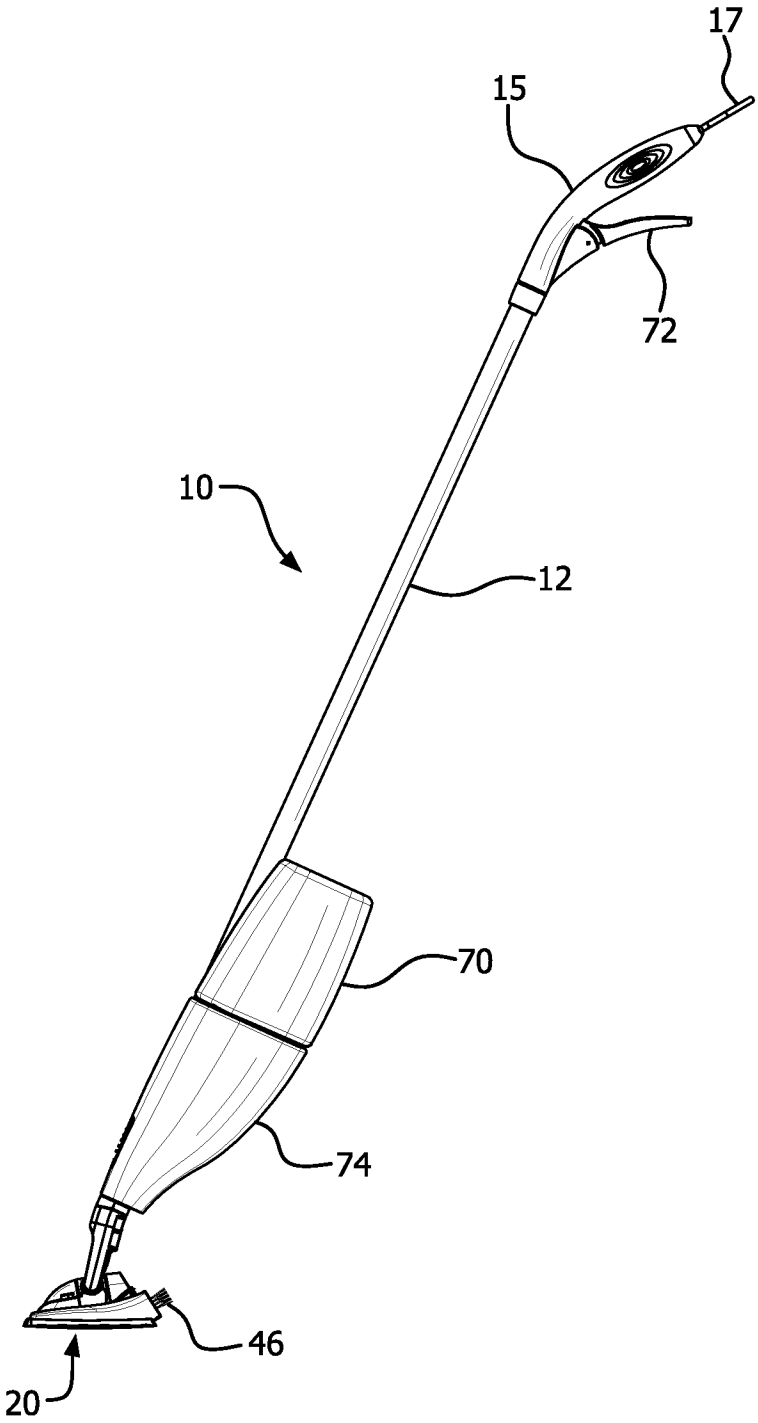

FIG. 4

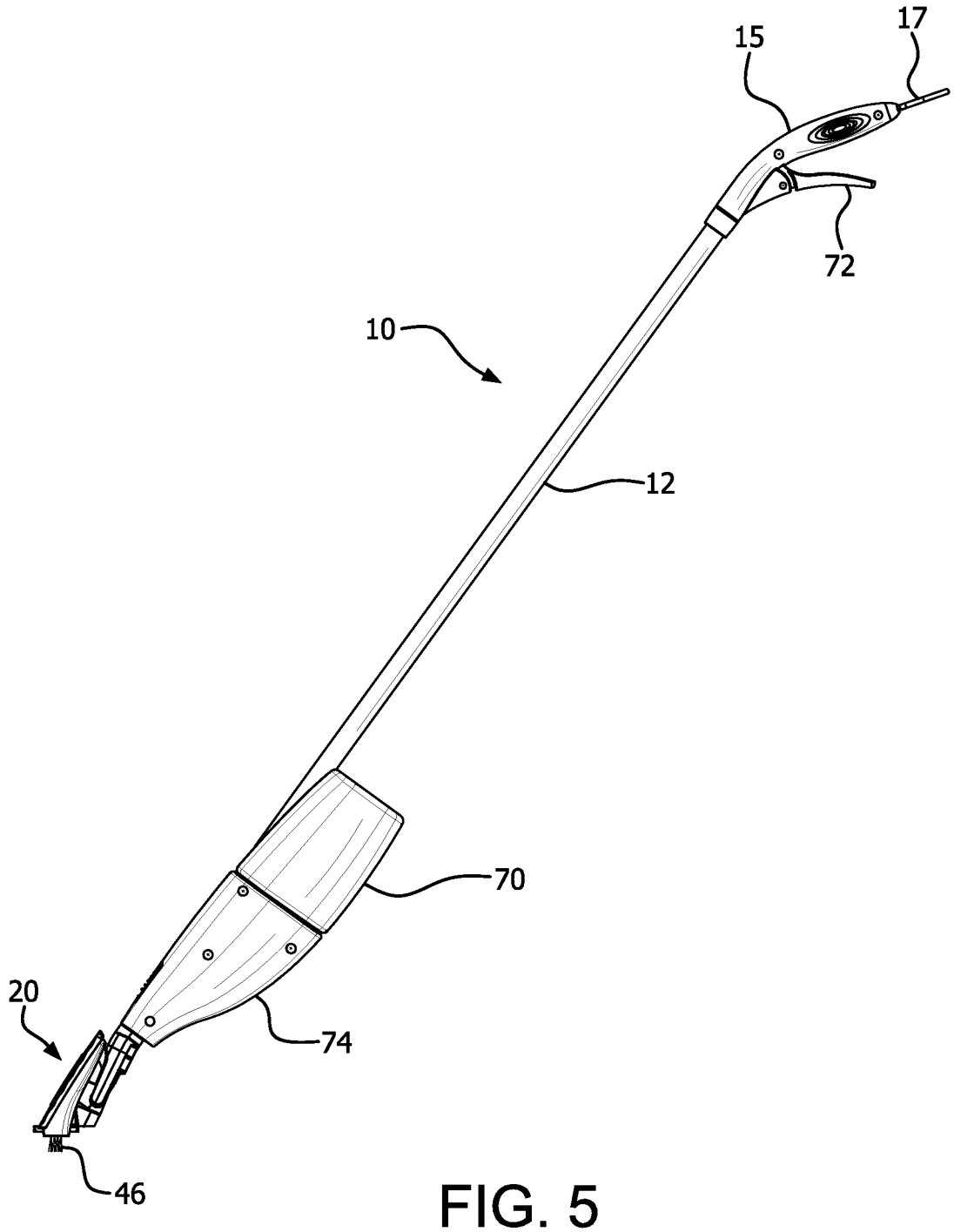

FIG. 5

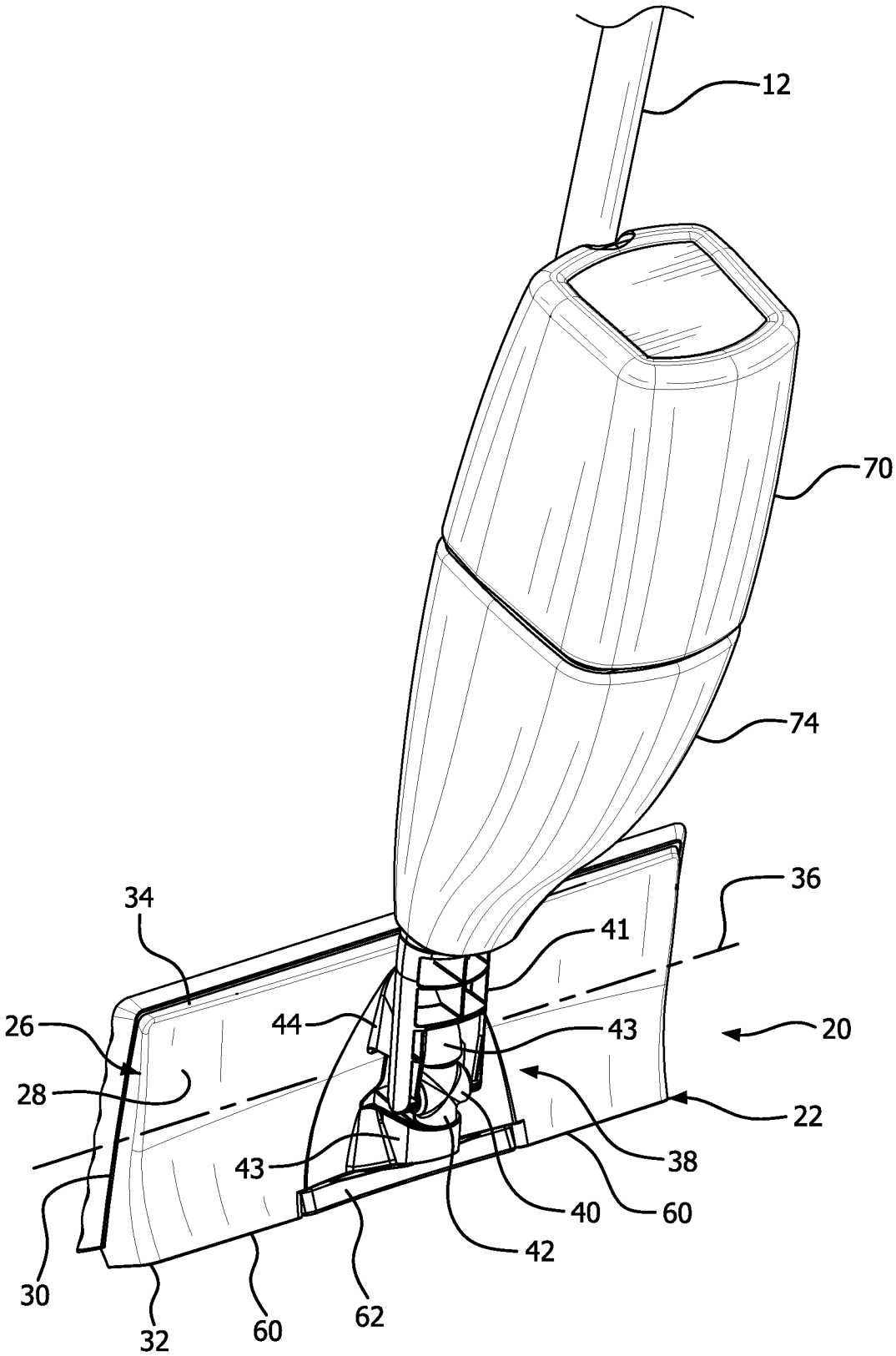

FIG. 6

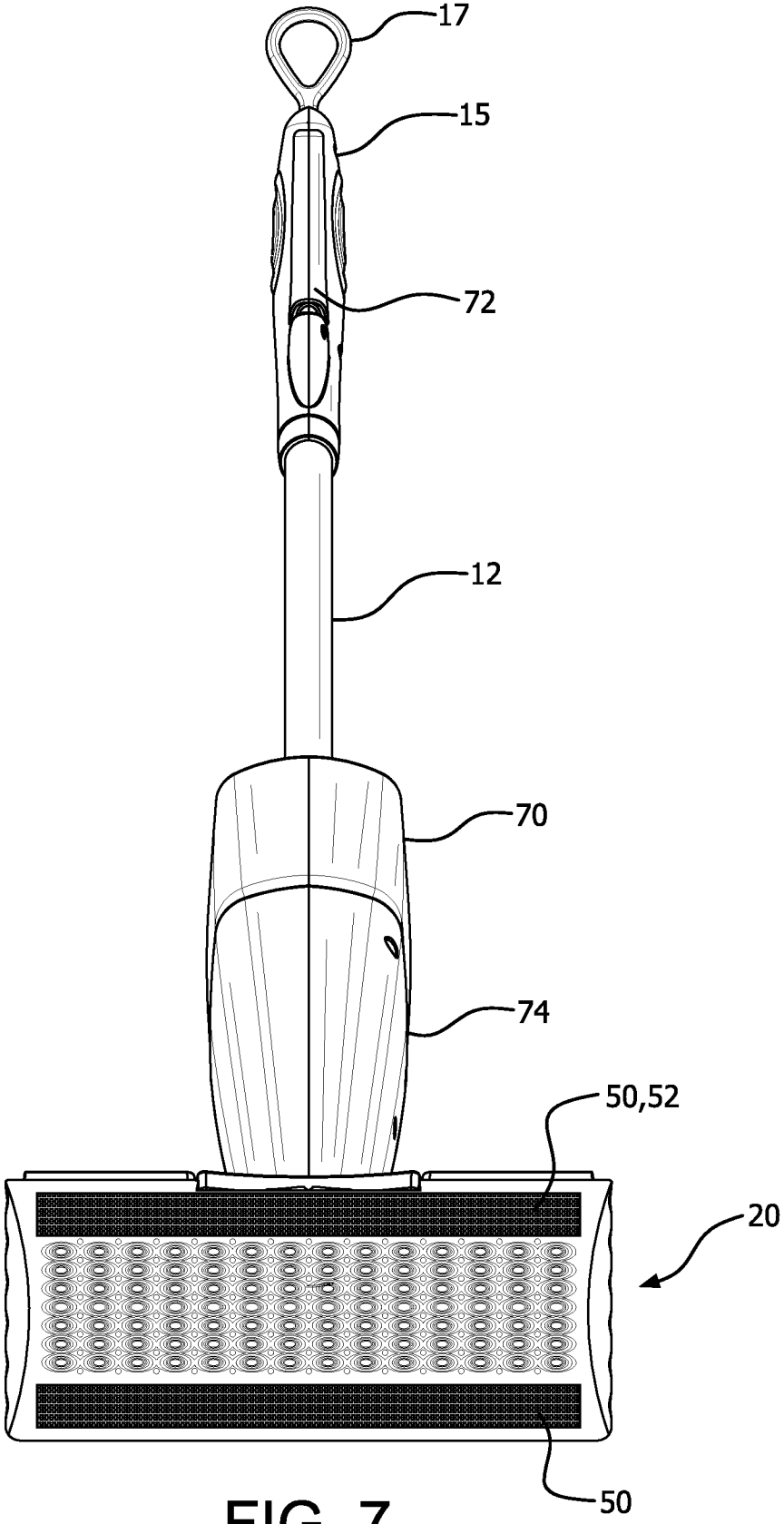

FIG. 7

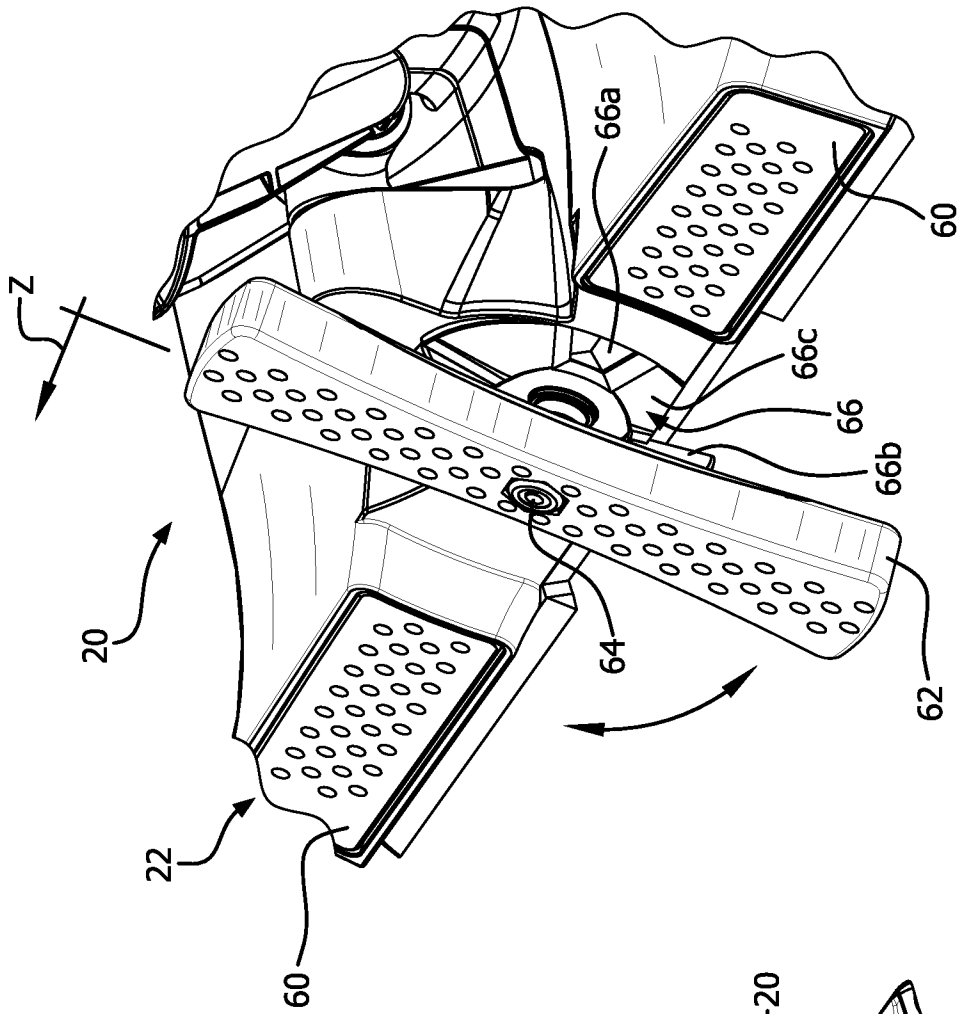

FIG. 9

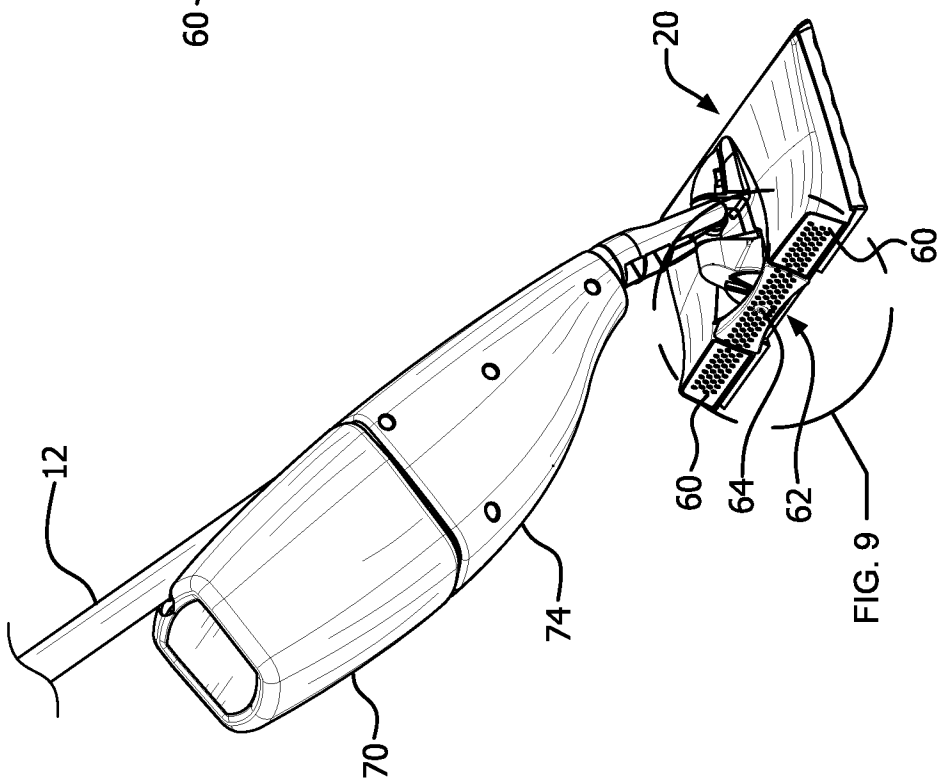

FIG. 9

FIG. 8