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(54) Title: MOP ARRANGEMENT FOR A SPRAY BOTTLE, SPRAY HEAD FOR A SPRAY BOTTLE AND A SPRAY BOTTLE

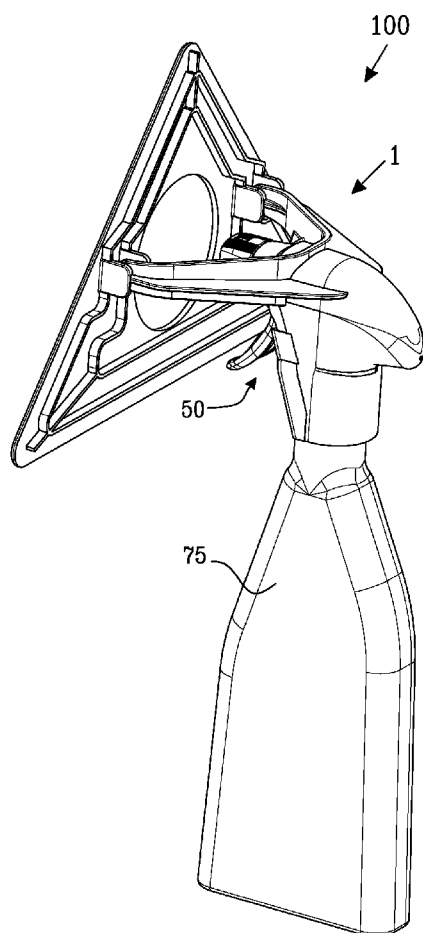


Fig. 4a

(57) Abstract: A mop arrangement (1), a spray head (50) and a spray bottle (100) are provided. The mop arrangement (1) comprises a first part (3) and a second part (5). The first part (3) comprises a body (7) with at least one attachment portion (9) which is attachable to a spray head (50) of a spray bottle (100) and a bracket portion (11) with at least one first fastener (13). The second part (5) comprises a mop head (15) and at least one second fastener (17) which is pivotally coupled to the at least one first fastener (13) of the first part (3).





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MOP ARRANGEMENT FOR A SPRAY BOTTLE, SPRAY HEAD FOR A SPRAY BOTTLE AND A SPRAY BOTTLE.

TECHNICAL FIELD

- 5 Embodiments herein relate to a mop arrangement for a spray bottle. Embodiments herein further relate to a spray head for a spray bottle and to a spray bottle.

BACKGROUND

- 10 A surface, e.g. of a window, a wall, tiles, a table or similar, may be cleaned in many different manners. The manner in which the surface is cleaned may depend on the type of surface, the type of dirt or dust to be removed and other factors.

- Sometimes the surface can be wiped off by a mop, duster, dustcloth or similar. This may be sufficient if the surface to be cleaned is easily cleaned, e.g. dust on the surface
15 loosens easily therefrom. In other scenarios particles and dust have to be removed mechanically by a scraper or similar.

- Sometimes a cleaner or a cleaner compound is used for the purpose of facilitating the cleaning, i.e. removal of dirt and dust. The cleaner may dissolve the dirt and dust such
20 that they may be removed more easily. Another purpose with the cleaner is to remove germs and bacteria from the surface. Thus, in an applying and wiping process, a cleaner compound is often first applied to the surface to be cleaned and then the surface is wiped with a mop or a cloth. Dirt and dust will then, together with the cleaner compound, be removed.

- 25 The applying and wiping process is efficient in terms of achieving a clean surface, but a problem with this process may be that it is somewhat cumbersome and time consuming. Generally, a person who is cleaning has to use two hands or frequently switch between the mop and the spray bottle.

- 30 This problem is addressed by US2004018038A, in which a spray head for a spray bottle is equipped with a cleaning pad arranged above a nozzle of the spray head.

This problem is also addressed by US5885019A, in which a sleeve of a scrubber attachment is thread on a spray head nozzle.

5 The cleaning implements in US2004018038A and US5885019A may be useful in some applications. However, there remains a need for an improved and/or alternative arrangement for cleaning a surface in an efficient manner. In addition, there remains a need for a more flexible and/or ergonomic arrangement for cleaning a surface.

SUMMARY

10 An object may be to eliminate or at least reduce problems and/or drawbacks associated with known mop arrangements.

According to an embodiment, the object is achieved by a mop arrangement for a spray bottle, the mop arrangement comprising a first part and a second part, wherein:

- 15
- the first part comprises a body with at least one attachment portion which is attachable to a spray head of a spray bottle and a bracket portion with at least one first fastener,
 - the second part comprises a mop head and at least one second fastener which is pivotally coupled to the at least one first fastener of the first part.
- 20

Since the first part comprises the body with at least one attachment portion which is attachable to a spray head of a spray bottle and the bracket portion with at least one first fastener, and the second part comprises the mop head and at least one second fastener which is pivotally coupled to the at least one first fastener of the first part, the mop arrangement allows for, e.g., spraying and subsequent wiping by use of only one hand. Thereby, the mop arrangement provides efficient cleaning in an ergonomically advantageous manner.

25

With the first part pivotally coupled to the second part the mop head is allowed to be substantially parallel with a surface to be cleaned while a user is allowed to control the mop arrangement as desired in a number of different positions and/or cleaning scenarios by gripping the second part. Hereby extreme posture positions and strain on a wrist of the user are reduced and a user may easily apply a force to the mop arrangement which

30

is sufficient for dust removal without unnecessary preload of finger tendons and wrist abduction or wrist adduction. Grip strength depends largely on the posture of the wrist. When the wrist is extended, the finger flexors are lengthened and can exert more tension which results in a stronger grip. When the wrist is flexed, the opposite occurs
5 and grip strength is reduced.

With the first part pivotally coupled to the second part the mop head mainly force, not momentum is transferred from the first part to the second part when a user presses the mop arrangement toward a surface. A user is allowed to clean surfaces e.g. high up
10 without unnecessary wrist extension or unnecessary wrist flexion. The mop arrangement thus allows a user to clean a surface while keeping the wrist in a relatively neutral position and hereby a more efficient, flexible and/or ergonomic mop arrangement for cleaning a surface is achieved.

15 According to an embodiment the at least one first fastener and the at least one second fastener together form at least one pivotal connection between the first and second part. The pivotal connection between the first and second part may also be referred to as a swivel or hinge, and provides for a steady mop arrangement which a user easily can control.

20 According to an embodiment, the second part is pivotally coupled to the first part such that the second part is configured to pivot substantially in an up-down direction when the mop arrangement is mounted on a spray head of a spray bottle in an upright position. Hereby a user easily can use the mop arrangement to clean a surface arranged relatively high up, such as above shoulder height and/or total height of the user without
25 reaching extreme posture position of e.g. the wrist. In addition, the user easily can use the mop arrangement to clean a relatively low surface, such as below waist-height and/or knee-height without reaching extreme posture position of e.g. the wrist. In some embodiments, the pivotal connection is arranged at a ball-and-socket type of pivotal connection. The second part may then pivot more freely, i.e. both up-down and
30 sideways.

According to an embodiment the bracket portion comprises a first bracket and a second bracket each provided with a respective one of the at least one first fastener and the

second part comprises two second fasteners pivotally coupled to the two first fasteners along a pivot axis.

5 Since the bracket portion comprises a first bracket and a second bracket each provided with a first fastener respectively and the second part comprises two second fasteners pivotally coupled to the two first fasteners along a pivot axis, a force applied is distributed via both the first and second bracket. Hereby a pressure applied by a user is distributed from the brackets to the surface to be cleaned via the fasteners and the mop head. Thus, the force will be evenly distributed over the mop head and dust will be removed
10 efficiently over the entire contact surface between the mop head/mop and the surface.

According to an embodiment the mop head comprises a substantially flat attachment surface for a mop. With a substantially flat attachment surface for attachment of the mop, different kinds of mops can easily be attached to the flat attachment surface. In addition,
15 a force applied by a user will be evenly distributed.

According to an embodiment, the substantially flat attachment surface comprises an aperture. Hereby any spray, such as cleaner compound from a spray bottle can be sprayed through the aperture. The spray will thus be applied within the outer borders of
20 the mop head. Hereby the spray can first act on the surface to be cleaned then easily be removed with the mop head independently of which direction the user decides to swipe the mop head to. A user can therefore easily both apply cleaner compound and wipe off a surface in an integrated spraying-rubbing movement.

25 According to an embodiment the substantially flat attachment surface is substantially triangular. Since the substantially flat attachment surface is substantially triangular, the mop arrangement can be used to clean also corners of the surface to be cleaned. The triangular shape thus provides for an increased access of the surface to be cleaned.

30 According to an embodiment the body of the first part comprises a recess, arranged to receive a spray head of a spray bottle. Hereby the mop arrangement can be snapped or thread onto a large part of the spray head. Forces and momentum between the mop arrangement and the spray head will be evenly distributed over a large contact surface.

According to an embodiment the body of the first part comprises a pivotally support, arranged to be supported by the spray head nozzle when the mop arrangement is attached to the spray head. With the pivotal support a snug fit is achieved between the mop arrangement and the spray head.

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According to an embodiment at least one of the first and the second part comprises a stop portion which is arranged to restrict the second part from pivoting more than an angle α relatively the first part. Hereby a force and/or momentum may be transferred via the stop portion. A user who presses the mop arrangement towards a surface to be
10 cleaned can therefore apply sufficient pressure to the surface.

According to an embodiment the stop portion is arranged to restrict the second part from pivoting more than an angle α relatively the first part, angle α being 110 degrees. With an angle α being 110 degrees or smaller a user may hold the mop arrangement with a pistol
15 grip and pressing a spray bottle trigger without risk that the second part will squeeze his/her hand.

An object may be to eliminate or at least reduce problems and/or drawbacks associated with known spray heads.

20 According to an embodiment, the object is achieved by a spray head for a spray bottle, the spray head comprising a spray head nozzle and a spray receptacle attachment portion, wherein the spray head comprises a mop arrangement according to embodiments described herein. In some embodiments, the mop arrangement is detachable from the spray head. In some embodiments the mop arrangement is
25 permanently attached and/or integrated with the spray head.

According to an embodiment, the object is achieved by a spray head for a spray bottle, the spray head comprising a spray head nozzle and a spray receptacle attachment portion, wherein the spray head comprises a mop arrangement with a mop head
30 comprising an aperture and where the spray head nozzle is directed to spray through the aperture of the mop head. Hereby the aperture of the mop arrangement defines the width of the spray/jet/squirt expelled from the spray head nozzle. A user can therefore

easily spray cleaner compound on a desired spot without risk, or at least with a very small risk, of applying excess cleaner compound outside the desired spot or area.

5 According to an embodiment the spray head nozzle is arranged at a distance from the aperture. Hereby the spray/jet/squirt expelled from the spray head nozzle can diverge sufficiently, yet not too much, before hitting the surface to be cleaned.

An object may be to eliminate or at least reduce problems and/or drawbacks associated with known spray bottles.

10 According to an embodiment, the object is achieved by a spray bottle with a spray receptacle, wherein the spray bottle comprises a spray head according to embodiments described herein. Since the spray bottle comprises a spray head according to embodiments described herein a more efficient, flexible and/or ergonomic spray bottle for cleaning a surface is achieved.

15 Further features of, and advantages with, the embodiments herein will become apparent when studying the appended claims and the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

20 The various aspects of embodiments herein, including its particular features and advantages, will be readily understood from the following detailed description and the accompanying drawings, in which:

Fig. 1a illustrates a perspective view of a mop arrangement according to some embodiments,

25

Fig. 1b illustrates a perspective view of a mop arrangement according to some other embodiments,

Fig. 1c illustrates a perspective view of the Fig. 1b mop arrangement mounted on a spray head,

30

Fig. 2a illustrates a side view of the mop arrangement according to some embodiments,

Fig. 2b illustrates a side view of the Fig. 2a mop arrangement mounted on a spray head,

Fig. 3a illustrates a side view of the mop arrangement according to some embodiments
5 when the second part is pivoted relatively the first part,

Fig. 3b illustrates a perspective view of the Fig. 3a mop arrangement,

Fig. 4a illustrates a perspective view of a spray bottle, a spray head and a mop
10 arrangement according to some embodiments, and

Fig. 4b illustrates a side view of the Fig. 4a spray bottle, spray head and mop
arrangement.

15 DETAILED DESCRIPTION

Embodiments herein will now be described more fully with reference to the
accompanying drawings, in which embodiments are shown. Well-known functions or
constructions will not necessarily be described in detail for brevity and/or clarity.

20 **Fig. 1a** illustrates a mop arrangement **1** for a spray bottle. The mop arrangement **1**
comprises a first part **3** and a second part **5**.

The first part **3** comprises a body **7**. The body **7** can be designed with different shapes,
but may have an outer part and an inner recess. The recess is designed to be fit on a
25 spray head of a spray bottle and is further illustrated in conjunction with Fig. 3b.

The outer part of the body **7** is shaped to accommodate at least a part of a hand of a
user. The body **7** may therefore be provided with gripping surfaces, gripping and/or
supporting protrusions, concave and/or convex portions to facilitate gripping of the body
30 **7**. A lower portion of the body **7** can be shaped as a handle and/or "pistol grip" which
allows a user to hold/grip body **7** between his/her fingers, such as between his/her
thumb and index finger.

The first part 3 comprises at least one attachment portion **9** which is attachable to a spray head of a spray bottle. The attachment portion 9 is shaped and designed to firmly attach the first part 3 to a spray head, illustrated e.g. in Fig. 2b and 3b. Thus, a spray head of a spray bottle is inserted into the recess and locked with the attachment portion

5 9. In some embodiments the recess constitutes the attachment portion 9, i.e. the recess is shaped such that the first part 3 is attached to a spray head solely via the recess. The attachment portion 9 can include e.g. a snap-fit, press-fit, protrusion and/or groove or any other type of attachment means suitable for fastening the first part 3 onto a spray head. When mounted, the mop arrangement 1 will be arranged as a helmet on the spray

10 head of the spray bottle.

The first part 3 further comprises a bracket portion **11** with at least one first fastener **13**. The bracket portion 11 may be integrally formed with the body 7 and/or the attachment portion 9. The bracket portion 11 extends away from the body 7.

15 The second part 5 comprises a mop head **15** and at least one second fastener **17**. The at least one second fastener 17 is pivotally coupled to the at least one first fastener 13 of the first part 3. The at least one first fastener 13 and/or the at least one second fastener 17 can include a male and/or a female member, a thread, a hook, or any other fastening

20 means which allows the parts to pivot relatively each other. This means that the at least one first fastener 13 and at least one second fastener 17 may be complementary shaped.

The at least one first fastener 13 and the at least one second fastener 17 can together

25 form at least one pivotal connection **19** between the first and second parts 3, 5.

In the embodiment illustrated in Fig. 1a the bracket portion 11 comprises a first bracket **11a** provided with a first fastener **13a** and a second bracket **11b** is provided with a further first fastener **13b**. The second part 5 comprises two second fasteners **17a** and

30 **17b**. As illustrated, the second fastener 17a is pivotally coupled to the first fastener 13a and the further second fastener 17b is pivotally coupled to the further first fastener 13b along a pivot axis **A**. The first bracket 11a and the second bracket 11b are separated from each other in the direction of the pivot axis A.

In Fig. 1a the mop head 15 is substantially triangular. In other embodiments, not illustrated, the mop head 15 may have other shapes. The mop head 15 further comprises an aperture **25**. The aperture 25 can have a circular shape or any other shape. In some embodiments a diameter of the aperture 25 exceeds 10 mm. In some
5 embodiments a diameter of the aperture 25 exceeds 20 mm. In some embodiments a diameter of the aperture 25 exceeds 30 mm. In some embodiments a diameter of the aperture 25 exceeds 40 mm. In some embodiments a diameter of the aperture 25 exceeds 50 mm.

10 The **Fig. 1b** generally resembles the Fig. 1a embodiment and illustrates the mop arrangement 1 with the first part 3 and the second part 5. However, the body 7 of the first part 3 in the Fig. 1b is provided with a pivotally support **29**.

As illustrated in **Fig. 1c**, the pivotally support 29 is arranged to be supported by a spray
15 head nozzle **52** when the mop arrangement 1 is attached to a spray head **50**. In Fig. 1c the pivotally support 29 is illustrated in a locked position in which the pivotally support 29 is locked relatively the spray head nozzle 52. In Fig. 1c an upper part of a spray receptacle **75** of a spray bottle **100** is illustrated. Also a trigger **54** of the spray head 50 is illustrated. When a user presses the trigger 54 cleaner compound is dispensed through
20 the spray head nozzle 54 in a known manner. The spray bottle is further discussed in conjunction with Fig. 4a and 4b.

As illustrated in Fig. 1c, the aperture 25 is made as a through-hole in the mop head 12. The aperture 25 is arranged in front of the spray head nozzle 52 such that cleaner
25 compound is dispensed through the aperture 25 when a user presses the trigger 54. In other words, the aperture 25 is arranged in the direction of the spray head nozzle 52.

Fig. 2a illustrates a side view of the mop arrangement 1 with the first part 3 and the second part 5. Also the body 7, a bracket 11, and the pivot axis A are illustrated.
30 The mop head 15 of the second part 5 comprises a substantially flat attachment surface **21** for attaching a mop.

In **Fig. 2b** a schematic mop **23** is attached to the substantially flat attachment surface 21. The mop 23 can be made e.g. of microfiber, cloth, sponge, scrub- or scrape-material or

fabric. The mop 23 may form a part of the mop arrangement 1 or may be a separate part. The attachment surface 21 and/or the mop 23 can be provided with attachment means and/or material such as Velcro or similar. Hereby the different mops 23 can be attached and detached to the flat attachment surface 21. In another embodiment, not
5 illustrated, the mop 23 comprises attachment means, such as projections, protrusions, openings or coupling members or similar, which are arranged to be attached to complementary shaped attachment means of the mop head 15.

10 The mop 23 can be designed with an aperture which coincides with aperture 25 of the substantially flat attachment surface 21 such that cleaner compound from the nozzle may be distributed through the mop 23 and not directly onto the mop 23. This has the advantage that less cleaner compound has to be used since the cleaner compound is allowed to be directly distributed over the surface to be cleaned.

15 In some embodiments the second part 5 is detachable from the first part 3 via the connection 19. Different second parts 5 with different mop materials may then be attached to the first part 3. Such different second parts 5 and/or mops may have different sizes and/or different shape than the embodiment illustrated in Fig. 2b. The second part 5 may for example be arranged with a mop suitable for cleaning surfaces with a
20 curvature. Hereby the mop arrangement 1 can be used for cleaning of several different types of surfaces.

In Fig. 2b also a direction **S** is illustrated. The direction S is referred to as a main spray direction, i.e. the direction in which the nozzle points when the mop arrangement 1 is
25 arranged onto the spray head 50. During spraying, cleaner compound is expelled from the nozzle in the S-direction (to the right in Fig. 2b), through the aperture 25 and the aperture/opening of the mop 23.

30 In Fig. 1a to 2b the main extension plane of the second part 5, i.e. a plane substantially in parallel with the flat attachment surface 21, is substantially perpendicular to the direction S. The S-direction is also substantially perpendicular to the pivot axis A.

Fig. 3a illustrates a side view of the mop arrangement 1 with the first part 3, the second part 5 and the pivot axis A when mounted onto the spray head 50. In Fig. 3a the second

part 5 is pivoted relatively the first part 3 such that an angle α is smaller or larger than 90 degrees. The mop arrangement 1 can comprise one or more stop portions (not illustrated) arranged to limit the pivoting of the second part 5. Such stop portion(s) can be arranged as shoulders or bosses which mechanically stop the second part 5 from pivoting more than a desired angle α . The angle α may for example be about 50 degrees, about 60 degrees, about 70 degrees or about 80 degrees which means that the surface 21 is directed upwards when the S-direction is horizontal.

The angle α may for example be about 100 degrees, about 110 degrees, about 120 degrees or about 130 degrees which means that the surface 21 is directed downwards when the S-direction is horizontal. Thus, the second part 5 can pivot around the pivot axis A in both directions from the neutral position in which the angle α is about 90 degrees.

In some embodiment the first part 3 comprises the stop portion. The stop portion can for example be arranged on the bracket portion. In some embodiments a first and a second bracket portion each are equipped with a stop portion. In some other embodiments the second part 5 comprises the stop portion. The stop portion can for example be arranged in the vicinity of the fasteners.

As mentioned the stop portion is arranged to restrict the second part 5 from pivoting more than an angle α relatively the first part 3. The angle α is thus, as illustrated in Fig. 3a, the angle between the main spray direction of a spray nozzle and the main extension plane of the second part 5. With an angle α of maximum 110 degrees it is ensured that the second part 5 doesn't rotate too near fingers of a user that holds a spray bottle equipped with a mop arrangement according to embodiments herein.

In some embodiments, the second part 5 is arranged to, or allowed to, pivot an angle α relatively the first part 3, α being in the range of 80-100 degrees. In some embodiments, α is in the range of 70-110 degrees. In some embodiments, α is in the range of 60-120 degrees. In some embodiments, the angle α is in the range of 50-130 degrees.

This is also referred to as an up-down-direction. In the up-down direction the pivot axis A is substantially horizontally arranged. In some embodiments, the mop arrangement 1 is

pre-tensioned such that the second part 5 is arranged to return to a rest position in which the angle α is about 90 degrees when no external force, except gravity, affects the mop arrangement 1. This may be achieved e.g. by a spring.

5 **Fig. 3b** illustrates a perspective view of the mop arrangement 1 of Fig. 3a. The body 7 of the first part 3 comprises a recess **27**, arranged to receive a spray head 50 of a spray bottle 100.

10 In Fig. 3b the pivotally support 29 is illustrated in an open position in which the pivotally support 29 is detached relatively the spray head nozzle 52.

In **Fig. 4a** a spray bottle 100 comprising a spray receptacle 75, a spray head 50 and a mop arrangement 1 according to some embodiments are illustrated. **Fig. 4b** illustrates a side view of the Fig. 4a spray bottle 100 with the spray receptacle 75, the spray head 50
15 and the mop arrangement 1.

In Fig 4b a spray receptacle attachment portion **54** of the spray head 50 is illustrated. The spray receptacle attachment portion 54 may be arranged e.g. as a thread or snap connection between the spray head 50 and the spray receptacle 75.

20

In Fig. 4b also the distance **D** is illustrated. The spray head nozzle 52 is arranged at the distance D from the aperture 25 of the mop head. In some embodiments distance D exceeds 10 mm. In some embodiments distance D exceeds 20 mm. In some
25 embodiments distance D exceeds 30 mm. In some embodiments distance D exceeds 40 mm. In some embodiments distance D exceeds 50 mm.

The width of a spray/jet/squirt dispensed onto a surface from the nozzle depends on the design of the nozzle, but also on the size of the aperture 25 and the distance D. With a relatively wide nozzle, a larger aperture 25 and/or a relatively small distance D means
30 that cleaner compound can be applied to a large area of the surface to be cleaned. A smaller aperture 25 and/or a larger distance D means that cleaner compound can be applied to a smaller area of the surface to be cleaned.

The mop arrangement 1, the spray head 50 and/or the spray bottle 100 may be made of any suitable material, such as plastics, polypropylene, ABS (Acrylonitrile butadiene styrene) or similar.

CLAIMS

1. A mop arrangement (1) for a spray bottle (100), the mop arrangement (1) comprising a first part (3) and a second part (5), **characterized in that**:
 - the first part (3) comprises a body (7) with at least one attachment portion (9) which is attachable to a spray head (50) of the spray bottle (100) and a bracket portion (11) with at least one first fastener (13),
 - the second part (5) comprises a mop head (15) and at least one second fastener (17) which is pivotally coupled to the at least one first fastener (13).
2. The mop arrangement (1) according to claim 1, **wherein** the at least one first fastener (13) and the at least one second fastener (17) form at least one pivotal connection (19) between the first (3) and second part (5).
3. The mop arrangement (1) according to claim 1 or 2, **wherein** the second part (5) is pivotally coupled to the first part (3) such that the second part (5) is configured to pivot substantially in an up-down direction when the mop arrangement (1) is mounted on a spray head (50) of the spray bottle (100) in an upright position.
4. The mop arrangement (1) according to any one of the preceding claims, **wherein**:
 - the bracket portion (11) comprises a first bracket (11a) and a second bracket (11b), each provided with a respective one (13a), (13b) of the at least one first fastener ,
 - the second part (5) comprises two second fasteners (17a), (17b), pivotally coupled to the two first fasteners (13a), (13b) along a pivot axis (A).
5. The mop arrangement (1) according to any one of the preceding claims, **wherein** the mop head (15) comprises a substantially flat attachment surface (21) for a mop (23).
6. The mop arrangement (1) according to claim 4, **wherein** the substantially flat attachment surface (21) comprises an aperture (25).
7. The mop arrangement (1) according to claim 5 or claim 6, **wherein** the substantially flat attachment surface (21) is substantially triangular.

8. The mop arrangement (1) according to any one of the preceding claims, **wherein** the body (7) of the first part (3) comprises a recess (27), arranged to receive a spray head (50) of the spray bottle (100).

5

9. The mop arrangement (1) according to any one of the preceding claims, **wherein** the body (7) of the first part (3) comprises a pivotally support (29), arranged to be supported by the spray head nozzle (52) when the mop arrangement (1) is attached to the spray head (50).

10

10. The mop arrangement (1) according to any one of the preceding claims, **wherein** at least one of the first (3) and second (5) part comprises a stop portion which is arranged to restrict the second (5) part from pivoting more than an angle (α) relatively the first (3) part.

15

11. The mop arrangement (1) according to claim (10), **wherein** the stop portion is arranged to restrict the second (5) part from pivoting more than an angle (α) relatively the first (3) part, angle α being 110 degrees.

20

12. A spray head (50) for a spray bottle (100), the spray head (50) comprising a spray head nozzle (52) and a spray receptacle (75) attachment portion (54), **characterized in** that the spray head (50) comprises a mop arrangement (1) according to any one of claims 1-11.

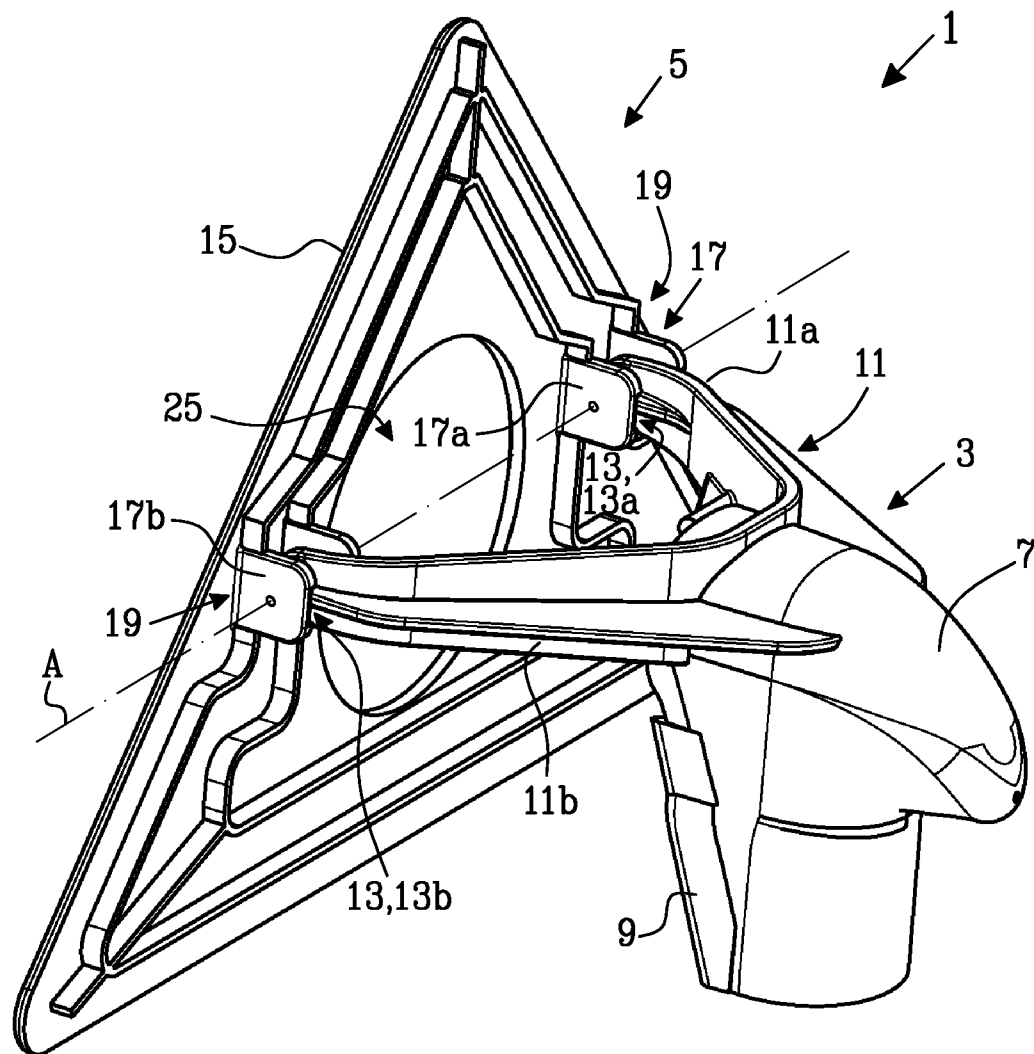
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13. The spray head (50) according to claim 12, when dependent on claim 6, **wherein** the spray head nozzle (52) is directed to spray through the aperture (25) of the mop head (15).

30

14. The spray head (50) according to claim 13, **wherein** the spray head nozzle (52) is arranged at a distance (D) from the aperture (25).

15. A spray bottle (100) with a spray receptacle (75), **characterized in** that the spray bottle (100) comprises a spray head (50) according to any one of claims 12-14.

*Fig. 1a*

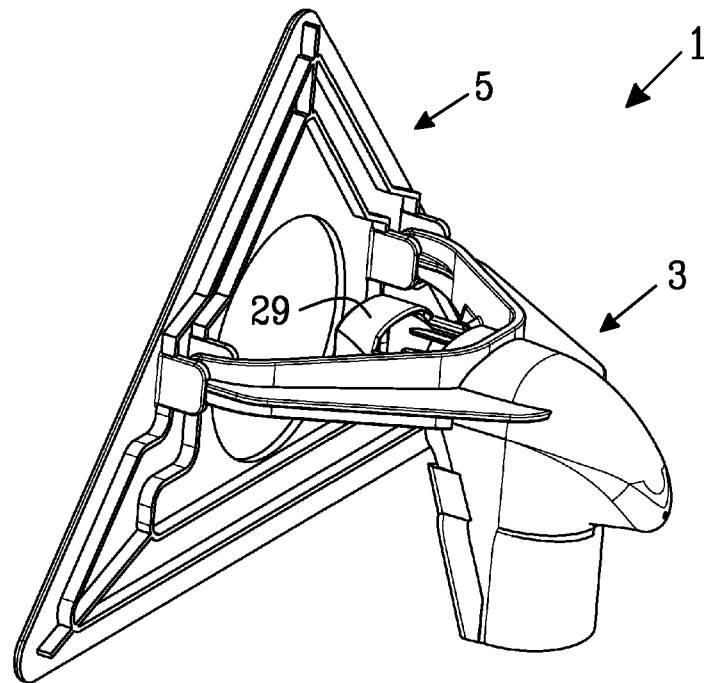


Fig. 1b

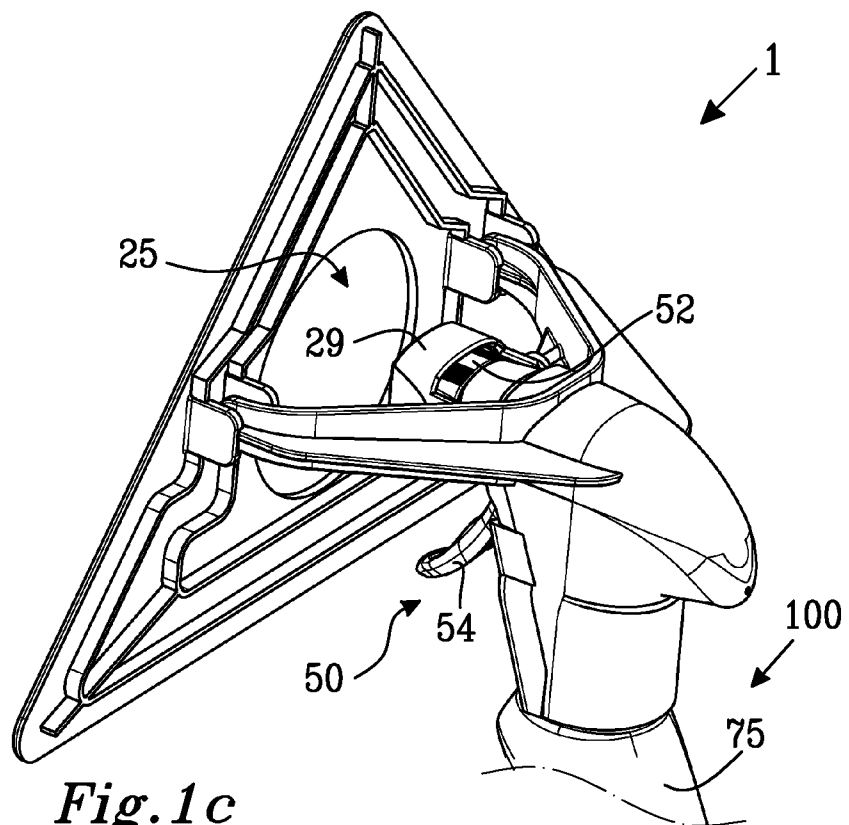
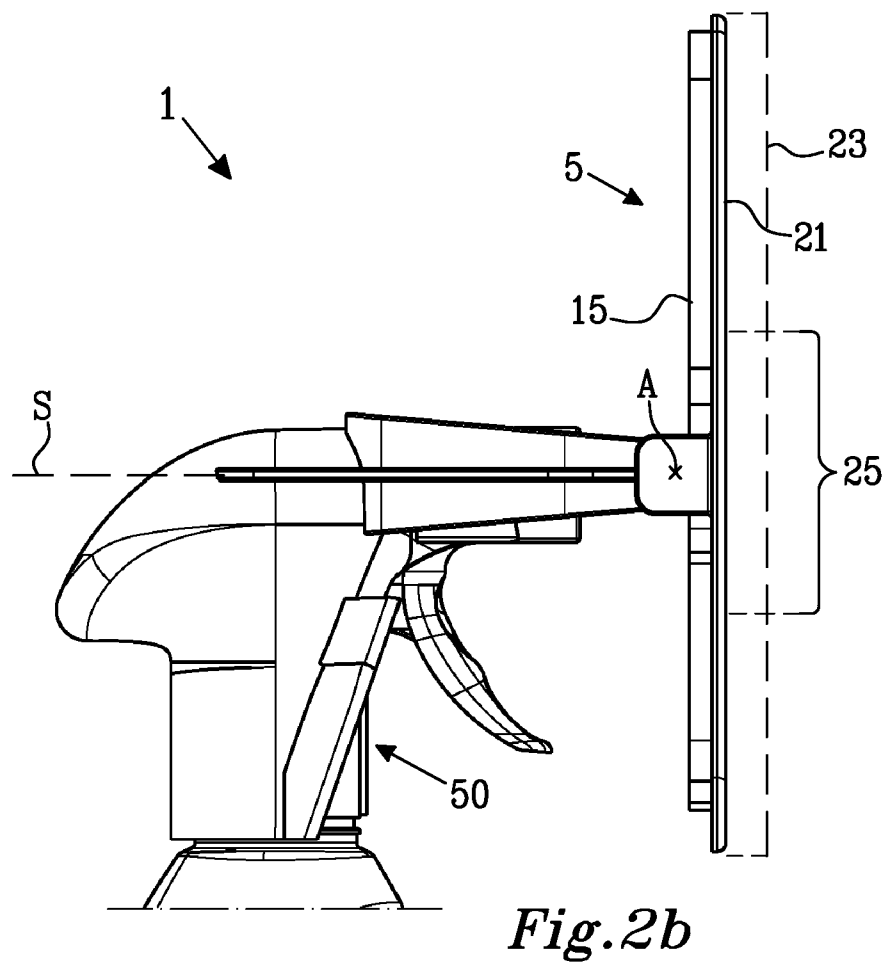
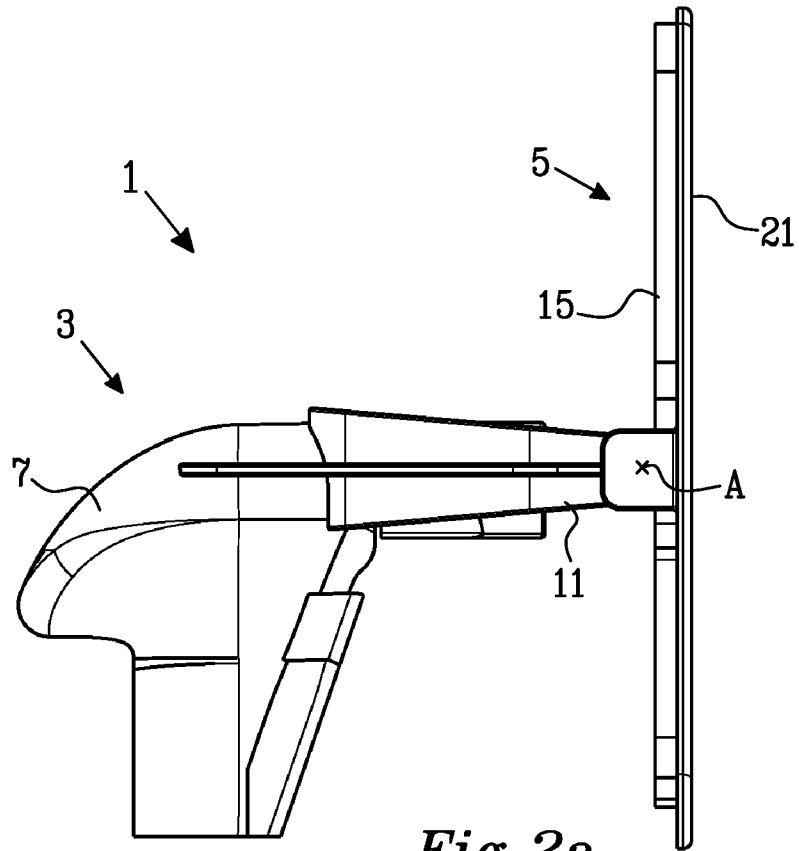


Fig. 1c



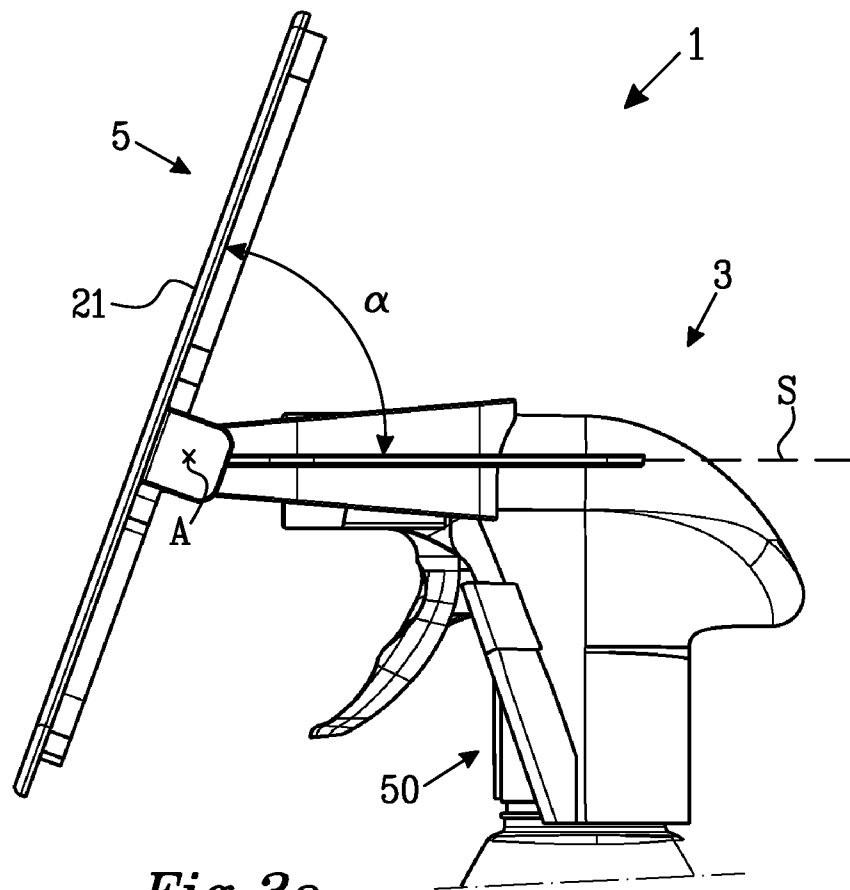


Fig. 3a

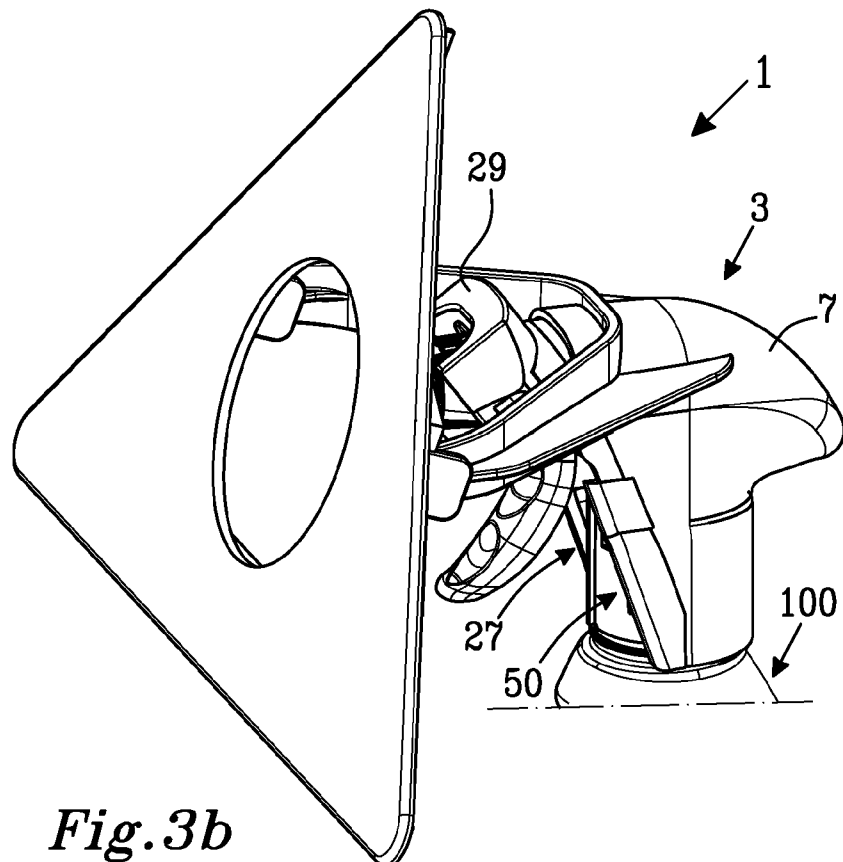
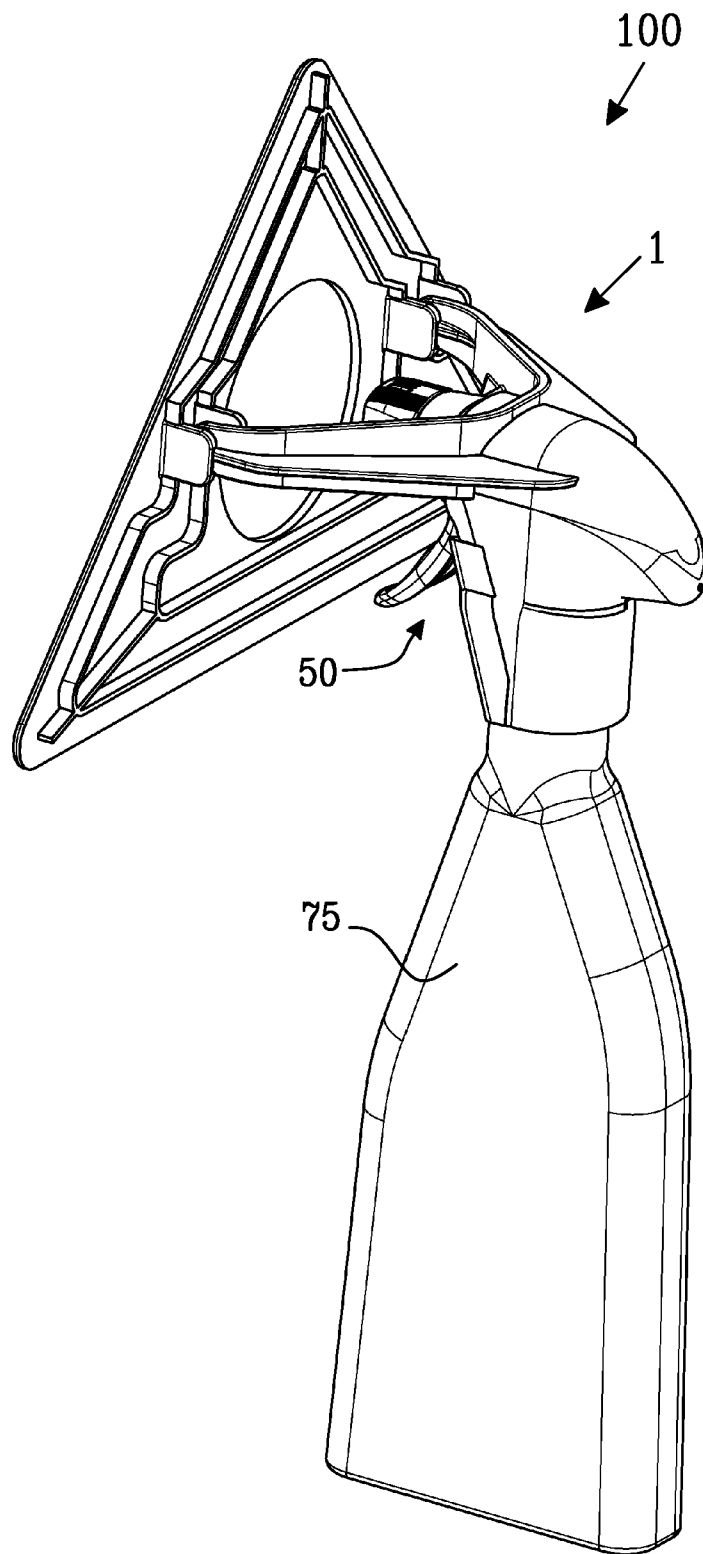
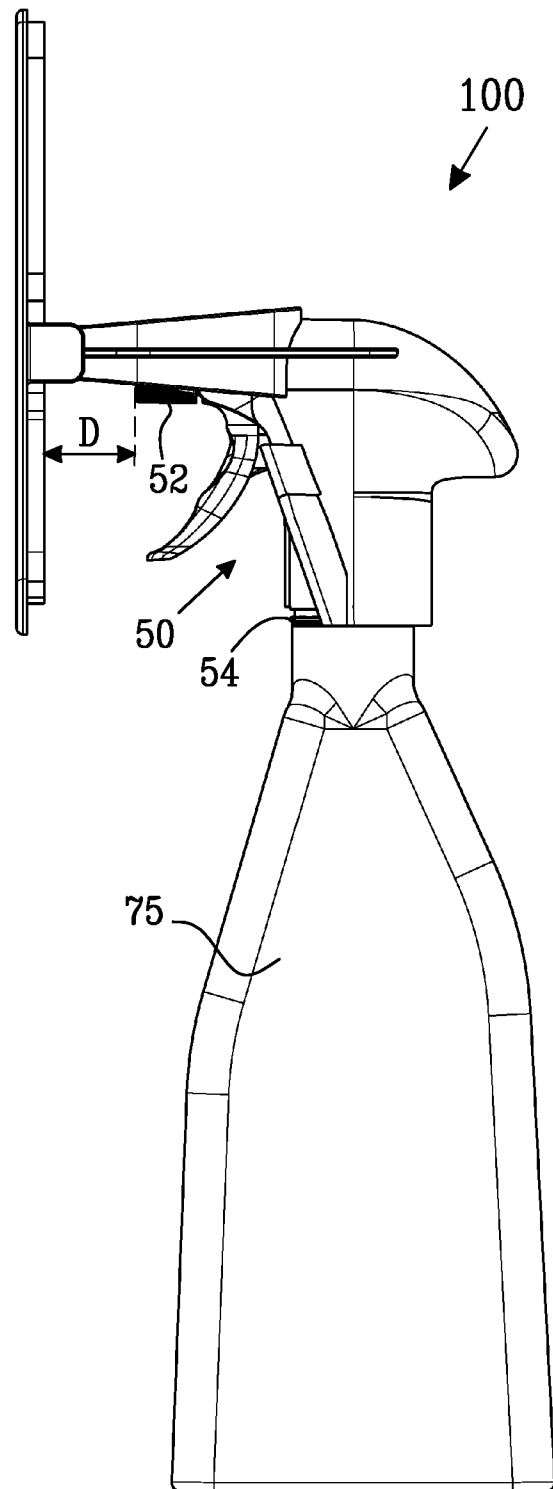


Fig. 3b

*Fig. 4a*

*Fig.4b*

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/052626

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A47L13/20 A47L13/22 A47L13/26
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 A47L B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	paragraph [0020] - paragraph [0032]; figures 1-10	6,9,13, 14
X	----- CN 202 458 190 U (WENGAO LIU) 3 October 2012 (2012-10-03)	1-5,7,8, 10-12,15
A	the whole document	6,9,13, 14
A	----- US 2015/023717 A1 (LEWIS LARRY WARREN [US]) 22 January 2015 (2015-01-22)	1-15
A	paragraph [0006]; figures 1,2	
A	----- US 2007/071535 A1 (YOUNG JAMES V [US] ET AL) 29 March 2007 (2007-03-29)	1-15
	abstract; figures 1-5	
	----- -/-	



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Date of the actual completion of the international search

25 September 2015

Date of mailing of the international search report

07/10/2015

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Authorized officer

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/052626

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2004 242799 A (KAO CORP) 2 September 2004 (2004-09-02) abstract; figures 1-7 -----	1-15
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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