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(11) **EP 1 731 079 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
13.12.2006 Bulletin 2006/50

(51) Int Cl.:
A47L 13/59 (2006.01)

(21) Application number: **05257626.1**

(22) Date of filing: **13.12.2005**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

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(30) Priority: **09.06.2005 GB 0511709**

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(54) **Mop wringer**

(57) A mop wringer (12) comprises a basket (14) having an opening (16a) for accepting a mophead (18) having mop material to be wrung, and a lever-operated mechanically assisted pressing mechanism including at least one press member (20) for pressing the mop material of the mophead into or against the basket (14), an elongate lever (28) for operating the press member (20), and a gear mechanism for transmitting movement of the lever (28) to the or each press member (20), characterised in that the lever (28) is positioned in a plane which bisects or substantially bisects the opening (16a) of the basket (14), so that forces imparted to the wringer (12) via the lever (28) are evenly or substantially evenly distributed.

There is also provide a mop holding element (42) specifically adapted for a centralised lever (28) of a mop wringer (12) as described above. The holding element (42) comprises means for securing the holding element (42) to the lever (28) of the wringer, and a gripping portion (48) for releasably gripping a mop handle (32) attached to the mophead (18).

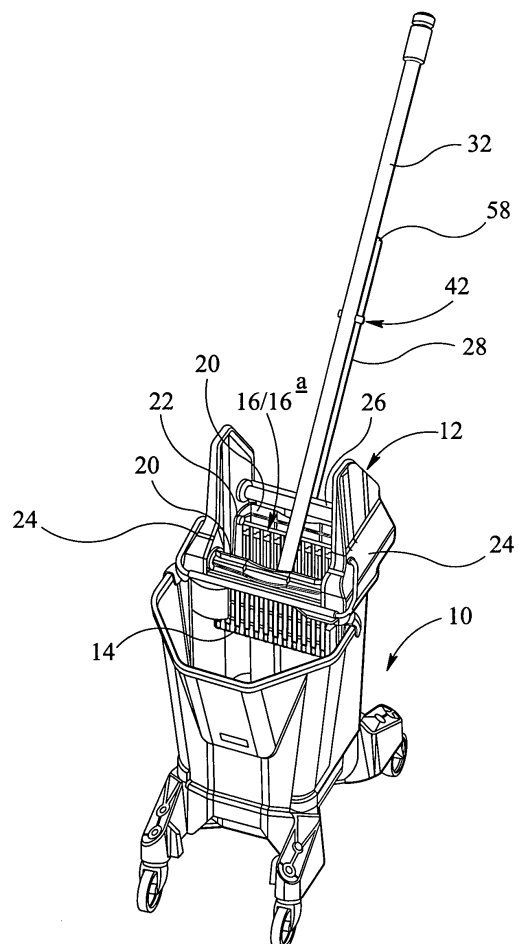


FIG 3

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Description

[0001] This invention relates to a mop wringer, a mop handle holding element for such a wringer, and to a bucket in combination with such a wringer.

[0002] Lever-operated mechanically assisted pressing wringers are well known. They typically comprise a basket, one or two pressing plates which are slidable into and out of the basket, a pivotable lever operable by a user, and an enclosed gear mechanism connecting the lever with the or each pressing plate. As the lever is pushed or pulled forward, the or each pressing plate moves into the basket, forcing a mophead with mop material into the basket and causing the mop material to be wrung out. Such an arrangement supported by a wheeled bucket is shown by way of example in Figure 1 and in GB2243537A.

[0003] In this prior art, the lever is connected to a horizontal rotatable drive bar. In order to accommodate traditional shapes of mophead, such as shown in Figure 2, the distal end of the lever is connected to the drive bar adjacent one interior side of the wringer, well offset from the centre of the drive bar.

[0004] Other arrangements of wringer, also utilising a lever operated pressing mechanism, dispense with the drive bar by positioning the lever on the exterior surface of the wringer.

[0005] Both of these offset arrangements are unsatisfactory. Due to the offset lever, a twisting moment is applied to the wringer, supporting bucket, wheelbases and castors when the lever is operated. This results in premature wear and breakage of the wringer and/or bucket, and thus a much reduced life expectancy.

[0006] Additionally, due to the twisting moment imparted, stability of the wringer and bucket is decreased, resulting in a greater number of spillages.

[0007] Furthermore, the traditional lever is typically offset to the right, causing left handed users problems.

[0008] Finally, due to the traditionally offset lever, when a mophead is positioned in the wringer, a mop handle cannot easily be supported when it is desirable to leave the mop unattended.

[0009] The present invention seeks to provide a solution to these problems.

[0010] According to a first aspect of the present invention, there is provided a mop wringer comprising a basket having an opening for accepting a mophead having mop material to be wrung, and a lever-operated mechanically assisted pressing mechanism including at least one press member for pressing the mop material of the mophead into or against the basket, an elongate lever for operating the press member, and a gear mechanism for transmitting movement of the lever to the or each press member, characterised in that the lever is positioned in a plane which bisects or substantially bisects the opening of the basket, so that forces imparted to the wringer via the lever are evenly or substantially evenly distributed.

[0011] Preferable and/or optional features of the first

aspect of the invention are set forth in claims 2 to 6, inclusive.

[0012] According to a second aspect of the present invention, there is provided a holding element for a lever of a mop wringer in accordance with the first aspect of the invention, the holding element comprising means for securing the holding element to the lever of the wringer, and a gripping portion for releasably gripping a mop handle attached to the mophead.

[0013] Preferable and/or optional features of the second aspect of the invention are set forth in claims 9 and 10.

[0014] According to a third aspect of the present invention, there is provided a bucket in combination with a mop wringer in accordance with the first aspect of the invention, the mop wringer being detachably attachable to the bucket.

[0015] Preferable and/or optional features of the third aspect of the invention are set forth in claims 13 and 14.

[0016] The invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which :

Figure 1 shows a prior art lever-operated mechanically assisted pressing wringer with offset lever;

Figure 2 shows a prior art mophead;

Figure 3 is a perspective view of one embodiment of a long-handled mop wringer, in accordance with the first aspect of the invention, seated on a wheeled bucket and including a mop holding element in accordance with the second aspect of the invention;

Figure 4 is an elevational view of a known mophead typically used with the mop wringer shown in Figure 3;

Figure 5 is a front view of the mop wringer and bucket, and holding element shown in Figure 3;

Figure 6 is an elevational view of a drive bar of the mop wringer shown in Figure 3;

Figure 7 is a perspective view of the holding element;

Figure 8 is a plan view of the holding element; and

Figure 9 is an enlarged side view of a proximal end of a lever of the mop wringer shown in Figure 4, and showing a user hand grip and the holding element.

[0017] Referring to Figures 3 to 9 of the drawings, there is shown a wheeled bucket 10 having castors, and a lever-operated mechanically assisted mop wringer 12 detachably seated on an upper rim of the bucket 10. The combination of bucket 10 and such a mop wringer 12 are generally known from GB2243537A, for example, and

thus will not be further described in great detail.

[0018] However, for the sake of clarity, the mechanically assisted mop wringer 12 comprises a perforated or generally latticework-type basket 14 which defines a channel 16 having a main opening 16a for receiving a mophead 18, two opposing press members or plates 20 which can travel along guide slots 22 into and out of the basket 14 in order to urge mop material held by the mophead 18 into or against the basket 14, an enclosed gear mechanism provided in one or both sides 24 of the mop wringer 12 for moving the press plates 20 along the guide slots 22, a rotatable drive bar 26 which, when rotated, drives the or each gear mechanism, and a long-handled lever 28 which is attached to the drive bar 26 for rotating the drive bar 26.

[0019] Mopheads 18 having a far slimmer and compact profile are now used as standard. By way of example, such a mophead 18 is shown in Figure 4 and another type of mophead is shown in GB2262255A. These Mopheads 18 have a screw threaded boss 30 for attaching a mop handle 32, and an elongate or circular clamping body 34 for attaching, typically stranded, mop material (not shown).

[0020] Consequently, the long-handled lever 28 of the mop wringer 12 of the present invention is positioned centrally or substantially centrally on the drive bar 26, as best shown in Figures 5 and 6. This results in the lever 28 operating or moving in a plane 36 which bisects or substantially bisects the main opening 16a of the basket 14 of the wringer 12.

[0021] Preferably, the plane 36 of operation of the lever 28 in which the longitudinal axis 38 of the lever 28 lies is spaced or offset slightly from a line 40 bisecting the opening 16a of the basket 14 and the drive bar 26 by 10 mm to 15 mm. However, the range could feasibly be 0 mm (in other words the lever 28 is positioned centrally on the drive bar 26) and less than or equal to 20 mm.

[0022] Due to the reduced profiles of modern compact mopheads 18, interference with a centrally or substantially centrally positioned wringer operating lever 28 is eliminated or, at least, greatly reduced.

[0023] As seen in Figures 3 and 7 to 9, a holding element 42 is provided on the lever 28 for releasably holding the mop handle 32 attached to the mophead 18. The holding element 42 is specifically adapted for the centralised lever 28 and has a generally waisted pincer shape having a living or integral hinge 44. The shape of the holding element 42 defines two gripping portions 46, 48. One gripping portion 46 from the hinge 44 to waist 50 acts as a clamp for clamping the holding element 42 to the lever 28. A screw-threaded fastening device 52, such as a bolt and nut or self-tapping screw, is located at the waist 50 to fasten opposing sides of the holding element 42 together and thus secure the holding element 42 in place to the lever 28.

[0024] The other gripping portion 48 defines two flexible opposing jaws 54 between which the mop handle 32 can be push-fit inserted and gripped. The mop handle 32

is released from the jaws 54 of the holding element 42 simply by being pulled away from the holding element 42.

[0025] The holding element 42 can be located at any point along the longitudinal extent of the lever 28.

[0026] Any suitable means for securing the holding element 42 to the lever 28 can be utilised. For example, the gripping portion 46 can be a push-fit plug which locates in the proximal end 58 of the lever 28. In this case, the jaws 54 of the holding element 42 will extend transversely to the push-fit plug. However, this arrangement may interfere with a user gripping the lever 28.

[0027] The securing means can also be a screw-threaded fastener which directly fastens the holding element 42 to the lever 28.

[0028] The mop handle holding element 42 can be used with a centralised or substantially centralised lever of any mop wringer, irrespective of whether the mop wringer is a mechanically assisted or geared type mop wringer.

[0029] With a mop positioned in the basket 14 of the wringer 12, the handle 32 of the mop can be held by the holding element 42 alongside the lever 28 of the wringer 12. In this condition, the mop is reliably and positively supported without requiring external assistance, such as propping against a wall. The mop can thus be left unattended without risk.

[0030] The lever of the mop wringer described above is primarily intended to be a long-handled lever which, when operated, extends beyond the front edge of the bucket on which the mop wringer sits. However, short-handled lever, in other words levers which do not extend beyond the front edge of the bucket, can also be advantageously centralised on the drive bar.

[0031] The mechanically assisted mop wringer can have only one pressing member.

[0032] The 'mechanical assistance' of the wringer can take the form of a linkage arrangement at the or each side of the wringer which connects the lever and the or each pressing member, instead of, or additionally to, a gear mechanism.

[0033] By locating the lever of the wringer centrally or substantially centrally eliminates, or greatly reduces, undesirable turning and twisting moments imparted to the wringer and bucket. Force imparted by the user to the wringer and bucket is thus evenly or more evenly distributed, increasing the operational working life. Furthermore, left handed users are able to operate the wringer more easily. The mop handle is safely and securely supportable by the centralised lever, reducing the possibility of accidents.

Claims

1. A mop wringer (12) comprising a basket (14) having an opening (16a) for accepting a mophead (18) having mop material to be wrung, and a lever-operated mechanically assisted pressing mechanism includ-

ing at least one press member (20) for pressing the mop material of the mophead (18) into or against the basket (14), an elongate lever (28) for operating the press member (20), and a gear mechanism for transmitting movement of the lever (28) to the or each press member (20), **characterised in that** the lever (28) is positioned in a plane which bisects or substantially bisects the opening (16a) of the basket (14), so that forces imparted to the wringer (12) via the lever (28) are evenly or substantially evenly distributed.

2. A mop wringer as claimed in claim 1, wherein the said plane of the lever (28) is spaced from a line equally bisecting the opening (16a) of the basket in a range which is greater than 0 mm and less than 20 mm. 15
3. A mop wringer as claimed in claim 1, wherein the said plane of the lever (28) is spaced from a line equally bisecting the opening (16a) of the basket (14) in a range of 10 mm to 15 mm. 20
4. A mop wringer as claimed in any one of the preceding claims, wherein the lever operated pressing mechanism includes two said press members (20) for pressing the mop material into or against the basket (14). 25
5. A mop wringer as claimed in any one of the preceding claims, further comprising a holding element (42) for releasably holding a handle (32) attached to a mop-head. 30
6. A mop wringer as claimed in claim 5, wherein the holding element (42) is provided on the lever (28) and supports the handle (32) when the mophead is positioned in the basket (14). 35
7. A mop holding element (42) for a lever (28) of a mop wringer as claimed in any one of the preceding claims, the holding element (42) comprising means for securing the holding element (42) to the lever (28) of the wringer, and a gripping portion (48) for releasably gripping a mop handle (32) attached to the mop-head. 40 45
8. A mop holding element as claimed in claim 7, wherein the gripping portion (46) includes two jaws between which the mop handle (32) can be push-fit inserted. 50
9. A mop holding element as claimed in claim 7 or claim 8, wherein the securing means is a clamp by which the holding element (42) is clamped to the lever (28). 55
10. A bucket in combination with a mop wringer as claimed in any one of 1 to 6, the mop wringer (12)

being detachably attachable to a bucket (10).

11. A combination as claimed in claim 10, wherein the lever (28) of the mop wringer, in a pressing condition, extends beyond the front edge of the bucket (10).
12. A combination as claimed in claim 10 or claim 11, further comprising a holding element (42) as claimed in any one of claims 8 to 11.

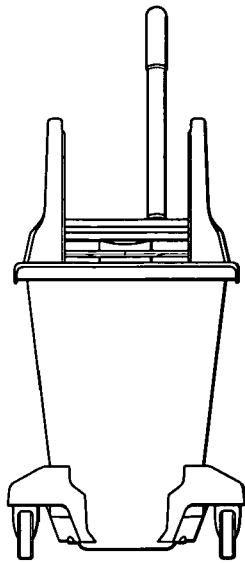


FIG 1
Prior art

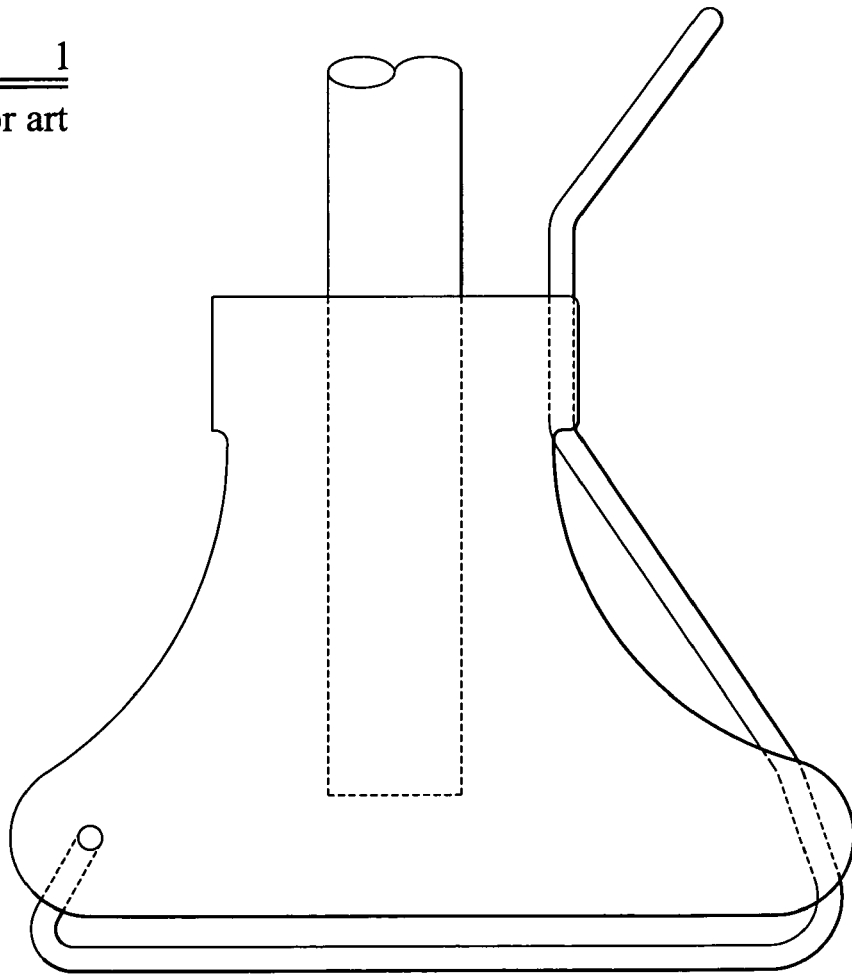


FIG 2
Prior art

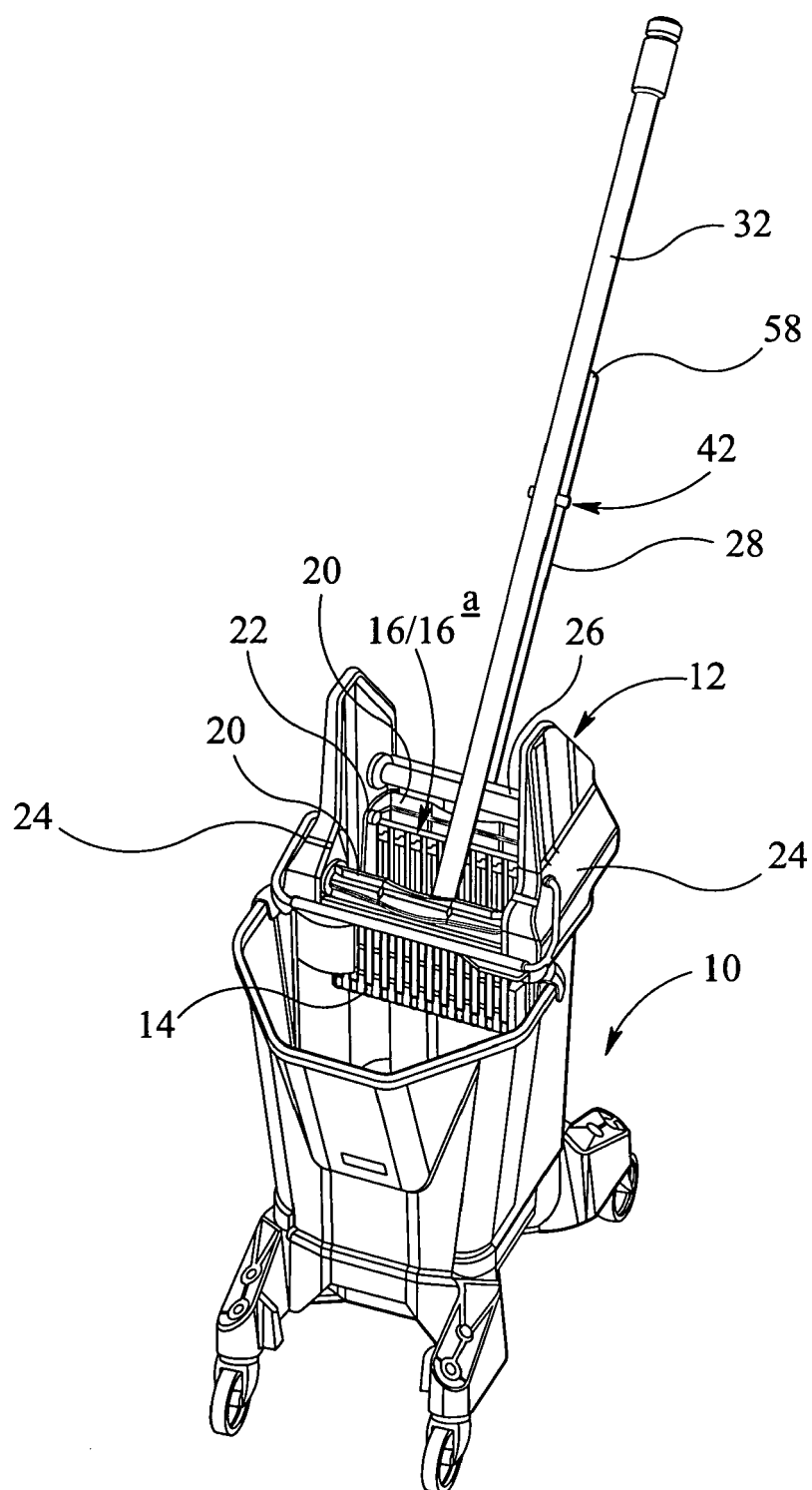


FIG 3

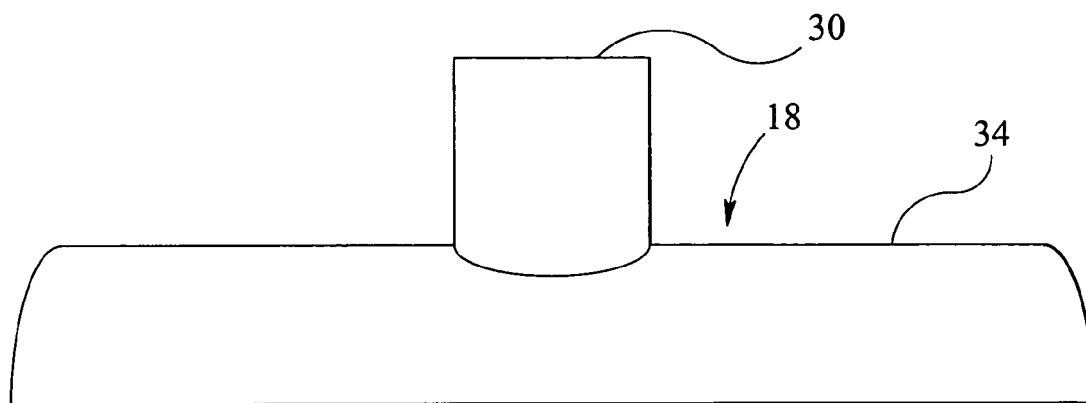


FIG 4
Prior art

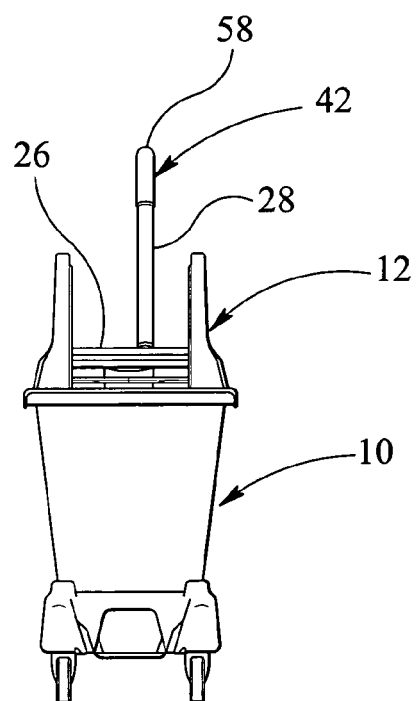


FIG 5

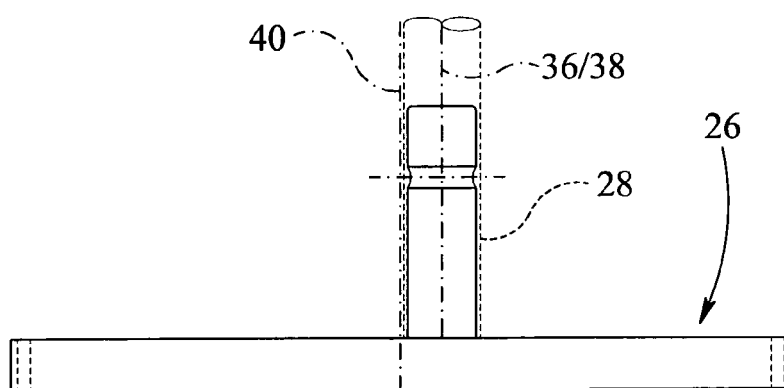


FIG 6

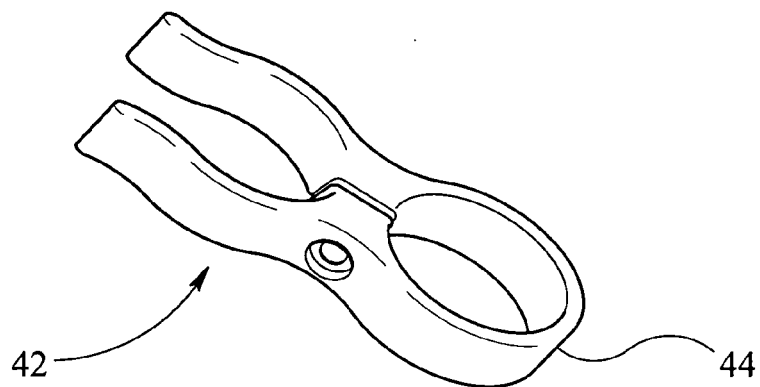


FIG 7

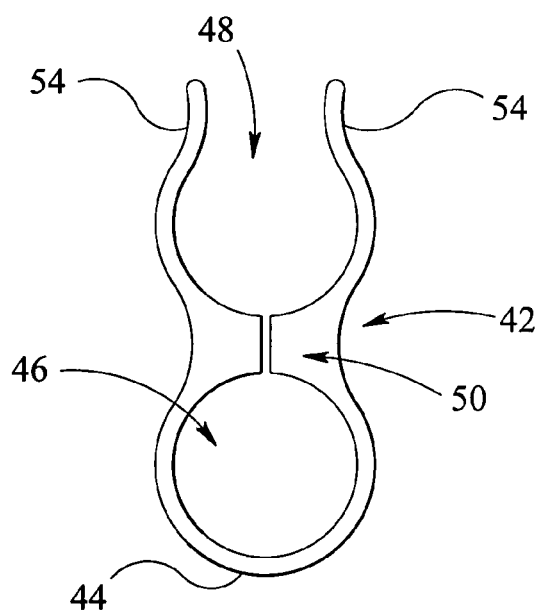


FIG 8

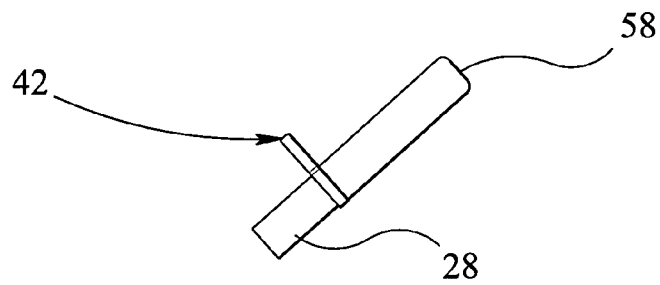


FIG 9

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- GB 2262255 A [0019]