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(54) **A sign stand**

(57) A sign stand (10) comprises a base (12); and a sign-supporting frame (14) adapted, in use, to substantially surround at least part of the perimeter of a display panel; wherein said base (12) is displaceable relative to said sign-supporting frame (14) between a first position where the sign-supporting frame (14) is held upright by

said base(12); and a second position where said base (12) and sign-supporting frame (14) are relatively collapsed onto each other; wherein said sign-supporting frame (14) is collapsed onto said base (12) by lifting up said sign-supporting frame a(14) nd allowing said base (12) to rotate relative to said sign-supporting frame (14).

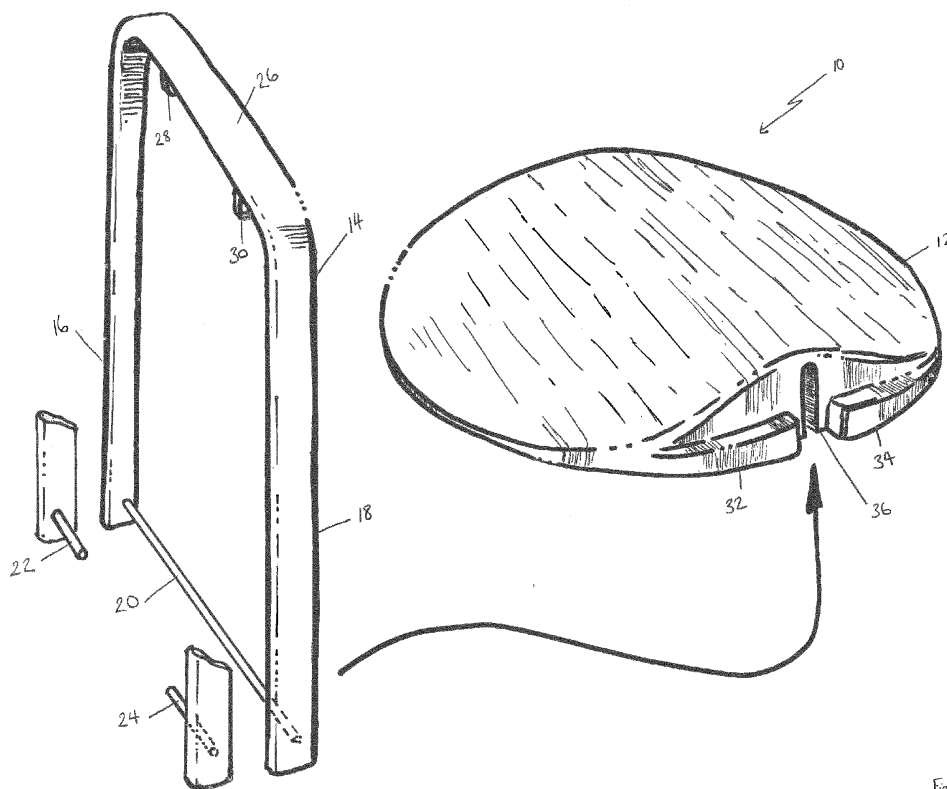


Fig. 1

Description

Field of the Invention

[0001] The invention relates generally to sign stands. The invention has particular applications in the field of self-standing signs.

Background to the Invention

[0002] The following prior art documents are acknowledged: US2898879, GB2280296, FR2893957, FR2741897, US5732911 and GB2313464.

[0003] The closest prior art is the applicant's own sign stands which feature a rigid engagement configuration. Embodiments of this prior art are illustrated in patent EP0809227B1. These sign stands feature a base and a sign frame which are initially disparate units, adapted to be assembled into a sign. Once assembled, these signs sit rigidly upright.

[0004] This sign suffers from a number of disadvantages. Portable signs of this type often need to be carried to a new location or stored away inside a shop. As these signs have a rigid configuration, they are difficult for a user to carry to a new location, as the weight of the sign has to be carried substantially apart from the user's body to prevent the base from hitting the legs of the user. Additionally, this type of sign takes up a large amount of space when stored, due to the large bottom surface of the base. Furthermore, stowing away this kind of sign by dismantling the rigid frame from the base is not desirable since the base is often exposed to the outside environment on a pavement and therefore handling of the base is not desired or recommended.

[0005] It is thus the object of the current invention to provide a sign stand which seeks to alleviate these problems.

Summary of the Invention

[0006] In a first broad independent aspect, the invention provides a sign stand comprising a base; and a sign-supporting frame adapted, in use, to substantially surround at least part of the perimeter of a display panel; characterised in that said base is displaceable relative to said sign-supporting frame between a first position where the sign-supporting frame is held upright by said base; and a second position where said base and sign-supporting frame are relatively collapsed onto each other; wherein said sign-supporting frame is collapsed onto said base by lifting up said sign-supporting frame and allowing said base to rotate relative to said sign-supporting frame.

[0007] This configuration provides a compact orientation for transporting, carrying and/or positioning of the sign stand whilst retaining a rigid configuration for display mode of use of the sign stand. It allows for easier negotiation of door aperture widths and door types, such as

revolving doors, when carrying the sign stand. It also provides a compact orientation for transport of multiple sign stands in a stack being delivered by a manufacturer. This configuration also allows the sign-supporting frame and base to collapse automatically so that a user does not need to exert extra effort in order to move or store the sign stand. It allows the interaction with the base to be avoided.

[0008] Preferably, said base is biased to collapse onto said sign-supporting frame when displacing into said collapsed position. This configuration allows the weight of the sign stand to be carried closer to the body of a user than is possible with previous rigid engagement designs, which provides a significant safety advantage. This configuration is also particularly advantageous in order to minimise the user's interaction with the base which might be soiled or otherwise affected in its use on a pavement or forecourt.

[0009] Preferably, said sign-supporting frame is provided with one or more cross-members and said base is provided with a channel suitable for receiving said cross-members. This configuration provides a frame which may support the weight of the base when the sign stand is lifted from its first position into its second position. In a preferred embodiment, the sign-supporting frame and the base may be integrally formed, whereby no detachment of the frame from the base is facilitated in any mode of use.

[0010] Preferably, said frame incorporates opposing limbs and a cross-member joining said opposing limbs. This configuration provides the sign stand with a strong frame for withstanding the weight of the base when lifted from its first position into its second position.

[0011] Preferably, said cross-member comprises two members which project toward and are spaced apart from one another. This configuration provides the advantage of not requiring a channel through the whole of the base for a crossbar to pass through. This reduces the need for tooling capabilities and manufacturing time.

[0012] Preferably, said base incorporates a number of supporting shoulders located at either side of said sign-supporting frame. This configuration provides support for the opposing limbs of the sign-supporting frame when the sign-supporting frame is in its first position. Said supporting shoulders ensure the sign-supporting frame is kept upright in this position.

[0013] Preferably, the sign stand incorporates a channel; wherein said channel extends upwardly in order to allow movement of said sign-supporting frame above said supporting shoulders when lifted, thereby allowing said base to pivot. This configuration allows the opposing limbs of the sign-supporting frame to rise above the supporting shoulders of the base, thereby allowing the frame and base to collapse onto each other.

[0014] Preferably, said base is unevenly weighted in order to automatically pivot when said sign-supporting frame is lifted. This configuration provides the advantage of preventing the user from exerting extra work on the

sign stand in order to move or store it. By being unevenly weighted, the base can be allowed to collapse onto the sign-supporting frame when the frame is lifted from its first position.

[0015] Preferably, said sign stand incorporates a mechanical bias to pivot said base when said sign-supporting frame is lifted. This configuration also allows the sign-supporting frame and base to collapse onto each other automatically when the frame is lifted by a user from its first position into its second position.

[0016] Preferably, the cross-section of said cross-member is circular. This configuration reduces the friction which acts upon the cross-member when the frame and base collapse onto each other when the frame is lifted.

[0017] Preferably, the cross-section of said cross-member is faceted. This configuration allows the sign-supporting frame and base to collapse onto each other in a controlled manner.

[0018] Preferably, said base pivots relative to said sign-supporting frame in order to substantially adopt the same common plane as said sign-supporting frame. This configuration allows for easier negotiation of door aperture widths and door types, such as revolving doors, when carrying the sign stand. It also provides a compact orientation for transport of multiple sign stands being delivered by a manufacturer.

[0019] Preferably, said base and said sign-supporting frame are non-detachable. This configuration provides a sign stand that is easy to set up as it is pre-assembled and exists as one unit. Therefore, no tools are needed by a user to set up the sign stand.

Brief Description of the Figures

[0020]

Figure 1 shows, in perspective view, a sign stand prior to full assembly with a sign-supporting frame and a base. Also shown is an alternative crossbar configuration.

Figure 2 shows one arm of the sign-supporting frame engaged with the base in perspective view.

Figure 3 shows, in perspective view, one arm of the sign-supporting frame when initially lifted by a user from the base.

Figure 4 shows, in perspective view, one arm of the sign-supporting frame disengaging from the supporting shoulders of the base.

Figure 5 shows a side view of the base of the sign stand.

Figure 6a shows a cross-sectional view of the base of the sign stand when the sign-supporting frame is in its first position.

Figure 6b shows a cross-sectional view of the base of the sign stand when the sign-supporting frame is in its second position.

Figure 7a shows a side view of the sign stand when in its first position in use.

Figure 7b shows a side view of the sign stand when initially lifted by a user.

Figure 7c shows a side view of the sign stand when the sign-supporting frame is fully lifted and in its second position.

15 Detailed Description of the Figures

[0021] Figure 1 shows a sign stand 10 comprising a base 12, preferably of recycled plastics material such as PVC, and a tubular sign-supporting frame 14. The sign-supporting frame 14 is of a generally inverted U-shape, having two parallel vertical limbs 16 and 18. The extremities of limbs 16 and 18 can be joined by cross-member 20. In an alternative embodiment cross member 20 is discontinuous; in that it comprises two co-axial members 22 and 24 (preferably of equal length) projecting inwardly toward one another from each of limbs 16 and 18. The parallel limbs 16 and 18, the top member 26 and cross-member 20 define the perimeter of sign-supporting frame 14.

[0022] The tubular metallic material from which sign-supporting frame 14 is constructed is of a rounded rectangular cross-section, the diameter of which is selected to provide a convenient and comfortable means by which the sign-supporting frame 14 can be lifted. Cross-member 20 need not be of the same cross-sectional area and/or shape. In particular, in alternative embodiments, cross-member 20 or cross-members 22 and 24 may be faceted in cross-section or even rectangular.

[0023] A sheet display panel can be supported on sign-supporting frame 14 by fixings 28 and 30, allowing the display panel to hang vertically with its perimeter substantially surrounded by sign-supporting frame 14. The display sheet may thus be free to swing in the wind in order to minimize any risk of the sign stand toppling over.

[0024] Base 12 is of a contoured shape having no sharp edges or corners. The base 12 has frame-supporting shoulders, such as 32 and 34, for supporting sign-supporting frame 14 in its upright first position. The base 12 may be embossed or otherwise marked with a logo, for example.

[0025] Base 12 also incorporates a cross-member receiving channel 36, which extends across the whole width of base 12. In an alternative embodiment, cross-member receiving channel 36 is discontinuous to accommodate equally discontinuous cross-member projections 22 and 24. Cross-member receiving channel 36 extends upwardly in order to facilitate the movement of sign-supporting frame 14 from its first position to a second position.

tion. In a preferred embodiment, channel 36 would be closed at its lower extremity in order to prevent the detachment of the base relative to the frame. A separately secured cross-piece (not shown in the figure) may be provided across the lower extremity of the channel.

[0026] Referring to Figure 2, it can be seen that each one of the parallel vertical limbs 16 and 18 of the sign-supporting frame 14 sits between the supporting shoulders 32 and 34 of the base 12 when the sign-supporting frame 14 is in its upright first position. It can also be seen that the tubular metal from which the sign-supporting frame 14 is constructed is of a rounded rectangular cross-section. The diameter of the sign-supporting frame 14 is uniform throughout, a diameter which is selected to provide a convenient and comfortable means by which the sign-supporting frame 14 can be lifted by a user. The exterior surface 13 of the base 12 has a plastic finish which may incorporate a relief in order to increase its coefficient of friction.

[0027] Figure 3 shows the direction of movement of the sign-supporting frame 14 from the base 12 when the sign-supporting frame 14 is initially lifted by a user. As the sign-supporting frame 14 is lifted, it disengages from its position between the supporting shoulders 32 and 34 of the base 12. As this happens, the cross-member 20 of the frame 14 moves upwardly within the cross-member receiving channel 36.

[0028] Referring to Figure 4, it can be seen that the movement described in Figure 3, once the sign-supporting frame 14 is lifted by a user, initiates the base 12 of the sign stand 10 to rotate and collapse onto the sign-supporting frame 14. The rotational movement of the base 12 is determined by the base 12 being unevenly weighted. In an alternative embodiment, the sign stand 10 may incorporate a mechanical means (not shown) to bias the base 12 to collapse onto the sign-supporting frame 14. This may include a spring acting between the frame and the base depending on the position of the frame. It may also include a motor or other actuator. Surface 37 may also incorporate a retention means for securing the rotated base onto the frame in the sign stand's collapsed configuration. This may take the form of a dimple or projection which may frictionally engage the frame when the base is rotated. Furthermore the inside proportion of the limbs of the frame may be covered at least in part by a low friction pad or protective pad in order to minimize any abrasion of the base of the limb when rotating in engagement against the base.

Figure 5 shows a side view of the base 12 of the sign stand 10, preferably of recycled plastics material such as PVC. The base 12 incorporates a channel 36 for receiving the cross-member 20 of the sign-supporting frame 14. This channel 36 extends upwardly in order to facilitate the movement of the sign-supporting frame 14 from its first position, where it stands upright between the supporting shoulders 32 and 34 of the base, and a second position, where

the base 12 and sign-supporting frame 14 collapse onto each other. A number of supporting shoulders, such as 32 and 34, exist on either side of the base 12, adjacent vertical limbs 16 and 18.

Figure 6A shows the position of the cross-member 20 of the sign-supporting frame 14 when the sign stand 10 is in its upright first position. In this position, the vertical limbs 16 and 18 of the sign-supporting frame 14 sit between the supporting shoulders 32 and 34 of the base 12.

In this position, the bottom surface 38 of the base 12 is in contact with the ground. The cross-member 20 of the sign-supporting frame 14 is located in the lower portion of the cross-member receiving channel 36.

Figure 6B shows the position of the cross-member 20 of the sign-supporting frame 14 when the sign stand 10 is lifted from its first position into its second position. In the second position, the cross-member 20 is located at the top of the cross-member receiving channel 36. In this position, the vertical limbs 16 and 18 of the sign-supporting frame 14 are disengaged from the supporting shoulders 32 and 34 of the base 12. This disengagement allows the base 12 to rotate around the cross-member 20 until the base 12 and sign-supporting frame 14 are collapsed onto each other. Whilst shoulders 32 and 34 are illustrated as providing a gap for the placement of the lower portion of the limbs, these extend in this embodiment substantially along the entire side of the base other the necessary gap. Alternatively, the shoulders may extend only partially along the side. In the preferred embodiment, the shoulders, however, not only offer the support for the upright frame but provide an abutment surface against which the frame abuts as the base rotates into its collapse configuration where the base is then substantially in the same plane as the frame (see figure 7c).

Figure 7A shows the sign stand 10 in its upright first position. In its first position, the sign-supporting frame 14 sits upright with its vertical limbs 16 and 18 situated between supporting shoulders, such as 32 and 34, of the base 12. In this first position, the cross-member 20 of the sign-supporting frame 14 is located in the lower portion of the cross-member receiving channel 36. The sign stand 10 exists as one unit in order to provide a user with a straightforward and efficient set up. The base 12 and sign-supporting frame 14 are also non-detachable to ensure that the sign stand 10 does not fall apart when being maneuvered or stored by a user.

Figure 7B shows the sign stand 10 when it is initially lifted by a user 40. As the sign-supporting frame 14 is lifted by a user 40, the cross-member 20 is pulled

to the top of the cross-member receiving channel 36. As the sign-supporting frame 14 is lifted, its vertical limbs 16 and 18 are disengaged from supporting shoulders, such as 32 and 34, of the base 12. Once this has occurred, the base 12 of the sign stand 10 is also lifted, allowing it to rotate around the cross-member 20. The base 12 is unevenly weighted so that rotation is automatic as soon as the base 12 leaves the ground. The base may not be formed as a solid block of plastics material. Instead, it may incorporate a plurality of weight saving webs located between recessed portions in the underside of the base. The weight of the base may be unevenly distributed by varying the spacing and/or thickness of these webs on the underside of the base. Alternatively, the base may be thinner on one side of the frame than the other in order to bias the base. In an alternative embodiment, the sign stand 10 can incorporate a mechanical means to bias the base 12 and cause it to collapse onto the sign-supporting frame 14.

[0029] Referring to Figure 7C, the base 12 rotates until it has collapsed onto the sign-supporting frame 14. In this second position, the sign stand 10 can be moved to a new location where it can be returned to its first position by placing the base 12 onto the ground and allowing the vertical limbs 16 and 18 of the sign-supporting frame 14 to engage with the supporting shoulders 32 and 34 of the base 12. The configuration of this sign stand 10 allows its weight to be carried closer to a user's body, illustrated in Figure 7C, providing a significant safety advantage.

[0030] Whilst in the preferred embodiment, the channel is located as part of the base and the crossbar or projection is located on the frame, in an alternative embodiment, the channel may be provided in the frame whilst the projection is provided as part of the base.

Claims

1. A sign stand comprising a base; and a sign-supporting frame adapted, in use, to substantially surround at least part of the perimeter of a display panel; **characterised in that** said base is displaceable relative to said sign-supporting frame between a first position where the sign-supporting frame is held upright by said base; and a second position where said base and sign-supporting frame are relatively collapsed onto each other; wherein said sign-supporting frame is collapsed onto said base by lifting up said sign-supporting frame and allowing said base to rotate relative to said sign-supporting frame.
2. A sign stand according to claim 1, wherein said base is biased to collapse onto said sign-supporting frame when displacing into said collapsed position.
3. A sign stand according to any of the preceding claims, wherein said sign-supporting frame is provided with one or more cross-members and said base unit is provided with a channel suitable for receiving said cross-members.
4. A sign stand according to any of the preceding claims, wherein said frame incorporates opposing limbs and a cross-member joining said opposing limbs.
5. A sign stand according to claim 4, wherein said cross-member comprises two members which project toward and are spaced apart from one another.
6. A sign stand according to any of the preceding claims, wherein said base incorporates a number of supporting shoulders located at either side of said sign-supporting frame.
7. A sign stand according to claim 6, incorporating a channel; wherein said channel extends upwardly in order to allow movement of said sign-supporting frame above said supporting shoulders when lifted, thereby allowing said base to pivot.
8. A sign stand according to any of the preceding claims, wherein said base is unevenly weighted in order to automatically pivot when said sign-supporting frame is lifted.
9. A sign stand according to any of the preceding claims, wherein said sign stand incorporates a mechanical bias to pivot said base when said sign-supporting frame is lifted.
10. A sign stand according to any of claims 3 to 5, wherein the cross-section of said cross-member is circular.
11. A sign stand according to any of claims 3 to 5, wherein the cross-section of said cross-member is faceted.
12. A sign stand according to any of the preceding claims, wherein said base pivots relative to said sign-supporting frame in order to substantially adopt the same common plane as said sign-supporting frame.
13. A sign stand according to any of the preceding claims, wherein said base and said sign-supporting frame are non-detachable.
14. A method of transporting a sign stand, comprising the steps of:
 - said sign stand being in a first position where a sign-supporting frame of the stand is held upright by a base;

- displacing said sign stand from said first position to a second position by lifting said sign-supporting frame and allowing said base to rotate relative to said sign-supporting frame in order for said base to collapse onto said frame; 5
- moving said sign stand to a desired location; and
- displacing said sign stand from said second position to said first position by lowering said base onto a surface at said desired location and moving said frame into a position whereby it is held upright by said base. 10

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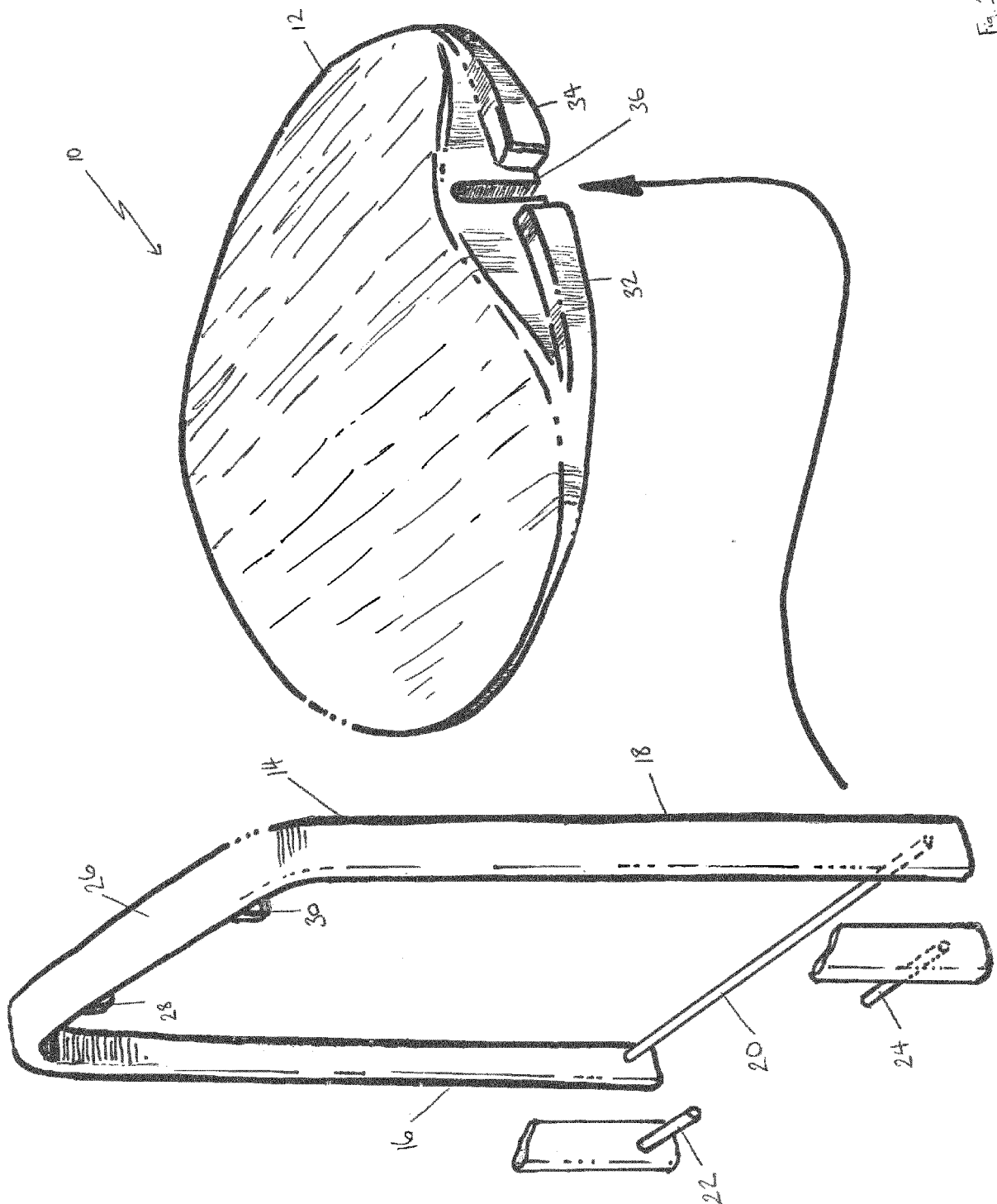


Fig. 1

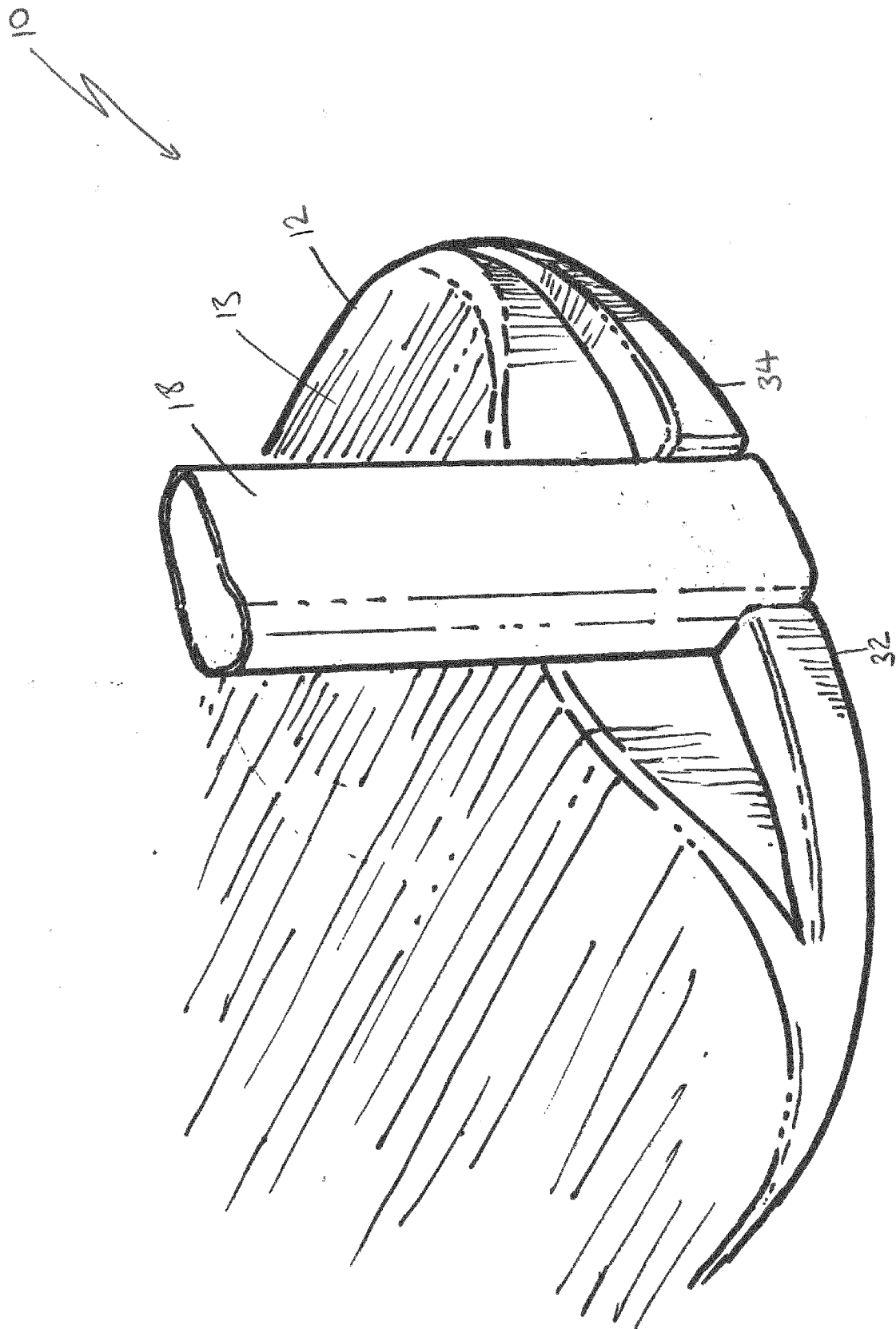
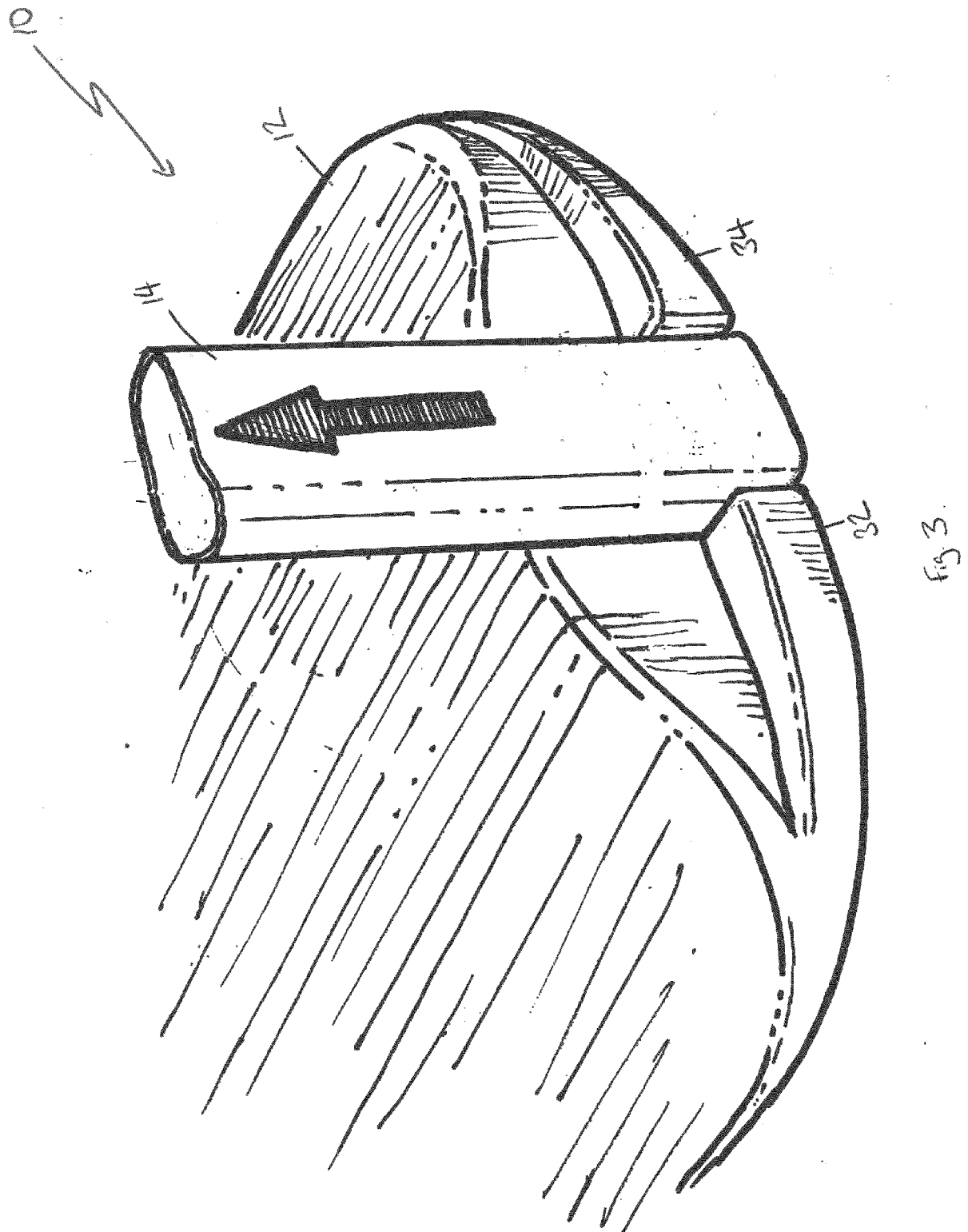
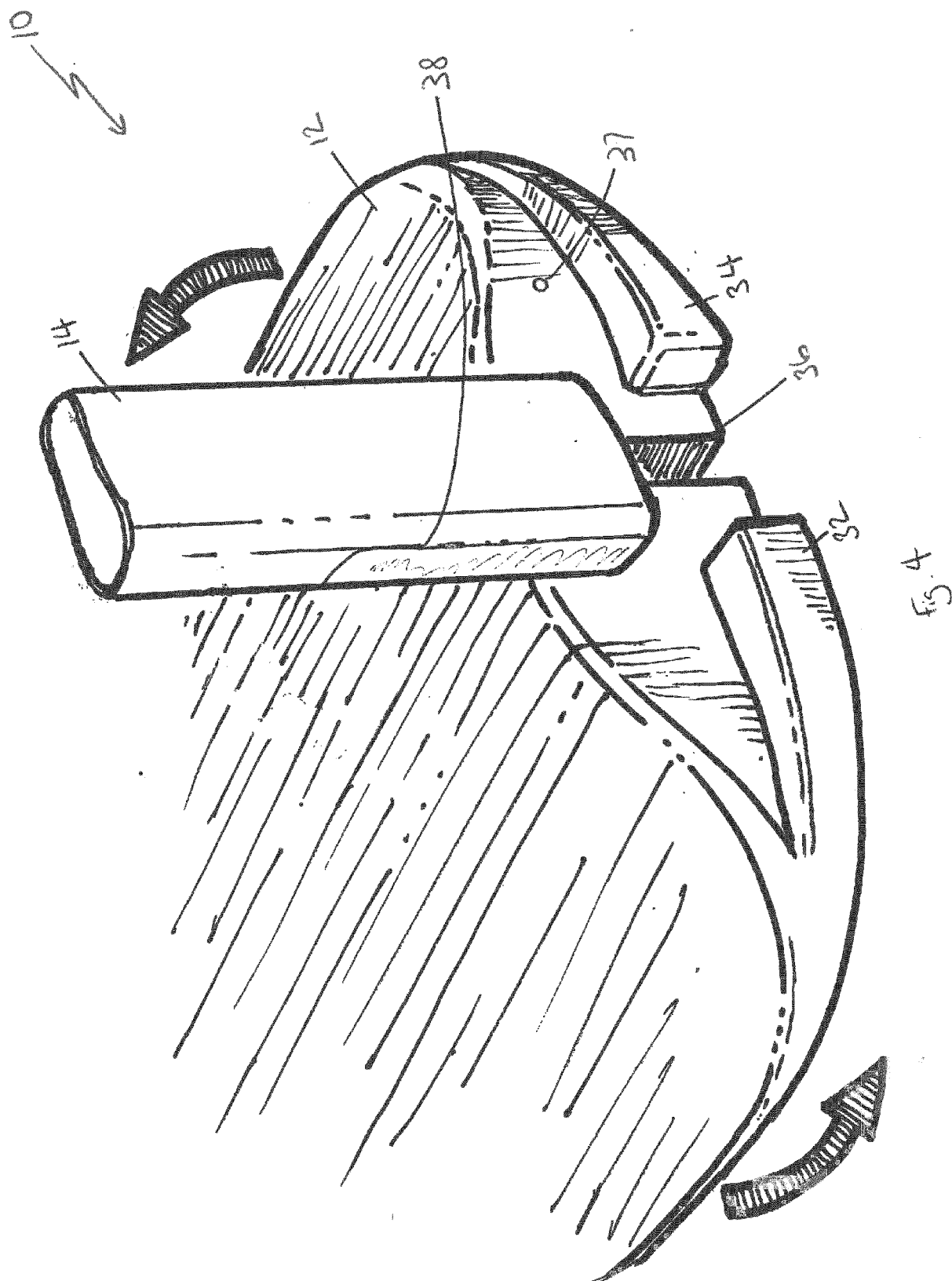
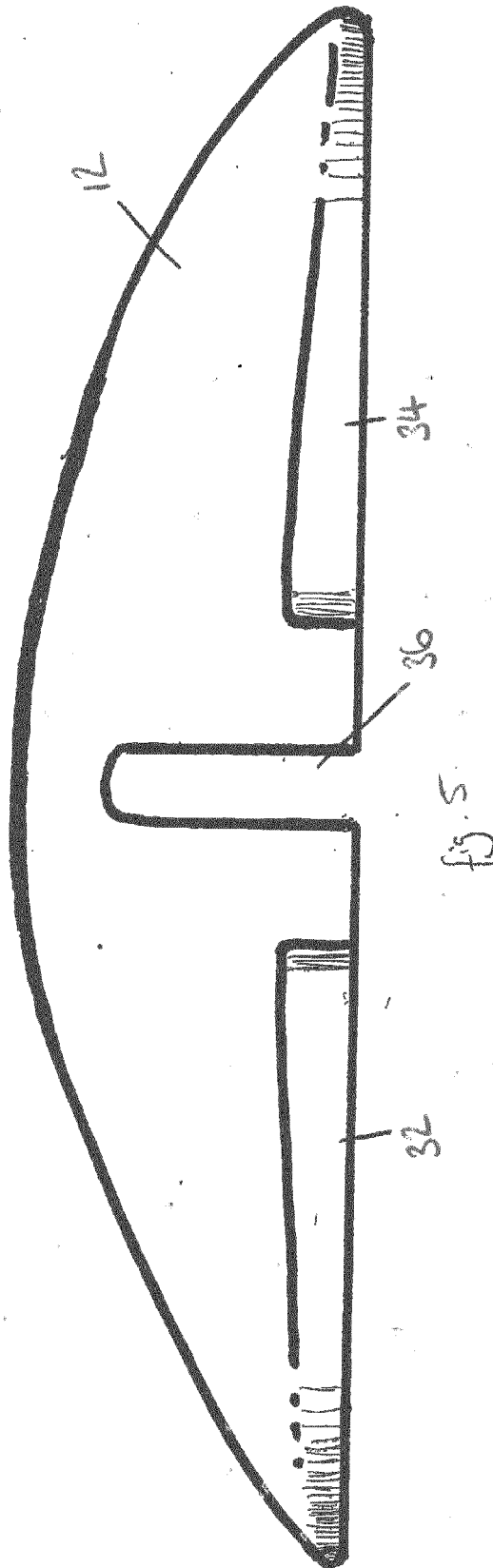


fig 2







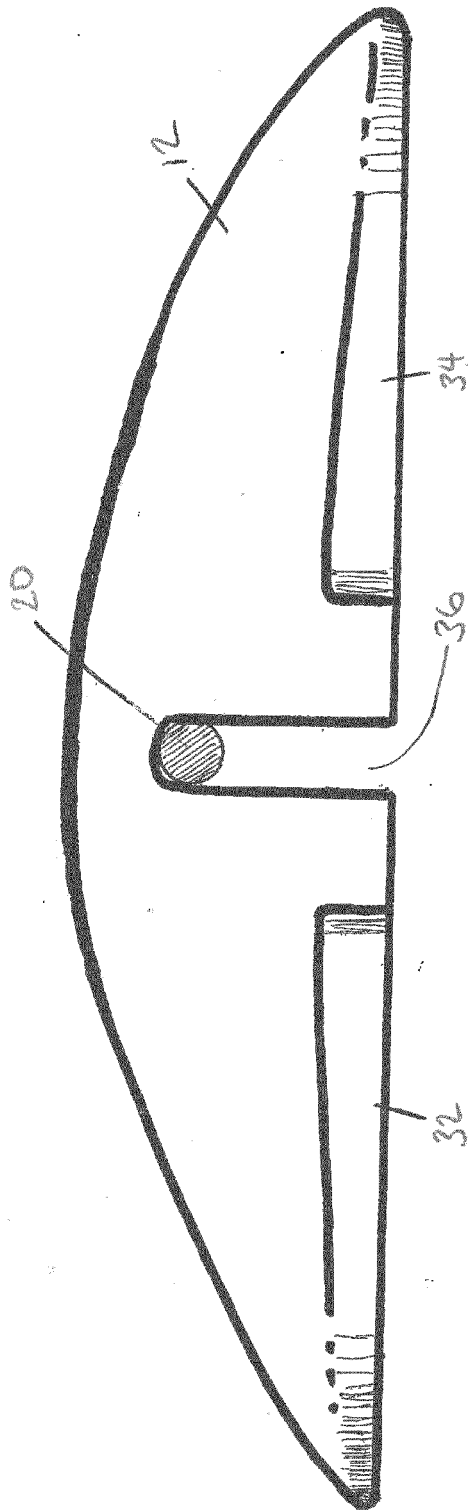


Fig. 6B

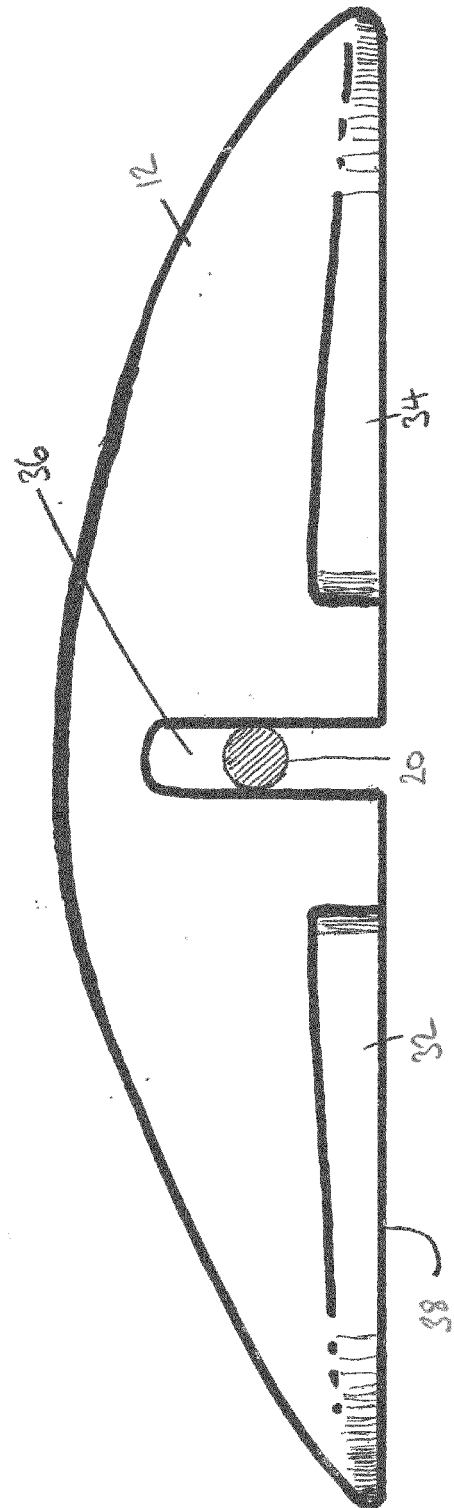
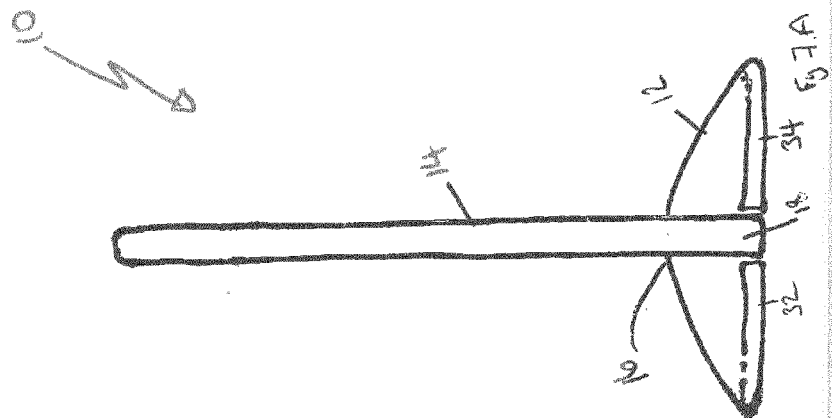
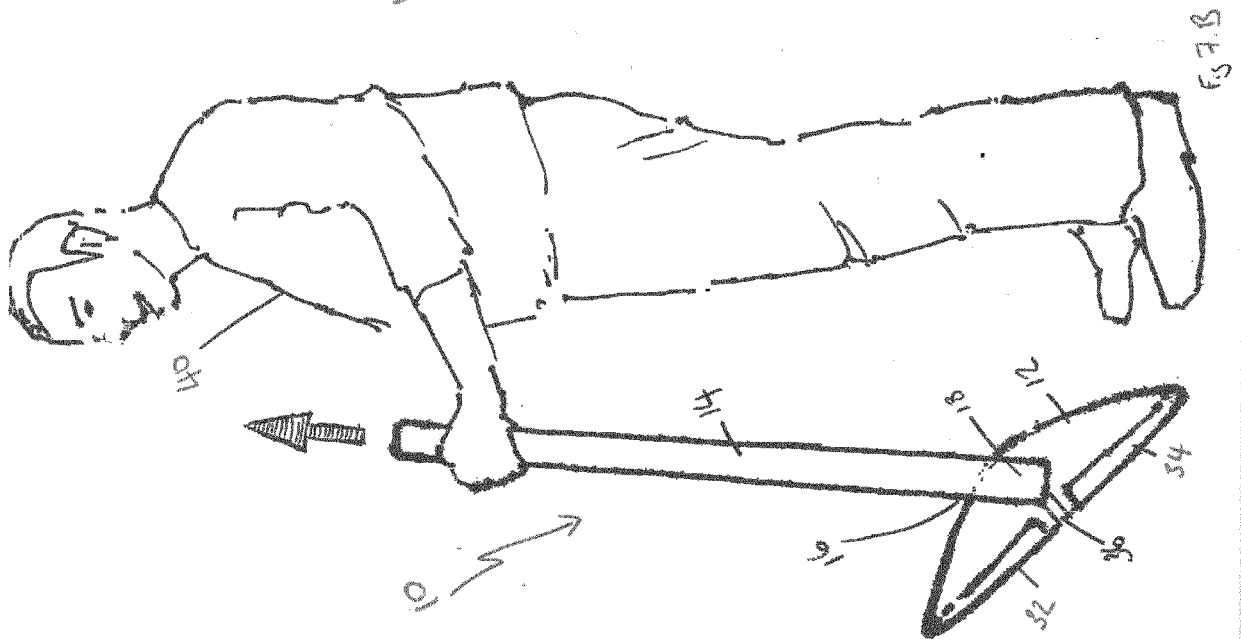
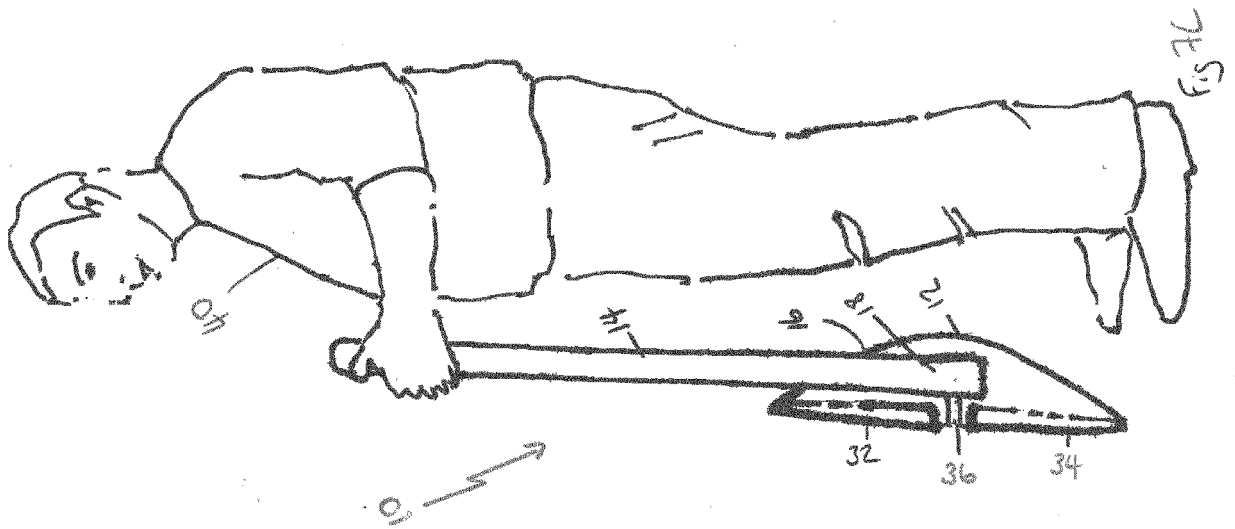


Fig. 6A



REFERENCES CITED IN THE DESCRIPTION

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