# INVENTION TITLE

Multiposition Visor Adaptor System

## DESCRIPTION

### FIELD OF INVENTION

**[Para 1]** This invention relates to a novel device in the general field of sunshield or protective visors and more specifically to a visor adaptor system which can be secured to the headband of communication or hearing protection headsets. The visor may be adjusted vertically or horizontally to provide optimally positioned shielding from unwanted glare, or as a means of transparent vision protection.

### BACKGROUND OF THE INVENTION

**[Para 2]** While flying, the two pieces of equipment a pilot commonly uses are sunglasses and a communication headset. This combination can be uncomfortable to wear, can cause interference with headset function, and can be both inconvenient and sometimes dangerous to use. For example, both items are worn on the head, face and ears, which are sensitive parts of the body. Wearing a headset in conjunction with sunglasses creates discomfort on the ears, as the headset pushes the arms of the glasses onto the ears and head; and onto the bridge of the nose, where the sunglasses rest for long periods of time.

**[Para 3]** Also, while wearing sunglasses, the arms of the sunglasses break the seal of the headset cushions around the pilot's ear. Engine noise is allowed to leak through, reducing the effective noise reduction of the headset. This is true whether the headsets are passive or have noise canceling capabilities. Not only can increased noise be a hardship on the pilot, but it also can interfere with the ability to hear critical communications.

**[Para 4]** As well, when a pilot is flying an aircraft, the brightness of the sun varies due to the changing position and orientation of the aircraft. It may be overcast at the start of the flight, but once up at altitude the pilot may be exposed to bright sunshine. When the brightness changes, the pilot must put on, constantly adjust, or remove the sunglasses, which at worst may involve removing the entire headset. Finally, the headset and sunglasses constitute two more pieces of equipment the pilot must keep track of and keep safe from damage or loss.

**[Para 5]** One early solution was to clip a pair of armless sunglasses to a rod hanging from and attached to the headband cushion of the headset. Unfortunately, this apparatus does not secure the glasses very reliably given the high vector forces on a pilot, and considering the consequences to flight safety when a pilot is inadvertently blinded by sunlight passing around the edges of poorly aligned sunglasses. A better and safer solution is needed.

**[Para 6]** The prior art teaches various partial solutions to the above issues, namely flip up visors attached by various means to the outside of earmuffs, or by a locking bolt onto headset stirrups. Unfortunately, all present visor solutions have limited adjustability, adjust only around a single axis, or are not attached to the headset securely enough to preclude dangerous visor misalignment, as discussed above.

**[Para 7]** Wearing a sunshield visor is more comfortable on long flights because it does not have to contact the face. Also it preserves the seal of hearing protectors, and provides a sunshield of much larger surface area than sunglasses. The problem is how to securely attach a visor to existing aviation headsets while permitting the flexible re-positioning necessary to block sunlight from any direction as needed while a flight progresses through areas of variable illumination. The following summary will briefly discuss a visor adaptor system that meets all of these requirements.

## BRIEF SUMMARY OF THE INVENTION

[Para 8] The Multiposition Visor Adaptor System (MVAS) addresses the above deficiencies by increasing user comfort, maintaining headset integrity, increasing sunshield capability, providing operator convenience, permitting increased and flexible visor positioning, and including a secure attachment to the headset.

[Para 9] During its normal use, no part of a visor touches the pilot's face, ears or head; while exceeding the protection and advantages of wearing sunglasses. The visor and adaptor system is light weight enough not to create any additional fatigue to the pilot. The seals of the headset cushion are not broken as the visor is mounted to the headset itself, therefore maintaining communications and acoustic integrity. When the angle or brightness that the pilot is exposed to changes, the visor is simply lowered or raised, or extended or retracted, or even removed completely, as required. When the visor is securely mounted to the headset, it forms an integrated unit, where there is only one piece of equipment to keep track of and keep safe. The MVAS invention will now be described in detail below.

## DETAILED DESCRIPTION

**[Para 10]** Note: Most elements of this invention are symmetrical; therefore, inside-outside designators will be used instead of left-right designators where appropriate. Inside will be used to describe views from inside the visor, adaptor, headset or headband; & outside to views from outside same.

**[Para 11]** Fig. 1 shows an outside isometric view of the Multiposition Visor Adaptor System (hereafter abbreviated as MVAS) 10 attached to a prior art aviation headset (of the David Clark style; hereafter abbreviated as DC) 56. Basic elements of the MVAS 10 visible in this view include a visor 12, visor arms 14, hinge tensioners 34, adaptors 24, and a headband connector 36. Basic elements of the prior art aviation headset (DC) 56 visible in this view include a headband assembly 58 comprising a headpad 60, headband spring 62, stirrup clamps 64, stirrups 66, headband locknuts 68, cable clips 70, clamp locking bolts 74, and associated noise attenuating domes 76, ear seals 78, and stirrup mounts 80.

**[Para 12]** Fig. 2 shows a side view of the MVAS 10, with the visor 12 in the down position, attached to the aviation headset (DC) 56. In this view, elements of the headband assembly 58 for the aviation headset (DC) 56 include the headpad 60, headband spring 62, stirrup clamp 64, stirrup 66, headband locknut 68, cable clip 70, and clamp locking bolt 74. The stirrup 66 is attached to the stirrup mounts 80 on the sides of the noise attenuating dome 76. Basic elements of the MVAS 10 include the visor 12, visor arm 14, hinge tensioner 34, adaptor 24, and a headband connector 36 visible between the headband spring 62 and the stirrup clamp 64.

**[Para 13]** Fig. 3 shows an outside isometric view of the visor arm 14 being secured to the visor 12. The visor securement 16 portion of the visor arm 14 fits over the visor 12 to align with the securement holes 18 so that it may be fastened by the securement bolts 20. The visor arm 14 may now be attached to the hinge assembly 26 of the adaptor 24 (shown in Fig. 4a below) by means of its bushing aperture 22.

**[Para 14]** Fig. 4a shows an exploded outside isometric view of the hinge assembly 26 elements connecting the adaptor 24 to the bushing aperture 22 of the visor arm 14 with its visor securement 16. Assembled onto the hinge post 28 of the adaptor 24 are a washer 30, the bushing aperture 22, another washer 30, a bushing 32, and the hinge tensioner 34. Adaptor 24 elements also shown are an index spring 48, and an index window 54.

**[Para 15]** Fig. 4b shows an exploded inside isometric view of the same hinge assembly 26 elements connecting the adaptor 24 to the visor arm 14. Other elements of the adaptor 24 visible from this view include the spring slot 46, where the index spring 48 is inserted, and the stem slot 44, where the connector stem 40 is inserted, as shown in Figs. 8a & 8b below.

**[Para 16]** Fig. 5a shows a side view of the MVAS 10 attached to the aviation headset (DC) 56 with the visor 12 in the mid vertical position, whereas Fig. 5b shows a side view of the MVAS 10 attached to the aviation headset (DC) 56 with the visor 12 in the up position, as it pivots around and is secured by the hinge tensioner 34.

**[Para 17]** Fig. 6 shows a close-up side view of the basic MVAS 10 elements including the headband connector 36 adapted to fit to the David Clark style aviation headset (DC) 56. (latter not shown) Elements of the headband connector 36 include a locking bolt slide 38, and a connector stem 40 with ratchet teeth 42 and index numbers 52 on its outside surface as shown.

**[Para 18]** Fig. 7 shows a close-up outside isometric view of the MVAS 10 adaptor 24 without attached visor arm 14, and the headband connector 36 adapted to fit to the David Clark style aviation headset (DC) 56.

**[Para 19]** Fig. 8a shows a close-up inside view of the MVAS 10 adaptor 24 with an index spring 48 inserted into its spring slot 46, and can be seen protruding into the stem slot 44 with its index window 54. Fig. 8b shows an inside view of the MVAS 10 adaptor 24 with the connector stem 40 of the headband connector (DC) 36 inserted into its stem slot 44.

**[Para 20]** Fig. 9a shows an outside view of the MVAS 10 adaptor 24 with a detached headband connector (DC) 36 showing its index numbers 52. Fig. 9b shows an outside view of the MVAS 10 adaptor 24 with the connector stem 40 of the headband connector (DC) 36 partly inserted into the adaptor’s 24 stem slot 44. Index numbers 52 on the connector stem 40 are visible through the index window 54 of the adaptor 24.

**[Para 21]** Fig. 10a shows a side view of the MVAS 10 with its adaptor 24 detached from its connector stem 40 which is secured to the aviation headset (DC) 56. Fig. 10b shows a side view of the MVAS 10 with its adaptor 24 at the “out” position of the connector stem 40. Fig. 10c shows a side view of the MVAS 10 with its adaptor 24 at the “mid” position of the connector stem 40. Fig. 10d shows a side view of the MVAS 10 with its adaptor 24 at the fully “in” position of the connector stem 40. These positions are merely illustrative and do not preclude more discriminating degrees of horizontal extension.

**[Para 22]** Fig. 11 shows a facing view of the aviation headset (DC) 56 in order to show where the MVAS 10 headband connector 36 with its stem 40 is inserted (right side) and secured (left side). Elements of this headset 56 not clearly visible elsewhere include the clamp locking bolt 74, and the clamp guide 82.

**[Para 23]** Fig. 12a shows an outside isometric view of an alternate prior art aviation headset (TH) 104 with a thicker headband (=TH) assembly 106 and a universal headband connector 84 where its connector stem 40 inserts into the stem slot 44 of a common adaptor 24 (not shown). Additional elements shown on this aviation headset (TH) include a microphone boom 86 and volume control 88. Note that these latter elements have been omitted from the figures showing the David Clark aviation headset only for clarity, but are included in a significant number of commonly used David Clark headsets.

**[Para 24]** Fig. 12b shows a close-up outside isometric view of the universal headband connector 84 as employed on each side of the headband assembly (TH) 106 of the alternate aviation headset (TH) 104. Elements of each universal headband connector 84 include a fulcrum post 90, upper grip 92, spring arm 94, lower grip 96, spring hub 98, hub extension 100, grip arrestors 102 as shown, and the connector stem 40.

**[Para 25]** How each element or assembly functions and interacts with each other element or assembly will now be described. For clarity of presentation, related elements will be described together as the following assemblies: visor assembly, hinge assembly, and adaptor assembly. Connecting the headband assembly 58 to the prior art aviation headset 56 will also be discussed.

**[Para 26]** The visor assembly is comprised of a visor 12 with one visor arm 14 secured to each side as shown in Fig. 1, and in detail in Fig. 3. The bushing aperture 22 at the end of each visor arm 14 fits into and rotates within the hinge assembly 26 of each adaptor 24 permitting the visor assembly to flip up and down as needed.

**[Para 27]** The hinge assembly 26 is comprised of the elements shown in Figs. 4a & 4b that fit between the hinge post 28 and the hinge tensioner 34. The hinge assembly 26 permits the visor assembly to smoothly rotate around the axis of each hinge post 28, by means of the washers 30 and bushing 32. The hinge tensioners 34 can be loosened to permit the visor assembly to be adjusted into an infinite number of vertical positions. The user can then lock the visor assembly in place by tightening each threaded hinge tensioner 34 so that the hinge assembly 26 secures the bushing aperture 22 end of each visor arm 14 in a fixed position, as demonstrated in Figs. 5a & 5b. Or the hinge tensioner 34 can be tightened just enough so that the visor assembly can be repositioned, but it will remain in its desired position. By this means the friction of the hinge assembly holds the visor assembly in place, but still permits it to be easily repositioned with only one hand.

**[Para 28]** As shown in Figs. 6 & 7, the adaptor assembly is comprised of the adaptor 24, including the hinge assembly 26, and those elements that permit horizontal adjustment of the visor assembly, i.e. controlled adjustment in and out from the pilot's face, such as its stem slot 44, spring slot 46, index spring 48, and spring port 50. The adaptor assembly also includes the headband connector 36, if using the common David Clark headset, or the universal headband connector 84, if using the thicker headband style headset 104 (see Fig. 12a). Horizontal adjustment of the visor assembly is achieved by means of a connector stem 40 at the end of each headband connector (36 or 84), which is inserted into the stem slot 44 of each adaptor 24. The top of each connector stem 40 has ratchet teeth 42 (see Fig. 7) which are engaged by the index spring 48 through the spring port 50. As the connector stem 40 slides into the stem slot 44 (see Fig. 8b) the tension of the index spring 48 secures the stem 40 in its index position and thereby the visor assembly in each fixed horizontal position, as shown in Figs. 10a through 10d.

**[Para 29]** All headband connectors terminate in a connector stem 40, which inserts into the MVAS 10 adaptor 24, but each connector can be securely attached to each aviation headset's respective headband designs. Each David Clark headband connector 36 (DC) is designed to fit between the headband spring 62 and each stirrup clamp 64, and are secured by the headband locknut 68 to the clamp locking bolt 74, as it passes through the locking bolt slide 38 (see Fig. 7), and is aligned by the clamp guide 82 as shown in Fig.

11. While the locking bolt slide 83 employs a continuous slot to permit headset adjustment, a multiplicity of independent holes performing an equivalent function can serve the same purpose, and may increase securement. Alternate connector securement methods will be described below.

**[Para 30]** The preferred embodiment of the Multiposition Aviation Visor Adaptor System (MVAS) 10 will now be described in detail. As discussed above, the MVAS 10 is comprised of the visor, hinge, adaptor, and connector assemblies. The preferred embodiment employs a headband connector 36 (DC) that is secured to each side of the headband spring 62 of a David Clark style aviation headset (DC). The adaptor assembly slides onto the connector stem 40 so that at least the first (#1) index number 52 is fully visible in the index window 54, in order to ensure that the connector stem 40 and stem slot 44 can support the weight of the adaptor and visor assemblies, and so that the index spring 48 has engaged the first ratchet teeth 42.

**[Para 31]** Assuming full use of all elements shown in Fig. 1, and now that the connector stem 40 has securely engaged the adaptor 24, the MVAS 10 can be adjusted horizontally towards the pilot's face by sliding the adaptor 24 inwards onto the connector stem 40 (or outwards if too close). When the optimal horizontal position for maximum glare reduction and comfort has been achieved, the pilot may then untighten (rotate counterclockwise) each hinge tensioner 34 so that the visor assembly may be adjusted to a vertical position that suits the current illumination conditions and aircraft orientation, and then locked into place by retightening (rotate clockwise) the same tensioners 34. Hinge tensioners 34 may be tightened just enough to permit easy and continuous readjustment of the visor assembly, which will remain securely in place without further tightening being needed. Vertical repositioning of the MVAS 10 visor assembly is illustrated in Figs. 2, 5a and 5b, while horizontal repositioning in Figs. 10a-10d.

**[Para 32]** Vertical repositioning of the visor assembly is achieved by loosening or tightening the hinge tensioner 34, a circular knob employing a threaded bolt which engages an equivalently threaded receiving end anchored in the hinge post 28. By this means the hinge tensioner 34 tightens or loosens the hinge assembly 26 around the bushing aperture 22 of the visor arm 14, as needed to adjust and lock the position of the visor assembly. (see Figs. 4a and 4b) Note that the head of the threaded bolt is embedded in the material of the hinge tensioner 34 (knob), and are therefore treated as one unit in this embodiment. Similarly, the threaded anchor is embedded in the hinge post 28, but other solutions may be employed to equivalent ends. The square orifice of the bushing 32 fits over the square end of the hinge post 28, thereby locking the two elements together and thereby providing an external bearing surface around which the bushing aperture 22 can rotate when the tensioner 34 is released.

[Para 33] Horizontal repositioning of the visor assembly is achieved by sliding the connector stem 40 in or out of the stem slot 44 of the adaptor 24. Additional securement and positional indexing is achieved by the use of an index spring 48 which presses through the spring port 50, in between the ratchet teeth 42 of the top edge of the connector stem 40, as shown in Fig. 8a, and inferred in Fig. 8b by means of Figs. 7 and 9a. When the connector stem 40 has slid far enough into the stem slot 44, the first index number 52 is visible through the index window 54, as shown in Fig. 9b. By this means, horizontal repositioning is controlled and indexed by reference to the index numbers 52 visible through the index windows 54 on the outside of each MVAS 10 adaptor 24, and this ensures that both sides of the visor assembly are positioned an equal, as well as optimal distance from the wearer's head.

[Para 34] Alternate embodiments of the novel device will now be described in detail, and include a universal headband connector, and a ratcheting tensioner. Other embodiments are not ruled out or similar methods leading to the same result.

[Para 35] The headband design employed on the most commonly used aviation headset at present is that made by the David Clark Company. A significant share of David Clark competitors employ a thicker headband design, as illustrated in Fig. 12a, so that in order to employ the MVAS 10 on these headsets, an alternate headband connector design is needed. In Fig. 12a, the universal headband connector 84 is shown attached to the alternate headband assembly 106 (TH = thicker headband) of the alternate style aviation headset 104 (TH).  The universal headband connector 84 uses an internal spring to compress two grip arms against the headband assembly 106 (TH) and a post. The universal headband connector 84 terminates with the same connector stem 40 as the preferred embodiment, and employs the same elements. Fig. 12b shows a detailed view of the elements of the universal headband connector 84, where the direction of the forces required to compress the internal spring (not shown) is illustrated by thick A & B arrows. By this means, in order to secure the universal headband connector 84 to the headband assembly 106 (TH), the upper grip 92 of the spring arm 94 (arrow A) is compressed towards the lower grip 96 (arrow B) by means of the hub extension 100, around the axis of the spring hub 98 and fulcrum post 90. While compressed, the appropriately sided universal headband connector 84 is then fitted onto the headband assembly 106 (TH) as shown in Fig. 12a, and then released. The upper grip 92 and lower grip 96 terminate in grip arrestors 102 as shown, which prevent the connector 84 from sliding forwards once attached. The surfaces of the upper 92 and lower grips 96, and the fulcrum post 90 may be sheathed in or impregnated with a frictional substance such as rubber or elastomer in order to more readily secure the connector 84 to the headband 106, and prevent their unwanted movement due to the excessive vibration common in an aircraft cockpit. The universal adapter can have a variety of embodiments which allow it to adapt to various headsets in a practical and unobtrusive manner, while permitting an equivalent overall functionality as in the preferred embodiment.

**[Para 36]** The hinge tensioner 34 may additionally employ a means to transmit audible and or tactile indication of its degree of rotation allowing the pilot to feel or hear index clicks when turning the tensioner 34 to ensure that the hinge assembly 26 is not overtightened. By this means the pilot can be aware that only a certain number of clicks are all they need to secure the visor assembly in place, and that more turns might damage the hinge assembly. One method to achieve this index mechanism would be a spring and pawl that would fit between the bushing 32 and the tensioner 34, and would require a means to trip the pawl as the tensioner 34 is adjusted around the outer circumference of the bushing 32. Index marks on the tensioner 34 and the visor arm 14 could also be used to prevent over-tensioning. Other methods may be used if they achieve the same results.

**[Para 37]** A secondary hinge mechanism where the visor arm attaches to the visor itself, so that when the visor is stowed in an upright position, the visor pivots flat to the pilots head, instead of projecting outwards.

**[Para 38]** The preferred materials for constructing the Multiposition Visor Adaptor System will now be described.  The visor may be made of polycarbonate, tempered glass, optical glass or similar transparent durable material capable of retaining optical sunshield coatings. The visor arm, most elements of the hinge assembly and the adaptor, excluding those mentioned below, can be made of rigid plastics, thermoplastics, carbon fiber, aluminum, etc. Washers may be brass, teflon, or other low friction durable surface. The bushing may be made of rigid plastic or teflon or carbon fiber, nylon; but if employing an index mechanism, will need to be made of a material strong enough to endure the wear of a pawl ratchet. The index spring and spring inside the universal headband connector would be made of high tension spring steel. The headband connector (DC) could be carbon fiber, high strength steel, or any material that has both the strength to support the weight of the remaining MVAS elements, and the ability to flex with the existing headband design. The arms, grips and post of the universal headband connector (TH) may use solid or hollow metal, or any other material strong enough to maintain structural integrity with repeated flexing, while consistently securing the connector to the headband. Grip coverings or coatings employed with the universal connector could be rubber or elastomer for enhanced in place securement to the headband.

**[Para 39]** Other advantages of using the MVAS over other methods or devices will now be described. The MVAS allows the pilot to protect their vision and hearing in a variety of environments. The MVAS is adaptable to a variety of currently used aviation headsets, while the basic design may comprise headset adaptors for additional designs not shown herein. An aircraft pilot now has the option of visor sunscreen protection when they need it, in the orientation that is most effective, and without sacrificing communication, hearing protection or comfort. The MVAS allows the pilot to fine tune the position of the visor to suit their equipment, environment, and changing circumstances. At any time, if the visor is not needed, it may be stowed in the fully up position and locked, so that it is out of the way, yet accessible if needed. Or the visor assembly may be easily removed when not required, and quickly and easily reattached when needed.

**[Para 40]** The MVAS can have applications outside of its use with aviation communication or hearing protectors, such as in sport shooting, automobile racing, emergency response (helmets) and similar activities where both hearing, communication, and adjustable vision protection are needed.

**[Para 41]** The foregoing description of the preferred apparatus and method of installation should be considered as illustrative only, and not limiting. Other forming techniques and other materials may be employed towards similar ends. Various changes and modifications will occur to those skilled in the art, without departing from the true scope of the invention as defined in this disclosure.

## DRAWINGS

BRIEF DESCRIPTION OF THE DRAWINGS

**[Para 42]** Fig. 1 shows an outside isometric view of the Multiposition Visor Adaptor System (MVAS) attached to a David Clark Aviation Headset.

**[Para 43]** Fig. 2 shows a side view of the Multiposition Visor Adaptor System (MVAS) attached to an Aviation Headset (DC), with the visor in the down position.

**[Para 44]** Fig. 3 shows an outside isometric view of a visor arm being secured to the MVAS visor.

**[Para 45]** Fig. 4a shows an exploded isometric outside view of the hinge assembly elements employed with the adaptor and visor arm.

**[Para 46]** Fig. 4b shows an exploded isometric inside view of the hinge assembly elements employed with the adaptor and visor arm.

**[Para 47]** Fig. 5a shows a side view of the MVAS attached to a David Clark headset with the visor in the mid position.

**[Para 48]** Fig. 5b shows a side view of the MVAS attached to a David Clark headset with the visor in the up position.

**[Para 49]** Fig. 6 shows a close-up side view of the MVAS elements used to adapt to a David Clark headset.

**[Para 50]** Fig. 7 shows a close-up isometric outside view of the MVAS adaptor without visor arm, and a David Clark (DC) headband connector.

**[Para 51]** Fig. 8a shows a close-up inside view of the MVAS adaptor.

**[Para 52]** Fig. 8b shows an inside view of the MVAS adaptor with a headband connector (DC) fully inserted into its stem slot.

**[Para 53]** Fig. 9a shows an outside view of the MVAS adaptor and a DC headband connector showing index numbers.

**[Para 54]** Fig. 9b shows an outside view of the MVAS adaptor with a DC headband connector showing index numbers partly inserted into the adaptor.

**[Para 55]** Fig. 10a shows a side view of the MVAS adaptor-visor assembly removed from the connector stem of the David Clark headset.

**[Para 56]** Fig. 10b shows a side view of the MVAS adaptor-visor assembly at the “out” position of the connector stem of the David Clark headset.

**[Para 57]** Fig. 10c shows a side view of the MVAS adaptor-visor assembly at the “mid” position of the connector stem of the David Clark headset.

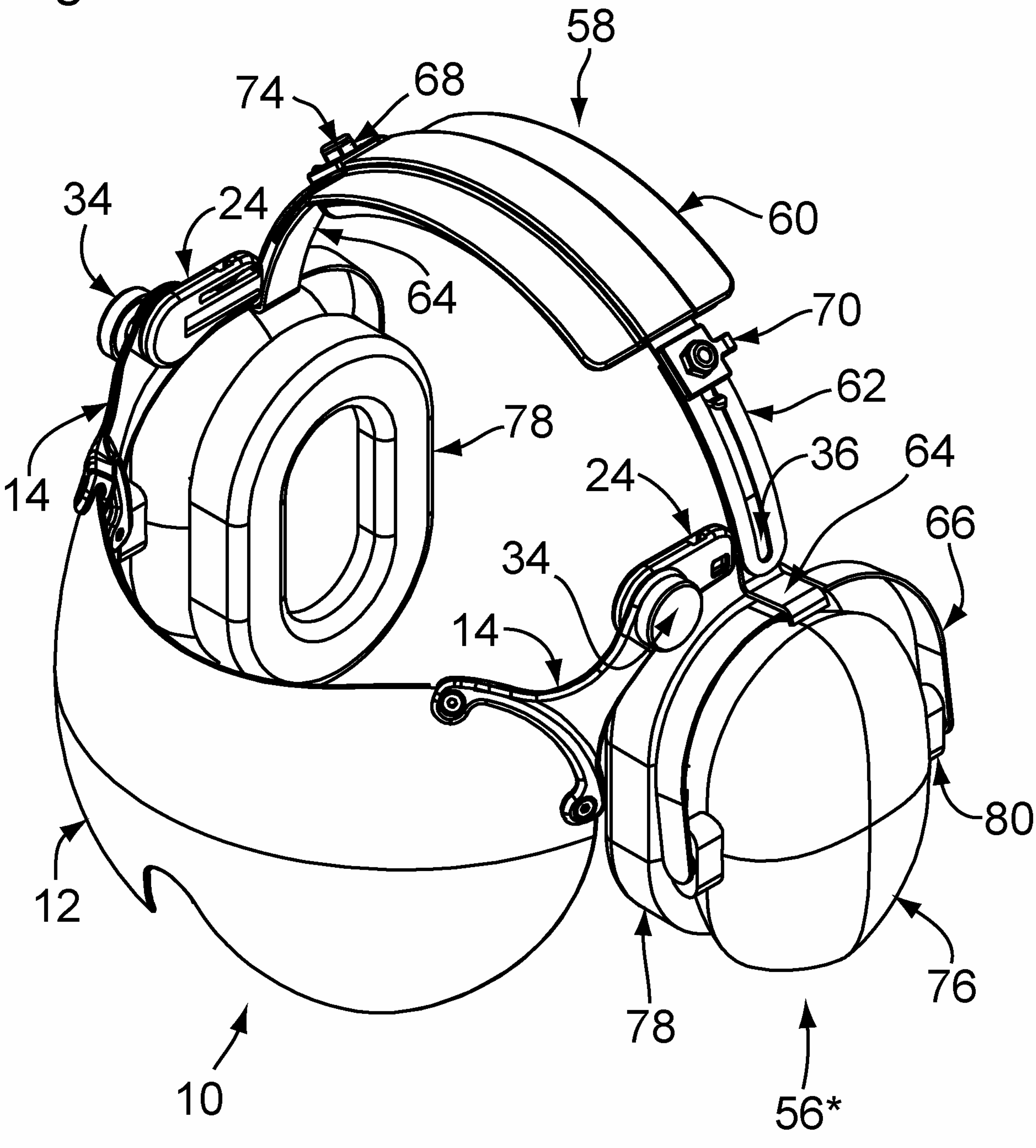
**[Para 58]** Fig. 10d shows a side view of the MVAS adaptor-visor assembly at the “in” position of the connector stem of the David Clark headset.

**[Para 59]** Fig. 11 shows a facing view of the David Clark headset in order to show where the MVAS headband connector is inserted and secured.

**[Para 60]** Fig. 12a shows an outside isometric view of an alternate aviation headset and headband configuration with a universal MVAS headband connector.

**[Para 61]** Fig. 12b shows a close-up outside isometric view of the universal MVAS headband connector illustrating its securement method.

Fig. 1




(* = Prior Art)

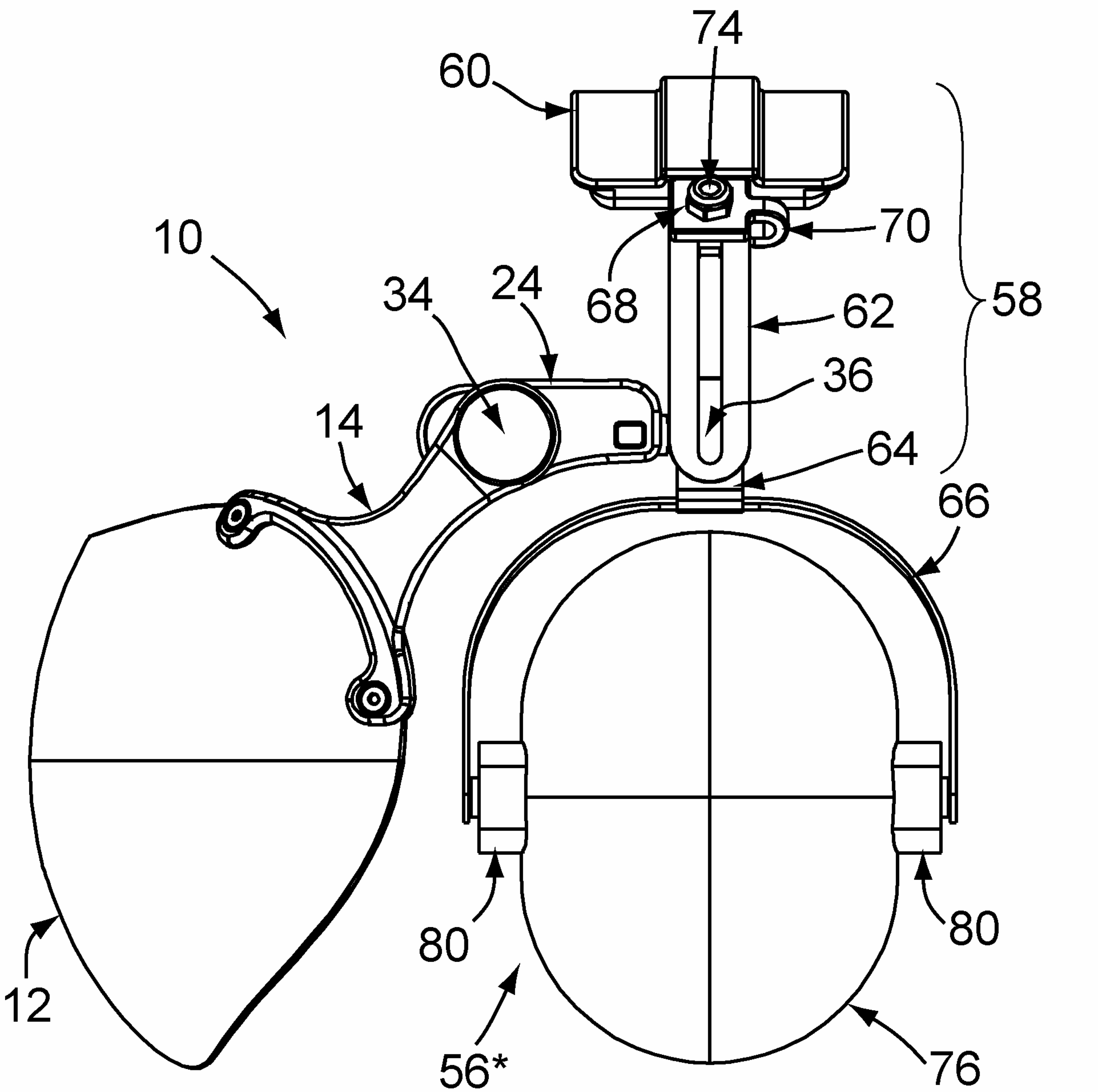



Fig. 2

(* = Prior Art)

Fig. 3

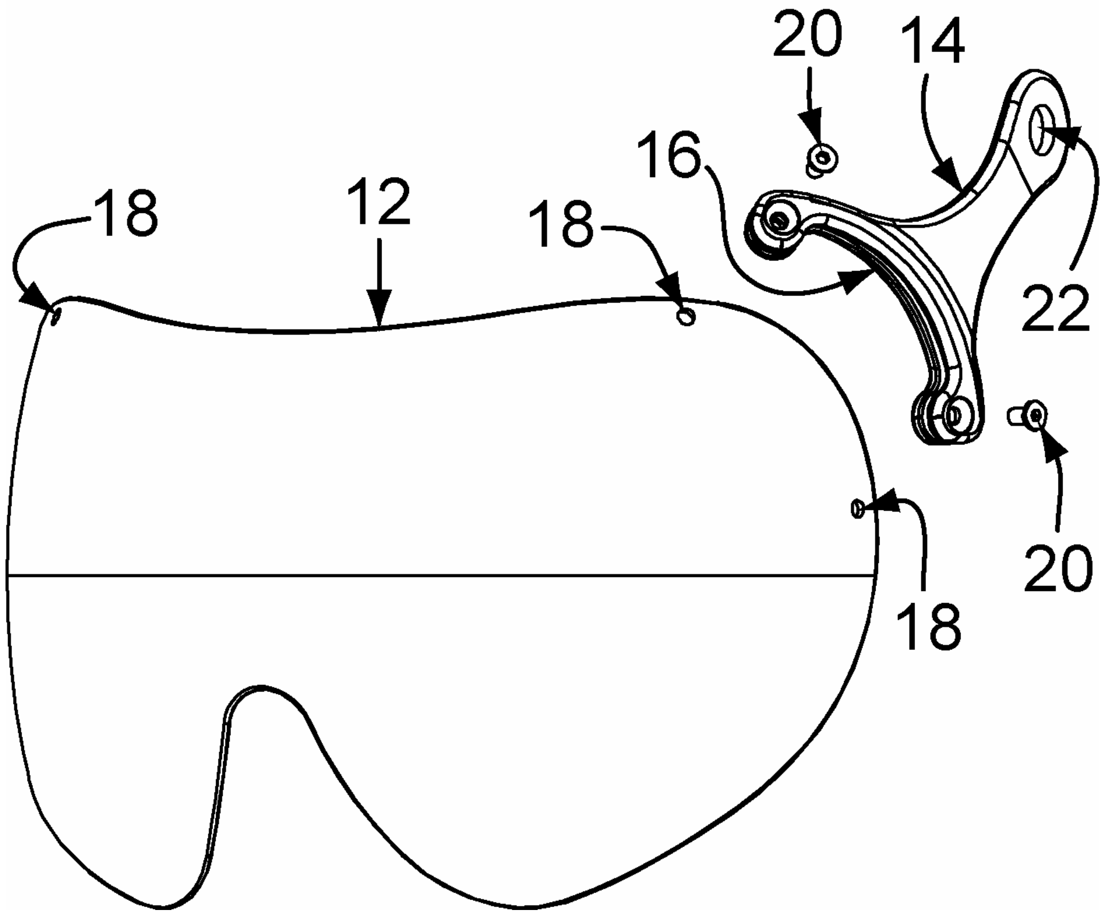


Fig. 4a

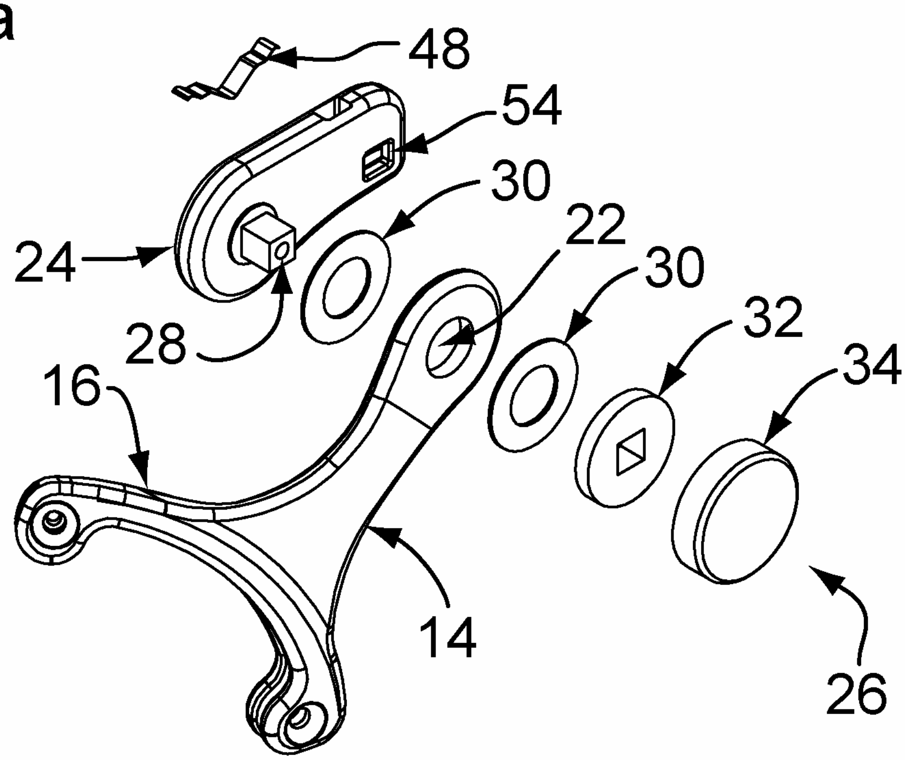

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Fig. 4b

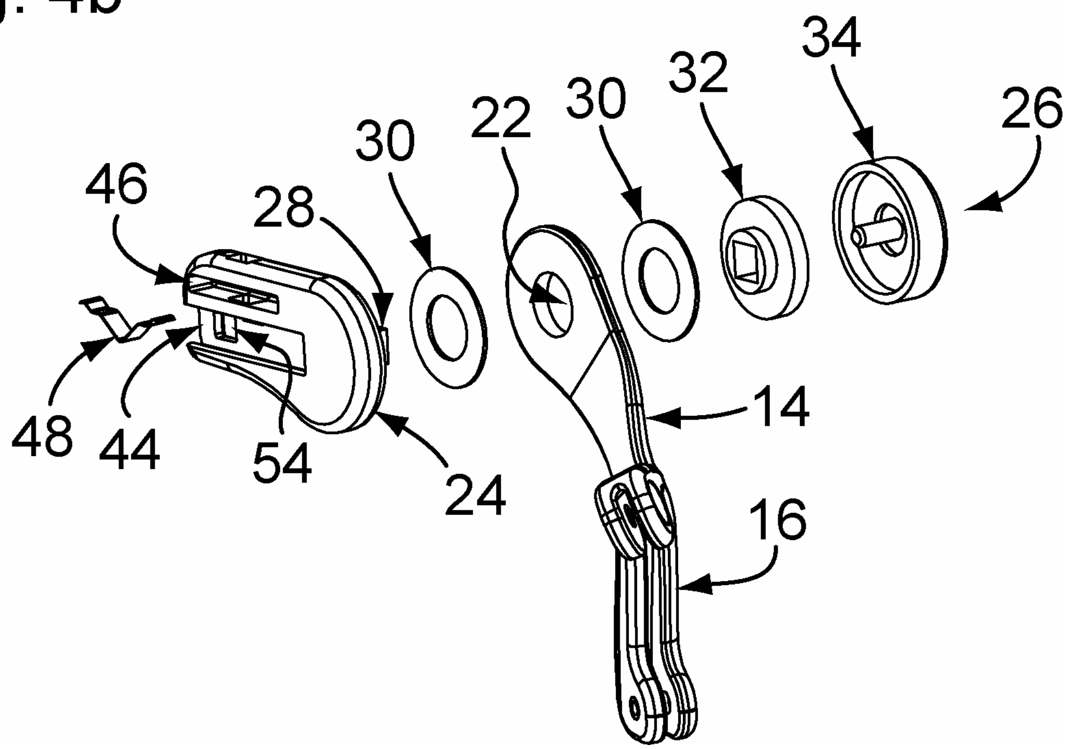
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Fig. 5a

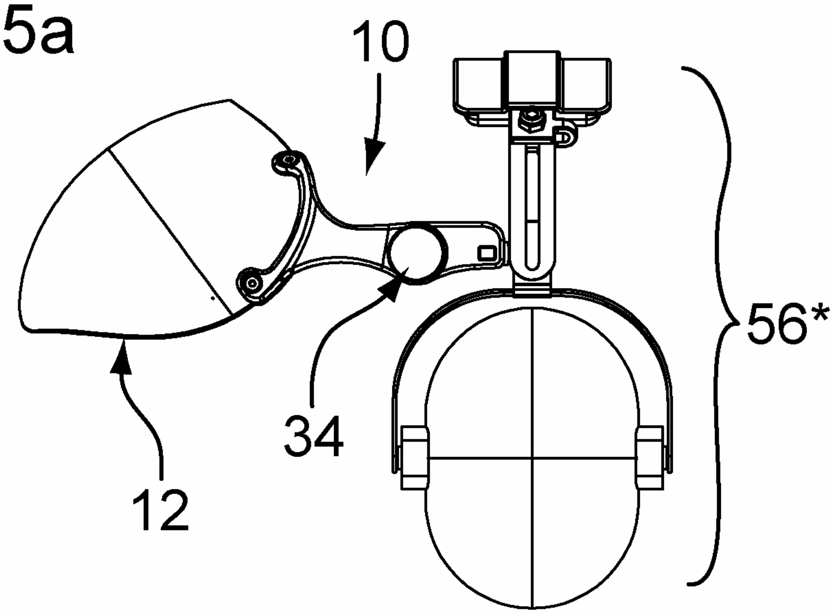


Fig. 5b

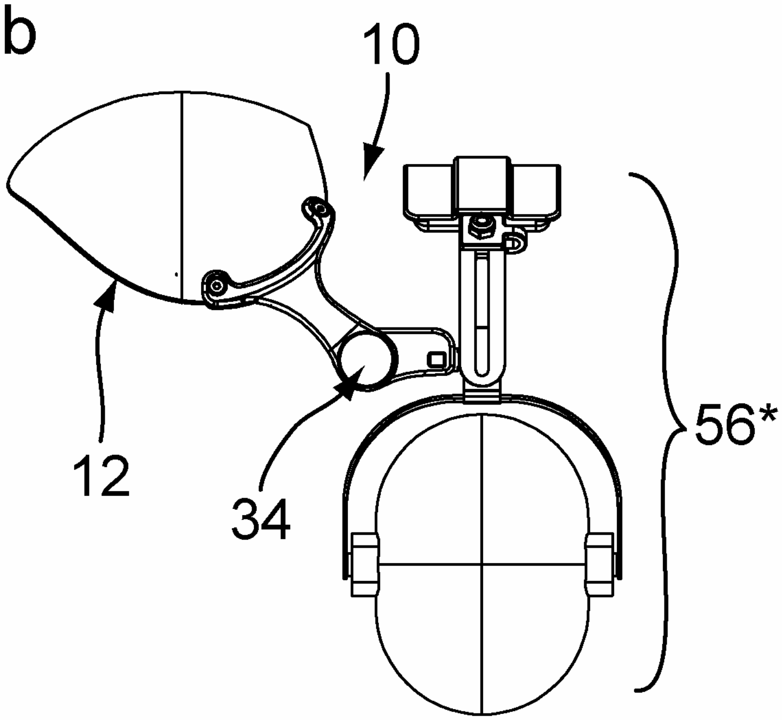


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Fig. 6

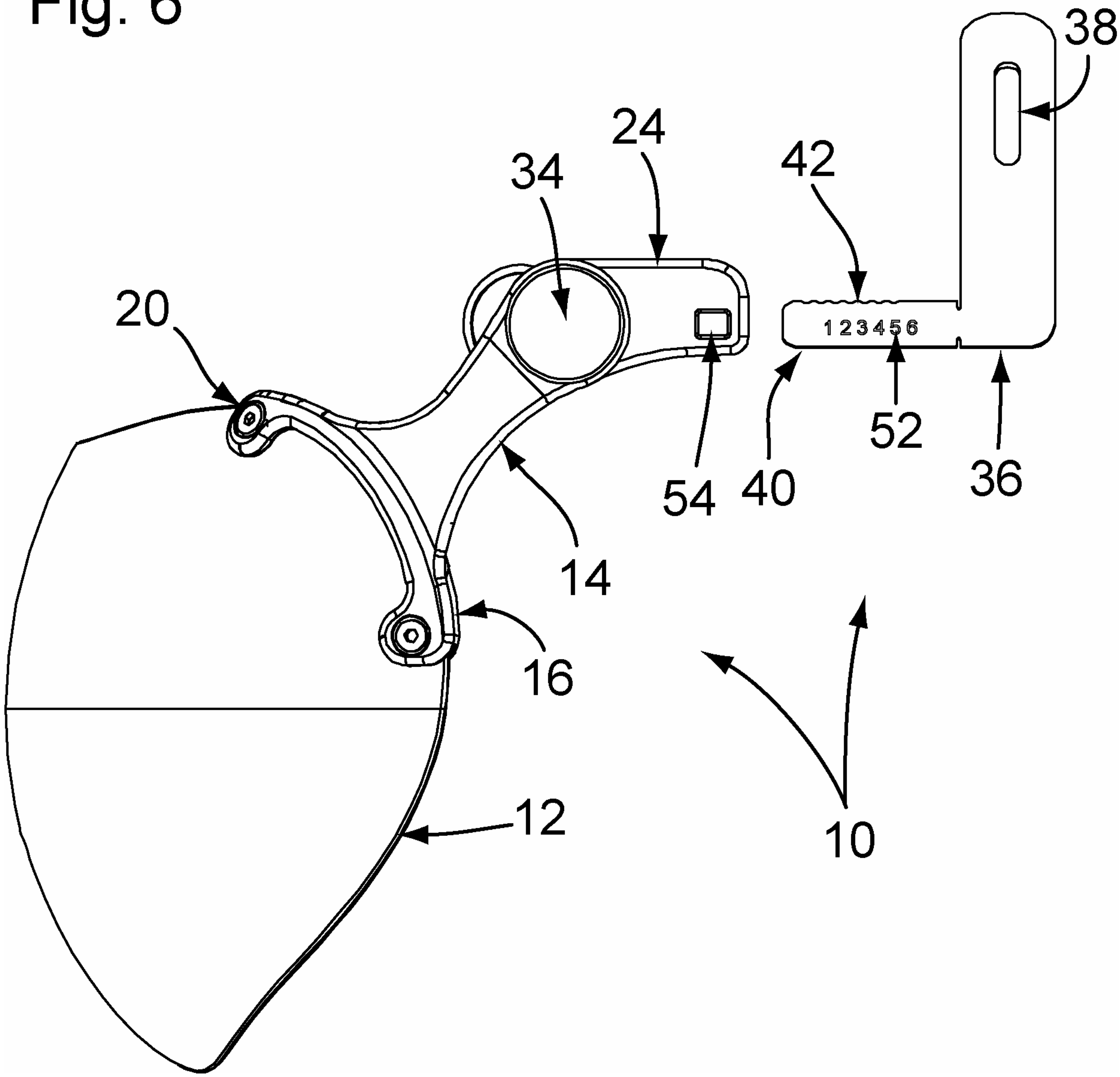


Fig. 7

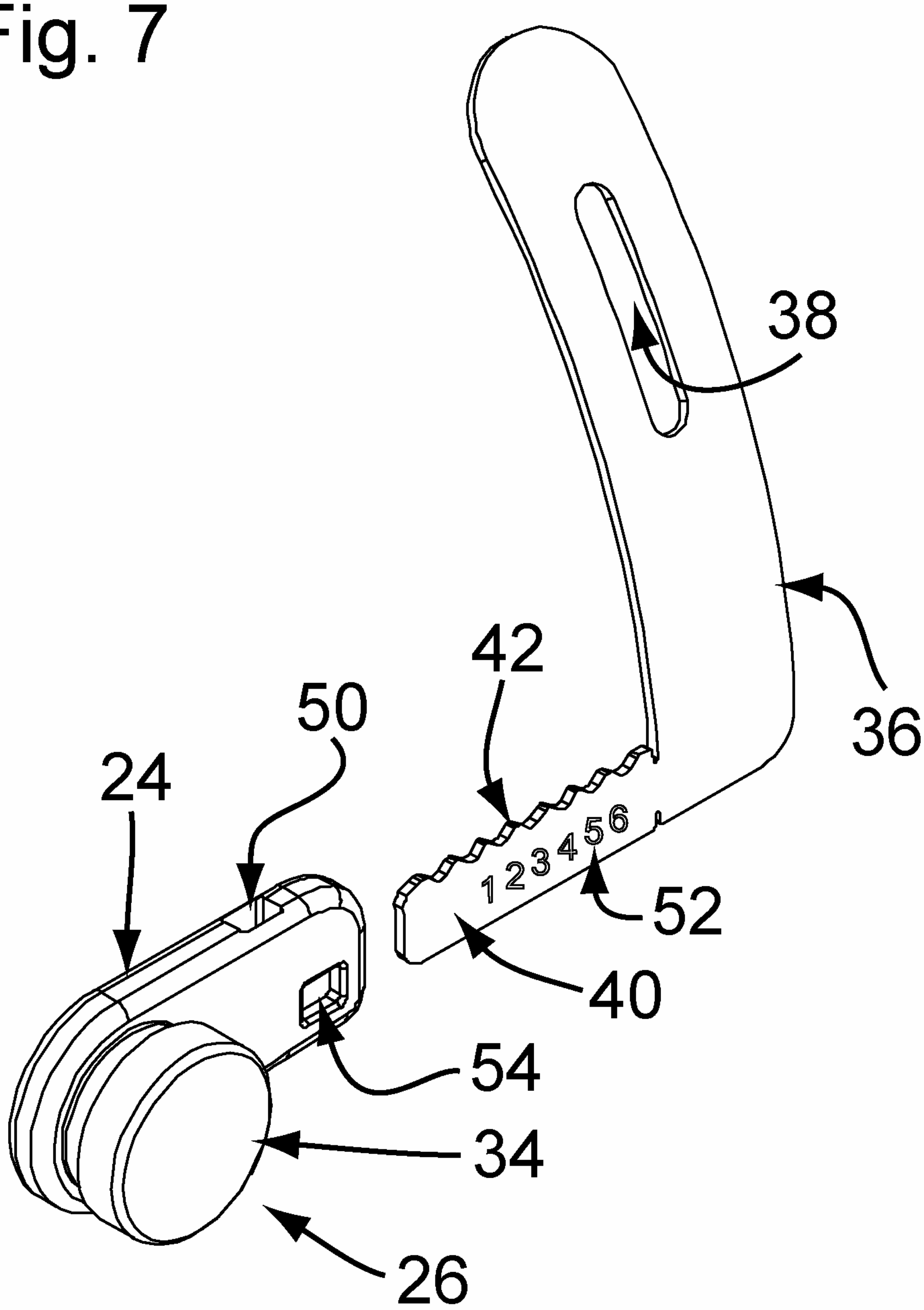


Fig. 8a

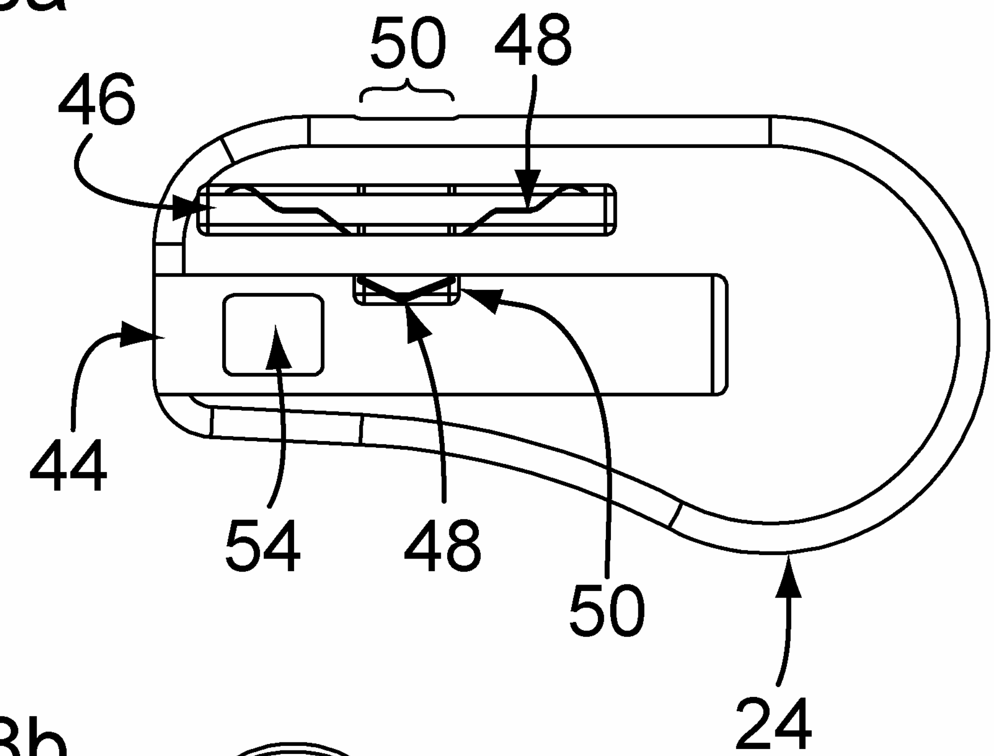



Fig. 8b

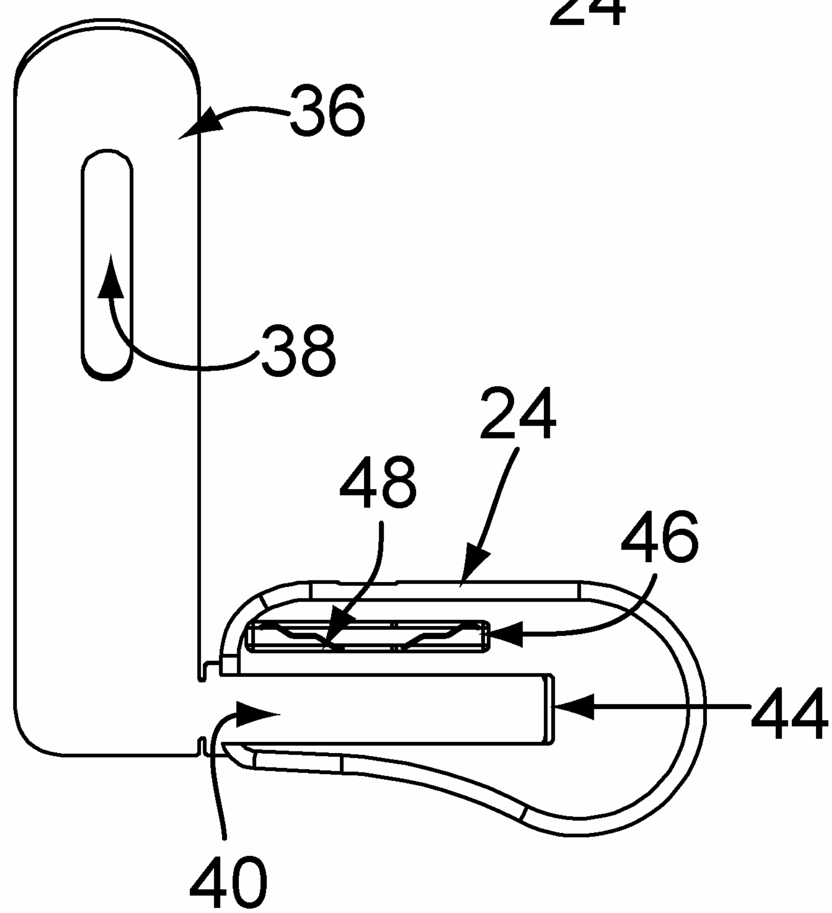


Fig. 9a

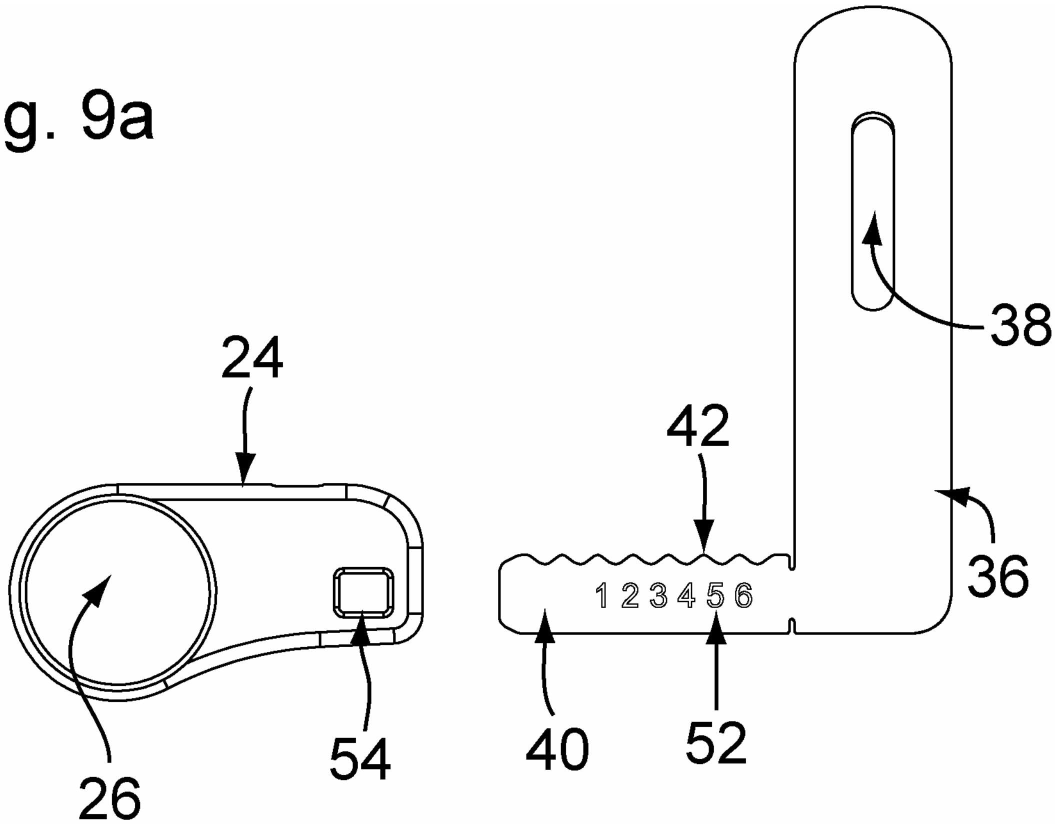



Fig. 9b

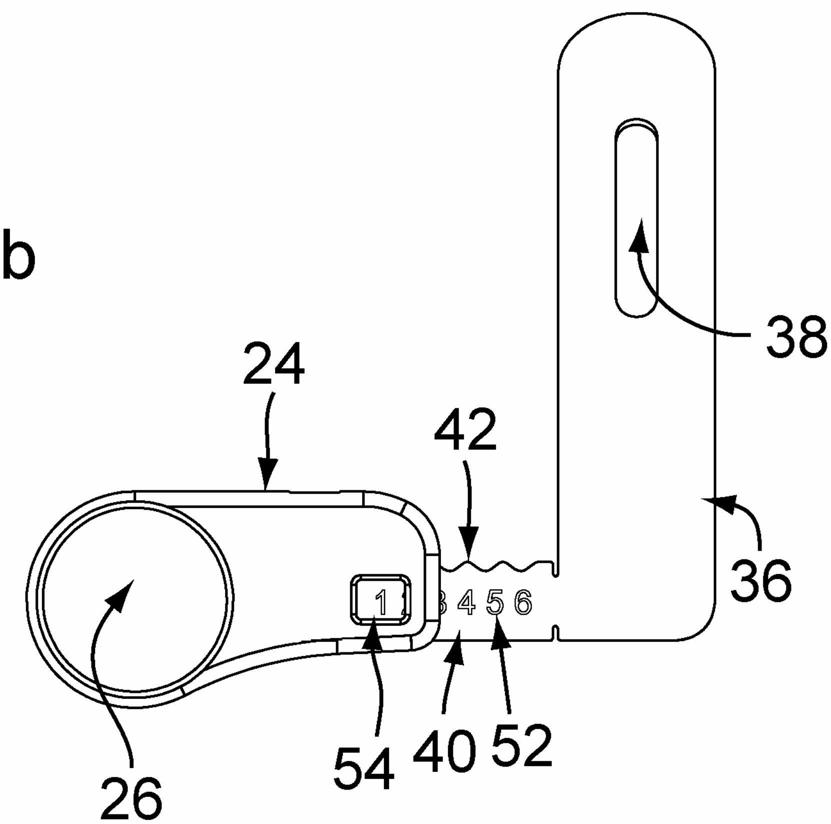


Fig. 10a

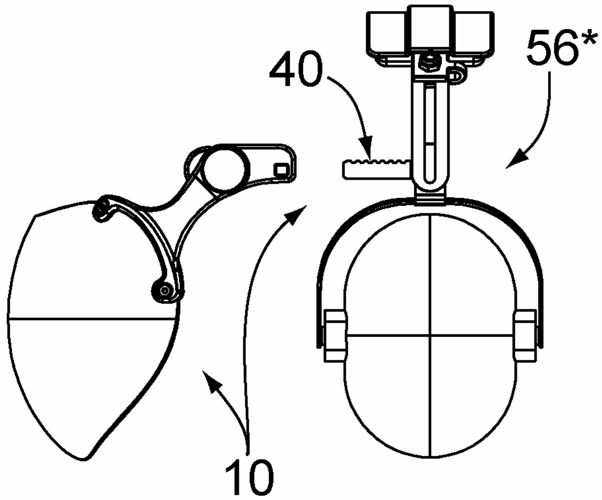



Fig. 10b

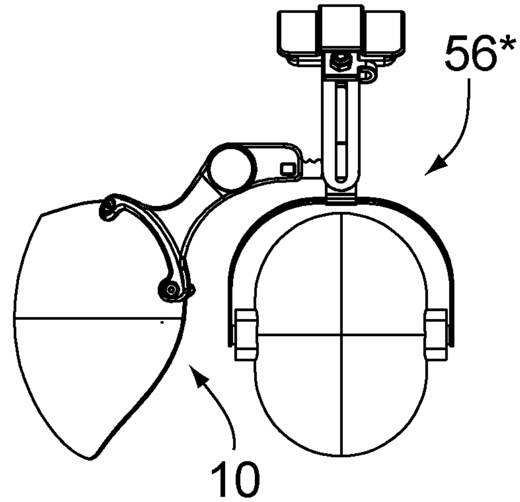



Fig. 10c

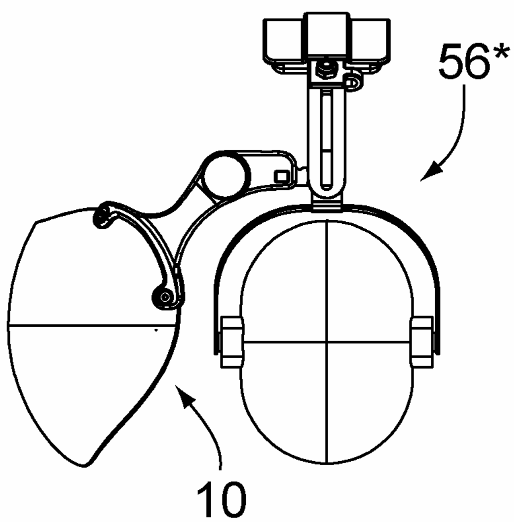
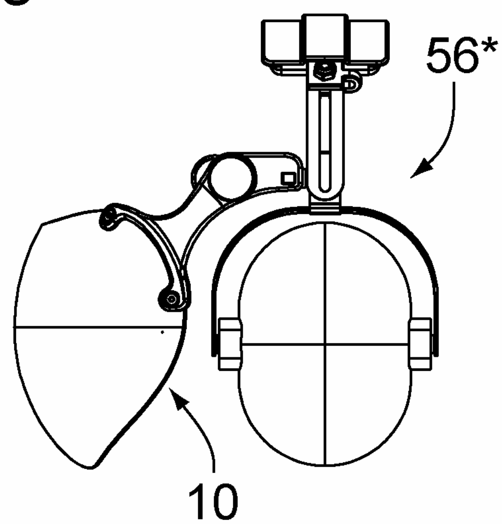



Fig. 10d




(* = Prior Art)

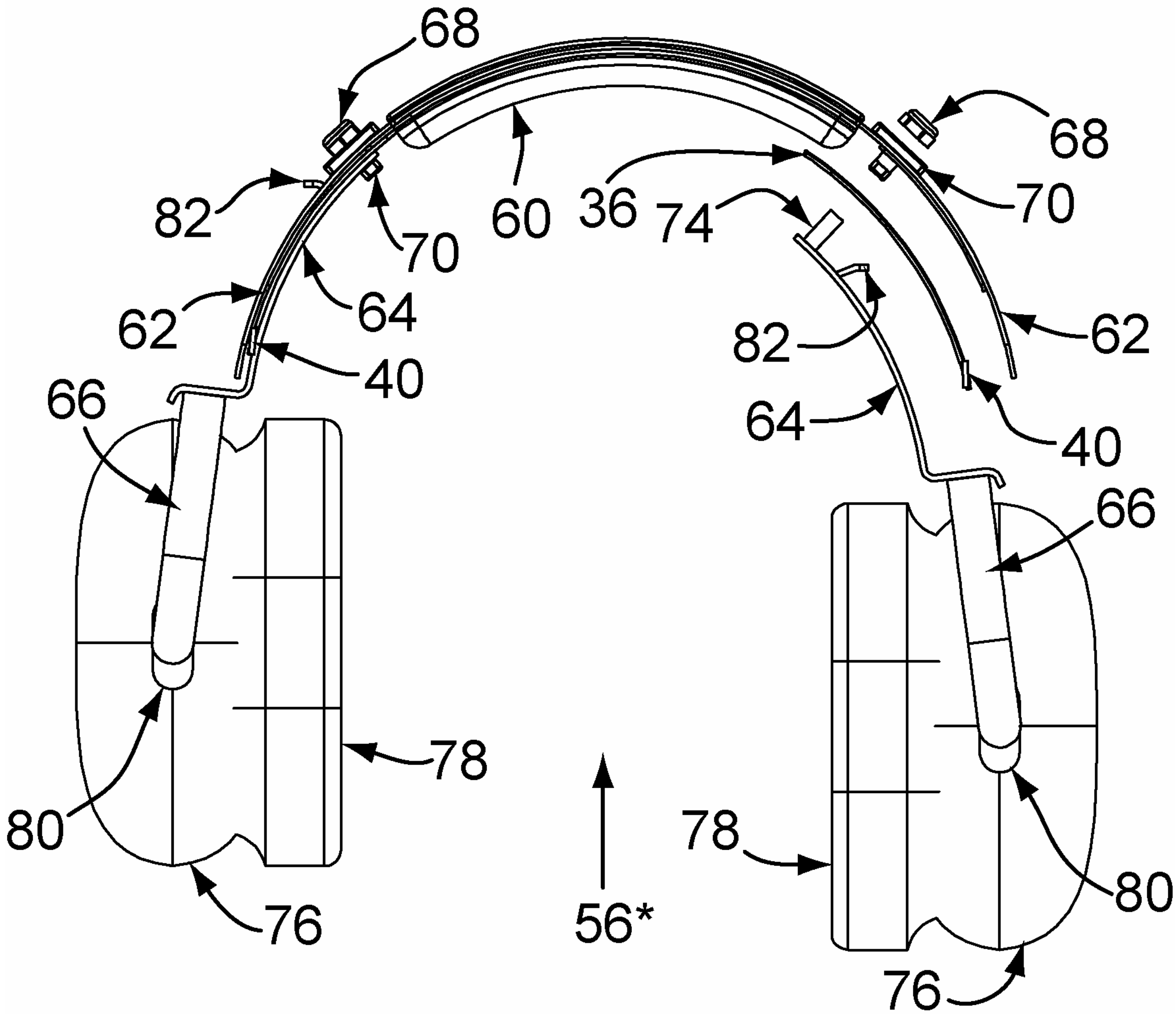
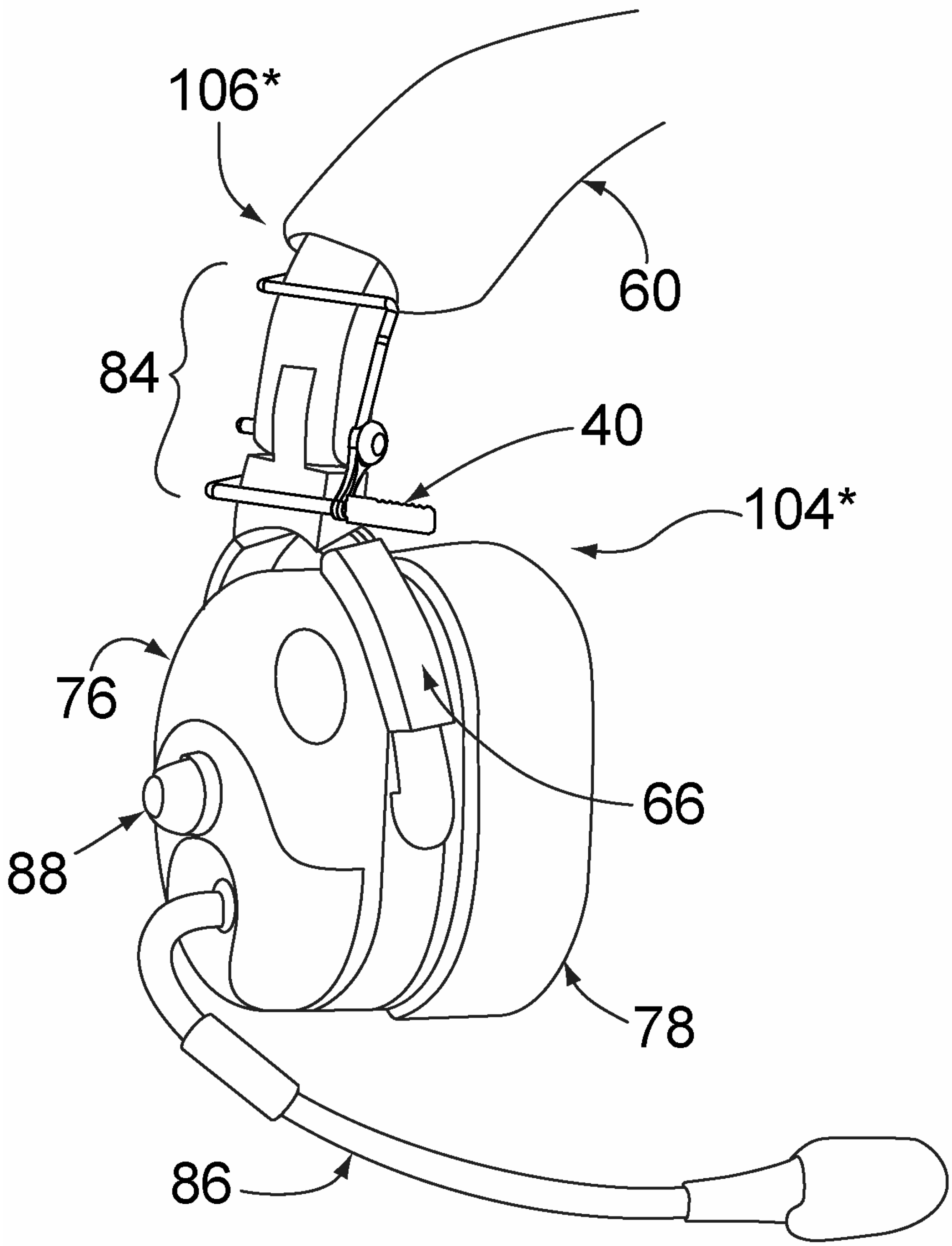



Fig. 11

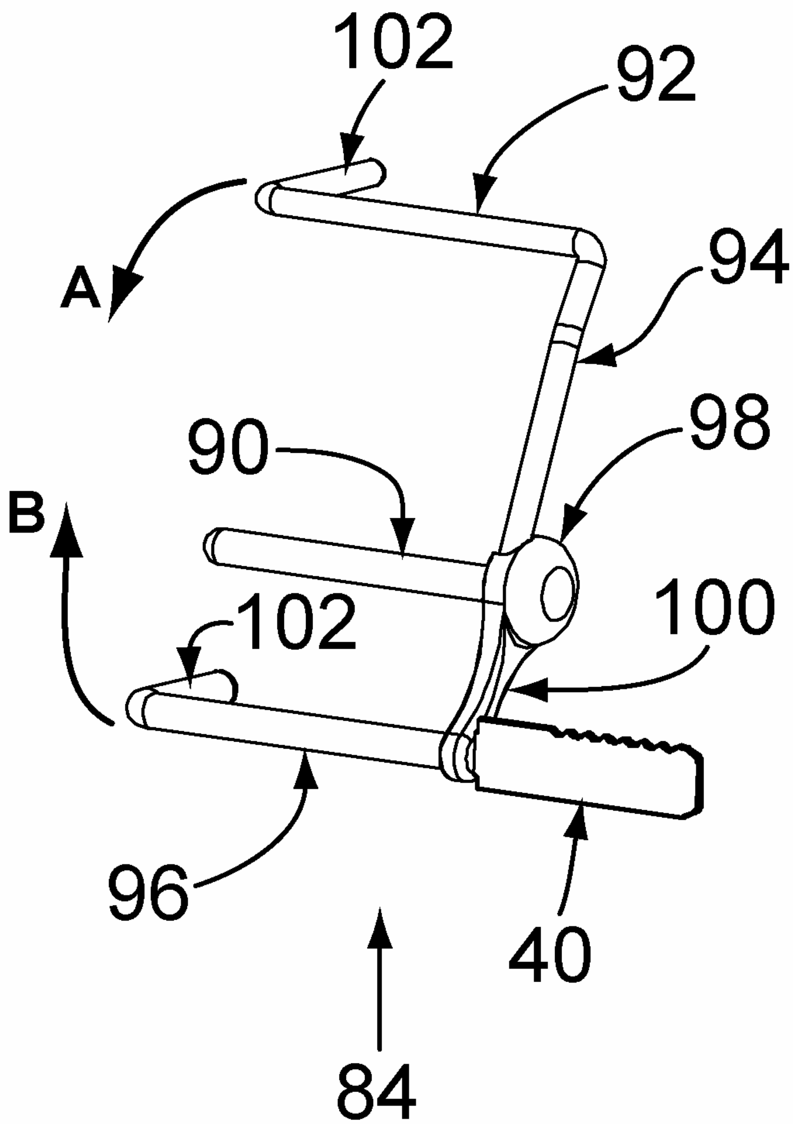
(* = Prior Art)

Fig. 12a




(* = Prior Art)

Fig. 12b



Part Numbers:

| | |
|---|---|
| 10 | Multiposition Visor Adaptor System (MVAS) |
| 12 | Visor |
| 14 | Visor Arm |
| 16 | Visor Securement |
| 18 | Securement Hole |
| 20 | Securement Bolt |
| 22 | Bushing Aperture |
| 24 | Adaptor |
| 26 | Hinge Assembly |
| 28 | Hinge Post |
| 30 | Washer |
| 32 | Bushing |
| 34 | Hinge Tensioner |
| 36 | Headband Connector (DC) |
| 38 | Locking Bolt Slide |
| 40 | Connector Stem |
| 42 | Ratchet Teeth |
| 44 | Stem Slot |
| 46 | Spring Slot |
| 48 | Index Spring |
| 50 | Spring Port |
| 52 | Index Number |
| 54 | Index Window |
| 56 | Aviation Headset* (DC) |
| 58 | Headband Assembly* (DC) |
| 60 | Headpad* |
| 62 | Headband Spring* |
| 64 | Stirrup Clamp* |
| 66 | Stirrup* |
| 68 | Headband Locknut* |
| 70 | Cable Clip* |
| 74 | Clamp Locking Bolt * |
| 76 | Noise Attenuating Dome* |
| 78 | Ear Seal* |
| 80 | Stirrup Mount* |
| 82 | Clamp Guide* |

| | |
|---|---|
| 84 | Universal Headband Connector |
| 86 | Microphone Boom* |
| 88 | Volume Control* |
| 90 | Fulcrum Post |
| 92 | Upper Grip |
| 94 | Spring Arm |
| 96 | Lower Grip |
| 98 | Spring Hub |
| 100 | Hub Extension |
| 102 | Grip Arrestor |
| 104 | Aviation Headset* (TH) |
| 106 | Headband Assembly* (TH) |
| 108 | |
| 110 | |
| 112 | |
| 114 | |
| 116 | |
| 118 | |
| 120 | |

(DC = David Clark style) (TH = Thicker headband style) (* = Prior Art)