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(54) COMMEMORATIVE RING WITH FLIP-TOP

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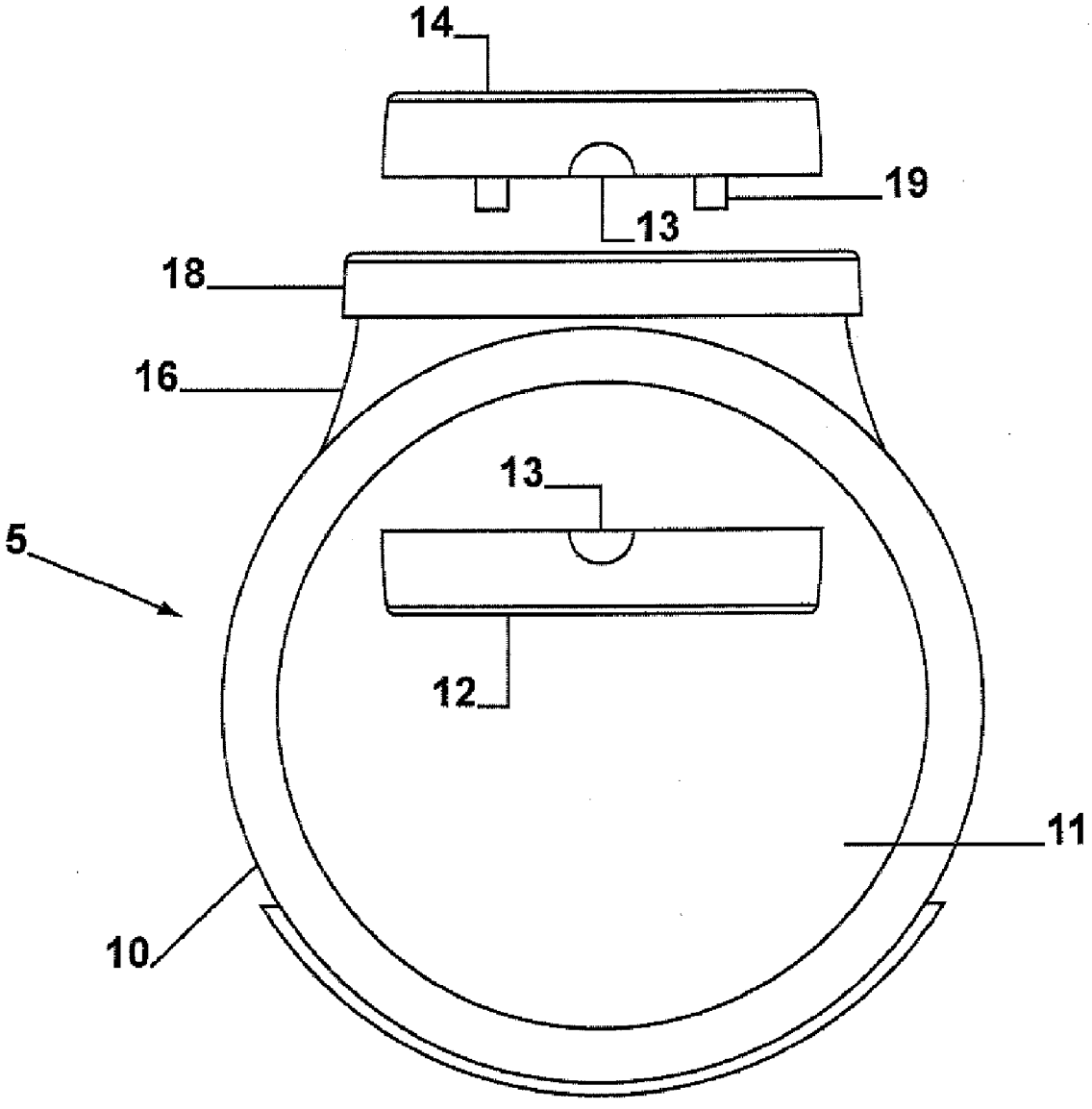
(57) **ABSTRACT**

A finger ring comprising a shank with a commemorative outer surface design and a dihedral setting pivotably-mounted in an aperture in the shank and having a design element on at least one face of the setting. In an embodiment, the design element on at least one face of the setting is co-commemorative with the design on the shank. In an alternate embodiment a finger ring is disclosed with a uniformly-tapered shank having an ornamented outer surface and a setting pivotably-mounted in an aperture in the shank. The setting has first and second faces, and in an embodiment one of the faces comprises a design element that is co-commemorative with a design element on the shank.



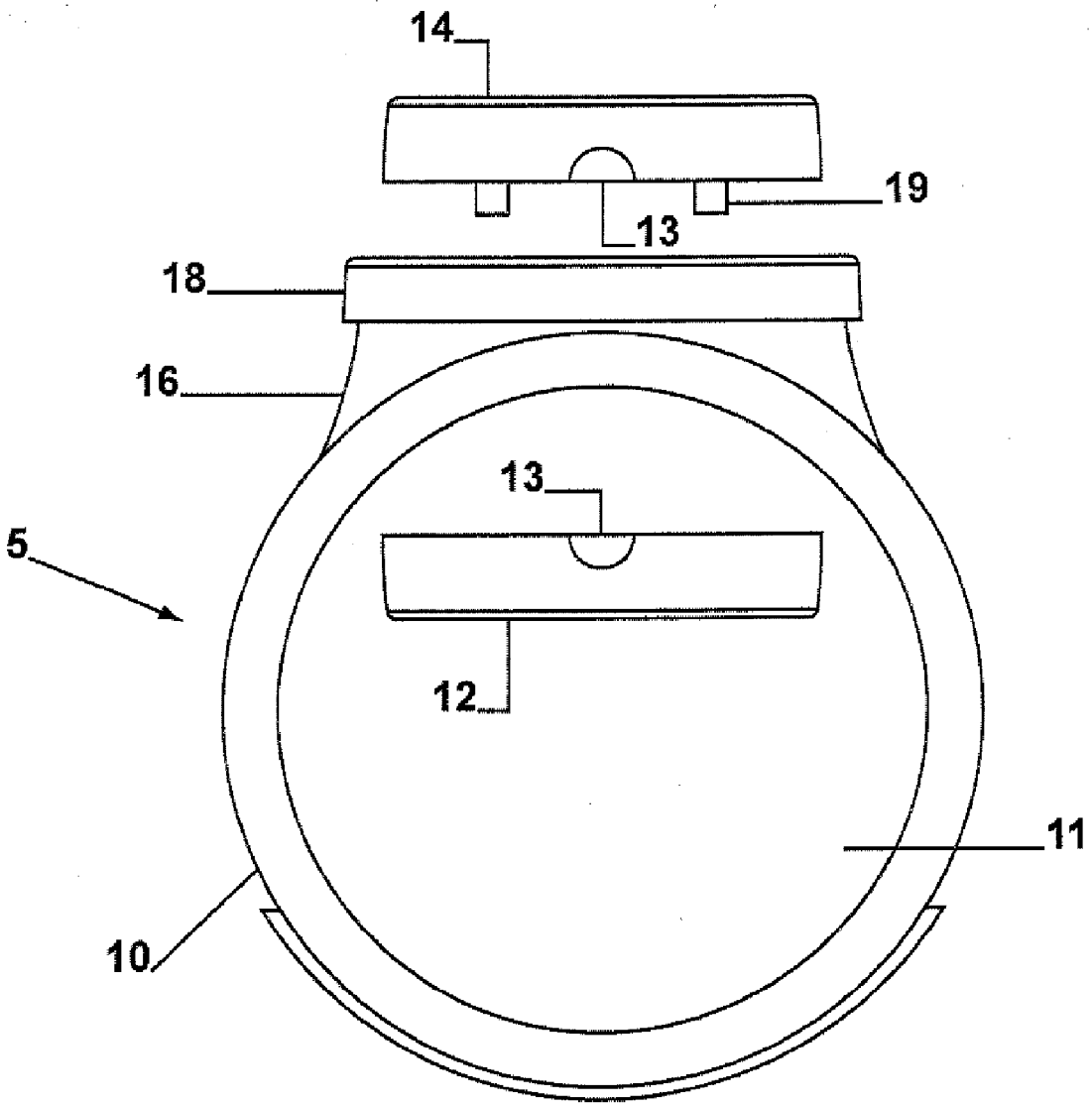


Fig. 1

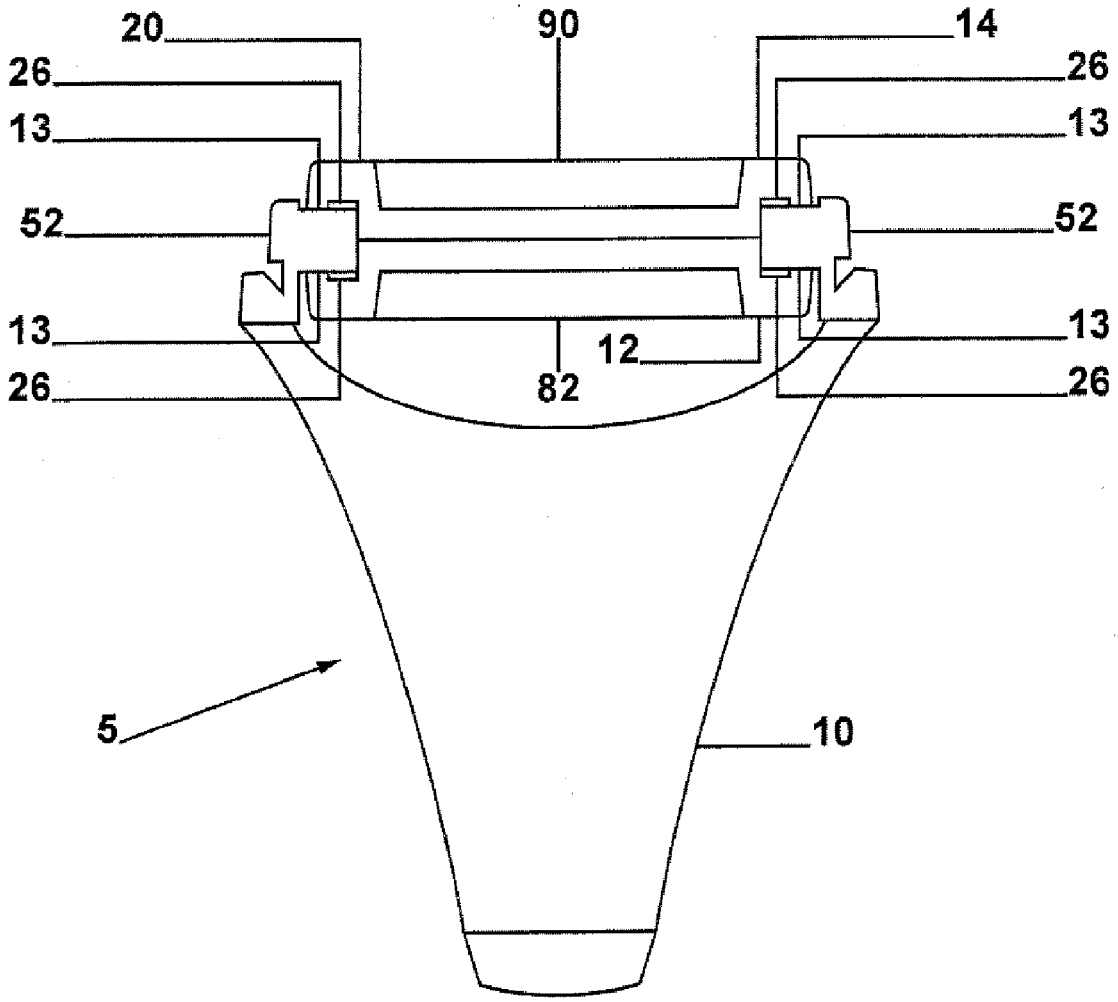


Fig. 2

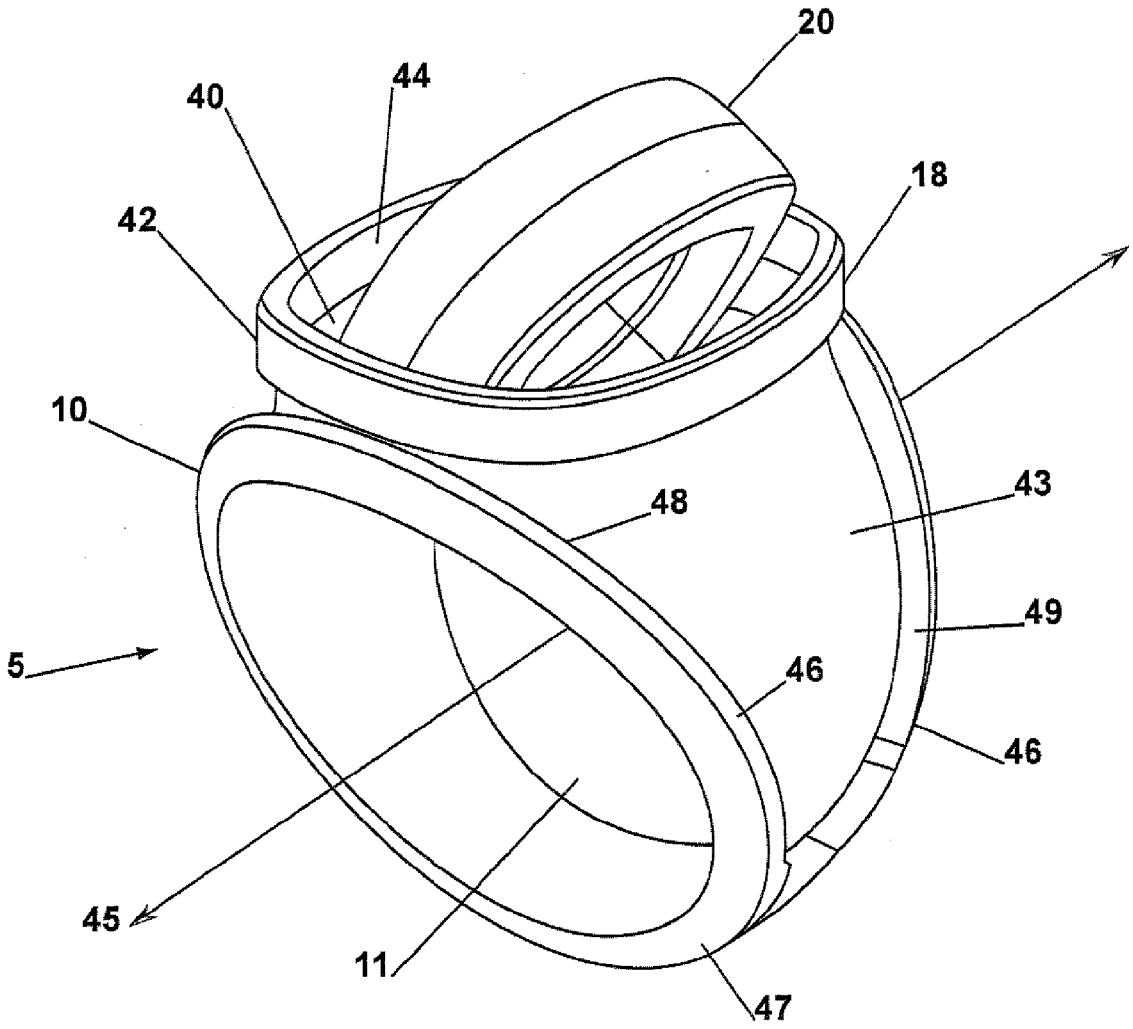


Fig. 3

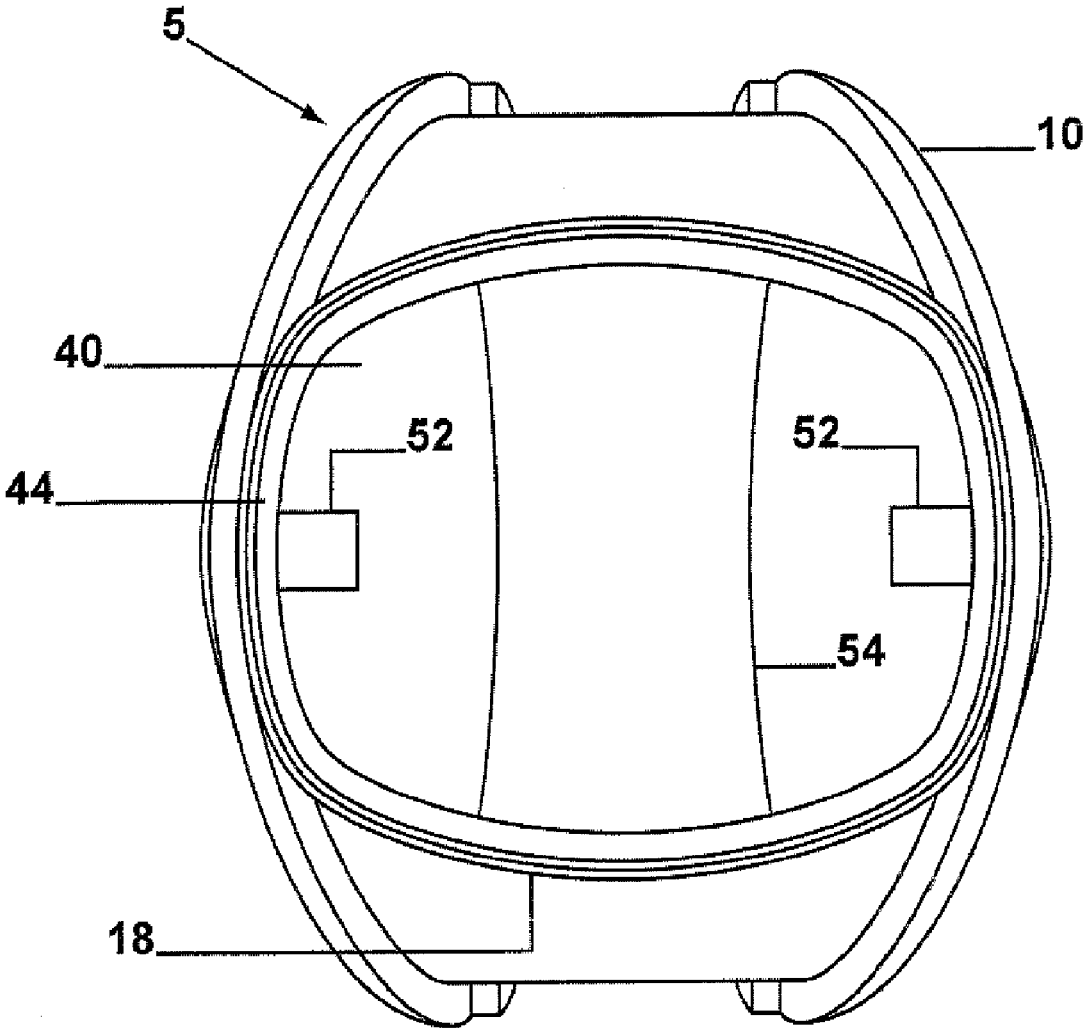
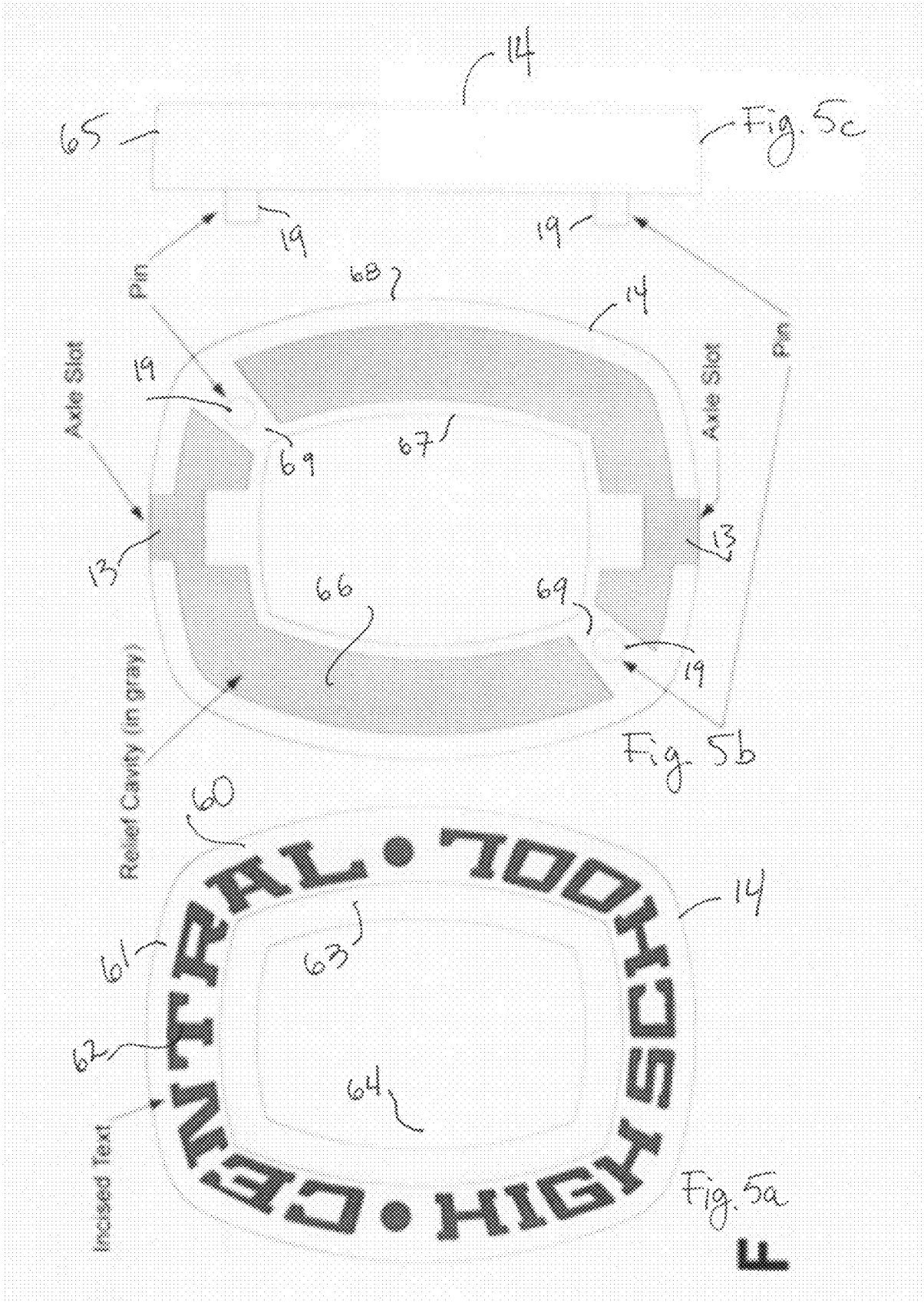
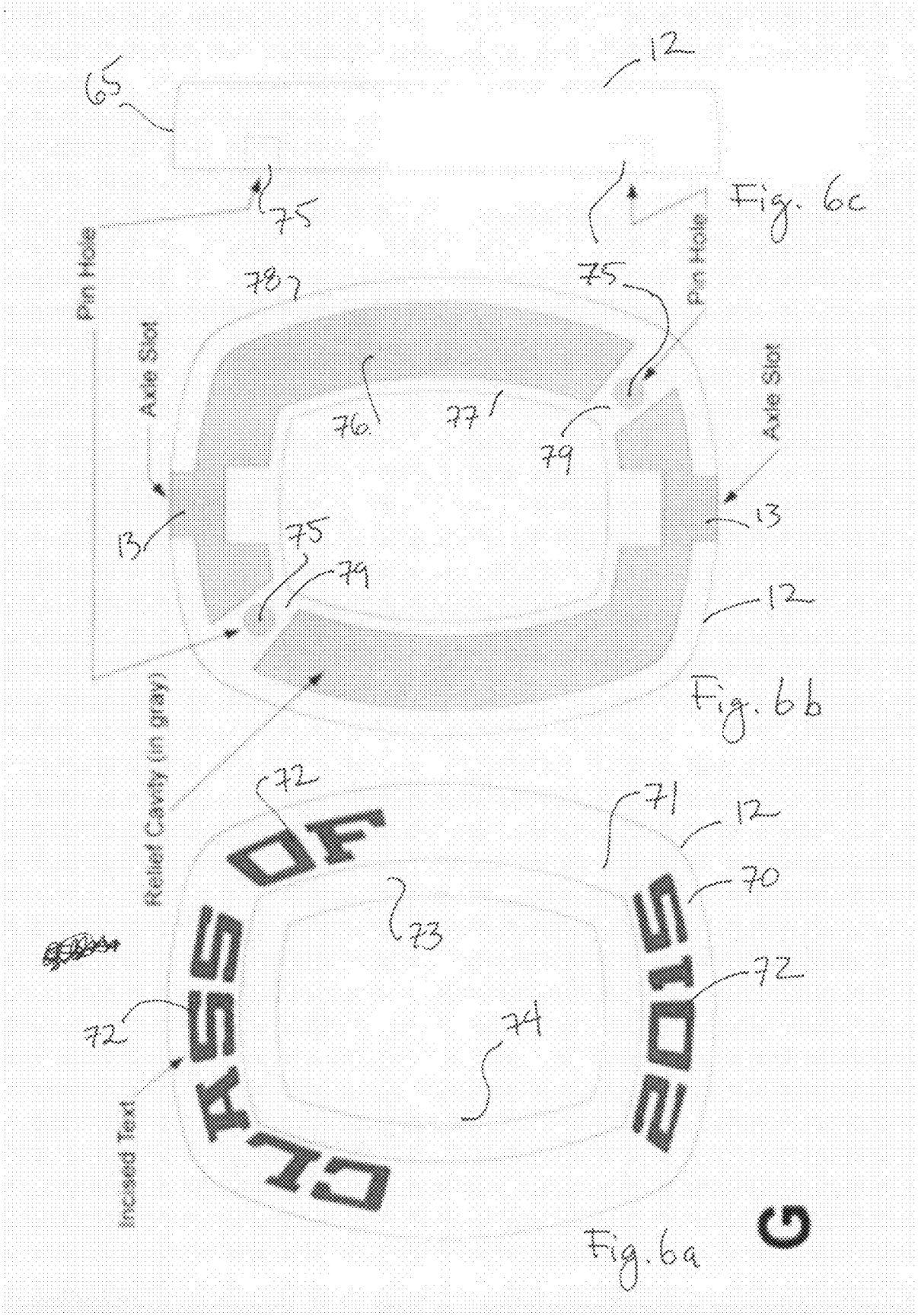


Fig. 4


14
65
Fig. 5c
19
19
Pin
68
14
Pin
Axle Slot
19
Axle Slot
69
67
13
13
66
69
19
Relief Cavity (in gray)
Fig. 5b
60
14
61
63
62
64
Incised Text
CENTRAL • TOOLING • HIGH SCHOOL
Fig. 5a


65
12
75
Pin Hole
Axle Slot
787
75
Pin Hole
Axle Slot
76
77
79
13
75
79
12
Raised Cavity (in gray)
72
71
12
70
72
73
74
Incised Text
Fig. 6c
Fig. 6b
Fig. 6a

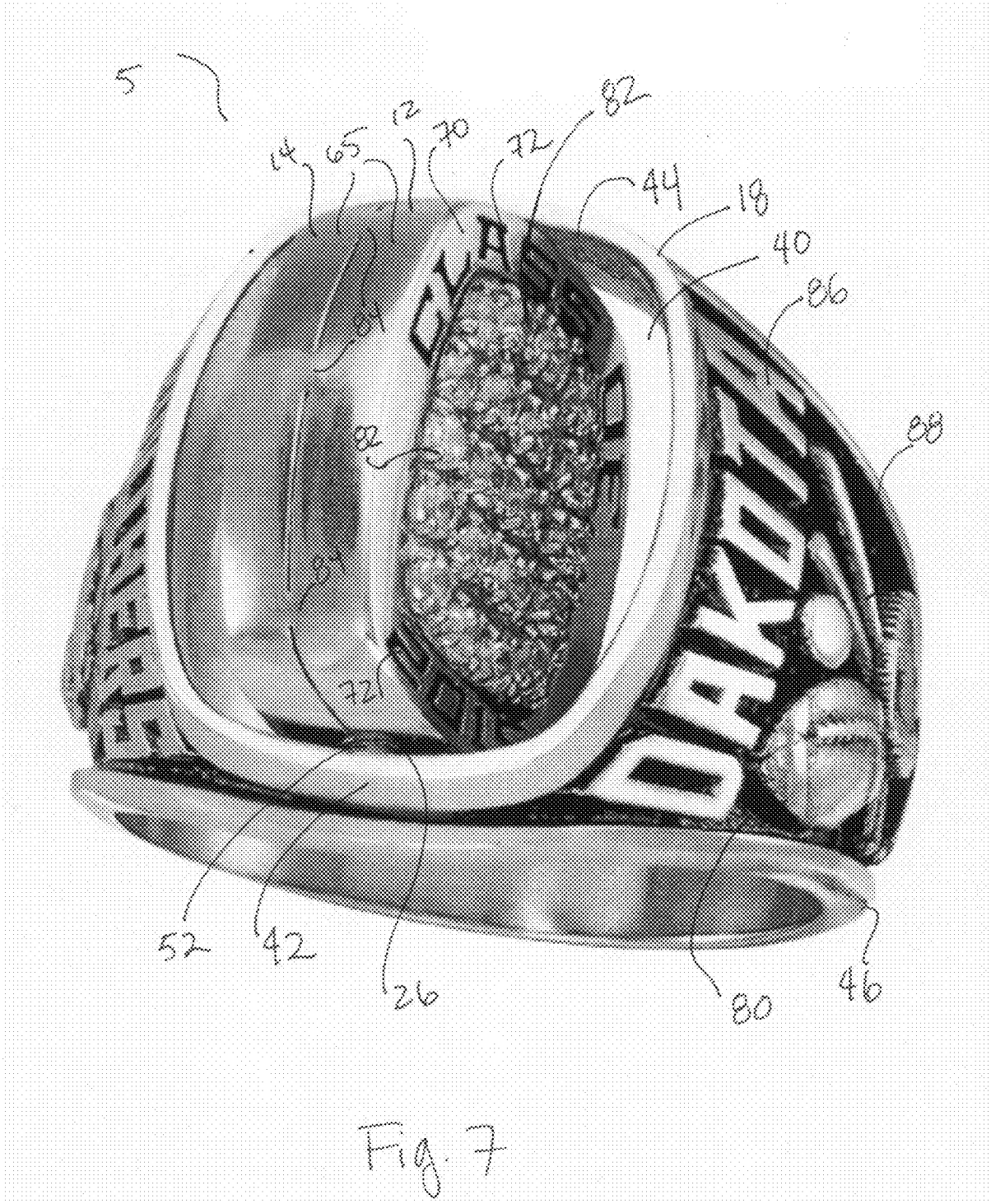


Fig. 7

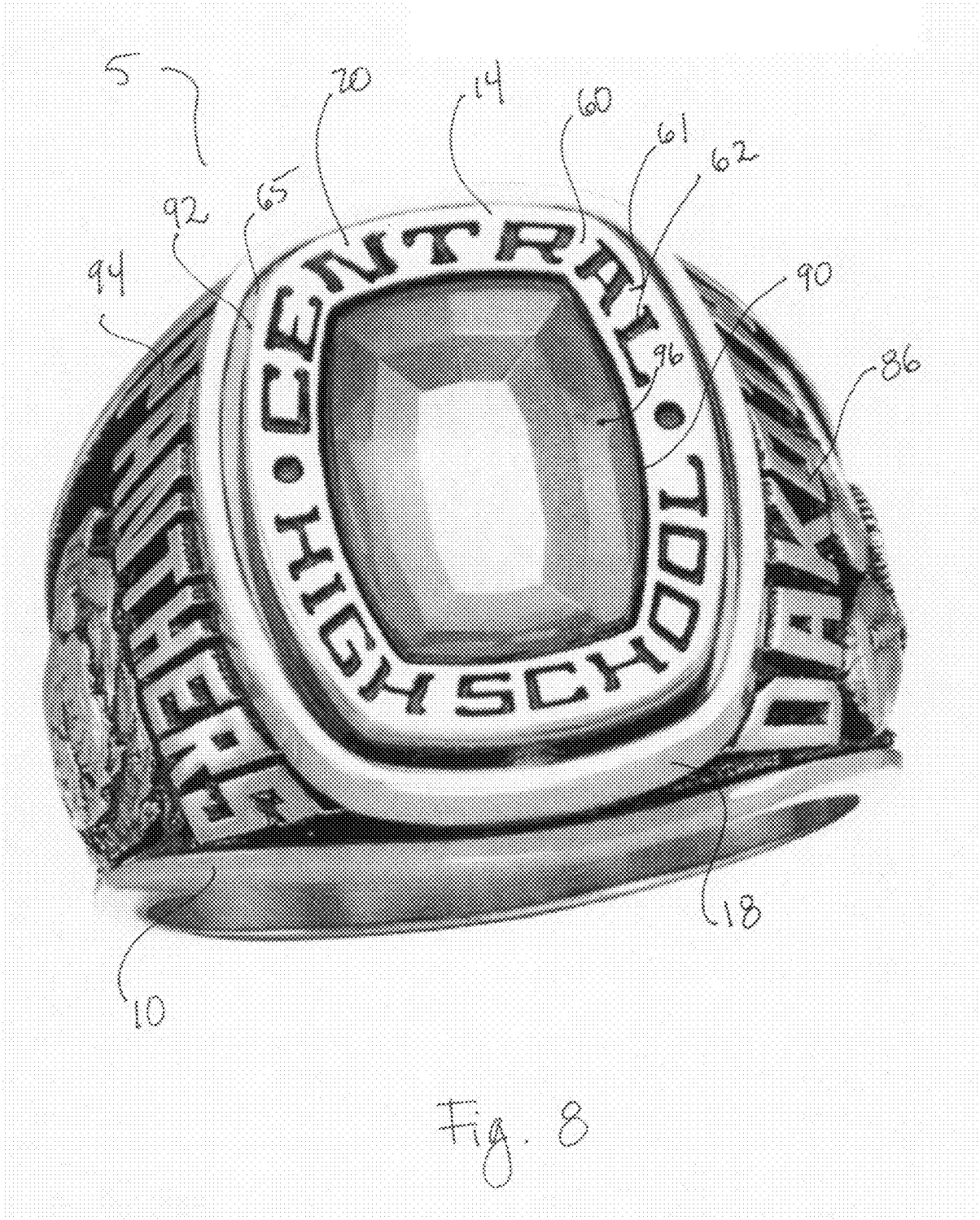


Fig. 8

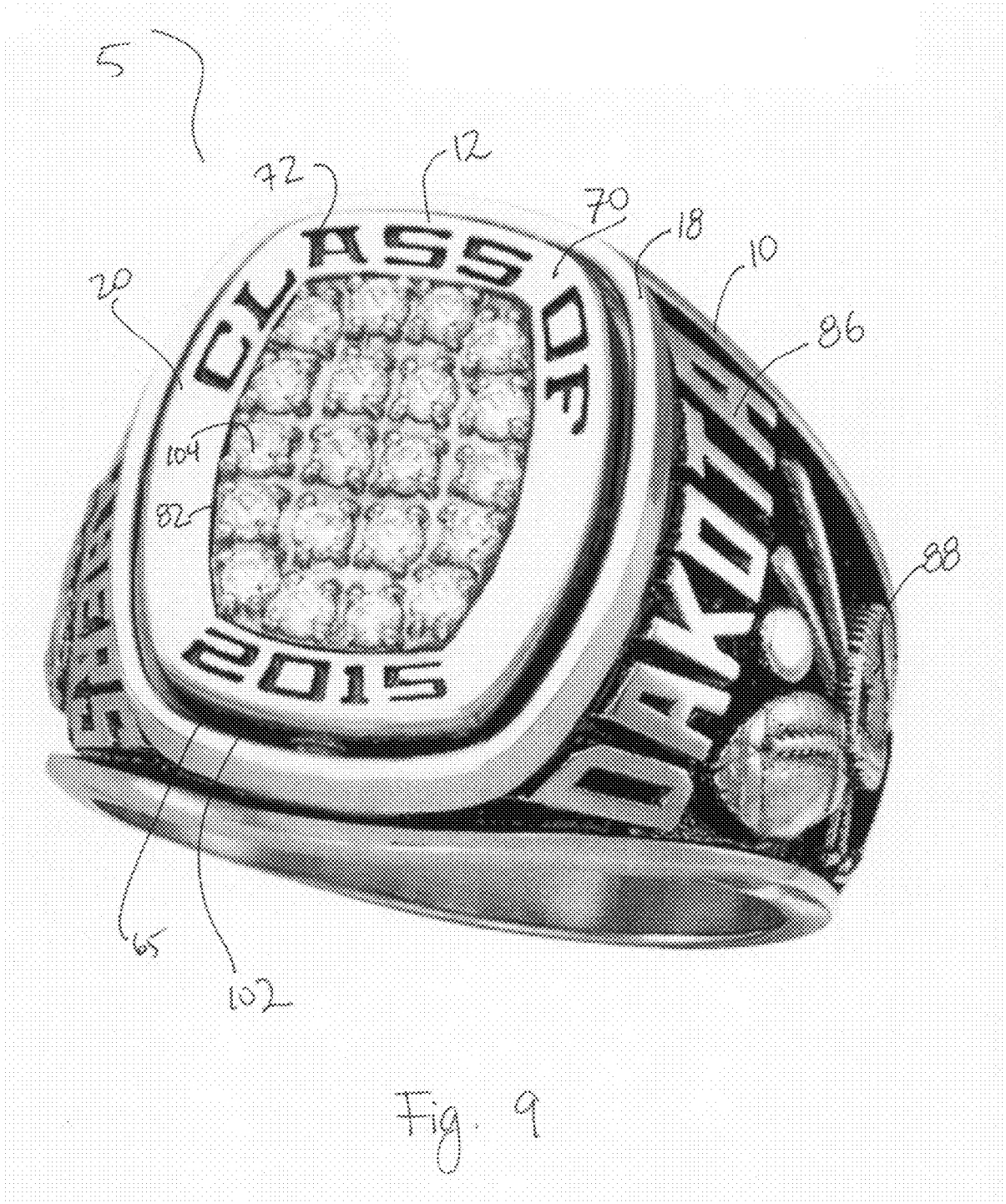


Fig. 9

Fig. 10.

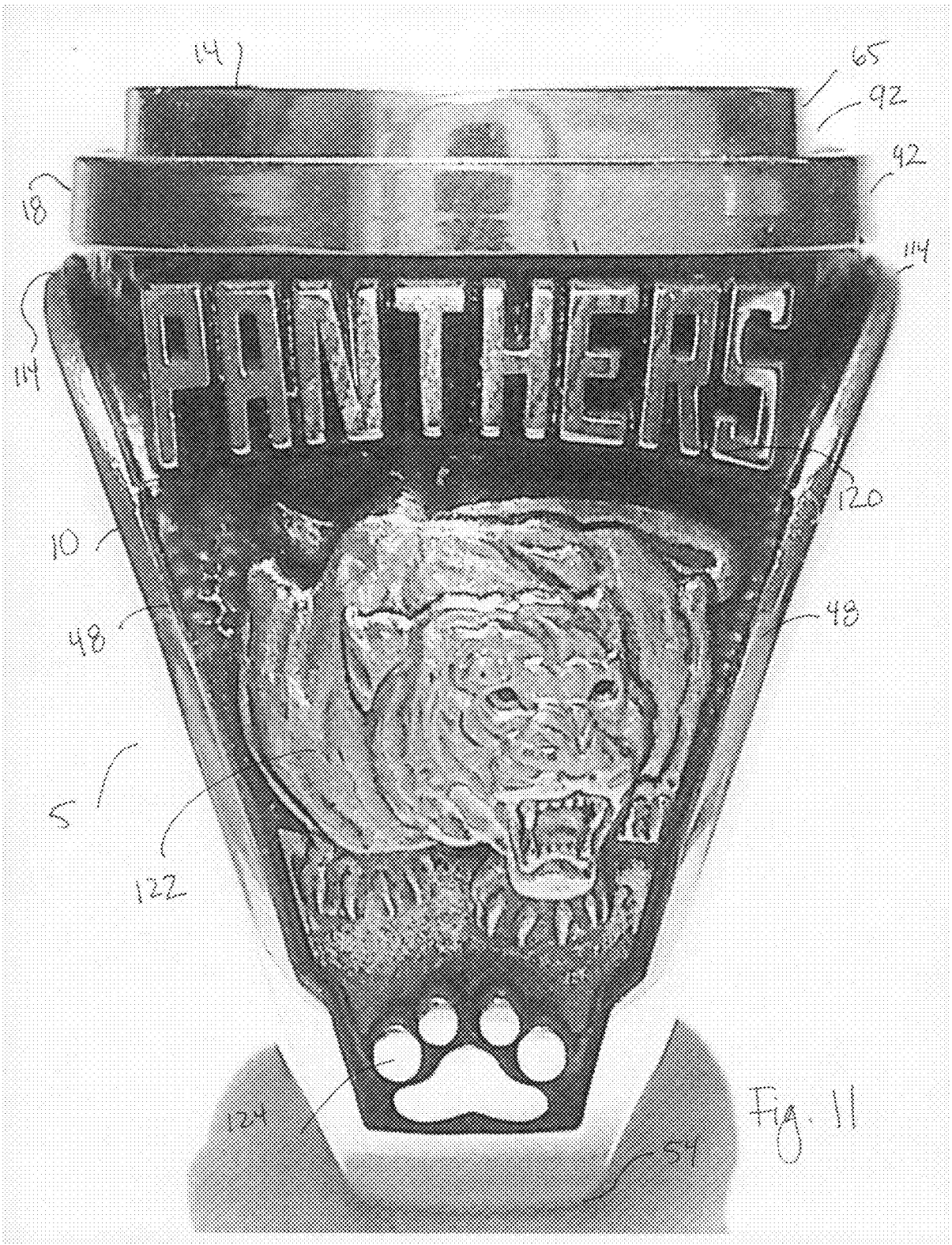


Fig. 11

COMMEMORATIVE RING WITH FLIP-TOP

BACKGROUND

[0001] Class rings and other commemorative rings have been used for well more than 150 years to commemorate shared experiences such as high school, college or university, sports team participation, sports championships, and military service. A conventional commemorative ring will have a static fixed setting, often a gemstone, seal or insignia, with text surrounding the setting, and may have additional design details engraved on the shank of the ring. The setting and design details conventionally co-commemorate related aspects of the experience commemorated by the ring. For a class ring, for example, such design details can include (without limitation) the date of graduation, the wearer's name, text or design icons signifying the wearer's school activities and affiliations, and/or the name of the school's sports team or mascot.

SUMMARY

[0002] Disclosed is a finger ring comprising a shank with a commemorative outer surface design and a dihedral setting pivotably-mounted in an aperture in the shank and having a design element on at least one face of the setting. In an embodiment, the design element on at least one face of the setting is co-commemorative with the design on the shank. In an alternate embodiment a finger ring is disclosed with a uniformly tapered shank having an ornamented outer surface and a setting pivotably mounted in an aperture in the shank. The setting has first and second faces, and in an embodiment one of the faces comprises a design element that is co-commemorative with a design element on the shank.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] FIG. **1** depicts a side view of components of an exemplary commemorative ring in a pre-assembled state.

[0004] FIG. **2** depicts a cross-section view of an exemplary commemorative ring in an assembled state.

[0005] FIG. **3** depicts a perspective view of an exemplary unornamented commemorative ring showing an exemplary pivotable setting in mid-rotation.

[0006] FIG. **4** depicts a top view of an exemplary unornamented shank of an exemplary commemorative ring.

[0007] FIG. **5***a* depicts a top view of the outer surface of an exemplary upper base of an exemplary setting of an exemplary commemorative ring.

[0008] FIG. **5***b* depicts a top view of the inner surface of an exemplary upper base of an exemplary setting of an exemplary commemorative ring.

[0009] FIG. **5***c* depicts a side view of an exemplary upper base of an exemplary setting of an exemplary commemorative ring.

[0010] FIG. **6***a* depicts a top view of the outer surface of an exemplary lower base of an exemplary setting of an exemplary commemorative ring.

[0011] FIG. **6***b* depicts a top view of the inner surface of an exemplary lower base of an exemplary setting of an exemplary commemorative ring.

[0012] FIG. **6***c* depicts a side view of an exemplary lower base of an exemplary setting of an exemplary commemorative ring.

[0013] FIG. **7** depicts a perspective view of an exemplary commemorative ring showing an exemplary pivotable setting in mid-rotation.

[0014] FIG. **8** depicts a perspective view of an exemplary commemorative ring showing an exemplary face of an exemplary pivotable setting.

[0015] FIG. **9** depicts a perspective view of an exemplary commemorative ring showing another exemplary face of an exemplary pivotable setting.

[0016] FIG. **10** depicts a side view of an exemplary commemorative ring.

[0017] FIG. **11** depicts another side view of an exemplary commemorative ring.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

[0018] FIG. **1** depicts a side view of exemplary ring **5** with the main components in a pre-assembled state. Ring **5** has shank **10**, finger hole **11**, shoulder **16**, and rail **18**. Also shown in FIG. **1** are upper base **14** and lower base **12**, components of the pivotable setting described in more detail below. Upper base **14** has pins **19** for aligning with lower base **12** during the assembly process. Upper base **14** and lower base **12** each have two axle slots **13**, one each on opposing side of the base, which when aligned and adjoined can receive a pivot.

[0019] FIG. **2** depicts a cross-section view of exemplary ring **5** with the three components of a single ring unit shank **10**, upper base **14** and lower **12** in an assembled state. Upper base **14** is joined to lower base **12** to make setting **20**. FIG. **2** shows setting **20** in the orientation it would have when worn on the finger. Although the components of setting **20** are identified as "upper" base **14** and "lower" base **12**, the designation of "upper" and "lower" is arbitrary because setting **20** is pivotable. In other words, in ordinary usage setting **20** may be pivoted so that lower base **12** is situated above upper base **14** or so that upper base **14** is situated above lower base **12**.

[0020] Also shown in FIG. **2** is upper base face design element **90** in upper base **14** and lower base face design element **82** in lower base **12**. As described in more detail below, upper base face design element **90** and lower base face design element **82** may contain gemstones, text or design icons, or other design elements. FIG. **2** also shows two coaxially located pivots **52** received in pivot holes **26**. When upper base **14** and lower base **12** are aligned and adjoined, the respective axle slots **13** on upper base **14** and lower base **12** align to create pivot holes **26** coaxially located on opposing sides of setting **20**. Setting **20** can then pivot about the common axis defined by pivots **52** and pivot holes **26**.

[0021] FIG. **3** is a perspective view depicting ring **5** with setting **20** disposed within aperture **40** in mid-rotation relative to shank **10** and rail **18**. FIG. **3** shows shank **10** in its unornamented state, i.e., without design details. Shank **10** includes shank flanges **46** on both sides of shank **10**, each shank flange **46** having an outer shank flange surface **47**, an inner shank flange surface **49**, and a shank flange edge **48**. Shank **10** includes unornamented outer surface **43** to which will be added design elements such as text and/or design icons during manufacture of the ring. Shank flanges **46** form the overall shape of the ring, provide structural support for the ring, and provide a protective frame for the design elements to be added to unornamented outer surface **43**. Also depicted in FIG. **3** is aperture **40** in shank **10**. Rail **18**, which comprises outer rail surface **42** and an inner rail surface **44**, defines and surrounds

aperture **40**. FIG. **3** also depicts axis **45** running finger-like through the center of finger hole **11**.

[0022] FIG. **4** depicts a top view of an exemplary unornamented shank **10** showing aperture **40** without setting **20**, thereby revealing pivots **52** and shank bottom **54**. In an embodiment pivots **52** are approximately 2 mm long for a boys ring, 1.5 mm in a girls ring and preferably extend into aperture **40** from points on opposing faces of inner rail surface **44**. In the embodiment depicted in FIG. **4** the axis defined by pivots **52** is parallel to axis **45** and bisects the aperture in the horizontal plane. In an alternative embodiment pivots **52** can be oriented along the axis orthogonal to axis **45**. Those of skill in the art will appreciate that other orientations or positionings of pivots or other mounting devices may be used to advantage. In preferred embodiments, the dimensions of aperture **40** are 17.5 mm (length, along axis **45**)×14.6 mm (width, orthogonal to axis **45**) for a boys ring, and 10 mm (length)×9 mm (width) for a girls ring. Pivots **52** are preferably positioned in the vertical plane equidistant from the top and bottom of inner rail surface **44**. Preferably pivots **52** are cylindrical in shape and are cast as part of shank **10**.

[0023] FIGS. **5***a* through **5***c* depict different views of upper base **14**. FIG. **5***a* depicts a top view of the outer surface of upper base **14** and shows substantially-planar upper base face **60**, call-out area **61**, and incised text **62** in call-out area **61**. Bezel **63** is angled downward at preferably a 5 degree angle from the horizontal plane to form stone seat **64**. Stone seat **64** is adapted to receive a gemstone or other design element when the setting is fully assembled. Incised text **62** shows "CENTRAL HIGH SCHOOL" in the embodiment shown in FIG. **5***a*; however, those of ordinary skill in the art will appreciate that other text or designs can be incised into call-out area **61**. FIG. **5***b* depicts a top view of the inner surface of upper base **14**, including inner relief cavity **66**, inner rim **67**, outer rim **68**, and rim connectors **69**. Mounted in each rim connector **69** is a pin **19**. Also shown are openings in outer rim **68** defining axle slots **13**. FIG. **5***c* shows a side view of upper base **14**, including base side surface **65** and pins **19**.

[0024] FIGS. **6***a* through **6***c* depict different views of lower base **12**. FIG. **6***a* depicts a top view of the outer surface of lower base **12** and shows substantially-planar lower base face **70**, call-out area **71**, and incised text **72** in call-out area **71**. Bezel **73** is angled downward at approximately a 5-degree angle from the horizontal plane to create stone seat **74**. Stone seat **74** is adapted to receive a gemstone or other design element when the setting is fully assembled. Incised text **72** shows "CLASS OF 2015" in the embodiment shown in FIG. **6***a*; however, those of ordinary skill in the art will appreciate that other text or designs can be incised into call-out area **71**. FIG. **6***b* depicts a top view of the inner surface of lower base **12**, including inner relief cavity **76**, inner rim **77**, outer rim **78**, and rim connectors **79**. Mounted in each rim connector **79** is a pinhole **75**. Also shown are openings in outer rim **78** defining axle slots **13**. FIG. **6***c* shows a side view of lower base **12**, including base side surface **65** and pinholes **75**.

[0025] FIG. **7** depicts a perspective view of ring **5** with ornamented shank **10** and setting **20** in mid-rotation relative to shank **10**, aperture **40** and rail **18**. FIG. **7** shows lower base face **70**, lower base incised text **72** and lower base face design element **82**. FIG. **7** also shows base side surfaces **65** of bases **12** and **14** and welds **84** where upper base **14** and lower base **12** are joined. Also shown in FIG. **7** is ornamented outer surface **80** of shank **10** with design elements **86** and **88**. In the exemplary embodiment shown in FIG. **7**, shank design element **86** ("DAKOTA") is the wearer's name, and shank design element **88** includes sports icon designs of a football and baseball glove, bats and balls. Shank design element **88** commemorates the wearer's sports activity at Central High School, the high school commemorated in incised text **62** in the exemplary ring **5**; and lower base incised text **72** ("CLASS OF 2015") commemorates the wearer's graduation date from Central High School. FIG. **7** also shows a part of pivot **52** received in pivot hole **26**.

[0026] FIG. **8** depicts a perspective view of ring **5** with ornamented shank **10** and setting **20** pivoted so that upper base **14** is up, i.e., so that upper base face **60** is fully visible. Shown are upper base call-out area **61**, upper base incised text **62**, and upper base face design element **90**. Also visible in FIG. **8** is shank design element **94** ("PANTHERS") commemorating the panthers, the name of the sports team of Central High School, the wearer's high school commemorated in incised text **62** in the exemplary ring **5**. FIG. **8** shows base side surface **65** of upper base **14** and upper surface **92** thereof, which is preferably visible whenever setting **20** is pivoted so that upper base face **60** is fully visible.

[0027] FIG. **9** depicts a perspective view of ring **5** with ornamented shank **10** and setting **20** pivoted so that lower base **12** is up, i.e., so that lower base face **70** is fully visible. Shown are lower base call-out area **71**, lower base incised text **72**, lower base face design element **82**, and shank design elements **86** and **88**. FIG. **9** shows base side surface **65** of lower base **12** and upper surface **102** thereof, which is preferably visible whenever setting **20** is pivoted so that lower base face **70** is fully visible.

[0028] FIG. **10** depicts a side view of exemplary ring **5** with ornamented shank **10** and setting **20** pivoted so that lower base face design element **82** of lower base face **70** of lower base **12** can be seen in profile. Shank **10** in FIG. **10** includes design elements **86**, **88**, and **112**, a design icon of a baseball home plate with the wearer's team number ("11"). Also shown are outer rail surface **42** of rail **18** and upper surface **102** of base side surface **65** of lower base **12**.

[0029] FIG. **11** depicts an alternative side view of exemplary ring **5** with ornamented shank **10**. In addition to design element **120**, shank **10** in FIG. **11** includes design elements **122**, a design icon of a panther, and **124**, a design icon of a panther paw, commemorating the sports team of Central High School, the wearer's high school commemorated in incised text **62** in the exemplary ring **5**. Also shown are outer rail surface **42** of rail **18** and upper surface **92** of base side surface **65** of upper base **14**.

[0030] The width of the ring at shank bottom **54** is 6.15 mm for an exemplary boys ring and 3.65 mm for an exemplary girls ring. The thickness of the ring at shank bottom **54** is 1.87 mm for an exemplary boys ring and 1.37 mm for an exemplary girls ring. The width of the ring at the top of shank **10** (i.e., at apices **114** of shank edge **48**) is 20.06 mm for an exemplary boys ring and 13.58 mm for an exemplary girls ring. As shown in FIGS. **10** and **11**, the profile of shank **10** is tapered, preferably uniformly, in an embodiment, from the top of shank **10** at the apex **114** of each shank flange edge **48** to shank bottom **54**. In an alternative embodiment the shank tapers from the top of the shank **10** at apex **114** of each shank flange edge **48** to a point between the apex **114** and shank bottom **54**. The tapered shank provides additional surface area for commemorative design detail, and the severity of the taper may be varied for aesthetic effect.

[0031] Upper base face **60** and lower base face **70** in an exemplary embodiment preferably have a cushion (or barrel) shape which is generally rectangular with rounded corners and rounded sides. The shape of the upper and lower base face design elements **82** and **90** preferably correspond to the shape of the silhouette of base faces **60** and **70**. Preferably the shape of rail **18** and aperture **40** generally correspond to the shape of the silhouette of base faces **60** and **70**. Those of skill in the art will appreciate that the base faces, face design elements, rail and aperture may have other shapes, either simple shapes (such as a circle, oval, square or rectangle), or a more complex shapes such as a letter or other design.

[0032] Exemplary face design elements are shown in FIGS. **8** and **9**. Upper base face design element **90** (FIG. **8**) is a cushion-shaped single gemstone **96** of a type selected by the wearer, including but not limited to a birthstone or a gemstone reflecting a school color, and mounted conventionally with two-part epoxy in stone seat **64**. Lower base face design element **82** (FIG. **9**) is a cushion-shaped panel **104** containing 20 small gemstones, diamonds or cubic zirconium, conventionally mounted with two-part epoxy in stone seat **74**. The shape of the gemstone **96** in base face design element **90**, and the shape of the panel **104** in base face design element **82**, generally correspond to the shape of the silhouette of upper base face **60** and lower base face **70**. The dimensions of an exemplary face design element is 12 mm×9 mm for a boys ring, and 6 mm×4.5 mm for a girls ring. Those of skill in the art will appreciate that other gemstones or combinations of gemstones and/or text or design icons can be used as face design elements in the faces **60** and **70** of upper and lower bases **14** and **12** of setting **20**.

[0033] Exemplary ring **5** is a high school class ring and the design elements commemorate the wearer's high school experience. In addition to the face design elements, the design elements depicted in FIGS. **7**, **8**, **9**, **10** and **11** include incised text **62**, **72** identifying the wearer's school and year of graduation, text identifying the wearer's name **86**, design icons identifying the wearer's school activities **88** and **112**, and design icons **120**, **122**, and **124** signifying the school's team name and team mascot. The combination of commemorative design details co-commemorate the wearer's school experience, i.e., the design details commemorate different or related aspects of the school experience commemorated by the ring, so that the ring includes multiple design elements commemorating the same (or aspects of the same) experience or identity of the wearer. The pivotable setting enables the wearer to select and display more commemorative design elements than would be possible with a conventional static setting, thereby increasing the co-commemorative effect and symbolic value of the ring. Those of skill in the art will appreciate that there are many other types of text, icons, and face elements that can be used to commemorate a school experience, including but not limited to school motto, seal, or insignia, initials, insignia, and text and design icons relating to other activities such as band, drama, and other extracurricular activities, fraternities and sororities, honor societies, and clubs and civic organizations. Those of skill in the art will further appreciate that commemorative rings are not limited to school class rings, but can be used for any experience or identity worth of commemoration, including but not limited to sports teams, sports or academic championships, religious affiliation, military or government service, or organizational membership.

[0034] The three components of the ring (shank **10**, upper base **14** and lower base **12**) preferably are cast independently using a plaster-cast lost-wax investment method. The wearer selects text, gemstones or other face elements, and design icons to include in his or her ring. Through use of CAD/CAM and other computer-implemented hardware and software tools, such as preferably AliasStudio CAD/CAM software, the wearer's selections are transformed into a CNC (computerized numeric control) language via software and sent to a computerized milling machine, such as preferably a Servo 4-axis computerized milling machine, which creates precise models and die molds of the ring components. Using these models and die molds, wax impressions of the wearer's ring components are created and then adjusted to the wearer's ring size. Next, plaster is poured around the wax patterns and allowed to harden. Then the wax is melted out of the plaster, leaving an expression of the ring in the plaster mold. The metal chosen by the wearer (typically gold or white gold, stainless steel, sterling silver, platinum or other alloy) is melted and poured into the mold to form a casting and hardened. The plaster is discarded, the ring is cleaned, and stones are set in the ring.

[0035] When shank **10** and upper and lower bases **14** and **12** have been cast and hardened, the respective inner surfaces of upper and lower bases **12** and **14** are aligned with each other by matching up pins **19** and pinholes **75** and aligning axle slots **13** in the respective bases so that adjoined axle slots **13** form pivot holes **26** to fit around pivots **52** (FIGS. **5***b*, **5***c*, **6***b*, **6***c*). Once upper and lower bases **14** and **12** are aligned with each other and axle slots **13** are aligned to create pivot holes **26** to fit around pivots **52**, upper and lower bases **14** and **12** are joined by utilizing a laser welding process. Soldering or other conventional methods are also possible methods to join together upper and lower bases **14** and **12**. The length of setting **20** is 16.35 mm for an exemplary boys ring and 8.95 mm for an exemplary girls ring. The width of setting **20** is 13.46 mm for an exemplary boys ring and 7.42 mm for an exemplary girls ring. The height (or depth) of setting **20** when assembled is 5.13 mm for an exemplary boys ring and 3.95 mm for an exemplary girls ring. The clearance between the side surface side **65** of bases **12** and **14** and rail inner surface **44** is approximately 0.7 mm. Finishes (e.g, antiquing) are applied and the ring is polished.

[0036] Those of ordinary skill in the art will appreciate that setting **20** may be mounted onto shank **10** in different ways in alternative embodiments. For example, pivot pins could be located on setting **20** and received by pivot holes cast into the sides of shank **10**. Alternatively, pivot pins could be spring-mounted within setting **20** or shank **10** to enable removal of setting **20** to enable interchangeability of different settings.

[0037] Although many embodiments have been described in detail, it will be apparent to those skilled in the art that many embodiments taking a variety of specific forms and dimensions and reflecting changes, substitutions and alterations can be made. The described embodiments illustrate the scope of the claims but do not restrict the scope of the claims.

We claim:

1. A finger ring comprising:

a shank having a commemorative outer surface design, and

a dihedral setting pivotably-mounted within an aperture in the shank, the setting having a first face comprising a first face design element.

2. The finger ring of claim **1** wherein the first face design element and outer surface design are co-commemorative.

3. The finger ring of claim **2** wherein the setting has a second face comprising a second face design element wherein the second face design element and the outer surface design are co-commemorative.

4. The finger ring of claim **1** wherein the setting comprises adjoined first base and second base.

5. The finger ring of claim **1** wherein the setting is not interchangeable.

6. The finger ring of claim **1** wherein the shank is tapered.

7. The finger ring of claim **6** wherein the shank is uniformly tapered from the top of the shank to the bottom of the shank.

8. A finger ring comprising:

a shank having an ornamented outer surface, the shank being uniformly tapered from the top of the shank to the bottom of the shank, and

a setting pivotably-mounted in an aperture in the shank, the setting having a substantially-planar first face and a substantially-planar second face.

9. The finger ring of claim **8** wherein the first face, second face, and the aperture have substantially the same silhouette.

10. The finger ring of claim **8** wherein the corners of the setting are rounded.

11. The finger ring of claim **8** wherein the edges of the first face and second face are rounded.

12. The finger ring of claim **8** wherein the setting comprises a first base affixed to a second base.

13. The finger ring of claim **8** wherein the setting is not interchangeable.

14. The finger ring of claim **8** wherein said ornamented outer surface comprises a shank design element, the shank design element being commemorative.

15. The finger ring of claim **14** wherein the first face comprises a first face design element co-commemorative with the shank design element.

16. The finger ring of claim **15** wherein the second face comprises a second face design element co-commemorative with the shank design element.

* * * * *