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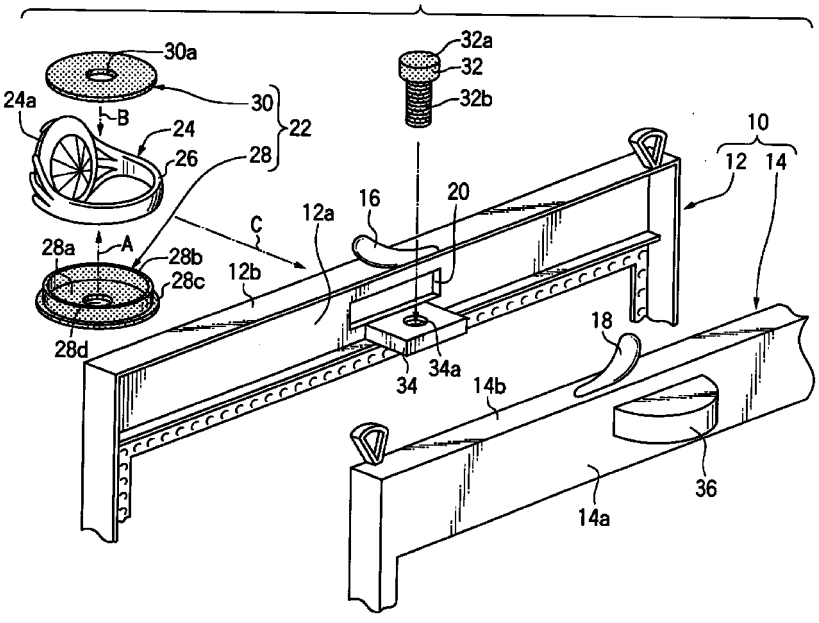
(54) Ring attachment structure

(57) A ring attachment structure for attaching a ring to an object to be adorned includes an opening formed in the object for passage of a band of a ring, a first attachment means formed with a through-hole that is fitted in an area surrounded by the band of the ring, a second attachment means formed with a hole that is fixed to the object at a location adjacent to the opening in the object, the hole being positioned to align with the through-hole of the first attachment means when the first attachment means is fitted in the area surrounded by the band of the ring and the band of the ring is passed through the opening, and a locking member that passes through the aligned through-hole and hole. The ring attachment structure facilitates use of rings in unconventional ways.

FIG. 1



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Description

[0001] This invention relates to a ring attachment structure, more specifically to a ring attachment structure that allows a ring to be freely attached and removed to and from an object to be adorned with the ring.

[0002] The only method for using a ring with a diamond or other jewel setting as an adornment, other than placing it on a finger, is to put it on a chain etc. and use it as a pendant.

[0003] However, this alone does not offer adequate opportunities for using expensive rings and ring use is therefore limited.

[0004] The present invention intends to overcome the above problems. The object is solved by the ring attachment structure according to independent claims 1 and 3.

[0005] Further advantages, features, aspects and details of the invention are evident from the dependent claims, the description and the accompanying drawings.

[0006] The present invention generally relates to a ring attachment structure. In particular it relates to a ring attachment structure that allows a ring to be freely attached and removed.

[0007] This invention was accomplished to overcome the above problem. Its object is to provide a ring attachment structure that facilitates effective utilization of rings by offering ring applications other than those previously known.

[0008] This invention provides a ring attachment structure for attaching a ring to an object to be adorned comprising an opening formed in the object for passage of the band of the ring, a first attachment means formed with a through-hole that is fitted in an area surrounded by the band of the ring, and a second attachment means formed with a hole that is fixed to the object at a location adjacent to the opening in the object. The hole is positioned to align with the through-hole of the first attachment means when the first attachment means is fitted in the area surrounded by the band of the ring and the band of the ring is passed through the opening. The ring attachment structure is further provided with a locking member that is passed through the aligned through-hole and hole.

[0009] By means of this configuration, a ring can be attached and secured to the object to be adorned by a simple procedure. Specifically, the first attachment means is fitted in the area surrounded by the band (or shank) of the ring, i.e., the portion through which the finger is passed in normal use, and the band in which this first attachment means has been fitted is passed through the opening in the object. The hole in the second attachment means is positioned to align with the through-hole in the first attachment means when the first attachment means is fitted in the area surrounded by the band of the ring and the band of the ring is passed through the opening. Therefore, when the band in which this first attachment means is fitted is passed through the opening in the object to which the ring is to be attached, the through-hole in the first attachment means and the hole in the second attachment means align. The locking member is then passed through the through-hole and hole. Therefore, a ring can be easily attached and secured to an object, such as an object that is part of a personal accessory or the like, thus allowing the ring to be used for adornment of the object and the accessory.

[0010] In one aspect of the invention, the hole in the second attachment means is a threaded hole and the locking member is a screw that screws into this hole. In this configuration, the through-hole in the first attachment means and the hole in the second attachment means are aligned and the screw is screwed into the hole in the second attachment means, whereby the ring is reliably attached and secured to the object. This invention further provides a ring attachment structure for attaching a ring with a stone setting to an object to be adorned comprising a notch formed in the object to have a length shorter than the outside diameter of the band of the ring, and a ring holder means for holding the band of the ring below the surface of the object with the stone setting of the ring rising above the surface of the object through the notch.

[0011] By means of this configuration, the band of the ring is held by a ring holder means below the surface of the object, whereby the ring can be attached to the object with the stone setting of the ring positioned above the surface of the object. This allows a ring to be easily attached to an object, such as an object that is part of a personal accessory or the like, thus allowing the ring to be used for adornment of the object and the accessory. Further, since the length of the notch is shorter than the band of the ring to be attached, the band of the ring positioned below the object cannot pass through this notch. Therefore, the ring will not fall out of the object.

[0012] According to another aspect to this invention, the ring holder is equipped with a plate member in which a roughly circular notched area is formed to house the band of the ring and a cover plate that covers the roughly circular notched area, and the plate member is fixed inside the object with the roughly circular notch located contiguous with the notch in the object.

[0013] In this configuration, after the band of the ring is placed in the roughly circular notched area, the roughly circular notched area is covered by this cover plate, whereby the ring is reliably attached and secured to the object.

[0014] In another aspect of the invention, the object to be adorned is a frame that opens and closes. By "frame" is meant a frame made from metal or other material and that is attached to, the opening of a handbag, pouch, purse, pochette or the like. By means of this configuration, rings can be attached to such accessories as handbags and pouches by a simple operation, thus allowing the ring to be used as an adornment for

these accessories.

[0015] The invention will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a schematic exploded view for explaining the attachment of a ring using a ring attachment structure that is a first embodiment of the invention.
FIG. 2 is a front view showing a ring attached to a frame in the first embodiment of the invention.
FIG. 3 is a partial exploded view for explaining the attachment of a ring using a ring attachment structure that is second embodiment of the invention;
FIG. 4 is a schematic perspective view from the rear showing a ring attached to the frame in the second embodiment of the invention.
FIG. 5 is a schematic perspective view from the front showing a ring attached to the frame in the second embodiment of the invention.

[0016] Preferred embodiments of the invention will now be explained with reference to the drawings.

[0017] The ring attachment structure of the first embodiment of the invention will be explained first with reference to FIGs. 1 and 2. FIG. 1 is a schematic exploded view for explaining the attachment of a ring using the ring attachment structure of the first embodiment of the invention, and FIG. 2 is a front view showing a ring attached to a frame. In this first embodiment, the object to which the ring is attached is a frame 10 disposed on the opening of a pouch. In FIGs. 1 and 2, the pouch itself is omitted for the sake of clarity.

[0018] As shown in FIG. 1, the frame 10, which is the object to be adorned, has basically the same configuration as known frames. Specifically, it comprises a frame member pair consisting of a front frame member 12 and a rear frame member 14, which are made from metal and attached at their bottom ends (not shown in figure). Closure clasps 16, 18 are attached to the upper parts of these front and rear frame members 12, 14. As with known frames, the frame 10 is configured such that the opposing surfaces on the frame members 12, 14 come together and the clasps 16, 18 engage and hold the frame in a closed condition.

[0019] As shown in FIG. 1, the front and rear frame members 12, 14 have outer plates 12a, 14a at the top that face outward. Here, inner refers to the side that faces the other frame member and outer refers to the side opposite from the other frame member. On the outer edges of these outer plates 12a, 14a are formed extending members 12b, 14b that extend toward the inside, i.e., toward the other frame member. Therefore, an open space is formed toward the inside in the upper part of the front and rear frame members 12, 14, and when the opposing surfaces of the frame members 12, 14 are brought together and the frame 10 is in a closed condition, an internal open space is formed inside the upper part of the frame 10, or more specifically, between the two outer plates 12a, 14a.

[0020] As shown in FIG. 1, a roughly rectangular opening 20 extending horizontally is formed in the middle area of the outer plate 12a of the front frame member 12. This opening 20 has dimensions that allow the band 26 of a ring 24 placed in a ring holder (first attachment means) 22 described below to pass through it.

[0021] The attachment structure of this embodiment is equipped with the ring holder 22. The ring holder 22 fits in the area surrounded by the band 26 of the ring 24 and has a through-hole formed therein. The ring holder 22 comprises a cylindrically shaped main unit 28 with a bottom and a disc-shaped cap 30. The main unit 28 and cap 30 are made from plastic or other synthetic resin or from rubber or the like. The bottom 28a of the main unit 28 has a flange 28c that extends out beyond a cylindrically shaped member 28b and a through-hole 28d in its center. The cap 30 is a disc having an outside diameter roughly equal to that of the bottom 28a of the main unit 28, and a through-hole 30a is formed in its center. The outside diameters of the flange 28c of the main unit 28 and the cap 30 are set larger than the inside diameter of the band 26 of the ring.

[0022] The ring holder 22 fits in the area surrounded by the band 26 of the ring 24 and holds the ring 24. More specifically, the main unit 28 fits in the ring 24 from one side of the band 26 as indicated by arrow A in FIG. 1 such that the cylindrical member 28b is in contact with the inside of the band 26 of the ring 24. The cap 30 fits on the ring 24 from the other side of the band as indicated by arrow B in FIG. 1.

[0023] The through-hole 28d in the bottom 28a of the main unit 28 and the through-hole 30a in the cap 30 are positioned, such that they align with each other when the main unit 28 and cap 30 are attached to the ring 24. The through-holes 28d, 30a have inside diameters that are larger than the outside diameter of the crests of the thread of a screw 32 described below. Multiple main units 28 and caps 30 with differing sizes are provided to accommodate different sizes of rings 24, i.e., bands.

[0024] A roughly rectangular metal nut 34 (second attachment means) is attached at a position adjacent to the opening 20 on theinside surface of the outer plate 12a. The nut 34 is positioned such that its one side is flush with the bottom edge of the opening 20. The nut 34 is attached to the front frame member 12 by adhesion or welding. The nut 34 can also be molded as one unit with the front frame member 12.

[0025] A threaded hole 34a in which a screw 32 is screwed is formed in the middle of the nut 34. This threaded hole 34a is positioned such that it aligns with the through-holes 28d, 30a of the ring holder when the ring holder 22 is fitted in the area surrounded by the band 26 of the ring 24 and the band 26 of the ring 24 is passed through the opening 20. The nut 34 is dimensioned such that it will fit in the internal space formed

inside the upper part of the frame 10 when the opposing surfaces of the frame members 12, 14 are brought together and the frame 10 is in a closed condition. That is, the nut 34 will not interfere with the inside surface, etc., of the rear frame member 14 when the frame 10 is closed.

[0026] The ring attachment structure of this embodiment is equipped with the screw (locking member) 32, which passes through the aligned through-holes 28d, 30a of the ring holder 22 and screws into the threaded hole 34a of the nut 34. The screw 32 has a head 32a with a diameter larger than the inside diameter of the through-holes 28d, 30a of the ring holder 22. The shank 32b of the screw 32 has a length sufficient for the lower portion to screw into the threaded hole 34a of the nut 34 when the screw 32 is passed through the aligned through-holes 28d, 30a of the ring holder 22 and the bottom surface of the head 23a is in contact with the top surface of the cap 30.

[0027] Further, in this embodiment, a receiving portion 36 is provided on the outer surface of the outer plate 14a of the rear frame member 14 for receiving the band 26 of the ring 24 inserted in the opening 20. This receiving portion 36 is configured to form a space for housing the portions of the band 26 of the ring 24 and the ring holder 22 fitted in the band that extend past the inside surface of the outer plate 14a of the rear frame member 14 when the frame 10 is closed. The receiving portion 36 is formed by curving part of the outer plate 14a of the rear frame member 14 outward. However, this portion can instead be formed as a separate member from metal or plastic and attached such that is covers an opening formed in the rear frame member 14.

[0028] In the ring attachment structure configured as described above, the main unit 28 of the ring holder 22 is fitted in the ring 24 from one side of the band 26 as indicated by arrow A in FIG. 1 such that the cylindrically shaped member 28b is in contact with the inside of the band 26 of the ring 24, and the cap 30 is placed on the ring 24 from the other side of the band as indicated by arrow B in FIG. 1. With the ring holder 22 attached to the band 26 of the ring 24, the band 26 of the ring 24 and the ring holder 22 attached to the band are inserted in the opening 20 on the front frame member 12 as indicated by arrow C in FIG. 1. The through-holes 28d, 30a of the ring holder are aligned with the screw hole 34a in the nut 34. The stone setting 24a attached to the ring 24 is positioned on the front side of the outer plate 12a of the front frame member 12 at this time. The screw 32 is inserted from above into the aligned through-holes 28d, 30a of the ring holder 22 and is screwed into the threaded hole 34a of the nut 34. This makes it possible to attach and secure the ring 24 to the frame 10 with the stone setting 24a positioned on the outside of the outer plate 12a of the front frame member 12. Further, the band 26 of the ring 24 and the ring holder 22 fitted in the band protrude toward the rear frame member 14 from the nut 34, but when the frame 10 is closed, this protruding portion becomes housed in the receiving portion 36 provided in the rear frame member 14, thus allowing the frame 10 to be closed normally even when a ring is attached.

[0029] A ring attachment structure that is a second embodiment of the invention will now be explained with reference to FIGs. 3 to 5. FIG. 3 is a partial exploded view for explaining the attachment of rings using the ring attachment structure of the second embodiment of the invention, FIG. 4 is a schematic perspective view from the rear showing a ring attached to the frame, and FIG. 5 is a schematic perspective view from the front showing a ring attached to the frame. In this second embodiment, the object to which a ring is attached is a frame 210 disposed on the opening of a pouch. In FIGs. 3 to 5, the pouch itself is omitted for the sake of clarity.

[0030] As in the case of the frame 10 described above, the basic configuration of the frame 210, the object to be adorned, is the same as known frames. Specifically, it comprises a frame member pair consisting of a front frame member 212 and rear frame member 214, which are made from metal and attached at their bottom ends (not shown in figure). The upper parts of these front and rear frame members 212, 214 have rectangular outer plates 212a, 214a which face outward. The frame 210 is configured such that it can be closed by bringing the opposing surfaces of the frame members 212, 214 together in the same way as in known frames. Here, inner refers to the side toward the other frame member, and outer refers to the side opposite from the other frame member.

[0031] On the upper edges of these outer plates 212a, 214a are formed extending members 212b, 214b that extend toward the inside, i.e., toward the other frame member from each outer plate 212a, 214a. Therefore, an open space is formed toward the inside in the upper part of the front and rear frame members 212, 214, and when the opposing surfaces of the frame members 212, 214 are brought together (more specifically, when the ends of the extending members 212b, 214b are brought together) and the frame 210 is in a closed condition as shown in FIGs. 4 and 5, an internal open space is formed inside of the upper part of the frame 210, i.e., between the two outer plates 212a, 214a.

[0032] Rectangular notches 212c, 214c extending from the edges are formed respectively in the extending members 212b, 214b. The notches 212c, 214c are configured such that their respective edges align and form a rectangular opening in the top of the frame 210 when the edges of the extending members 212b, 214b are brought together and the frame 210 is closed (FIGs. 4 and 5). The length of each notch 212c, 214c in the longitudinal direction of each frame member 212, 214 is shorter than the maximum diameter of the band 26 of the ring 24 to be attached.

[0033] As shown in FIG. 3, a roughly rectangular opening 216 extending horizontally in the longitudinal

direction of the front frame member 212 is formed in the middle area of the outer plate 212a of the front frame member 212. The opening 216 is positioned in a location on the front frame member 212 that aligns with the notch 212c and is dimensioned to allow the main part 218b of a locking member 218, described below, to pass through.

[0034] The attachment structure of this embodiment has a mounting member 220 that fits in the area surrounded by the band 26 of the ring 24. This mounting member 220 is a thick disc-shaped member made from synthetic resin etc., and a through-opening 220a is formed in its middle whose shape is roughly the same as that of opening 216. The mounting member 220 fits in the area surrounded by the band 26 of the ring 24 and securely holds the ring 24. More specifically, it fits in the ring 24 from one side of the band 26 such that its outer circumference comes in contact with the inside of the band 26 of the ring 24.

[0035] The through-opening 220a of the mounting member 220 is positioned such that it aligns with the opening 216 in the front frame member 212 when the ring 24 in which the mounting member has been fitted is attached to the frame 210. Multiple mounting members with differing sizes are provided to accommodate different sizes of rings 24, i.e., bands 26. Alternatively, this member is made from a material with high elasticity so that a single member can be used to accommodate different sizes of rings.

[0036] A ring holder 222 is attached to a position on the inside of the outer plate 212a, around the opening 216 and below the notch 212c. The ring holder 222 is a plate-shaped member formed with a nearly circular notch 222a. It comprises a U-shaped member 222b made from metal whose open end points upward in the drawings and a plate-shaped ring holder member 222c fitted inside the U-shaped member. The ring holder member 222c is made from highly elastic resin or rubber. As shown in FIG. 3, the roughly circular notch 222a is formed by cutting a roughly circular shape in the upper middle portion of the ring holder member 222c such that it overlaps the middle portion of the upper edge of the roughly rectangular ring holder member 222c. Therefore, as shown in FIG. 3, the roughly circular notch 222a opens upward towards the upper edge as well as to the front side and rear side of the plate-shaped ring holder member 222c. Also, this upward opening is contiguous with the notch 212c in the front frame member 212.

[0037] It is desirable that the inside diameter of the roughly circular notch 222a be slightly smaller than the outside diameter of the band 26 of the ring 24 to be attached. This dimension allows the band 26 of the ring 24 to be held resiliently in the notch 222a. Therefore, it is desirable that multiple ring holders 222 be provided to accommodate differing sizes of rings 24, i.e., bands 26. Alternatively, the ring holder member 222 is made from a material with high elasticity so that a single member can be used to accommodate different sizes of rings.

[0038] The ring holder 222 is fixed to the front frame member 212a by adhering or welding the metal U-shaped member 222b to the inside surface of the outer plate 212a. The U-shaped member 222b also has screw holes 222d for securing a cover plate 224 described below with screws.

[0039] The ring attachment structure of this embodiment is equipped with a cover plate 224. The cover plate 224 is a rectangular plate made from metal with dimensions for covering the ring holder 222 from the side. Therefore, when the cover plate 224 is attached, it covers the notch 222a from the side (inside). The four corners of the cover plate 224 have through-holes 224a for passing screws. The cover plate 224 also has an opening 224b to allow the locking member 218 to pass through. This through-opening 224b is positioned such that it aligns with the opening 216 in the front frame member 212 when the cover plate 224 is attached to the U-shaped member 222b.

[0040] An opening 226 is formed in the rear frame member 214. The opening 226 has roughly the same shape as the opening 216 in the front frame member 212, and when the frame 210 is closed, it is positioned such that it aligns with the opening 216 in the front frame member 212.

[0041] The locking member 218 comprises an enlarged part 218a on its base end, a main part 218b fixed to this enlarged part 218a, and an end member 218d linked to the end of the main part 218b via a hinge 218c such that it can bend. Each part is made from metal or plastic. The enlarged part 218a is dimensioned such that it cannot pass through the opening 216. The main part 218b, hinge 218c and end part 218d are dimensioned such that they can pass through each of the openings 216, 220a, 224a and 226. The main part 218b has a length that is slightly longer than the distance from the outside surface of the front frame member 212 to the outside surface of the rear frame member when the frame 210 is in a closed condition. The main part 218b and end part 218d of this locking member with this configuration are passed through the opening 216 from the direction indicated by arrow D, and the enlarged part 218a is adhered or welded to the outer surface of the front frame member 212.

[0042] When a ring is attached using the ring attachment structure configured as described above, the thick mounting member is fitted in the ring 24 so that its outer circumference comes in contact with the inside of the band 26 of the ring 24, and the band 26 of the ring 24 together with the mounting member fitted in the band 26 are placed in the notch 222a of the ring holder 222 from inside in the direction of arrow E. At this time, the end part 218d of the locking member 218 which protrudes inside from the opening 216 of the front frame member 212 is passed through the opening 222a in the mounting member. The stone setting 24a is positioned above the front frame member 212, which is the object

to be adorned.

[0043] Next, the cover plate 224 is attached to the U-shaped member 222b of the ring holder 222 with screws. At this time, the end part 218d of the locking member 218 is passed through the opening 224b in the cover plate 224.

[0044] When the frame 210 is closed in this condition, the end of the main part 218b of the locking member 218 is positioned slightly past the outside surface of the outer plate 214a of the rear frame member 214. Also, as indicated by arrow G in FIG. 4, the end part 218d is bent downward around the hinge 218c. By inserting and bending this locking member 218, the frame 210 can be held in a closed condition with the stone setting 24a positioned above the frame members 212, 214, and also the ring 24 can be securely attached and anchored to the frame 210. Further, since the ring holder 222, the band 26 of the ring 24 and the mounting member 220 fitted in the band 26 are housed in the space between the front and rear frame members 212, 214, the frame 210 can be closed normally even when a ring 24 is attached.

[0045] In this second embodiment, a ring is securely attached using the locking member 218 etc., but the locking member 218 and the openings through which it passes are not required by this invention. The same is true of the mounting member 220.

[0046] By means of the first and second embodiments of this invention described above, a ring can be attached to a frame or other object using a simple configuration and procedure, thus allowing a ring to be used as an adornment for an object. Since the part that comes in contact with the band of the ring is made from synthetic resin or rubber, it will not scratch the band of the ring.

[0047] The invention is not limited to the embodiments described above, and various modifications or variations are allowable within the scope of the claims.

[0048] For example, in the first embodiment, the locking member is a screw 32, but it can instead be a pin without a thread. In this case, the hole in the nut 34, which is the second attachment means, need not be a threaded hole.

[0049] In the above embodiments the object to be adorned is the frame of a pouch, but the object can instead be the frame of a handbag, purse or pochette, or it can also be a bracelet, pendant, belt, etc. Also, in the above embodiments, the band of the ring is continuous, but this invention is also applicable to rings in which the band has a break in it.

[0050] Further, the shapes of the ring holder 22, mounting member 220, ring holder 222 etc. are not limited to those in the above embodiments but can be changed as required to match the shape of the band of the ring.

[0051] This invention enables rings to be used in ways other than those previously known and, as such, facilitates effective utilization of rings.

Claims

1. A ring attachment structure (22) for attaching a ring to an object to be adorned comprising:

an opening (20) formed in the object for passage of a band of a ring (26),
a first attachment means (28) formed with a through-hole that is fitted in an area surrounded by the band of the ring (26),
a second attachment (30) means formed with a hole that is fixed to the object at a location adjacent to the opening in the object, the hole being positioned to align with the through-hole of the first attachment means (28) when the first attachment means is fitted in the area surrounded by the band of the ring and the band of the ring is passed through the opening, and
a locking member (32) that passes through the aligned through-hole and hole.

2. The ring attachment structure according to claim 1, wherein the hole is a threaded hole and the locking member is a screw that screws into the hole.

3. A ring attachment structure (22) for attaching a ring with a stone setting to an object to be adorned comprising:

a notch (212c) formed in the object to have a length shorter than an outside diameter of a band of the ring, and
a ring holder means for holding the band of the ring (26) below a surface of the object with the stone setting of the ring rising above the surface of the object through the notch.

4. A ring attachment structure according to claim 3, wherein the ring holder means comprises a plate-shaped member formed with a roughly circular notch for housing the band of the ring and a cover plate for covering the roughly circular notch, the plate-shaped member being fixed inside the object with the roughly circular notch located contiguous with the notch in the object.

5. The ring attachment structure according to any of claims 1 to 4, wherein the object to be adorned is a frame that opens and closes.

FIG. 1

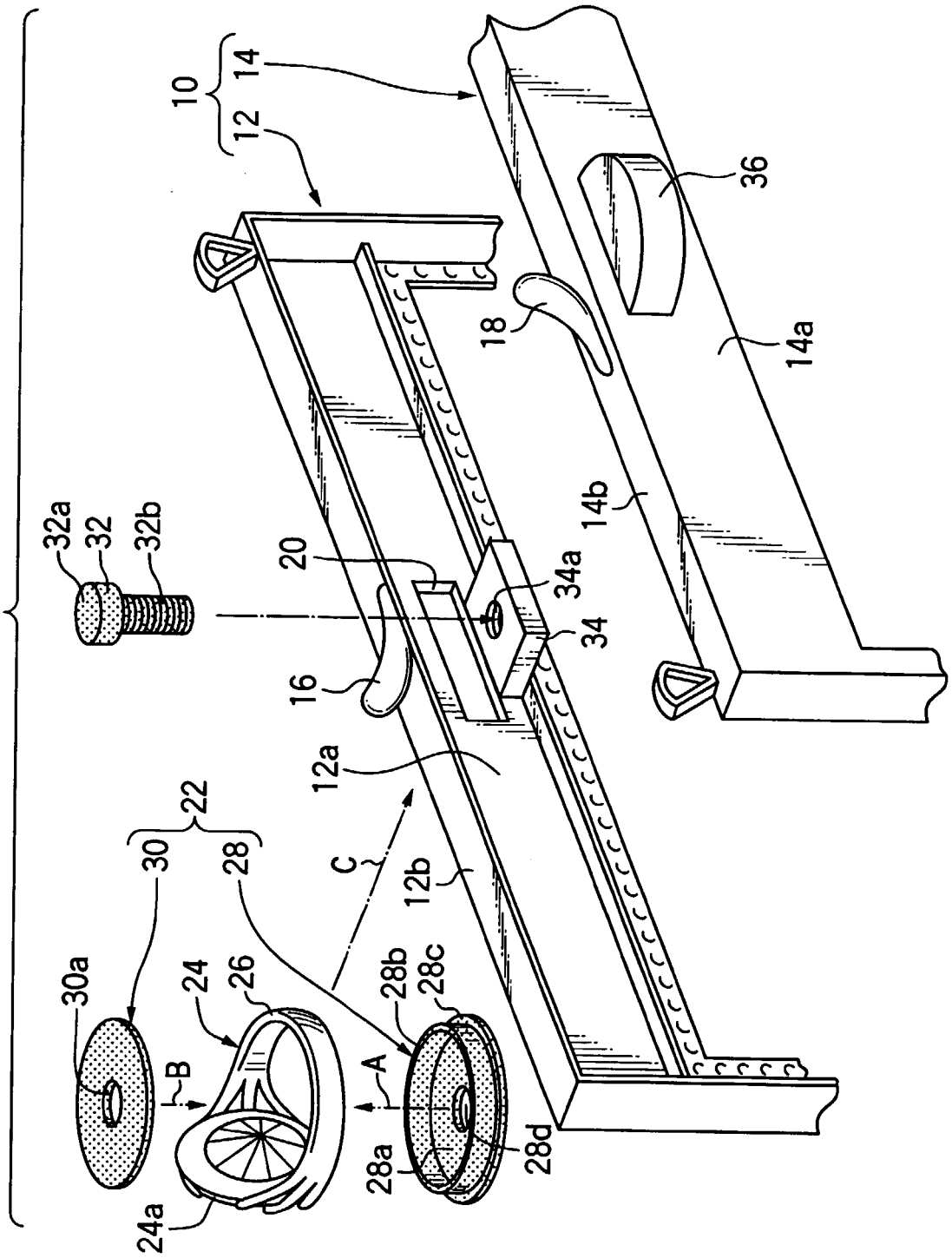
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FIG. 2

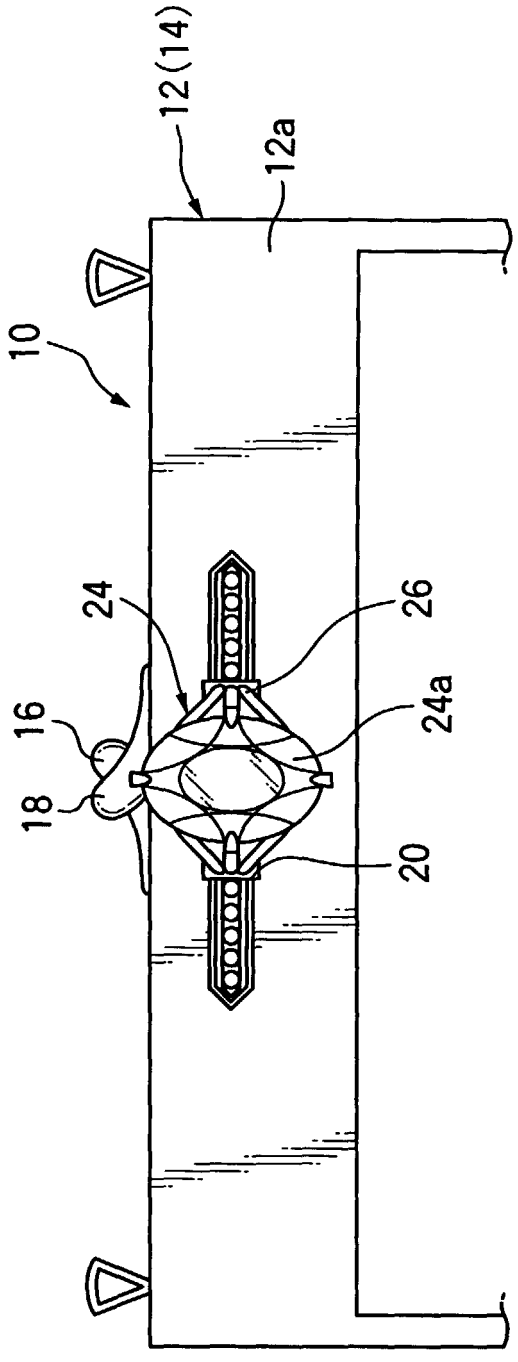

FIG. 3

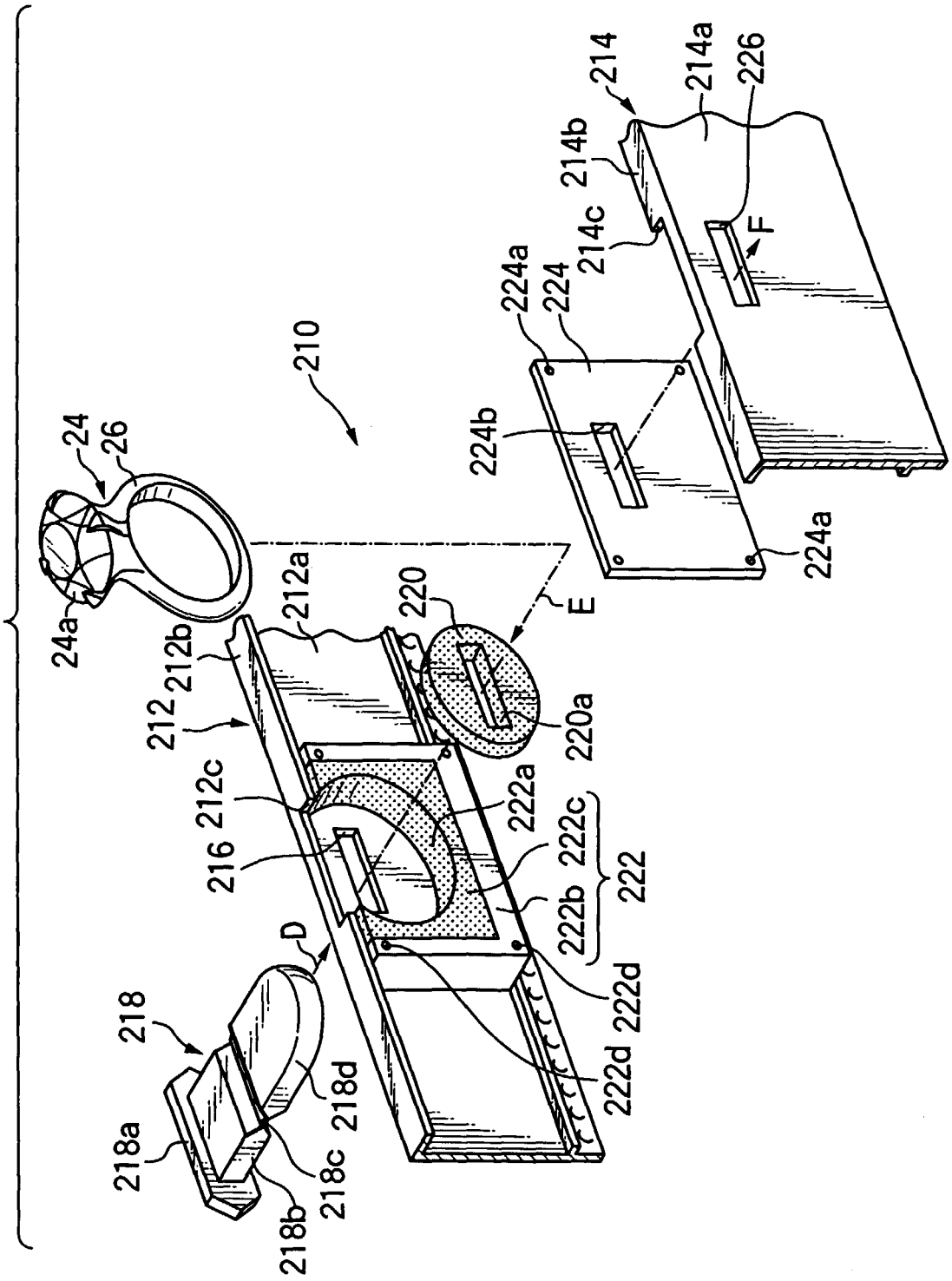
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FIG. 4

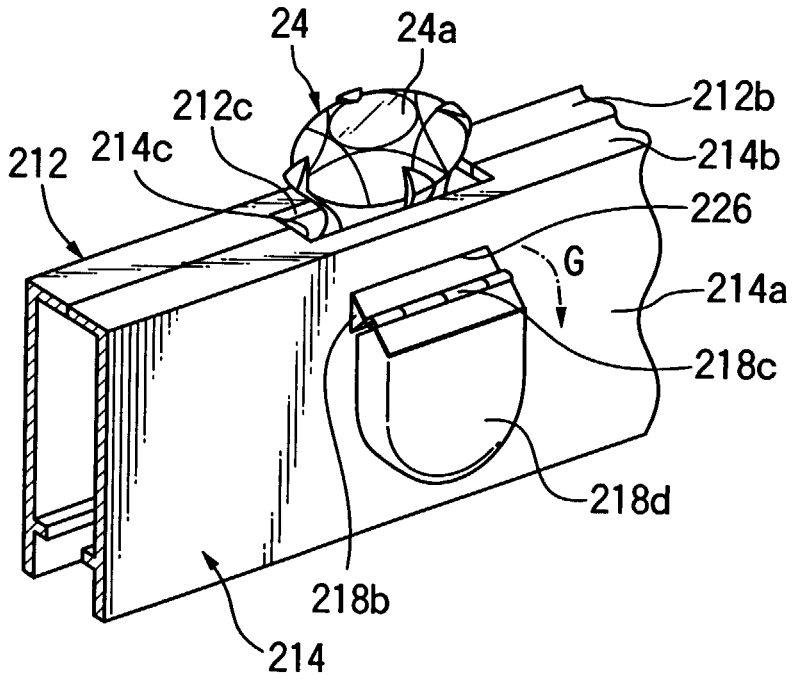
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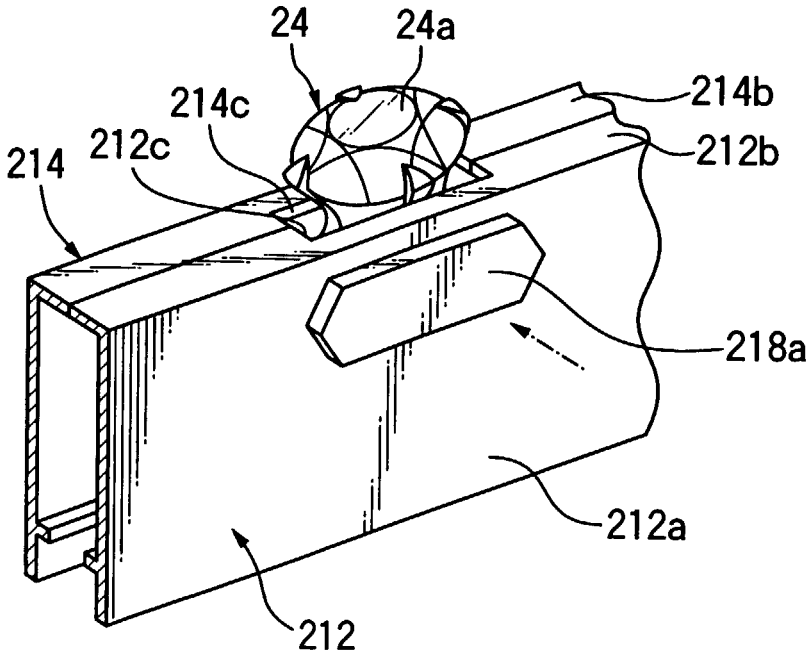
FIG. 5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