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Description

The present invention relates to cufflinks.

Conventional cufflinks are one-piece, comprising a decorative element and a link member integrally provided therewith. The link member bears an engaging element rotatable in an axial plane. This engaging element has to be inserted through the button holes of a shirt cuff, keeping it in a straight line, and then to be rotated so as to securely attach the link to the cuff.

The use of such cufflinks has a drawback that the insertion of the link into the button holes provided at a rear portion of the cuff need an inconvenient manipulation since the link is integral with the decorative member. Moreover the link is easily rotated by contact with the wearer's clothing and the other objects. Such factors tend to cause an untidy appearance. The link may fall from the cuff, which often disappears from view. A convertible cuff shirt is commonly worn with the conventional cufflink. This has buttons near the cuff button holes. The conventional cufflink as described above does not conceal the buttons, and thus an untidy appearance results.

The present applicant has proposed several improvements to ameliorate such drawbacks, and has obtained the issued Utility Model Nos. 1253159, 1253166 and 1253167 on October 31, 1978 in Japan.

The inventor has further proposed an improved cufflink described in Japanese Utility Model Application Ser. No. 54-49013 (corresponding to US Patent No. 4242776). This may be summarized as follows:

The cufflink has two units which are disassemblably assembled to one another through a pair of shirt cuff button holes. For assembly the outer end of the shank is inserted through an opening in the back of the decorative head element, and pushed in further to deflect two springs inside the decorative head element. The decorative head element is then released, to lock the cufflink in an assembled condition. The shank is unitary with a keeper which has a recess in its inner face, for accepting and hiding from view the shirt button found beside one of the cuffbutton holes on so called "convertible cuff shirts". For removal, the head and keeper are pushed together and then relatively turned 90 degrees about the shank axis.

For the above US application, the US Patents 506778, 644894, 885419, 908745, 2745620, 3107409 3220073, 3643296 and 3718950 were cited, but only for reference.

For its further corresponding applications in West Germany (under Ser. P2937344.2-23) and French patent application 79-27302, prior art has been cited as follows:

The present applicant's prior Japanese Pub. No. 53-3856 (corr. to said Japanese U.M. 1253166), US Patents 1515997, French Patents 533883 and 701467, German 701467, 551971, US Patents

1431339, 2406026, 2658249, 2847744, French Patent 478722 and German 225466.

However, these documents are of little relevance to the invention against which they were cited, and of still less to the present invention.

The present invention has been made to ameliorate still further said prior drawbacks. Preferred embodiments provide a cufflink which permits easy assembly and fixing through the button holes of a cuff, readily effectable with one hand. Furthermore, the construction and manufacture of the links may be much simpler than those of the links just described. Thus, the number of separate components may be reduced, and the troublesome operation of securing small components with tiny screws may be avoided.

According to the present invention there is provided a cufflink comprising a releasably interconnectable head element and shank element, wherein the head element includes a rear wall portion having an aperture (4a) into which a head end portion of the shank element is insertable, there being spring clip engagement means for releasably retaining the inserted shank head end portion, said engagement means comprising a spring clip having a pair of laterally spaced, generally U-shaped legs having respective free end portions nearest one another and having respective opposite ends joined by a rim, said free end portions being normally urged to lie adjacent said aperture at respective sides thereof so as to restrain inward passage of the shank element; said rim, in the vicinity of said free end portions having an arcuate bridge portion; all of said spring clip except said bridge portion lying generally in a common plane, and said bridge portion being resiliently urged to be at an acute angle which intersects said common plane, and said rear wall portion including means for engaging said bridge of said spring clip to the head element with said rim resiliently torsionally stressed by an amount sufficient to cause said bridge portion to lie substantially in said common plane, whereby said spring clip is resiliently loaded against the inside face of said rear wall portion; there also being abutment means at diametrically opposite sides of the aperture which restrain deflection of the free end portions of the spring clip laterally apart when they are adjacent the rear wall portion; the head end portion of the shank element being convexly curved and provided with a diametrically opposed pair of grooves, such that when the head portion is thrust into the aperture it first deflects the free end portions of the spring clip away from the inside face of the rear wall portion beyond the abutment means and then laterally away from one another, until they snap into engagement with respective ones of said grooves, whereafter the spring urges the head end portion outwardly until the end portions of the clip are adjacent the wall portion; the arrangement being such that disengagement of the shank element requires it to be rotated by substantially 90° to disengage the

free end portions from the grooves, but this is prevented by the abutment means until the shank element has been pushed inwardly against the urging of the spring clip.

Some preferred embodiments of the invention will now be described with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view from the rear of the decorative member of a cufflink according to a first embodiment of this invention;

Fig. 2 is a rear elevation of the decorative member;

Fig. 3 is a cross sectional view along line A—A in Fig. 2;

Fig. 4 is a cross sectional view along line B—B in Fig. 2;

Fig. 5 is a perspective view of the inner side of the rear cover plate of the decorative member;

Fig. 6 is a perspective inside view of the casing shell of the decorative member;

Fig. 7 is a perspective view of a spring clip for use in the first embodiment;

Fig. 8 is a cross sectional view along line C—C in Fig. 7;

Fig. 9 is a perspective view of a securing plate for use in the first embodiment;

Fig. 10 is a side view of the link member of the first embodiment;

Fig. 11 is a plan view of the link member;

Figs. 12 and 13 are partial transverse cross sectional front views for illustrating the engaged or locked condition (Fig. 12) and the start of the decoupling (Fig. 13) of the first embodiment;

Fig. 14 is a cross sectional view along line D—D in Fig. 13;

Fig. 15 is a partial transverse cross sectional front view showing the link member rotated through 90° at the start of the decoupling;

Fig. 16 is a cross sectional view along line E—E in Fig. 15;

Fig. 17 is a partial transverse cross sectional front view showing a state shortly before the decoupling;

Fig. 18 is a partial transverse cross sectional view showing one configuration;

Fig. 19 is a side view showing a modified link member;

Figs. 20—36 are views similar to those of Figs. 1 to 8 and 10 to 18 respectively, but showing a further embodiment of the invention.

The first embodiment (shown in Figs. 1 to 18) has a head element 1. This has a casing shell 3 whose general form is that of a rectangular box with an open back. A separate engaging shank element 2 is disassemblably attached, so as to form a cufflink.

The casing shell 3 may comprise a precious metal. A rear cover plate 4 is attached by soldering or other convenient means. It has a central hole 4a defined in a frusto-conical annular raised portion 4b of greater thickness.

Provided on an inside surface of the rear cover plate 4 is a pair of symmetrical wing projections 5 at diametrically opposed sides of said hole 4a. They are generally rectangular with arcuate

radially outer walls. Their inner limits are adjacent the hole 4a.

Also on the inner surface of the rear cover plate 4 and in a widthwise direction at the top and the bottom of the hole circumference, sandwiching the hole 4a are a pair of L-shaped pieces 6,6 of which the inner faces are partial inner cylindrical or arcuate walls 6a which continue the circular hole 4a. The bent-over portions are provided with screw threaded holes 6b. The construction and arrangement of the elements 5 and 6 are chosen for cooperating with a spring clip, which will now be discussed.

Fig. 7 shows a convenient spring clip 7 for the present embodiment. This clip 7 has a generally "spectacle frame" shape. It is made of a resilient material, such as metal wire. It has side legs 7a,7a generally symmetrically formed in U-shapes with free inner arms bent inwardly. The outer arms are connected by an upper rim having an arcuate dent or bridge portion 7c downwardly. This is also inclined outwardly. In other words, a plane including said arcuate dent 7c and the plane containing the side legs 7a,7a are at an angle.

This spring clip 7 is inserted with its arcuate dent 7c in the space beneath the bent over arm of either one of the L-shape pieces 6, and with its side legs 7a embracing the wings 5,5. Each of its inner arms has a free end portion 7b located between a respective wing projection 5 and the nearer side of the two L-shape pieces 6,6 so as to sandwich both ends of one of the L-shape pieces 6 at its tip ends. The free arms 7b,7b are retained in a resiliently deformed state, being urged towards one another.

The gaps between the bent over arms of the L-shape pieces 6 and the inner face of the cover plate 4 are similar to the spring clip diameter. Therefore the arcuate dent 7c must be resiliently deformed on insertion between the L-shaped piece 6 and the rear cover plate 4. Thus, the side legs 7a,7a are urged against the rear face of the plate 4.

A securing plate 8 is fixed onto the inside of the rear cover plate 4 after the securing of the spring clip 7. This securing plate 8 is generally rectangular in shape and has toward the casing shell 3 a central frusto-conical annular projection 8a, which has a central reverse projection having the general form of a cylinder 8b with a semi-spherical tip end toward the rear cover plate 4. The frusto-conical projection 8a has its root diameter generally identical with the diameter of the annular hole 4a of the plate 4, and their axes coincide.

The plate 8 has its length identical with the horizontal distance between the ends of the two L-shaped pieces 6,6. Its lateral dimension is shorter than said distance. The securing plate 8 is fixed to the plate 4 by inserting screws 9 into upper and lower holes 8c, 8c in the lengthwise direction and threadably mating said screws 9 within the threaded holes 6b,6b. The plate 8 is fixed so that the tip end of cylinder 8b extends into an axial central portion of the hole 4a.

The shank element 2 has a structure as shown in Figs. 10 and 11, which comprises a keeper 10 having a recess 10a for hiding a button in the shirt's sleeve cuff, and a shank 11 integrally provided at one end thereof, extending from its inner side on the same side of the recess 10a, at an angle so as to form a generally V-shape angle therebetween, as shown in Fig. 10.

The shank 11 has at its tip end a semi-spherical head end portion 12 whose central forward end has an orifice 12a for receiving said cylinder 8b. Provided at both sides of the orifice 12a are opposed slots or grooves 12b, 12b. Each slit has a bottom wall which is parallel with the axis of the shank 11, and the upper and lower side faces are perpendicular to the axis. The slits are dimensioned for receiving the free end portions 7b of the spring clip 7.

The head 12 is formed semi-spherically but its circular curved face continues from a position generally identical with the side rim of the button keeper 10 side of said slots 12b. The root of the head has a plane surface perpendicular to the axis of the shank 11 and a smaller diameter arm continues therefrom to the shank 11. This arm 11a has a smaller diameter than the shank 11 and a length slightly larger than the thickness of the cloth of the sleeve cuff of the shirt.

Now, installation/assembly and removal/disassembly of the cufflink on and from a shirt cuff will be explained in more detail.

First, for wearing, the shank 11 is inserted into the button holes of the cuff of the wearer's sleeve and the link's head 12 is brought on the surface of the cuff. In this state, the head 12 is inserted into the circular hole 4a of the decorative head element 1, keeping the slots 12b, 12b of the head 12 parallel to the free end portions 7b, 7b of the clip spring 7.

The clip's free end portions 7b, 7b are forcibly spread along the semi-spherical surface of the head 12 and pushed upwardly, as shown in Fig. 12, and upon oppositely facing the slots 12b and the free end portions 7b, the free end portions 7b come into the slots 12b by their own repulsive stored energy and the cylinder 8b is snugly received in the orifice 12a.

This state is shown in Fig. 13. In this state, release of the pressure on the shank element 2 allows it to be pushed back, the clip free end portions 7b remaining snugly within the slots 12b, because of their resilient urging toward the rear cover plate 4. Then the head 12 returns to its original position of the clip's free end portions 7b, together with said free end portions 7b. In this state, since the free end portions 7b are completely within the slots 12b, they do not prevent the head from returning into the hole 4a and the clip free end portions 7b never slip off nor come out from the slots 12b and the shank element 2 never slips nor comes out from the decorative head element 1. This means that the decorative head element 1 never rotates nor drops unless it is pushed or compressed toward the shank element 2, since the clip free end

portions 7b are blocked to move with the circumferential wall of the annular hole 4a. This locking operation can be effected using one finger.

For detaching the cufflink, one must push the decorative member 1 toward the shank element 2 to pull the clip free end portions 7b out from the annular hole 4a and then rotate the head in either direction for 90° with respect to the link 2 from the state shown in Fig. 13 to the state shown in Fig. 15. Then, the clip free end portions 7b, 7b, respectively come out from the slots 12b, 12b and contact the arcuate circumference of the head 12.

In this state, the clip free end portions 7b, 7b are resiliently urged to approach one another and also to push the shank element 2 out. Since the head's semi-spherical surface starts at a position corresponding with the side rim of the button keeper 10 side, the clip free end portions 7b slides along the head's semi-spherical surface and the head 12 is thereby pushed out from the annular hole 4a to permit an easy de-coupling of the shank element 2. After that, the clip free end portions 7b, 7b take positions between the wings 5 and the L-shaped pieces 6. Thus, the assembling and the disassembling and attaching and detaching of the cufflink are easily effectable at a desired time.

Heretofore, the embodiment has been explained for use for the convertible sleeve cuff having button thereon which is hidden within the recess 10a of the keeper 10 but the cufflink is also compatibly usable for the conventional double cuff. The decorative head can be decorated with a fanciful design, symbol or symbols or alphabets such as initials of the wearer's name, a house or family mark or a club's mark and the like. Those can be engraved on the decorating surface or attached with a metallic sticker having those decorative signs with a certain adhesive. Such stickers can be chosen by the wearer.

Fig. 19 shows a link member usable in place of the shank element 2 described above. It has a shank 11 formed in annular ring shape having its central hole 11b to prevent the link from rotating. Its shape is largely arbitrary and much variation is possible, provided that it can fulfil its function.

Figs. 20—36 show another embodiment of the invention. Elements which generally correspond bear the same reference numerals as used in Figs. 1 to 19.

A decorative head element 1 is formed generally as a quadrilateral enclosure. The element 1 is freely dis-assemblably assembled with a shank and shank element 2 formed separately therefrom.

The decorative head element 1 has a generally rectangular casing shell 3 formed from (e.g. noble metal. It is open to the rear, where a generally rectangular cover plate 4 is secured e.g. by soldering. The plate 4 has a central circular hole 4a surrounded by a raised portion 4b which builds up slowly toward the circular hole 4a at the outside surface of the plate 4.

A pair of elongate openings 4c, 4c, extending in

line transversely of the plate 4, is formed at each longitudinal end region of the plate 4. They lessen the weight of the cover plate 4 and let out any water, etc. which might enter the interior.

A low side wall 4d extends at the inside periphery of the cover plate 4 and a central band or wall 4e extends transversely across the inner surface of the plate 4. A lower step 4f is formed outside the side wall 4d throughout the entire circumference thereof, for use in fitting to the casing shell 3.

The central wall 4e is formed as high as the side wall 4d so as to close the above circular hole 4a. Its portion confronting the circular hole 4a is thin. This portion is dished inwardly, the dishing 4g protruding towards the casing 3. At the opposite side of the dishing 4g, there is a boss 4h of bullet head shape, projecting into the hole 4a. Its height is such that it does not project outside the hole 4a.

A slot 4i having a depth equal to the height of the central wall 4e is formed across the wall 4e adjacent one side of the dishing 4g, so as to divide the wall 4e into two parts.

A pilot hole 4j of small diameter extends through the side wall 4d and the central wall 4e on both sides of the slot 4i, into the region of the dishing 4g. A pin 105 fits therein.

A pair of rectangular projections 4k are provided, one on either side of the central wall 4e at the rear side of the cover plate 4. Their inner edges are in line with the circumference of the circular hole 4a. They are spaced from the central wall 4e by approximately the diameter of a fine metal wire which constitutes a spring as described below.

The above slot 4i is used to install a spring clip 7 of "spectacle frame" configuration, formed from a piece of fine metal wire of sufficient resilience as shown in Fig. 26. The spring 7 has generally U-shaped side leg portions 7a, 7a located side by side, the inner leg portions being straight free end portions 7b. The outer leg portions are connected at their upper ends by a portion comprising an arcuated dent 7c formed so as to curve toward the free end portions 7b but out of the plane, towards the outside.

The spring 7 is installed in position by fitting the dent 7c into the slot 4i, deforming resiliently by depressing the curved portion using a fine jig so that the plane containing the dent 7c and the plane containing the leg portions 7a, come together. In this condition the pin 105 is passed into the pilot hole 4j so that it crosses the slot 4i and passes over the dent 7c. Then, each free end portion 7b is positioned between a projection 4k and the central wall 4e, one on each side of the hole 4a. Thus the dent 7c is forcibly deflected so that the spring 7 is given a force urging the leg portions 7a to the rear side of the plate 4.

The shank element 2, on shank and keeper unit, is shown in Fig. 28 and 29. It includes a button keeper 10 having a circular recess 10a to receive a button and a shank 11 formed integrally therewith at one end thereof and tilted toward the recess

10a. Accordingly, when looked at from the side, as in Fig. 28, the shank element 2 has a V-shape.

A semi-spherical head 12 is formed on the tip end portion of the shank 11, and a pilot hole 12a to be fitted by the boss 4h is formed at the centre of the tip end of the head 12. Also there is a slot 12b, on each side of the head 12, perpendicular to the axial line of the shank 11. The slots have such a width and depth as to be capable of holding respective free end portions 7b of the spring clip 7.

Furthermore, the head 12 is formed semi-spherically so that a circular curved surface starts in continuity from approximately the same position as the button keeper 10-side edge of the above slot 12b.

At the base of the head 12 is a flat surface perpendicular to the axial line of the shank 11, and a shaft 11a of a small diameter is connected to this base portion. The shaft 11a is smaller in diameter than the shank 11 and its length is slightly larger than the thickness of a shirt cloth.

Next, there will be described how to use the cufflink just described.

First, when installing, the shank element 2 is passed through the button holes of a shift cuff from inside to outside with the two ends of the cuff overlapped, so that the head 12 is disposed at the front-side of the cuff. While thus disposed, the head 12 is fitted into the circular hole 4a of the decorative head element 1 so that the slots 12b, of the head 12 confront respective free end portions 7b, of the spring 7. This is shown in Fig. 30. As indicated in the view, a proper fitting can be obtained by fitting the shank 11 into the circular hole 4a with the direction in which the button keeper 10 projects relative to the shank 11 crossing perpendicularly the longitudinal direction of the casing shell 3 of the decorative head element 1. The head 12 is further pushed to travel under this condition. Then, as shown in Figs. 30 and 31, the free end portions 7b of the spring 7 are separated further from each other and pushed upward along the curved surface of the semi-spherical head 12. When the free end portions 7b confronts the slot 12b, it is urged therein by its resilient, and the boss 4b is fitted into the orifice 12a. This is shown in Fig. 31.

When the inserting force is released, the free end portions 7b push back the shank element 2 with the free end portions 7b within the slots 12b, urged towards the plate 4 so that the head 12 returns together with the free end portions 7b to the original position relative to the free end portions 7b in the circular hole 4a. The free ends 7b are perfectly fitted in the slots 12b. As a result, the head 12 is not prevented from returning into the circular hole 4a, the free ends 7b do not slip out of the slots 12b and the member 2 does not slip out of the decorative head element 1. In other words, unless deliberately pushed toward the shank element 2, the decorative head element 1 will not turn so as to slip out of the mating unit because the free end portions 7b are restrained by

the sides walls of the projections 4k adjacent the hole 4a.

When it is desired to remove the cufflink, the decorative head element 1 is depressed relative to shank element 2 so that the free end portions 7b are pushed towards the casing shell 3-side so that they no longer abut the side walls of the projections 4k. Rotation through 90° in either direction then frees the ends 7b from the slots 12b so that they contact the circular peripheral surface of the head 12 and are moved onto the upper surfaces of the projections 4k,4k. This condition is shown in Fig. 33.

The free end portions 7b experience resilient forces, that firstly urge them together and secondly urged them to push out the shank element 2. Since the curved surface of the head 12 starts approximately from the same position as that edge of slot 12b which is on the side of the button keeper 10-side edge of the slot 12b, the free end portions 7b slide along the curved surface of the head 12. As a result of this, as shown in Fig. 35, the head 12 is pushed out from the circular hole 4a to effect a simple removal of the link member 2. The free end portions 7b are then located each between the projection 4k and the central wall 4e. Installation and removal of the cufflink are executed very easily in this manner.

As is apparent from the description set forth so far, the plate 4 can be integrally formed.

Claims

1. A cufflink comprising a releasably inter-connectable head element (1) and shank element (2), wherein the head element (1) includes a rear wall portion (4) having an aperture (4a) into which a head end portion (12) of the shank element (2) is insertable, there being spring clip engagement means (7,12b) for releasably retaining the inserted shank head end portion (12), said engagement means comprising a spring clip (7) having a pair of laterally spaced, generally U-shaped legs (7a) having respective free end portions (7b) nearest one another and having respective opposite ends joined by a rim, said free end portions (7b) being normally urged to lie adjacent said aperture (4a) at respective sides thereof so as to restrain inward passage of the shank element (2); characterised in that said rim, in the vicinity of said free end portions (7b) has an arcuate bridge portion (7c); all of said spring clip (7) except said bridge portion (7c) lying generally in a common plane, and said bridge portion (7c) being resiliently urged to be at an acute angle which intersects said common plane, and said rear wall portion (4) including means (6; 4i, j) for engaging said bridge (7c) of said spring clip (7) to the head element (1) with said rim resiliently torsionally stressed by an amount sufficient to cause said bridge portion (7c) to lie substantially in said common plane, whereby said spring clip (7) is resiliently loaded against the inside face of said rear wall portion (4); there also being abutment means (5; 4k) at diametrically opposite

sides of the aperture (4a) which restrain deflection of the free end portions (7b) of the spring clip laterally apart when they are adjacent the rear wall portion (4); the head end portion (12) of the shank element (2) being convexly curved and provided with a diametrically opposed pair of grooves (12b), such that when the head portion (12) is thrust into the aperture (4a) it first deflects the free end portions (7b) of the spring clip away from the inside face of the rear wall portion (4) beyond the abutment means (5; 4k) and then laterally away from one another, until they snap into engagement with respective ones of said grooves (12b), whereafter the spring urges the head end portion outwardly until the end portions (7b) of the clip (7) are adjacent the wall portion; the arrangement being such that disengagement of the shank element (2) requires it to be rotated by substantially 90° to disengage the free end portions (7b) from the grooves (12b), but this is prevented by the abutment means until the shank element (2) has been pushed inwardly against the urging of the spring clip (7).

2. A cufflink according to claim 1 wherein the inside face of said rear wall portion (4) bears a pair of bosses (5; 4k) flanking diametrically opposite sides of said aperture (4a) so as to provide said abutment means and so as to be embraceable by the U-shaped legs (7a) of the clip; and wherein the means for engaging the bridge portion (7c) comprise limited gap bracket means (6; 4i, j) adjacent the aperture (4a) angularly between said bosses.

3. A cufflink according to claim 2 wherein the inside face of said rear wall portion (4) is provided with a pair of L-shaped brackets (6), each L-shaped bracket (6) having a first leg based on the rear wall portion (4), with a radially inner side (6a) that is cylindrically concavely coincident with a respective portion of the perimeter of the aperture (4a), and a radially outwardly projecting tank; said brackets being angularly between said bosses (5), and one of said brackets (6) constituting said bracket means.

4. A cufflink according to claim 2 wherein the inside face of said rear wall portion (4) is provided with an upstanding elongate wall portion (4e) extending generally radially of the aperture (4a) angularly between the bosses (4k), said wall portion (4e) being provided with a transverse slot (4i) and a pilot hole (4j) interrupted by the slot and capable of receiving a pin (105), said slot and pin constituting said bracket means.

5. A cufflink according to claim 3 or 4 wherein the clip (7) is mountable with its U-shaped legs (7a) embracing respective said bosses, (5; 4k) and each free end portion (7b) extending laterally between a respective said boss and said upstanding wall portion (4e) or both of said L-shaped brackets (6).

6. A cufflink according to any one of the preceding claims wherein said head element (1) includes means providing a round-tipped cylindrical projection (8b; 4h) projecting coaxially towards said apertures (4a) and wherein said

shank portion (12) has an axially-opening socket (12a) which receives said projection (8b; 4h) as said shank portion is inserted through said aperture (4a).

7. A cufflink according to claim 6 as appendant on claim 3 further including a securement plate (8) mounted on both said tangs, said plate providing said projection (8b) and an annular well at the base thereof for receiving the head end portion (12).

8. A cufflink according to claim 6 as appendant on claim 4 wherein said upstanding wall portion (4e) has portions on either side of the aperture bridged by an inwardly-dished portion (4g) whose outer surface provides said round-tipped cylindrical projection (4h).

9. A cufflink according to any one of the preceding claims wherein the shank element (2) includes a keeper (10) which has a recess (10a) which is sized and positioned to hide a shirt cuff button.

10. A cufflink according to any one of the preceding claims wherein the shank element (2) has a circumferentially extending recess (11a) rearwardly adjacent said head end portion (12).

11. A cufflink according to any of claims 1 to 9 wherein said shank element (2) has an annular shank (11) connecting the head end portion (12) and a keeper (10), the shank's aperture (11b) being in a transverse direction.

Revendications

1. Bouton de manchette comprenant un élément formant tête (1) pouvant être interconnecté de manière détachable et un élément formant tige (2), où l'élément formant tête (1) comprend une partie de paroi arrière (4) ayant une ouverture (4a) dans laquelle une partie d'extrémité de tête (12) de l'élément formant tige (2) peut être insérée, avec un moyen d'engagement par attache à ressort (7, 12b) pour retenir de manière libérable la partie d'extrémité de tête de la tige insérée (12), ledit moyen d'engagement comprenant une attache à ressort (7) ayant deux branches latéralement espacées, généralement en forme de U (7a) ayant des parties extrêmes libres respectives (7b) très proches l'une de l'autre et ayant des extrémités respectives opposées jointes par un cercle, lesdites parties extrêmes libres (7b) étant normalement sollicitées pour se trouver adjacentes à ladite ouverture (4a) sur ses côtés respectifs afin de retenir le passage de l'élément formant tige (2) vers l'intérieur; caractérisé en ce que ledit cercle, à proximité desdites parties extrêmes libres (7b) a une partie arquée de liaison (7c); la totalité de ladite attache à ressort (7) à l'exception de ladite partie de liaison (7c) se trouvant généralement dans un plan commun et ladite partie de liaison (7c) étant élastiquement sollicitée pour être à un angle aigu qui couple ledit plan commun, et ladite partie de paroi arrière (4) comprenant un moyen (6; 4i, j) pour engager ladite liaison (7c) de ladite attache à ressort (7) à

l'élément formant tête (1) avec ledit cercle tendu élastiquement en torsion d'une quantité suffisante pour forcer ladite partie de liaison (7c) à se trouver sensiblement dans ledit plan commun, ainsi ladite attache à ressort (7) est élastiquement chargée contre la face interne de ladite partie de paroi arrière (4); des moyens d'aboutement (5; 4k) étant également prévus sur des côtés diamétralement opposés de l'ouverture (4a), qui retiennent la déformation des parties extrêmes libres (7b) de l'attache à ressort latéralement au loin l'une de l'autre lorsqu'elles sont adjacentes à la partie de paroi arrière (4); la partie d'extrémité de tête (12) de l'élément formant tige (2) étant courbée de manière convexe et pourvue d'une paire diamétralement opposée de gorges (12b), de façon que lorsque la partie de tête (12) est poussée dans l'ouverture (4a), elle déforme d'abord les parties extrêmes libres (7b) de l'attache à ressort au loin de la face interne de la partie de paroi arrière (4) au-delà des moyens d'aboutement (5; 4k) puis latéralement au loin l'une de l'autre, jusqu'à ce qu'elles viennent automatiquement en engagement avec des gorges respectives (12b), ensuite le ressort sollicite la partie d'extrémité de tête vers l'extérieure jusqu'à ce que les parties extrêmes (7b) de la pince (7) soient adjacentes à la partie de paroi; l'agencement étant tel que le dégagement de l'élément formant tige (2) nécessite sa rotation sensiblement sur 90° pour dégager les parties extrêmes libres (7b) des gorges (12b), mais cela est empêché par les moyens d'aboutement jusqu'à ce que l'élément formant tige (2) ait été poussé vers l'intérieur contre la sollicitation de l'attache à ressort (7).

2. Bouton de manchette selon la revendication 1 où la face interne de ladite partie de paroi arrière (4) porte deux protubérances (5; 4k) flanquant les côtés diamétralement opposés de ladite ouverture (4a) afin de former les moyens d'aboutement et afin de pouvoir être entourées par les branches en forme de U (7a) de l'attache; et en ce que les moyens pour l'engagement de la partie de liaison (7c) comprennent des moyens de support à intervalle limité (6; 4i, j) à proximité de l'ouverture (4a) angulairement entre lesdites protubérances.

3. Bouton de manchette selon la revendication 2 où la face interne de ladite partie de paroi arrière (4) est pourvue de deux supports (6) en forme de L, chaque support (6) en forme de L ayant une première branche basée la partie de paroi arrière (4) avec un côté radialement interne (6a) qui coïncide de manière cylindriquement concave avec une partie respective du périmètre de l'ouverture (4a), et une langue faisant saillie radialement vers l'extérieur; lesdits supports étant angulairement entre lesdites protubérances (5) et l'un desdits supports (6) constituant ledit moyen formant support.

4. Bouton de manchette selon la revendication 2 où la face interne de ladite partie de paroi arrière (4) est pourvue d'une partie de paroi allongée dressée (4e) qui s'étend généralement radialement à l'ouverture (4a) angulairement

entre les protubérances (4k), ladite partie de paroi (4e) étant pourvue d'une fente transversale (4i) et d'un trou pilote (4j) interrompu par la fente et pouvant recevoir une broche (105), ladite fente et ladite broche constituant ledit moyen de support.

5. Bouton de manchette selon la revendication 3 ou 4 où l'attache (7) peut être montée avec ses branches (7a) en forme de U entourant respectivement lesdites protubérances, (5; 4k) et chaque partie extrême libre (7b) s'étendant latéralement entre respectivement ladite protubérance et ladite partie de paroi dressée (4e) ou bien les deux supports (6) en forme de L.

6. Bouton de manchette selon l'une quelconque des revendications précédentes où ledit élément formant tête (1) comprend un moyen formant une protubérance cylindrique à bout rond (8b; 4h) faisant saillie coaxialement vers ladite ouverture (4a) et où ladite partie de tige (12) a un emboîtement (12a) ouvrant axialement qui reçoit ladite protubérance (8b; 4h) tandis que ladite partie de tige est insérée par l'ouverture (4a).

7. Bouton de manchette selon la revendication 6 dépendant de la revendication 3 comprenant de plus une plaque d'assujettissement (8) montée sur lesdites deux langues, ladite plaque formant ladite protubérance (8b) et un creux annulaire à sa base pour recevoir la partie d'extrémité de tête (12).

8. Bouton de manchette selon la revendication 6 dépendant de la revendication 4 où ladite partie de paroi dressée (4e) a des parties de chaque côté de l'ouverture qui sont reliées par une partie (4g) en creux vers l'intérieur dont la surface externe forme la protubérance cylindrique à bout rond (4h).

9. Bouton de manchette selon l'une quelconque des revendications précédentes où l'élément formant tige (2) comprend un chapeau (10) qui a un évidement (10a) qui est dimensionné et placé pour cacher un bouton de poignet de chemise.

10. Bouton de manchette selon l'une quelconque des revendications précédentes où l'élément formant tige (2) a un évidement (11a) s'étendant circonférentiellement vers l'arrière à proximité de ladite partie d'extrémité de tête (12).

11. Bouton de manchette selon l'une des revendications 1 à 9 où ledit élément formant tige (2) a une tige annulaire (11) reliant la partie d'extrémité de tête (12) et un chapeau (10), l'ouverture (11b) de la tige étant dans une direction transversale.

Patentansprüche

1. Ein Manschettenknopf umfassend ein miteinander bzw. gegenseitig lösbar verbindbares Kopfelement (1) und Schaftelement (2), worin das Kopfelement (1) einen hinteren Wandabschnitt (4) umfaßt, der eine Öffnung (4a) aufweist, in die ein Kopfendabschnitt (12) des Schaftelementes (2) einsetz- bzw. einführbar ist, wobei Federklemmeingriffseinrichtungen (7, 12b) für das lösbare Festhalten bzw. die lösbare Befestigung des eingeführten Schaftkopfendabschnittes (12) vorgesehen sind und die genannte Eingriffs-

einrichtung eine Federklemme (7) mit einem Paar von im seitlichen Abstand angeordneten, im allgemeinen U-förmigen Schenkeln (7a) aufweist, die jeweils freie Endabschnitte (7b) am nächsten aneinander und jeweilige gegenüberliegende Enden besitzen, die durch einen Rand verbunden sind, wobei die genannten freien Endabschnitte (7b) normalerweise gedrängt bzw. getrieben bzw. gedrückt werden, um an die genannte Öffnung (4a) an jeweiligen Seiten derselben anzuliegen, um die nach innen gehende Passage bzw. den Eintritt des Schaftelementes (2) zurückzuhalten; dadurch gekennzeichnet, daß der genannte Rand in der Nähe der genannten freien Endabschnitte (7b) einen bogenförmigen Brückenabschnitt (7c) aufweist; daß die gesamte genannte Federklemme (7) mit Ausnahme des genannten Brückenabschnittes (7c) im allgemeinen in einer gemeinsamen Ebene liegt und der genannte Brückenabschnitt (7c) elastisch so gedrängt bzw. getrieben bzw. gedrückt wird, daß er einen spitzen Winkel bildet, der die genannte gemeinsame Ebene schneidet, und daß der genannte hintere Wandabschnitt (4) eine Einrichtung (6; 4i, 4j) für den Eingriff der genannten Brücke (7c) der genannten Federklemme (7) mit dem Kopfelement (1) aufweist, wobei der genannte Rand drehelastisch in einem Ausmaß belastet bzw. gespannt ist, das ausreicht, um zu bewirken, daß der genannte Brückenabschnitt (7c) im wesentlichen in der genannten gemeinsamen Ebene liegt, wodurch die genannte Federklemme (7) elastisch gegen die Innenfläche des genannten hinteren Wandabschnittes (4) belastet wird; daß weiters auch Widerlager (5; 4k) an diametral gegenüberliegenden Seiten der Öffnung (4a) vorgesehen sind, die das seitliche Biegen bzw. Auseinanderbeugen der freien Endabschnitte (7b) der Federklemme zurückhalten, wenn sie an den hinteren Wandabschnitt (4) anliegen; daß der Kopfendabschnitt (12) des Schaftelementes (2) konvex gekrümmt und mit einem diametral gegenüberliegenden Paar von Nuten (12b) versehen ist, so daß, wenn der Kopfabschnitt (12) in die Öffnung (4a) geschoben bzw. gedrückt wird, er zuerst die freien Endabschnitte (7b) der Federklemme weg von der Innenfläche des hinteren Wandabschnittes (4) über die Widerlager (5; 4k) hinaus und dann seitlich voneinander weg drückt bzw. ablenkt bzw. biegt, bis sie in Eingriff mit den jeweiligen der genannten Nuten (12b) schnappen, worauf die Feder den Kopfendabschnitt nach außen drückt, bis die Endabschnitte (7b) der Klemme (7) an den Wandabschnitt angrenzen bzw. anstoßen; daß die Anordnung so ausgebildet ist, daß zum Lösen des Eingriffs des Schaftelementes (2) dieses im wesentlichen um 90° gedreht werden muß, um die freien Endabschnitte (7b) aus den Nuten (12b) freizusetzen, dies jedoch von den Widerlagern so lange verhindert wird, bis das Schaftelement (2) nach innen gegen den Druck der Federklemme (7) gedrückt ist.

2. Ein Manschettenkopf nach Anspruch 1, worin die Innenfläche des genannten hinteren Wand-

abschnittes (4) mit einem Paar von Ausbuchtungen bzw. Vorsprüngen (5; 4k) versehen ist, die diametral gegenüberliegende Seiten der genannten Öffnung (4a) flankieren, um die genannten Widerlager zu bilden und um von den U-förmigen Schenkeln (7a) der Klemme Umgriffen zu werden; und worin die Einrichtung zum Eingriff mit dem Brückenabschnitt (7c) eine Träger- bzw. Stützeinrichtung (6; 4i, j) mit begrenztem Spalt angrenzend an die Öffnung (4a) winkelig zwischen den genannten Ausbuchtungen umfaßt.

3. Ein Manschettenknopf nach Anspruch 2, woein die Innenfläche des genannten hinteren Wandabschnittes (4) mit einem Paar von L-förmigen Trägern (6) versehen ist, wobei jeder L-förmige Träger (6) einen ersten Schenkel besitzt, der auf dem hinteren Wandabschnitt (4) angestützt ist, mit einer radial inneren Seite (6a), die zylindrisch konkav mit einem entsprechenden Abschnitts des Perimeters der Öffnung (4a) zusammenfällt und mit einem radial äußeren, vorspringenden Heft bzw. Dorn; wobei die genannten Träger winkelig zwischen den genannten Ausbuchtungen (5) angeordnet sind und einer der Träger (6) die genannte Trägereinrichtung darstellt.

4. Ein Manschettenknopf nach Anspruch 2, worin die Innenfläche des genannten hinteren Wandabschnittes (4) mit einem aufrechtstehenden, langgestreckten Wandabschnitt (4e) versehen ist, der sich im allgemeinen radial von der Öffnung (4a) winkelig zwischen den Ausbuchtungen (4k) erstreckt, wobei der Wandabschnitt (4a) mit einem Querschlitz (4i) und einem Führungsloch (4j) versehen ist, das vom Schlitz unterbrochen wird und fähig ist, einen Stift (105) aufzunehmen, wobei der genannte Schlitz und der Stift die genannte Träger- bzw. Stützeinrichtung darstellen.

5. Ein Manschettenknopf nach Anspruch 3 oder 4, worin die Klemme (7) mit ihren U-förmigen Schenkeln (7a) jeweilige genannte Ausbuchtungen (5; 4k) umgreifend montiert ist und jeder freie Endabschnitt (7b) sich seitlich zwischen einer jeweiligen genannten Ausbuchtung und dem genannten aufrechtstehenden Wand-

abschnitt (4e) oder beiden der genannten L-förmigen Träger (6) erstreckt.

6. Ein Manschettenknopf nach einem der vorhergehenden Ansprüche, worin das genannte Kopfelement (1) eine Einrichtung umfaßt, die einen zylindrischen Vorsprung (8b; 4h) mit abgerundetem Ende schafft, der coaxial zur genannten Öffnung (4a) hin vorspringt und worin der genannte Schaftabschnitt (12) eine sich axial öffnende Buchse (12a) aufweist, die den genannten Vorsprung (8b; 4h) aufnimmt, wenn der genannte Schaftabschnitt durch die genannte Öffnung (4a) eingeführt wird.

7. Ein Manschettenknopf nach Anspruch 6 bezogen auf Anspruch 3 weiters umfassend eine Sicherungs- bzw. Befestigungsplatte (8), die auf den beiden genannten Heften bzw. Dornen montiert ist, wobei die genannte Platte den genannten Vorsprung (8b) und einen ringförmigen Schacht an der Basis desselben für die Aufnahme des Kopfendabschnittes (12) vorsieht bzw. bereitstellt.

8. Ein Manschettenknopf nach Anspruch 6 bezogen auf Anspruch 4, worin der genannte aufrechtstehende Wandabschnitt (4e) Abschnitte auf beiden Seiten der Öffnung aufweist, die von einem nach innen konkav gewölbten Abschnitt (4g) überbrückt sind, dessen äußere Fläche den genannten zylindrischen Vorsprung (4h) mit abgerundetem Ende bildet.

9. Ein Manschettenknopf nach einem der vorhergehenden Ansprüche, worin das Schaftelement (2) einen Halter (10) umfaßt, der eine Ausnehmung (10a) besitzt, deren Abmessungen und Position so gewählt sind, daß sie einen Hemdmanschettenknopf verbirgt.

10. Ein Manschettenknopf nach einem der vorhergehenden Ansprüche, worin das Schaftelement (2) einen sich in Umfangsrichtung erstreckenden Ausnehmung (11a) hinten angrenzend an den genannten Kopfendabschnitt (12) aufweist.

11. Ein Manschettenknopf nach einem der Ansprüche 1 bis 9, worin das genannte Schaftelement (2) einen ringförmigen Schacht (11) aufweist, der den Kopfendabschnitt (12) und einen Halter (10) verbindet, wobei die Öffnung (11b) des Schaftes in Querrichtung verläuft.

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FIG. 1

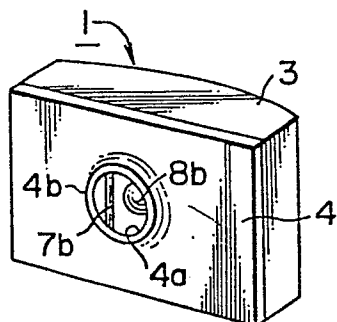


FIG. 4

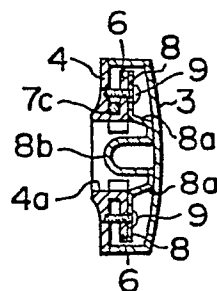


FIG. 2

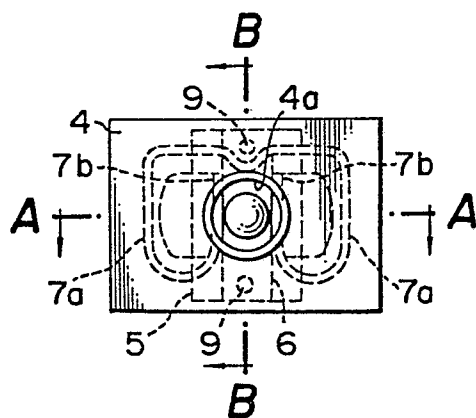


FIG. 5

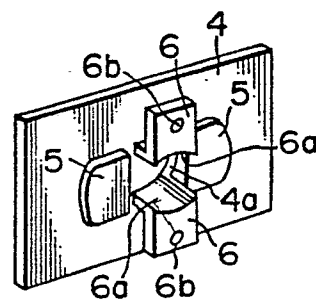


FIG. 3

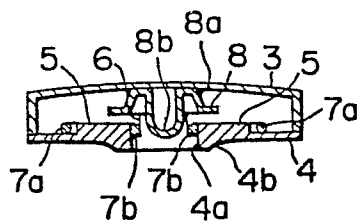


FIG. 6

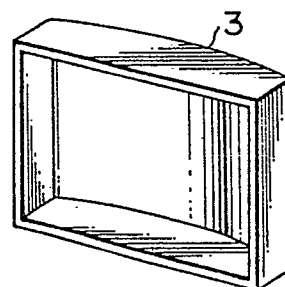


FIG. 7

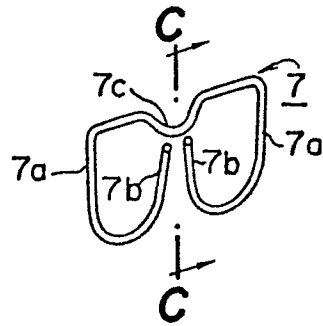


FIG. 8

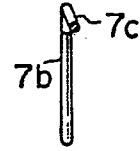


FIG. 9

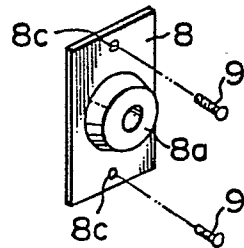


FIG. 10

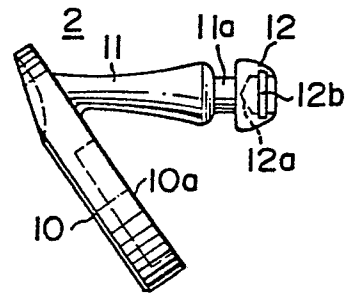


FIG. 12

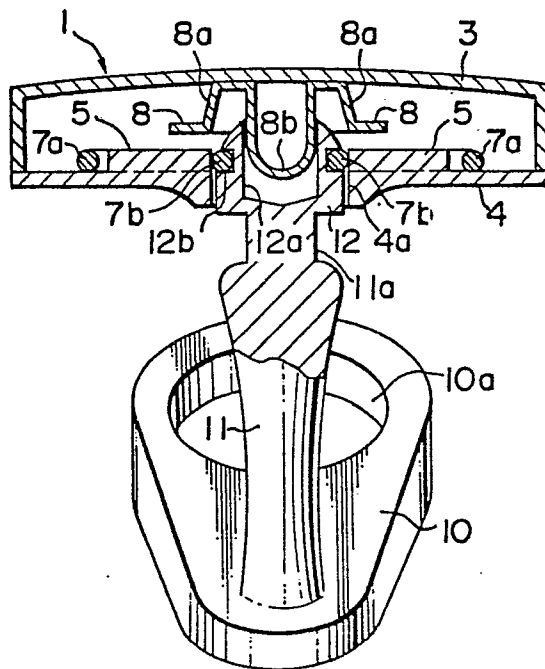


FIG. 11

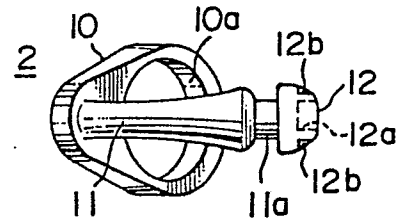


FIG. 13

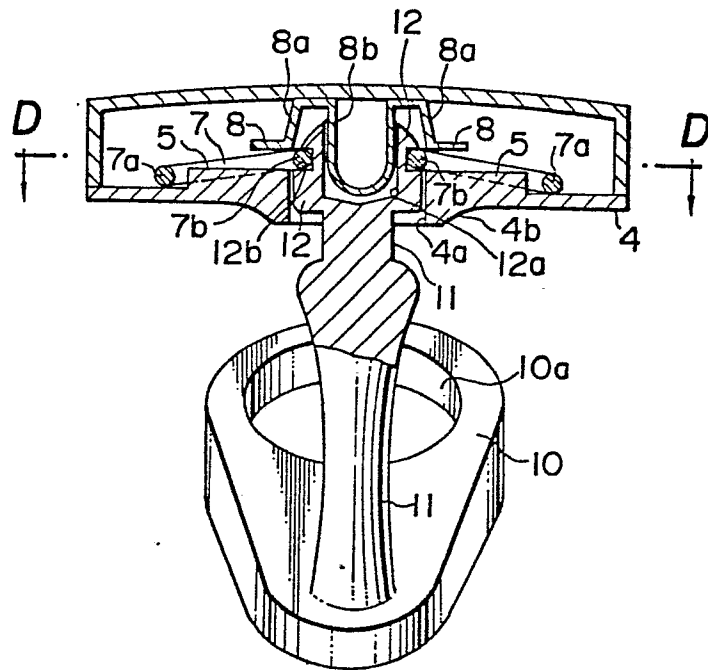


FIG. 14

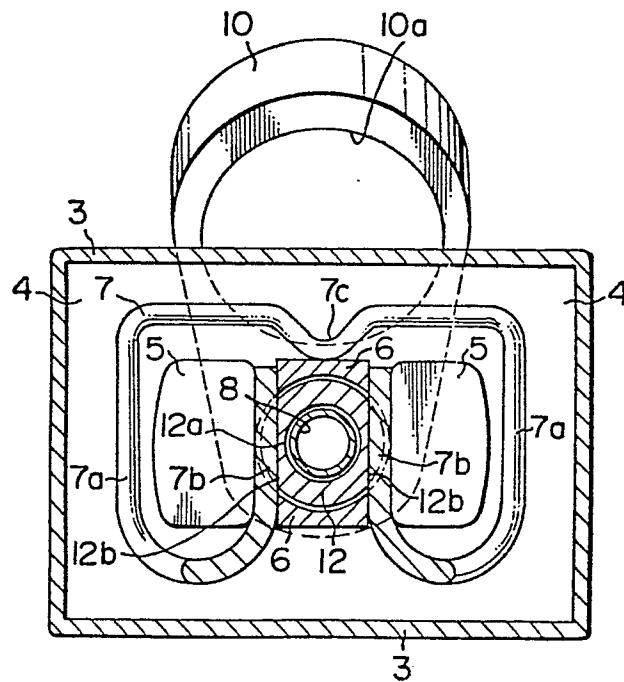


FIG. 15

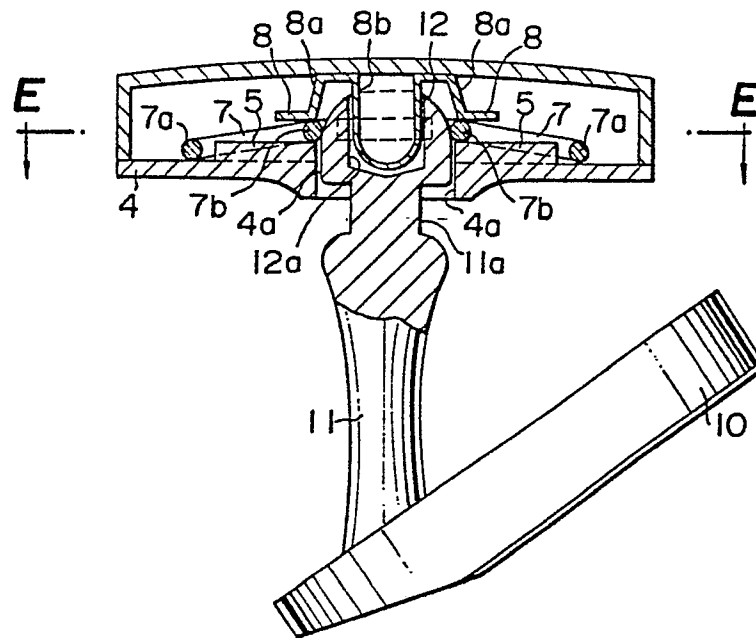


FIG. 16

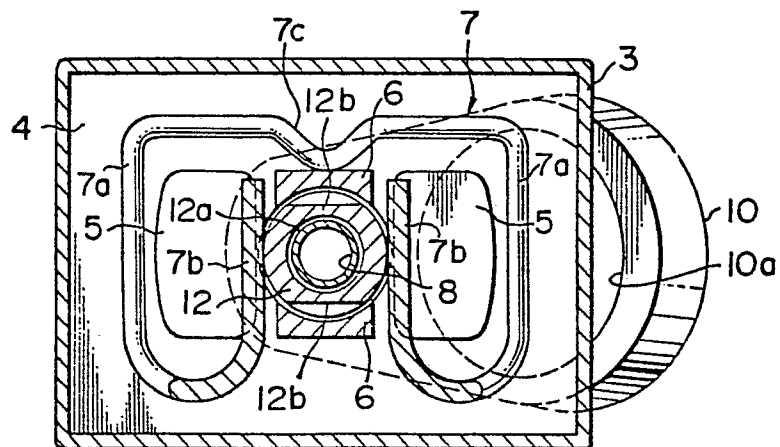


FIG. 17

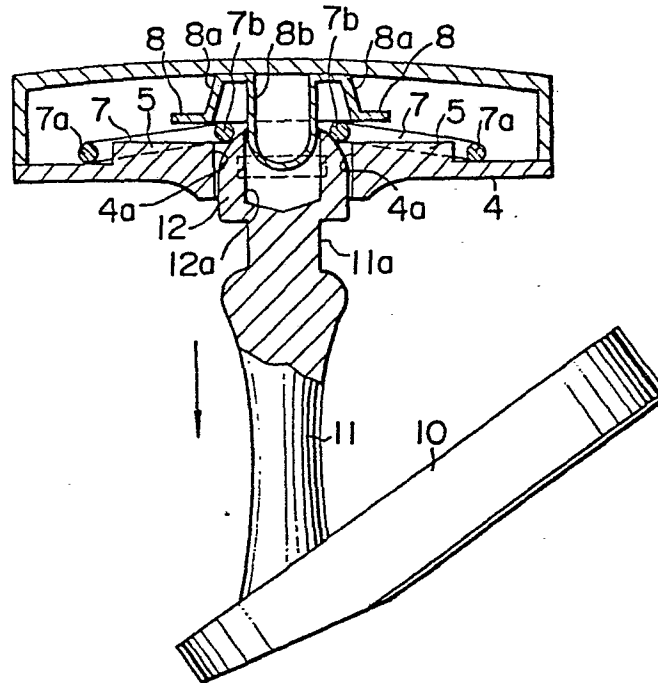


FIG. 18

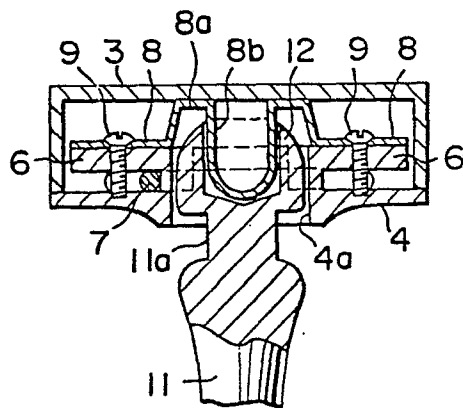


FIG. 19

