July 12, 1927. 1,635,188

E. MOREHOUSE

METHOD OF FORMING THE BODY MEMBER OF A SAFETY CATCH

Filed March 26, 1925

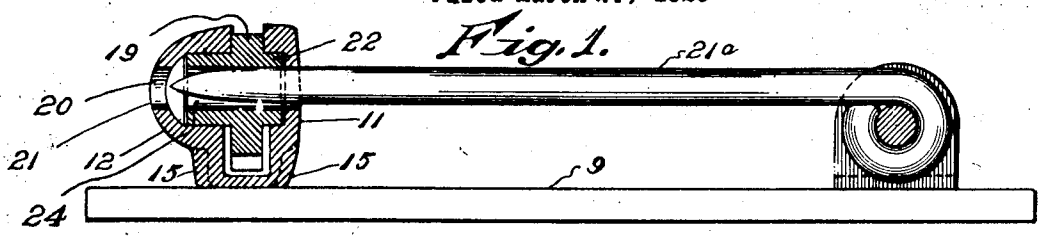


Fig. 1.

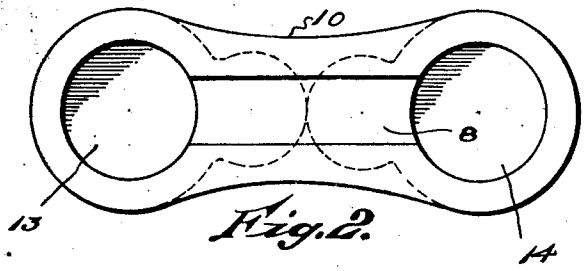


Fig. 2.

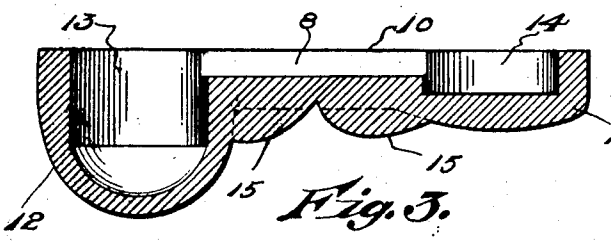


Fig. 3.

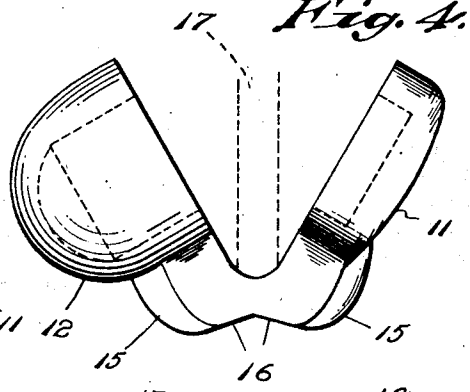


Fig. 4.

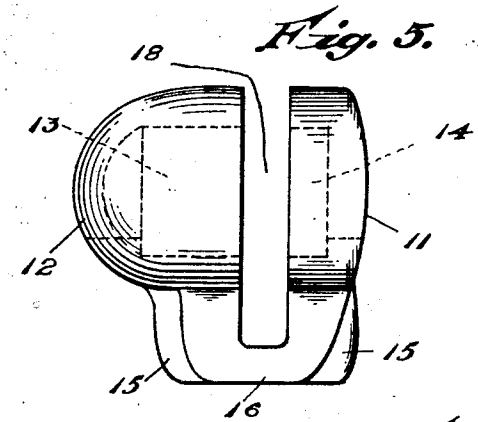


Fig. 5.

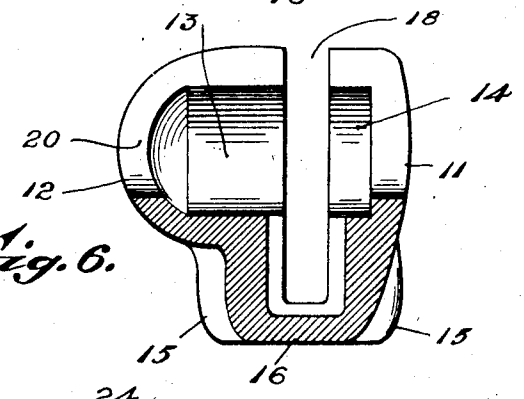


Fig. 6.

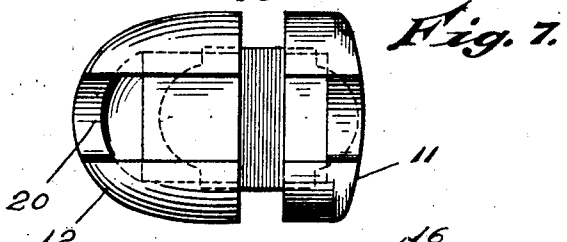


Fig. 7.

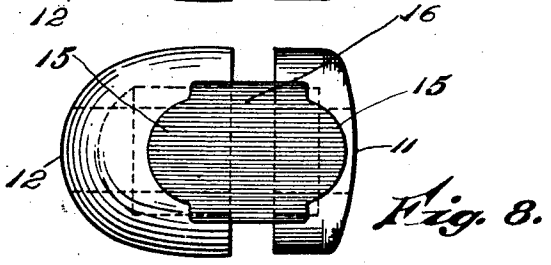


Fig. 8.

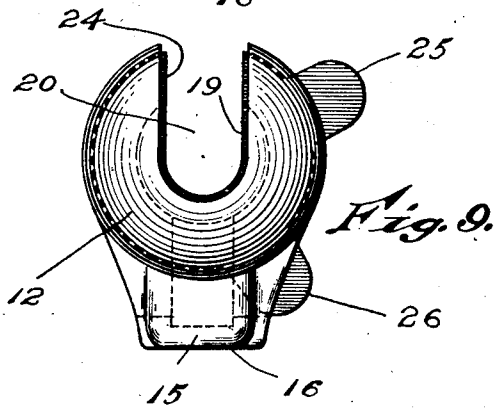


Fig. 9.

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UNITED STATES PATENT OFFICE.

EUGENE MOREHOUSE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO B. A. BALLOU & CO., INC., OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

METHOD OF FORMING THE BODY MEMBER OF A SAFETY CATCH.

Application filed March 26, 1925. Serial No. 18,573.

This invention relates to an improved construction of safety catch, and has for its object to provide a new method of forming the body portion of the catch of a single piece of metal having a pair of side ears connected through a shank portion to and bent up from a common base portion, the ears being enlarged to provide bearings for the rotor trunnions and the shank portions being provided with integral stiffening ribs which are widely separated by the stretching of the stock of the base during a folding operation of the ears upward therefrom, the ribs serving a double purpose of stiffening the shank portions and also providing an enlarged attaching area for the base.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation partly in section illustrating my improved catch in section and in closed position to lock and house the pointed end of the pin-stem therein.

Figure 2 is a view of the body extended and as swaged from the stock.

Figure 3 is a sectional view of the body and in extended position illustrating the rib members as substantially meeting in the center.

Figure 4 illustrates the ear members of the body as being folded up from extended position over the arbor shown in dotted lines, which folding action over this arbor serves to open up and stretch the base portion and separate the ribs to form an enlarged base area.

Figure 5 is a side elevation showing the ears as folded up from the base in operating position.

Figure 6 is a central sectional elevation of the body portion in folded position.

Figure 7 is a top view of this body portion.

Figure 8 is a bottom view of the body portion showing the enlarged supporting area of the base formed by the ends of the ribs.

Figure 9 is an end view of the body portion showing the rotor mounted therein and in open position.

It is found in practice of advantage to provide the body portion of a safety catch with one of its pair of side ears of an extended thickness to receive and provide a bearing for the elongated trunnion on the rotor and also to provide a protecting housing for the point of the pin-stem and to connect both of these ears to the base portion of the body by a relatively thin shank so as to reduce the amount, to the minimum, of the precious metal of which the body is usually made and to also form integral with these shank portions stiffening ribs, which ribs also serve to provide extending supporting base when spread into operating position by the method of folding up the ear portions from the base, by which operation the spread or widely separated position enlarges the supporting area of the base of the body; and the following is a detailed description of the present embodiment of my invention showing one construction by which these advantageous results may be accomplished:—

With reference to the drawings, 10 designates the body of the catch which is swaged of metal, usually of the precious metals, such as gold or silver and, therefore, is so designed as to be formed of the minimum amount of such material and still have the maximum strength for performing its important function of locking the pin-stem therein. To accomplish this, I have swaged a pair of ears 11 and 12 on its body member, the ear 12 being of considerably greater thickness than the ear 11 and is provided with a relatively deep bearing portion for the trunnion of the rotor, presently described. The ear 11 also has a bearing opening 14 of less depth than the bearing 13. On the back of this body member, I have formed a pair of thickened portions, protuberances or ribs 15 whereby when this body member is being bent up to form the base portion 16, as illustrated in Figure 4, by being bent up over the anvil or former 17, shown in dotted lines, is caused to spread and so separate these rib members 15 one from the other, thus providing an extended base portion, as best illustrated in Figure 8, in which the ribs are shown as providing an extended support for soldering or otherwise attaching this base to the back of the bar pin 9. When the body of the catch is bent up into position as illustrated in Figure 5, a space 18 is provided in which the rotor disc member 19 is mounted and this body is provided with an elongated radially-disposed slot 20 through both of its ears, which

is adapted to receive the pointed end of the pin-stem 21ª, the elongated ear 12 serving a double purpose, first, that of providing an elongated bearing 13 for the trunnion, and second, the slot 20 in this ear 12 is for housing the pointed end of the pin-stem so that this point will not project beyond the end of this ear to catch in the fabric of the garment to which the same is attached.

The rotor 19 is preferably formed in disc shape and is provided with an elongated trunnion 21 to be inserted into the bearing 13 and a shorter trunnion 22 to be inserted into the bearing 14 of the body. This rotor is also provided with a radially-disposed slot 24 which extends down through its trunnions 21 and 22 about the center thereof and is also provided with an operating arm 25 set at substantially 70° back from the central line through the radial slot and also is provided with a second arm 26 widely spaced from the arm 25 and set at a distance substantially 75° back from the arm 25.

These arms are so arranged that when the rotor is in open position the arm 26 engages the base 16 of the body, which serves as a stop when the two radial slots register and the arm 25 is caused to engage the base on the opposite side, to form a stop when the rotor is in its complete closed position. In both these instances when the rotor is in either its wide-open or entirely-closed position, neither of the arms 25 or 26 extends above the top of the body portion so as to prevent these arms from engaging in the adjacent fabric of the wearer.

Having thus described one illustrative embodiment of my invention and the best mode known to me for carrying out my method, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for the purpose of limitation, the scope of the invention being defined and limited only by the terms of appended claims.

I claim:

1. An improved method of forming a body member for safety catches, which consists in swaging the same from sheet stock to provide a pair of ear members connected by a shank to a base portion and having a rib on each shank portion, and bending the ears and shanks upward and simultaneously stretching the base portion to separate the ribs whereby the lower ends of said ribs serve to enlarge the area of the supporting base of the body.

2. An improved method of forming a body member for safety catches, which consists in swaging the same from sheet stock to provide a pair of ear members connected by a shank to a base portion and having integral stiffening ribs on each shank portion, one of said ears being swaged deeper than the other and both being recessed to receive the keeper trunnions, bending the ears and shanks upward from the base and simultaneously stretching the base portion over an arbor, reducing the thickness of the stock and separating the ribs whereby their lower ends serve to enlarge the area of the supporting base of the body.

3. An improved method of forming a body member for safety catches, which consists in swaging the same from sheet stock to provide a pair of ear members connected by a shank to a base portion both being recessed to receive the keeper trunnions and said shank having a channel forced therein with the stock extending outward to provide an integral stiffening rib, bending the ears and shanks upward from the base and simultaneously stretching the base portion over an arbor to reduce the thickness of the base stock and separate the ribs whereby their lower ends serve to enlarge the area of the supporting base of the body.

In testimony whereof I affix my signature.

EUGENE MOREHOUSE.