

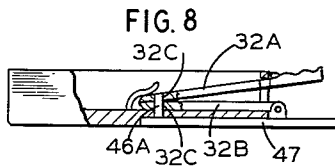
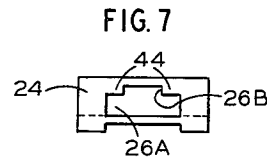
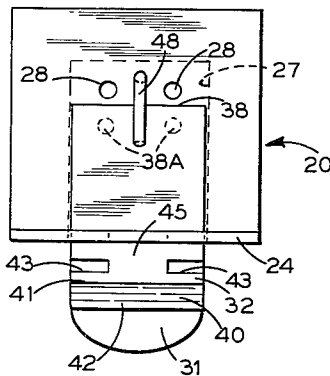
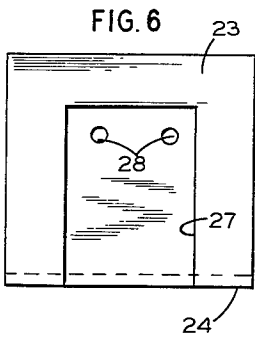
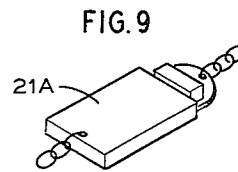
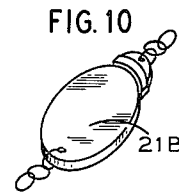
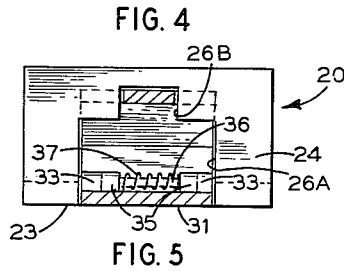
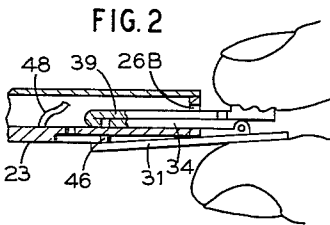
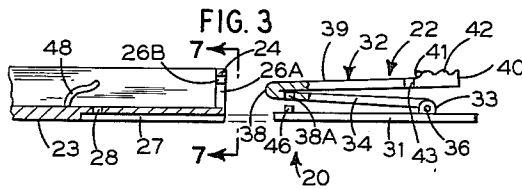
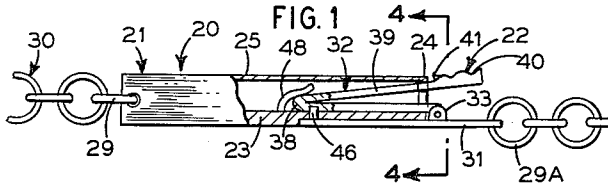
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SAFETY CLASP

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SAFETY CLASP

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9 Claims. (Cl. 24—230)

This invention relates to a clasp, and more specifically to a safety clasp particularly adapted for use in necklaces, bracelets, or other pieces of jewelry, or bands, belts and wear worn about the neck, waist, arms or legs.

Heretofore, many clasps used with necklaces, bracelets and the like consisted merely of a snap clasp in which a male member was merely inserted into a female member of a type disclosed by United States Patent 1,794,333. Such clasps do not have a built-in safety, and consequently a second safety clasp or chain is generally provided on the more expensive necklaces or jewelry pieces to insure against loss due to accidental or unintentional opening of the main clasp. As many necklaces and jewelry pieces requiring a clasp and safety therefor are quite small and delicate, difficulty is often encountered by the wearer in manipulating the additional safety catch or chain guard. Consequently much lost time and aggravation is encountered by the wearer in merely fastening such piece to her person.

Therefore, an object of this invention is to provide an improved safety clasp that is positive in operation and which has a built-in safety to prevent unintentional opening of the clasp.

Another object is to provide an improved safety clasp having a positive double action latching construction in which the fastening of the latch and safety is performed in the same operation.

A feature of this invention resides in the provision of a clasp having an insertable type latch means receivable in a cooperating catch means, and having means for positively locking the latch means in the latched position thereof to insure against unintentional separation thereof.

Another feature resides in the provision that the clasp is easy to fasten or unfasten, and positive in operation.

Other features and advantages will be rendered readily apparent when considered in view of the drawings and description in which:

FIG. 1 is side elevation view of the improved safety clasp of this invention illustrating the clasp in latch position, with parts shown in section.

FIG. 2 is a side elevation of the clasp illustrating the relationship of the components partially unlatched.

FIG. 3 is a side view of the parts in disengaged position.

FIG. 4 is an enlarged section end view taken along line 4—4 of FIG. 1.

FIG. 5 is a top view of the clasp illustrating the latch means partly unlatched.

FIG. 6 is a bottom view of the catch plate.

FIG. 7 is an end view taken along line 7—7 of FIG. 3.

FIG. 8 illustrates a side sectional view of a slightly modified clasp.

FIG. 9 is a perspective view of a rectangularly shaped clasp embodying the instant invention.

FIG. 10 is a perspective view of an oval shaped clasp embodying the instant invention.

Referring to the drawings, FIGS. 1 to 7, there is shown a clasp 20 which in accordance with this invention comprises essentially of a hollow catch casing 21 and an improved insertable, double acting safety latch means 22. The catch casing 21 has a bottom catch plate 23 having connected thereto a circumscribing rim portion 24, and a suitable cover plate 25. It will be understood that the casing may assume any desired shape. FIG. 9 il-

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lustrates a generally rectangularly shaped casing 21A, and FIG. 10 illustrates an oval shaped casing 21B.

The rim portion 24 at one end of the casing 21 is provided with an opening 26 for receiving the latch means 22 as will herein be described. As shown in FIG. 7, the rim opening 26 has an enlarged portion 26A at the bottom and a reduced or restricted portion 26B at its upper end. In alignment therewith there is formed in the under surface of the catch plate 23 a recessed portion to define a guideway 27. The guideway 27 has a width substantially equal to the width of the enlarged portion 26A of the rim opening 26. Formed in the recessed guideway 27 are a pair of holes 28. Preferably holes 28 are drilled through the thickness of the catch plate 23. Accordingly, the end of the casing 21 opposite the rim opening 26 has connected thereto one end 29 of the chain 30 or the like of the necklace or bracelet and the like.

According to this invention an improved, doubleacting insertable latch means 22 is arranged to be readily engaged and disengaged with the catch casing 21. As seen in FIGS. 1 to 3, the latch means 22 includes a latch plate 31 to which an insertable spring latch 32 is hinged. Means forming the hinge connection includes a pair of upright hinge lugs 33 connected to opposite sides of the latch plate 31 at a position intermediate the ends of the latch plate 31.

According to this invention the spring latch 32 comprises a reversely bent or hairpin shaped flat spring having one leg 34 hinged at its end to catch plate at 36 and having the end of its other leg free to flex toward the hinged end. The spring latch 32 may be made integrally either by bending, as seen in FIGS. 1 to 3, or by brazing or welding two legs 32A, 32B of flat springs at the nose portion, as seen in FIG. 8. In either form, one leg portion 34 of the leaf spring 32 has connected thereto hinge ears 35 which are adapted to align with the hinge lugs 33 of the latch plate 31. A hinge pin 36 extended through aligned apertures in the hinge lugs and ears 33 and 35 to provide a pivot for the spring latch 32 relative to the latch plate 31, and a coil spring 37 wound about the hinge pin 36 normally biases the nose 38 of the latch spring 32 toward the latch plate 31. The other leg portion 39 of the latch spring 32 is free to flex relative to leg portion 34, and the end 40 of the free leg 39 is provided with a shoulder stop 41 and an extended finger press portion 42 by which it may be grasped.

As best seen in FIG. 5, the leg portion 39 of the spring latch 32 is provided with opposed inwardly extending slots 43 which are adapted to receive the shoulder portion 44 of the rim which defines the reduced portion 26B of the rim aperture 26. The arrangement is such that in the latch position, as seen in FIG. 4, the web 45 formed between the slots 43 in leg 39 of the spring latch 22 will register in the restricted portion 26B of the rim opening 26.

According to this invention the latch plate 31 has connected therein a pair of upright pins 46, which are adapted to project into holes 28 formed in the catch plate 23 when in the latched position. If desired the nose portion 38 of latch spring 32 may also be formed with a hole 38A for alignment with the holes 28 of the catch plate 23. Accordingly the pins 46 of the latch plate 31 are formed sufficiently long as to extend through the catch plate 23 and into the holes 38A of the latch spring 32, when latched.

FIGS. 1 to 7 illustrate the arrangement wherein the holes 38A in the latch spring 32 extend through the lower leg portion 34 only.

In a slightly modified form of FIG. 8, the upper and lower legs 32A, 32B, of the latch spring are each provided

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with aligned holes 32C so that pins 46A connected to the latch plate 47 may project through the nose portion of the latch spring also.

To limit the insertion of the latch spring 32, a hold-down stop 48 is connected to the inner surface of the catch plate 23. As shown, this stop 48 comprises a bent wire brazed on one end to the catch plate, with its other end spaced above the plate 23 for receiving the nose portion 38 of the latch spring 32 in the latched position.

Connected to the outer end of the latch plate 31 is the other end 29A of the chain 30 of a necklace or bracelet and the like.

With the clasp 20 in latch position, as shown in FIG. 1, the engagement of the shoulder portion 44 of the rim opening 26 in the slots 43 of the upper leg 39 of the latch spring 32 function to lock the latch 22 to the catch plate 23. Also the insertion of pins 46 of the latch plate 31 in the holes 28, 38A of the catch plate 23 and nose portion 38 of the latch 22, respectively function as an added safety against disengagement or unintentional unlatching of the clasp. The hinge spring 37 insures that the pins 46 of latch plate 31 are biased in the latched position. Thus it is to be noted that the only way for the clasp 20 to become unlatched is to depress both the end 42 of spring latch leg 39 and the outer end of the latch plate 31 toward each other, as seen in FIG. 2. This force will depress the free leg 39 of the latch spring 32 to free the web portion 45 from the restricted portion 26B of the rim opening 26 and pivot the latch plate 31 outwardly to disengage the pin 46 from the catch plate 23. With the latch means 22 so positioned, unlatching is accomplished by withdrawal of the latch means 22 from the catch casing 21. With the described construction unlatching is accomplished only by a conscious effort on the part of the wearer.

To engage the latch mean 22 to the catch casing 21, the procedure is reversed. That is, a force applied to the free end 42 of the leg 39 of latch spring 32 and latch plate 31 will cause the free leg 39 to depress toward the fixed leg 34. Also the latch plate 31 will pivot relative to the latch spring 32. With the latch means 22 so positioned, the depressed latch spring 32 is inserted into the enlarged portion 26A of the rim opening 26 until the nose portion 38 engages the stop 48. In this position the latch plate 31 is in alignment with guide way 27, and upon release of the force, the hinge spring 37 will bias the latch plate 31 toward the catch plate 23, permitting the pins 46 to register in holes 28. The web 45 of the latch leg 39 snaps into registry with the restricted portion 26B of the rim opening 26. Thus as seen in FIGS. 1 and 8, the clasp is positively latched. Also the bottom of the latch plate 31 is flush with the bottom of the catch plate 23. From the foregoing description, it will be noted that the improved latch construction has double locking action with a single insertion. Insertion of the latch means is easy and can be easily manipulated. Further, both latching of the clasp and safety therefor is attained.

While the instant invention has been disclosed with reference to a particular embodiment thereof, it is to be appreciated that the invention is not to be taken as limited to all of the details thereof as modifications and variations thereof may be made without departing from the spirit or scope of the invention.

What is claimed is:

1. A clasp comprising a catch plate having a rim portion formed with an opening therein, a latch means adapted to be engaged and disengaged from said catch plate, said latch means including a latch plate adapted to underlie said catch plate in the engaged position, a spring latch, means pivotally connecting said spring latch to said latch plate, said spring latch being insertable into the opening of said rim with said latch plate underlying said catch plate, said spring latch and latch plate each having opposed finger press end portions, and spring means normally urging said latch plate and spring latch

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hinged thereto toward one another so as to embrace said catch plate therebetween in the engaged position, said finger press end portions of said spring latch and latch plate extending beyond said catch plate in said engaged position, and cooperating means on said catch plate and latch means for positively locking said latch means to said catch plate when engaged and whereby disengagement of said latch means and catch plate is effected by pressing said opposed finger press end portions together.

2. The invention as defined in claim 1 wherein said cooperating means includes a hole formed in said catch plate and a pin connected to said latch plate, and said pin being arranged to register in said hole in the latched position of said clasp.

3. The invention as defined in claim 2 wherein said spring latch has a hole adapted to register with the hole in said catch plate in the latched position, and said pin being arranged to project through said aligned holes in the latched position.

4. A double action, single insertion, safety clasp comprising a hollow catch casing having a bottom catch plate and a connected circumscribing rim portion, said rim having an opening therein, said opening having a restricted portion, said catch plate having a hole extending through, and a latch means adapted to be engaged and disengaged with said catch casing, said latch means including a latch plate and a V-shaped spring latch for insertion through said opening, said spring latch being hinged at one end thereof to said latch plate, and having its other end free to flex toward said hinged end, said flexing free end having opposed inwardly extending slots formed therein to permit said free end to register with the restricted portion of said rim opening when said latch is inserted in said rim opening with said latch plate engaging the outer surface of said catch plate in the latch position of said clasp, said latch plate having an upright pin adapted to register with the hole in said catch plate and said spring latch having a finger press end extension on the free end thereof, and said latch plate having an opposed complementary finger press extension so that disengagement of the latch means from the catch casing is effected by pressing said respective finger press extensions together to withdraw the latch means from the casing.

5. A clasp comprising a catch plate and a connected rim, said catch plate having a hole therein and said rim having an opening therein, said opening having a restricted portion, a latch plate, a V-shaped leaf spring latch having a nose portion and opposed ends, means hinging one of said opposed ends of said spring latch opposite said nose portion to said latch plate to render said latch pivotally connected thereto, and said spring latch having the other of its opposed ends free to flex toward said hinged end so that the nose of said latch may be inserted through said rim opening so as to be disposed on one side of the catch plate with said latch plate disposed on the other side of said catch plate, said free end of said latch having inwardly extending slots to permit the free end of said latch to snap in registry in the restricted portion of said opening, said latch plate having an upright pin to register with the hole in said catch plate in the latched position thereof and which cooperates with said latch to provide a double safety to prohibit unintentional disengagement of said latch from said catch and said spring latch having a finger press and extension on the free end thereof, and said latch plate having an opposed complementary finger press extension so that disengagement of the latch means from the catch casing is effected by pressing said respective finger press extensions together to withdraw the latch means from the casing.

6. A clasp comprising a catch plate and a connected upright rim, said plate having a hole therein and said rim having an opening therein, said opening having a restricted portion, and a latch means adapted to be readily engaged and disengaged with said catch plate by clamping on

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thereto, said latch means including a latch plate adapted to engage the outer surface of said catch plate and a V-shaped leaf spring latch having a nose portion and opposed ends, means hinging one of said opposed ends of said spring latch to said latch plate to render said latch pivotally connected thereto, said hinge means including a hinge spring for normally urging the nose portion of said spring latch toward said latch plate, said spring latch being fulcrumed intermediate the ends of said latch plate, and said spring latch having the other of its opposed ends free to flex toward said hinged end whereby a force applied to said free end and the end of said latch plate opens the latch means so that the nose of said latch may be inserted through said rim opening so as to be disposed on one side of the catch plate with the latch plate disposed on the other side of said catch plate, said free end of said latch having a shoulder stop to limit insertion, and inwardly extending slots adjacent thereto to permit the free end of said latch to snap in registry in the restricted portion of said opening, and said latch plate having an upright pin to register with the hole in said catch plate in the latched position thereof to provide a double latching safety which prohibits unintentional disengagement of the clasp and said spring latch having a finger press end extension on the free end thereof, and said latch plate having an opposed complementary finger press extension so that disengagement of the latch means from the catch casing is effected by pressing said respective finger press extensions together to withdraw the latch means from the casing.

7. The invention as defined in claim 6 and including a hold down stop connected to said catch plate for engaging the nose portion of said spring latch in the latched position of said clasp.

8. The invention as defined in claim 6 wherein the nose of said spring latch is formed with a hole adapted to register with the hole in said catch plate so that the pin on said latch projects into said aligned holes in the latched position of said clasp.

9. A clasp comprising a hollow catch casing having a

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bottom catch plate and a connected circumscribing rim, said bottom plate having a hole therein and said rim having an opening therein, said opening having a restricted portion, a stop connected to the inner surface of said catch plate, said stop being spaced from and in alignment with said rim opening, and a latch means adapted to be readily engaged and disengaged from said catch casing, said latch means including a latch plate, a V-shaped spring leaf latch having a nose portion and opposed ends, means hinging one of said ends of said spring latch to said latch plate to render said latch pivotally connected thereto, and said spring latch having its other end free to flex toward said hinge end so that the nose of said latch may be inserted through said rim opening to said stop means whereby said spring latch is disposed on one side of the catch plate and said latch plate disposed on the other side of said catch plate, said free end of said latch having inwardly extending slots to permit the free end of said latch to snap in registry with the restricted portion of said opening, and said latch plate having an upright pin to register with the hole in said catch plate in the latched position thereof to provide a double safety latch to insure against unintentional disengagement of said latch means from said catch casing and said spring latch having a finger press end extension on the free end thereof, and said latch plate having an opposed complementary finger press extension so that disengagement of the latch means from the catch casing is effected by pressing said respective finger press extensions together to withdraw the latch means from the casing.

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