March 12, 1957 N. SCHMITT 2,784,475

JEWELRY CLASP

Filed Oct. 30, 1952

FIG. 1

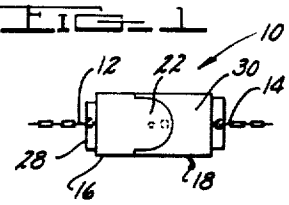


FIG. 2

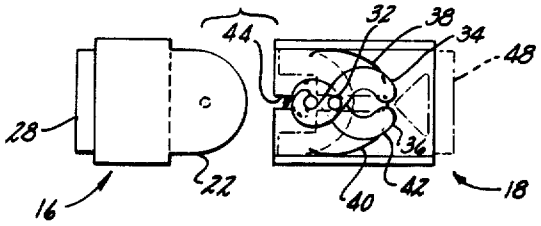


FIG. 3

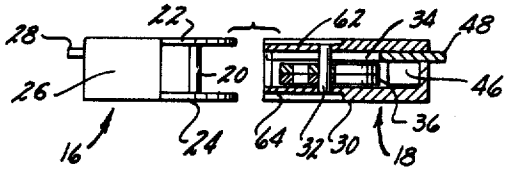


FIG. 4

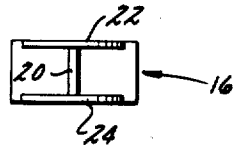


FIG. 5

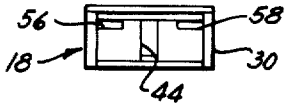


FIG. 7

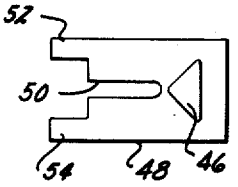
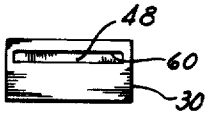


FIG. 6



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JEWELRY CLASP

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4 Claims. (Cl. 24—230)

The present invention relates to a clasp particularly adapted for use with items of jewelry such as necklaces, bracelets and the like.

It is among the objects of the present invention to provide an improved clasp particularly adapted for use with jewelry and which is characterized by its compact and sturdy construction and by its ability to compensate for wear of the locking parts so that such locking parts will always snugly engage one another when in their closed positions.

It is another object of the present invention to provide a clasp of the foregoing character which is constructed and arranged to permit releasing the clasping elements by pressing together the opposite ends of said clasp, such action also causing a separation of the mating parts of the clasp so that when the opposite ends of the clasp are released the clasp will be open.

It is another object of the present invention to provide a clasp of the foregoing character which has its mating parts constructed and arranged to prevent any unnecessary stresses or strains from being transmitted to the clasping elements thereof, thereby reducing to a minimum the opportunities for breakage or failure of such elements.

It is still another object of the present invention to provide a clasp which has its moving parts enclosed within a housing to protect the same from becoming damaged, which housing has attractive symmetrical lines to effect an optimum appearance when used with jewelry.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In the drawings:

Fig. 1 is a plan view of a clasp embodying the present invention, which clasp is in its closed position joining two ends of a chain fragmentarily shown;

Fig. 2 is an enlarged exploded view of the clasp with the housing cover for one of the mating parts of the clasp being shown in phantom;

Fig. 3 is an exploded side elevation of the mating parts of the clasp, one of said parts being shown in section;

Fig. 4 is an end elevation of one of the mating parts as viewed from the right in Fig. 3;

Fig. 5 is an end elevation of the other mating part as viewed from the left in Fig. 3;

Fig. 6 is an end elevation of said other mating part as viewed from the right in Fig. 3; and

Fig. 7 is a bottom view of the housing cover which is shown in phantom in Fig. 2.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology

employed herein is for the purpose of description and not of limitation.

Referring now to the drawings, the present invention will be explained in detail. The clasp **10** is shown in Fig. 1 in its closed position joining the ends **12** and **14** of a chain which may be part of a necklace, bracelet or other item of jewelry. However, it is to be understood that this invention is not limited in its application to items of jewelry but may be used to join other types of chains, cables or the like.

The clasp **10** has two mating parts **16** and **18** to which the respective chains **12** and **14** are attached. Part **16** has a pin or bolt **20** extending between two flanges **22** and **24** which project from the body portion **26**. The outer ends of the flanges are circular and are substantially concentric with respect to shaft **20** for a purpose to be explained hereinafter. The body portion **26** also has a flange **28** projecting from its opposite end to which a chain, such as **12**, may be attached.

The part **18** contains a latching mechanism adapted to engage and hold the bolt **20**. This mechanism is similar to those disclosed in my copending applications, Serial No. 229,999, filed June 5, 1951, now Patent No. 2,668,070 and Serial No. 266,289, filed January 14, 1952 now Patent No. 2,667,778, to which reference is made for a more complete description of the details of the mechanism. Briefly, this mechanism includes the housing **30** which has a shaft **32** extending upward from its lower wall within which the shaft is rigidly secured in any suitable manner. A pair of S-shaped dogs **34** and **36** pivotally mounted on the shaft **32** are adapted when in their closed positions to grip the bolt **20**. A pair of flat springs **38** and **40** are disposed between the dogs **34** and **36** and the sidewalls of the housing **30** to bias the dogs to their closed positions. The particular springs shown have their ends inserted into notches in the dogs **34** and **36**, as at **42**, and they are then soldered, brazed, or otherwise secured thereto. However, it will be understood that other springs and attaching means may be used which carry out the purpose of this invention.

The housing **30** has a slot **44** in its one end into which the bolt **20** may be inserted to be engaged by the dogs **34** and **36**. When it is desired to close the clasp **10**, it merely is necessary that the mating parts **16** and **18** be pressed together after bolt **20** has been inserted in slot **44**. The bolt **20** will then engage the curved outer ends of the dogs **32** and **34** causing them to be spread apart against the biasing action of the springs **38** and **40**. After the bolt has passed inside the ends of the dogs **32** and **34** the latter will snap around said bolt **20** because of the action of the springs **38** and **40**.

One of the features of this latch mechanism which is explained in my aforesaid copending applications is that the inner or bolt holding surfaces of the dogs are concentric at their outer ends with respect to shaft **32** so that when such surfaces wear the springs **38** and **40** will bias the dogs **34** and **36** further into a closed position taking up any slack that may have resulted from such wear. The bolt holding surfaces may converge gradually from points a short distance from their outer ends, if desired, to accentuate this feature of having a permanent "take up."

The clasp **10** is opened, when desired, by spreading the dogs **34** and **36** apart from their inner ends, as for example, by the wedge **46** which is integral with the slidable plate **48** which is mounted in the housing **30**. As can be understood, when the plate **48** is moved further into the housing **30** the wedge **46** will move between inner ends of dogs **34** and **36** and will pivot them apart against the action of springs **38** and **40** to cause said dogs to release their hold on bolt **20**.

The plate **48** not only provides a mount for the wedge

46, but also cooperates to separate the mating parts 16 and 18 when the clasp 10 is to be opened. As best seen in Fig. 7, the plate 48 has a slot 50 within which the shaft 32 will fit during movement of the plate. Two fingers 52 and 54 project from the body of plate 48 and during opening of the clasp 10 these will press against the part 16, thereby separating the mating parts. The housing 30 has apertures 56 and 58 through which the fingers 52 and 54 are projected. The aperture 60 in the other end of housing 30 receives the plate 48 and in conjunction with apertures 56 and 58 allows the plate to be moved longitudinally within the housing 30.

Another feature of the present invention is the manner in which the mating parts 16 and 18 fit together to form a compact unit. The upper and lower outer surfaces of the housing 30 are recessed as at 62 and 64 to conform to the shape of the flanges 22 and 24 so that when the clasp 10 is closed the two parts 16 and 18 fit snugly together as shown in Fig. 1. The surfaces of the clasp 10 will then be flush along the adjacent edges of parts 16 and 18. While the clasp is shown to be rectangular it will be understood that it can be made round, oval or any other suitable shape.

The manner in which the mating parts 16 and 18 fit together not only creates an attractive clasp but also provides a compact construction so that no lateral or twisting pressures will place any strains or stresses on the bolt and latch mechanism. All such pressures will be transmitted through the housing 30 and mating part 16, thus preventing damage to the internal parts of the clasp 10.

Having thus described my invention, I claim:

1. A clasp comprising two mating parts releasably snapped together in endwise-abutting relation, one of said parts including a bolt, the other including a housing with a slot for receiving said bolt, a shaft mounted in said housing inward of said slot, a pair of jaws pivotally mounted on said shaft for holding said bolt in said slot, the holding surface of each jaw being substantially concentric with the axis of said shaft, springs operably connected between said housing and said jaws for urging the latter to a closed position, and a jaw release mechanism for opening said jaws and pushing the first named part from the second named part, said mechanism including a plate extending through openings in opposite ends of the second named part so that one end of the plate abuts against the first named part, and a wedge-like member mounted on said plate, and operatively connected with said jaws for opening the latter on movement of said plate toward the first named part.

2. A clasp comprising two mating parts releasably snapped together in endwise-abutting relation to form a thin flat substantially rectangular unit, one of said parts including a vertical bolt, the other including a housing with a vertical slot adapted to receive said bolt, a vertical shaft mounted in said housing inward of said slot, a pair of flat S-shaped dogs pivotally mounted on said shaft in inverted position so as to form at their one end two opposed jaws which when in a closed position will hold said bolt, spring means urging said jaws to a closed position, a flat plate slidably mounted above said dogs for movement to and from said first named part, said housing having openings at its opposite ends through which said plate extends, a wedge-like member attached to said plate and in engagement with the other end of said pair of dogs for separating the latter on movement of the plate toward said other part whereby the jaws will release said bolt.

3. A clasp as defined in claim 2 wherein the first named part has horizontal lips projecting from its upper and lower surfaces, and the second named part has recesses in its upper and lower surfaces for receiving such lips.

4. A clasp comprising two mating parts having relatively flat upper and lower surfaces and adapted to be snapped together in abutting endwise relation with the upper and lower surfaces flush with one another, one of said parts including a bolt, the other part including a slot extending into its end for receiving said bolt, a shaft mounted in said housing inward of said slot, a pair of S-shaped dogs pivotally mounted on said shaft in inverted position so as to form at their one end two opposed jaws which when in closed position will hold said bolt, means for urging said jaws to a closed position, and a jaw release mechanism for opening said jaws and pushing the first named part from the second named part, said mechanism including a slidable member having a wedge which when moved forward will engage the other end of said pair of dogs to spread the dogs apart thereby opening said jaws, said slidable member having another portion engageable with the first named part for pushing the latter from the second named part when said wedge opens said jaws, and mating portions on the upper and lower surfaces of said parts fitting together to strengthen the joint between said parts while maintaining substantially flush upper and lower surfaces.

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