Aug. 22, 1933. B. GOEBEL 1,923,262

FASTENING DEVICE

Filed June 24, 1931

Fig. 3

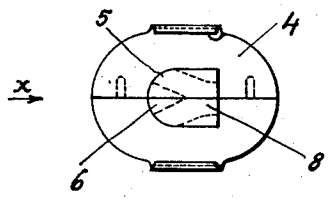


Fig. 4

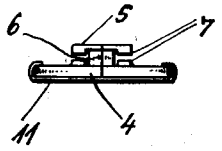


Fig. 1

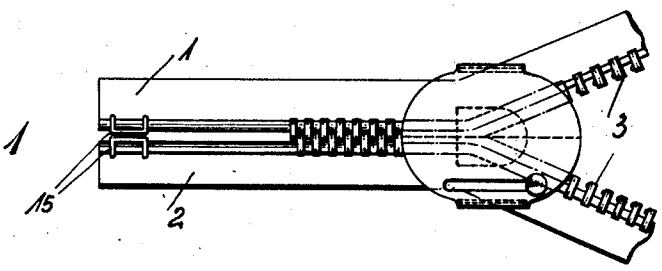
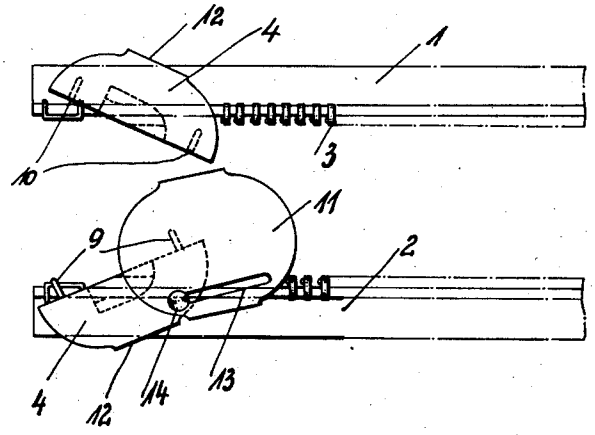


Fig. 2



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Patented Aug. 22, 1933 1,923,262

UNITED STATES PATENT OFFICE

1,923,262

FASTENING DEVICE

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Application June 24, 1931, Serial No. 546,469, and in Germany July 1, 1930

6 Claims. (Cl. 24—205)

My invention relates to a fastening device of the type comprising a plurality of fastening elements disposed on the opposite edges of the two parts to be connected, and a slidable member designed to be moved along the outer edges of the said fastening elements to bring them into or out of engagement. It has been found, however, that during the use of articles provided with such fastening devices individual units of the closed device become readily disengaged and, as the slidable member serving for opening and closing the device cannot be moved any more over these detached units and it is impossible therefore to open the device at and beyond this point, the necessity arises to separate the fastening device from the article, such as clothing and the like, to which it was attached.

To overcome these mistakes it has already been proposed to divide the sliding member into two or more separable sections so that after separating the sections, the fastening elements when in mutual engagement may be separated merely by withdrawing the bands which carry them. The known sliding members of this kind have not turned out well in practice as the sections into which the slider may be separated are not secured in firm position relative to one another so that their relative position varies. This maintenance of the exact relative position of the parts of the slide member is of importance in so far as the slightest variation in their relative position will have the result that the slide cannot be moved any more, or only with great difficulty, along the fastening members. Further the sections of the known sliders of this kind being stamped from sheet metal are springy whereby the closing action of the slider is impaired.

According to my invention, I use a casting slider consisting of two parallel plates interconnected by a wedgelike stud. This slider is symmetrically divided in its longitudinal axis. Pins and bores provided on the intersecting edges secure the sections against longitudinal displacement and suitable means serve for locking the sections relative to one another.

The invention further resides in the novel subject matter hereinafter described and claimed, one embodiment being illustrated in the accompanying drawing.

Figure 1 is a view of the fastening device in closed condition.

Fig. 2 shows the device when opened.

Fig. 3 is a bottom view of the slidable member and

Fig. 4 is a front view in the direction of the arrow X in Fig. 3.

Referring to the drawing, 1 and 2 are two flexible stringers or bands which on the edges facing each other carry the fastening elements 3 arranged so that the elements of one row can enter between the elements of the other row. The elements 3 are formed like small plates which have an elevation on one side and a depression on the other side. When the fastening elements of one row are brought into engagement with those of the other row, the elevations of the elements of one row enter into the depressions of the elements of the other row, so that the fastening elements thus engaged are locked relative to one another. The fastening elements of both rows are brought into and out of engagement by a slidable member which embraces both rows.

This slidable member consists of two plates 4 and 5 which are disposed parallel to one another and interconnected by a wedgelike web 6. By means of the ribs 7 provided on the sides of the plates 4 and 5 which face each other in connection with the wedgelike web 6 a forked channel 8 is formed between the plates 5 and 4 wherein the fastening elements 3 are guided, the ribs 7 being preferably formed by bending the edge of the plates.

The slidable member is divided into two equal parts in the longitudinal direction of the fastening device. One half of the member possesses at its dividing surface the pins 9 disposed vertically thereto while the other half is provided on the corresponding surface with the depressions 10 which receive the pins 9, the mutual engagement of the pins 9 and depressions 10 preventing displacement of the two halves relative to each other.

The two halves of the slidable member are firmly held together by a suitable closing appliance. In slidable members of the usual construction there would be very little guiding for the plate 11 to be attached and the two halves of the slide would therefore not be held together by it with sufficient firmness. For this reason the plate 4 is considerably larger than the plate 5 which in size and shape corresponds to the plates of ordinary slides. On an enlarged plate 4 the guide ribs 7 cannot be formed of course by bending the edges of the plate, and it will be necessary to provide special ribs 7 projecting from the plate 4. The enlargement of the plate 4 affords the added advantage that the pins 9 and the recesses 10 may be arranged at

a greater distance from one another to offer still greater security against the displacement of the two parts. The plate 4 has two edges 12 extending parallel to the sectional plane of the slidable member and is rounded at the ends. The parallel edges 12 serve as guides for the holding plate 11 to be attached which corresponds in shape to that of the plate 4 which is thus fully covered by the plate 11. With its bent edges the plate 11 grips also the underside of the plate 4 and is firmly held in position relative to the latter plate. If the novel fastening device is used, for example, for garments, the plate 4 with the covering plate 11 will be arranged on the outside of the garment and act in this case like a waist-clasp, it being possible of course to decorate the covering plate 11 by embossing, etching or the attachment of ornaments. The relatively large plate 4 can be conveniently gripped by the fingers to move the slide so that a special strap may be dispensed with.

The slidable member described can be detached in any position of the fastening device by withdrawing the plate 11 from the plate 4 whereupon the two halves of the slide can be taken apart, each half of the divided slide member being and remaining attached to the band or stringer whose fastening elements are guided in its edge 8. After the separation of the slidable member the entire fastening device can be opened merely by pulling the two bands. To prevent the plate 11 which holds together the two halves from getting lost during the disassembling of the slide member, it is guided by the longitudinal slot 13 in the plate 11 on the pin 14 provided with a head and secured to one part of the slide plate 4. To release the plate 11 from the two slide halves held together by it, it will be necessary at the end of the withdrawing motion to swing the plate 11 about the guide pin 14. To make this swinging motion possible, the edges of the plate 4 must be shaped correspondingly.

Since the elements of the fastening device can be interlocked only when in spread condition, no elements must be found in the two slide-halves when the latter are assembled or a part thereof will collide with their front sides and thus render a union of the two slide-halves impossible. For this reason the fastening elements 3 must not extend to the stop members 15 limiting the motion of the slide member but a free space corresponding to the length of the slide member must remain between the stop members 15 and the first fastening elements 3. Assembling of the two halves is quite simple and requires no special skill. After the two halves are joined together and secured by attaching the covering plate 11, the slide is moved towards the fastening members 3 which enter the channels 8 of the slider and are thus brought into engagement.

The detachable character of the slide member is of special importance for the so-called separable fasteners in which the two bands may be separated completely from one another instead of being firmly interconnected at the beginning in the usual manner. In the known types of separable fasteners one band must be pulled out of the slide which adheres to the other band so that it cannot get lost. The reintroduction of the band with the fastening members into the slide is quite bothersome and requires much time and some skill. When a separable slide according to the invention is employed, the band need not be re-introduced as each band carries one half of the slide in a manner preventing its loss.

I claim:—

1. In a fastening device of the class described a slidable member longitudinally divided in its center, pins and bores adapted to receive the pins arranged on the dividing surfaces of the two parts of the said slidable member to secure the two parts of the slidable member against longitudinal displacement with respect to each other, and a clamp overlapping the two halves from one side to lock them relative to one another against lateral displacement.

2. In a fastening device of the class described a slidable member longitudinally divided in its center, means for securing the two halves of the said slidable member against relative longitudinal displacement, a slotted covering plate overlapping the two halves from one side and adapted to be slipped thereon to lock them against lateral displacement, and a pin secured to one of the two halves and guided in the slot of the said covering plate, the said pin connecting the said covering plate with the half portion of the said slidable member.

3. In a fastening device of the class described a slidable member which consists of two parallelly arranged plates interconnected by a wedge-like stud and symmetrically divided in its longitudinal axis, pins and bores adapted to receive the pins arranged on the dividing surfaces of the two parts of the slidable member to secure the parts of the slidable member against longitudinal displacement, and a clamp overlapping the two halves from one side to lock them relative to one another against lateral displacement.

4. In a fastening device of the class described, a slidable member which consists of two parallel plates interconnected by a wedge-like stud and symmetrically divided in its longitudinal axis, means for securing the two halves of the said member against relative longitudinal displacement, a clamp overlapping the two halves from one side and adapted to be pushed upon the united halves to lock them against lateral displacement, the plate of the said member embraced by the said clamp being larger than the other plate of the said slidable member, and ledges at the underside of the said larger plate, positioned in front of and in front to back alignment with the bent side edges of the second smaller plate and forming with them a guide channel for the fastening elements.

5. In a fastening device of the class described a slidable member which consists of two parallel plates interconnected by a wedge-like stud and symmetrically divided in its longitudinal axis, means for securing the two halves of the said slidable member against relative longitudinal displacement, a slotted covering plate overlapping the two halves from one side and adapted to be pushed upon the united halves to lock them against lateral displacement, and a pin secured to one of the two halves and guided in the slot of the said covering plate, the said pin connecting the said covering plate with the half portion of the said slidable member.

6. In a fastening device comprising a pair of flexible stringers provided with interlocking elements on their opposing edges, said elements being arranged in staggered relation on opposite stringers, a slidable member comprising two parallelly arranged plates, a wedge-like stud interconnecting the same, the slidable member

being symmetrically divided along its longitudinal axis by a straight rectilinear cut performed in a plane vertical to the plane of the plates, pins projecting from the dividing surfaces of the plates at different points along the length thereof, and bores in the dividing surfaces to receive the pins to thereby secure the two parts of the slidable member against longitudinal displacement with respect to each other, and a clamp overlapping the two plates from one side to lock them relative to one another against lateral displacement.

BOTHO GOEBEL.