Oct. 14, 1958 Z. DESHAW 2,855,651

SLIDING CLASP FASTENERS

Filed Nov. 25, 1953 2 Sheets-Sheet 1

FIG. 1.

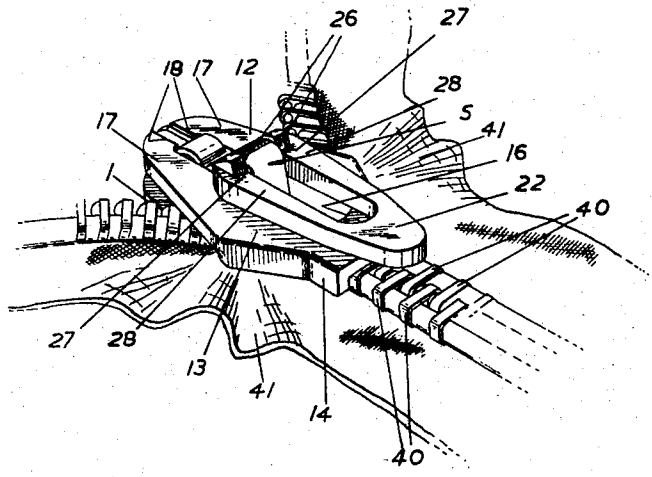

FIG. 2.

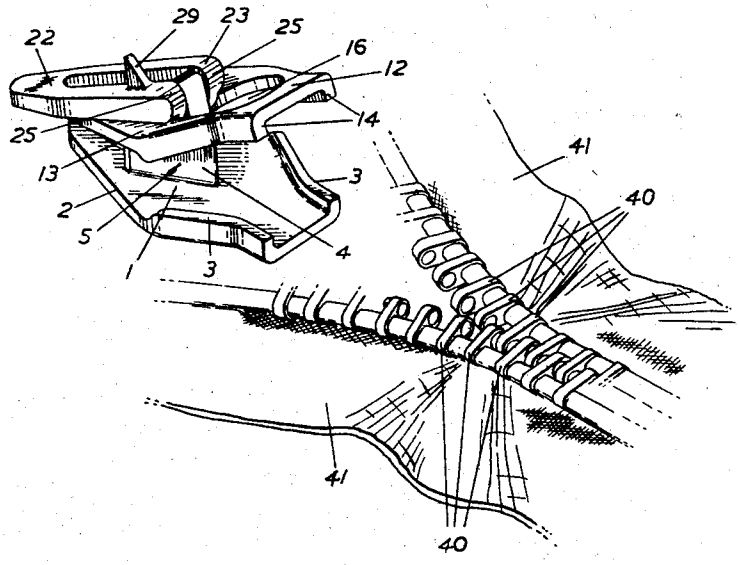

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FIG. 3.

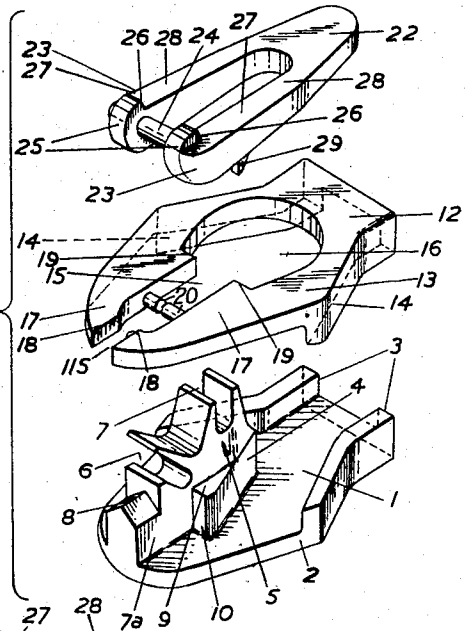


FIG. 4.

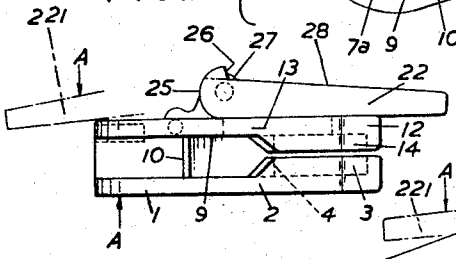


FIG. 5.

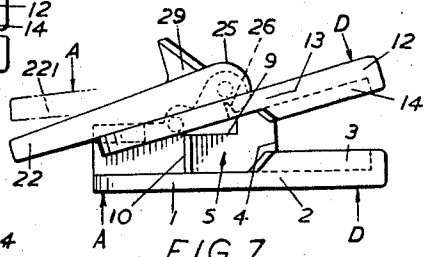


FIG. 6.

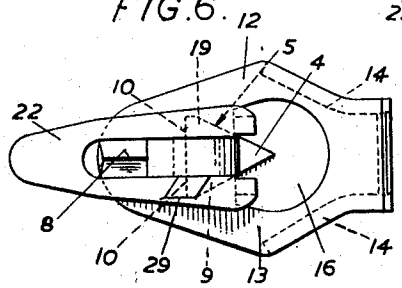
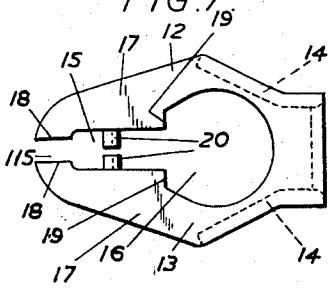


FIG. 7.



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SLIDING CLASP FASTENERS

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Claims priority, application Great Britain December 1, 1952

3 Claims. (Cl. 24—205.15)

The present invention relates to sliders for sliding clasp fasteners of the kind comprising opposed shields for guiding two fastener stringers through the slider, the said shields being joined so as to allow spreading apart of the shields at any position of the slider on the stringers at which the slider may have jammed whereby to overcome the jamming.

It is an object of the invention to provide an improved and simplified slider of the kind described.

It is another object of the invention to provide a slider of the kind described wherein means are provided for preventing unintentional spreading of the slider shields.

It is a further object of the invention to provide a slider of the kind described wherein simple cam means are provided for preventing unintentional spreading of the slider shields.

It is still another object of the invention to provide a slider of the kind described, which comprises only three components which allow the slider to be easily assembled.

These and other objects and advantages of the invention will become apparent to those skilled in the art from the following detailed description when read in conjunction with the accompanying drawings, which by way of example only illustrate a specific embodiment of the invention and in which:

Fig. 1 illustrates a perspective view of a slider of the invention in position on two stringers of a sliding clasp fastener;

Fig. 2 similarly illustrates the slider with the slider shields spread apart, the slider being detached from the fastener stringers;

Fig. 3 shows an exploded perspective view of the slider;

Fig. 4 shows a side view of the slider;

Fig. 5 shows a similar side view of the slider with the slider shields spread apart;

Fig. 6 shows a plan view of the slider; and,

Fig. 7 shows a plan view of one of the slider shields.

The slider illustrated in the drawings comprises two opposed slider shields **1** and **12**, and an operating tab **22**. For convenience, the shields **1** and **12** will hereinafter be termed the lower and the upper shield respectively.

The lower shield **1** comprises a base **2**, side walls **3**, and a wedge-shaped projection **4**. The projection **4** forms part of a riser element generally denoted by reference numeral **5** and provided with two transverse bearing grooves **6** and **7** (see Fig. 3), with a rib **7***a* providing a wedge **8** and with faces **9** parallel with the base **2**, the faces **9** extending from the bearing groove **6** towards the groove **7** and terminating in a vertical wall **10** (see also Figs. 4, 5 and 6) approximately underneath the bearing groove **6**.

The upper shield **12** comprises a base **13** and side walls **14** adapted to overlie the side walls **3** of the lower shield **1**. The base **2** of the lower shield **1**, its side walls **3**, the base **13** of the upper shield **12**, its side walls **14** and the wedge-shaped projection **4** are arranged to form, in known manner, diverging channels for the passage of interlocking members **40** of two stringers **41** in connection with which the slider is used. The base **13** of the upper shield **12** has a wide perforation **16** merging at shoulders **19** into a narrow slot **15** open at **115** at the end of the upper shield overlying the wedge **8**. Thereby the upper shield **12** is forked, the limbs **17** of the fork being capable of being elastically forced apart from each other in the general plane of the upper shield **12**. The slot **15** narrows still further at **115** so as to provide two opposed lateral projections **18**. Between the opposed walls of the slot **15** are integral aligned hinge pins **20** which meet, or nearly meet, each other.

The tab **22** for operating the slider is a forking the portions **23** of which are bridged by a pivot pin **24**, which may be formed in one piece with the forking. The operating tab **22** as a whole may be formed by casting, moulding or stamping. The portions **23** are formed with peripheral cam faces **25** substantially concentric with the axis of the pivot pin **24** and extending through approximately 180° and terminating in a radial or nearly radial shoulder **26** forming a recess **27** with the surface **28** of the operating tab **22**. The operating tab has a locking finger **29** arranged for extending through the perforation **16** in the upper shield **12** and engaging between adjacent interlocking members **40** for locking the slider in a desired position on the stringers **41**.

In assembling the slider, the hinge pins **20** of the upper shield **12** are located in the bearing groove **6**, the upper shield **12** resting with the limbs **17** in surface engagement with the faces **9**, and with the lateral projections **18** in contact with the wedge **8**. One of each side wall of the bearing groove **6** is peened or turned over to retain the hinge pins **20** in the said bearing groove and to complete the bearing for the said hinge pins. The pivot pin **24** of the operating tab **22** is then located in the bearing groove **7** and one or each side wall of the bearing groove **7** is also peened or turned over to retain the pivot pin **24** in the said bearing groove and to complete the bearing.

Figs. 1 and 4 show the slider closed for normal use with the operating tab **22** in the position shown in Fig. 1 or shown in full lines in Fig. 4; the concentric faces **25** are in contact with, or in close proximity to, the adjacent part of the outer face of the upper shield **12**, the said part acting as a stop face so that the shields **1** and **12** cannot hinge open about the hinge pins **20**. This stop action persists while for opening or closing the sliding clasp fastener the operating tab **22** is being turned through almost the whole of its 180° movement until it reaches the position indicated in broken lines at **221** in Figs. 4 and 5 when the shoulders **26** terminating the concentric faces **25** pass beyond the shoulders **19** of the perforation **16** in the base **13** of the upper shield **12** and overlie the perforation **16**. When now opposed finger pressure is applied in clothes-peg-operating fashion on the operating tab **22** and on the outer wall of the base **2** of the lower shield **1**, as indicated by the arrows A, A in Figs. 4 and 5, the operating tab **22** rocks the upper shield **12** about the hinge pins **20** until the outer surface of the upper shield **12** fully contacts the adjacent face of the operating tab **22** (see Figs. 2 and 5), the portions of the upper shield **12** adjacent the shoulders **19** being accommodated in the recesses **27** of the operating tab **22**. Thereby, the slider has been hinged open for removal from the stringers **41** (Fig. 2). During the rocking movement of the upper shield **12**, the lateral projections **18** on the limbs **17** of the said shield slide first along the wedge **8** and subsequently along the straight upright side walls of the rib **7***a*, and cause the limbs **17** to be elastically forced apart. Thereby it may be achieved that when the operating tab **22** is in the position **221** of Figs. 4 and 5, the rocking movement takes place with a snap action when the finger pressure exerted overcomes the elastic

force of the limbs **17**. When the slider has been applied again to the stringers **41** it can be closed in clothes-peg-operating fashion by pressing together the spread apart ends of the shields **1** and **12**, as indicated by the arrows D, D in Fig. 5. During the closing movement, the projections **18** first move along the straight upright side walls of the rib **7***a* and subsequently along the wedge **8**. As soon as the projections **18** have left the said side walls, the closing of the slider is completed with a snap action due to the elasticity of the limbs **17** forcing the upper shield **12** into its position for normal use.

After continued use and owing to elastic after effects, it may happen that the elasticity of the limbs **17** is reduced, whereby the snap action effect referred to above may be reduced accordingly. However, even in this case, the slider cannot unintentionally become detached from the stringers **41** since during normal use of the slider the concentric cam faces **25** of the operating tab **22** in co-operation with the outer face of the upper shield **12** prevent unintentional spreading apart of the slider shields.

It should be clearly understood that the embodiment described and illustrated is given by way of example only. Many modifications, omissions and additions are possible without departing from the spirit and scope of the invention as defined in the following claims.

I claim:

1. In and for a sliding clasp fastener, a slider comprising opposed shields for guiding two fastener stringers of the sliding clasp fastener through the slider, the said shields being joined together so as to allow spreading apart of the shields, an operating tab pivoted to the slider so as to be pivotable through approximately 180° about a pivot axis substantially parallel to the shields when not spread apart and a cam on the said operating tab, the said cam having a raised cam face substantially co-axial with the said pivot axis, the said cam face extending through an angle of approximately 180° but short of the angle through which the operating tab is pivotable, the shield adjacent the operating tab having a perforation, the said operating tab and its cam face being arranged for the cam face to overlie the outer surface of said adjacent shield adjacent its perforation in all pivotal positions of the operating tab which it assumes in normal use for opening and closing the sliding clasp fastener to prevent spreading apart of the shields by the said cam face abutting against the said outer surface, the said cam face overlying the said perforation when the operating tab is near one end of its pivotal movement so as to allow the said cam face to enter the perforation when the shields are spread part.

2. In and for a sliding clasp fastener, a slider comprising opposed shields for guiding two fastener stringers of the sliding clasp fastener through the slider, the said shields being hinged together so as to allow spreading apart of the shields, an operating tab pivoted to the slider, a cam arranged on the said operating tab for co-operation with the outer surface of the adjacent shield in all positions of the operating tab which it assumes in normal use for opening and closing the sliding clasp fastener, the operating tab and the cam being arranged for the cam to be out of such co-operation when the operating tab is at one end of its pivotal movement, the said adjacent shield having a slot extending in the longitudinal direction of said adjacent shield and being open at one end thereof whereby the said shield is forked so that the limbs of the forked portion of the said shield can be forced apart elastically in the general plane of the said shield, a wedge, and a riser element both on the other

shield and extending therefrom towards the said adjacent shield, the riser element having at least one surface substantially parallel to the said other shield and arranged for the said adjacent shield to rest on the said surface when the shields are closed, the said riser element also having two surfaces substantially perpendicular to the said other shield and merging into two inclined surfaces forming the said wedge, the said forked portion straddling the said wedge, the limbs of the said forked portion being forced apart by the wedge on spreading the shields apart to slide along the said inclined surfaces and subsequently along the said substantially perpendicular surfaces, the movements of the said limbs being reversed on closing the slider shields, whereby the spreading apart and closing of the slider shields is effected under a snap action.

3. In and for a sliding clasp fastener, a slider comprising opposed shields for guiding two fastener stringers of the sliding clasp fastener through the slider, the said shields being hinged together so as to allow spreading apart of the shields, an operating tab pivoted to the slider, so as to be pivotable through approximately 180° about a pivot axis substantially parallel to the shields when not spread apart, a cam on the said operating tab, the said cam having a raised cam face substantially parallel to the said pivot axis, the said cam face extending through an angle of approximately 180° but short of the angle through which the operating tab is pivotable, the shield adjacent the operating tab having a perforation, the said operating tab and its cam face being arranged for the cam face to overlie the outer surface of said adjacent shield adjacent its perforation in all pivotal positions of the operating tab which it assumes in normal use for opening and closing the sliding clasp fastener to prevent spreading apart of the shields by the said cam face abutting against the said outer surface, the said cam face overlying the said perforation when the operating tab is near one end of its pivotal movement so as to allow the said cam face to enter the perforation when the shields are spread apart, the said perforation merging into a slot extending in the longitudinal direction of said adjacent shield and being open at one end thereof whereby the said shield is forked so that the limbs of the forked portion of the said shield can be forced apart elastically in the general plane of the said shield, a wedge, and a riser element both on the other shield and extending therefrom towards the said adjacent shield, the riser element having at least one surface substantially parallel to the said other shield and arranged for the said adjacent shield to rest on the said surface when the shields are closed, the said riser element also having two surfaces substantially perpendicular to the said other shield and merging into two inclined surfaces forming the said wedge, said forked portion straddling the said wedge, the limbs of the said forked portion being forced apart by the wedge on spreading the shields apart to slide along the said inclined surfaces and subsequently along the said substantially perpendicular surfaces, the movement of the said limbs being reversed on closing the slider shields, whereby the spreading apart and closing of the slider shields is effected under a snap action.

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