Aug. 8, 1944. I. GOLDSTEIN 2,355,152

SLIDE FASTENER

Filed Dec. 17, 1942 2 Sheets-Sheet 1

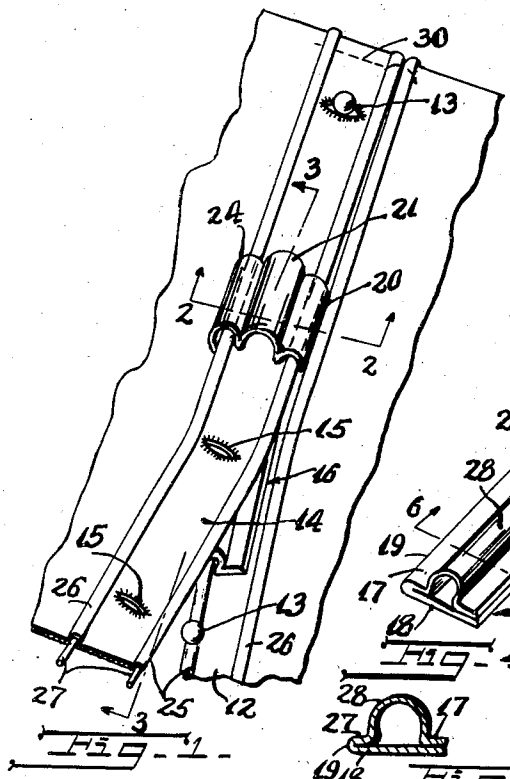

Fig - 1 -

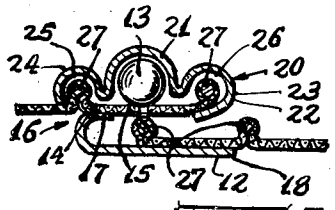

Fig - 2 -

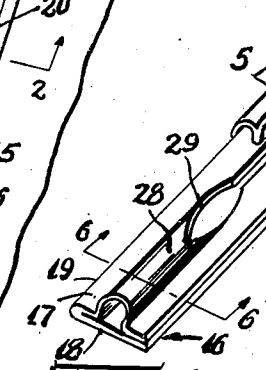

Fig - 4 -

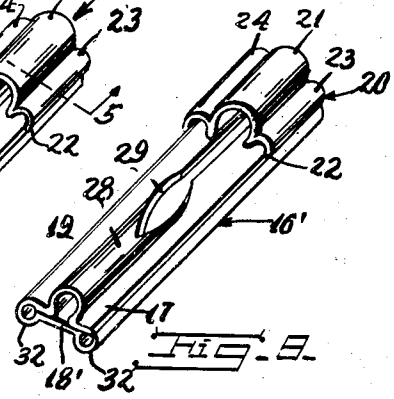

Fig - 5 -

Fig - 6 -

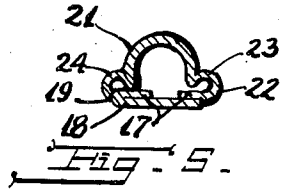

Fig - 5 -

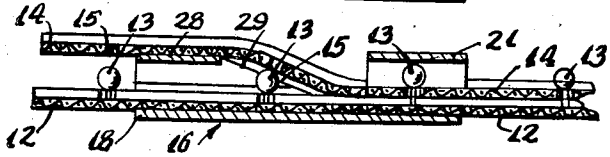

Fig - 3 -

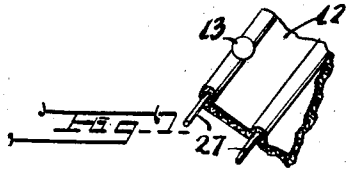

Fig - 7 -

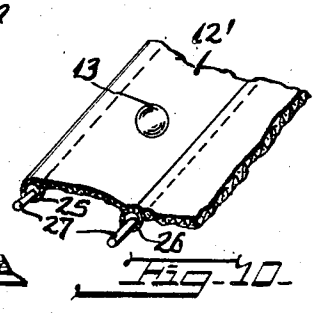

Fig - 10 -

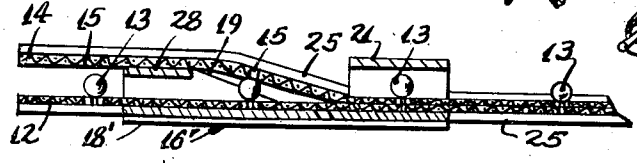

Fig - 8 -

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SLIDE FASTENER

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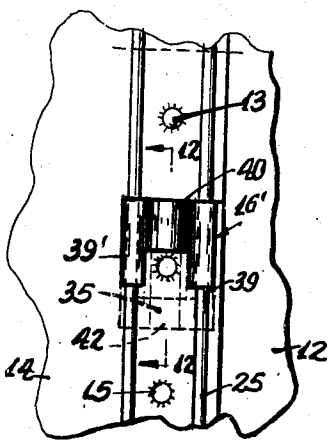

Fig. 11.

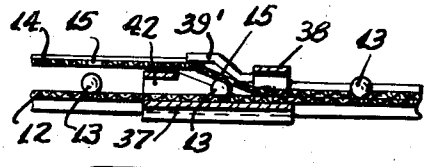

Fig. 12.

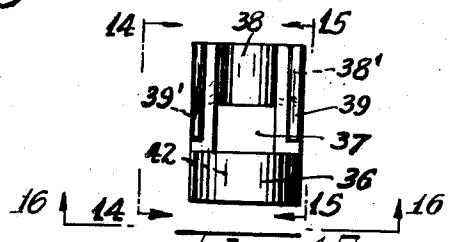

Fig. 18.

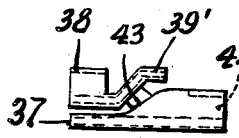

Fig. 14.

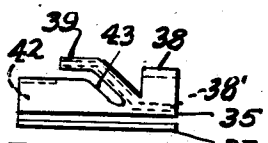

Fig. 15.

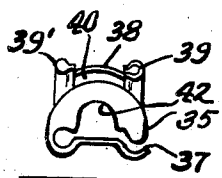

Fig. 16.

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UNITED STATES PATENT OFFICE

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SLIDE FASTENER

Isidore Goldstein, Brooklyn, N. Y.

Application December 17, 1942, Serial No. 469,311

8 Claims. (Cl. 24—205)

This invention relates to new and useful improvements in a slide fastener.

More particularly, the invention proposes a new slide fastener which essentially consists of a bottom flexible strip having a plurality of spherical buttons along its length, a top flexible strip having buttonholes for said buttons, and a slide for buttoning and unbuttoning said buttons.

An important feature of the invention resides in the construction of the slide. It is characterized by a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip and provided with certain members which will button and unbutton said buttons when the slide is moved forwards and rearwards.

More specifically, a bridge-like member is proposed to be mounted on the outer edge of the top wall portion of said C-shaped member for engaging over the edge portion of the top strip. It is proposed that this bridge-like member be provided with a semi-tubular portion for holding down said top strip on said bottom strip and for forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other. It is further proposed that a hollow semi-tubular portion be disposed upon the top wall portion of said C-shaped member for said buttons to pass through when said slide is moved relative to said strips, and it is proposed that this semi-tubular portion be located to the front of said bridge-like member and have an inclined rear end for progressively lifting said top strip off said buttons when the slide is moved in one direction, and dropping said top strip on said buttons when the slide is moved in the other direction. This action will accomplish the unbuttoning and buttoning, as required.

Still further the invention contemplates novel means for slidably connecting the slide upon said strips.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a slide fastener constructed in accordance with this invention.

Fig. 2 is a fragmentary enlarged sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary longitudinal sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the slide, per se.

Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 4.

Fig. 7 is a fragmentary perspective view of a portion of the bottom strip, per se.

Fig. 8 is a fragmentary sectional view similar to Fig. 3 but illustrating a modified construction.

Fig. 9 is a perspective view of the slide, per se, disclosed in the modified form of the invention illustrated in Fig. 8.

Fig. 10 is a fragmentary perspective view of the bottom strip used in the form of the invention disclosed in Fig. 8.

Fig. 11 is an elevational view of a slide fastener constructed according to a modified form of this invention.

Fig. 12 is a fragmentary longitudinal sectional view taken on the line 12—12 of Fig. 11.

Fig. 13 is a plan view of the slide, per se, shown in Figs. 11 and 12.

Fig. 14 is a side elevational view looking in the direction of the line 14—14 of Fig. 13.

Fig. 15 is a side elevational view looking in the direction of the line 15—15 of Fig. 13.

Fig. 16 is an end elevational view looking in the direction of the line 16—16 of Fig. 13.

The slide fastener, in accordance with the form of the invention disclosed in Figs. 1 to 7, includes a bottom flexible strip 12 having a plurality of spherical buttons 13 along its length. This bottom flexible strip is cooperative with a top flexible strip 14 formed with buttonholes 15 for said buttons 13. There is a slide 16 for buttoning and unbuttoning said buttons 13 with said buttonholes 15. The construction of this slide forms a dominating portion of this invention.

The slide 16 includes a flat C-shaped member in cross section having a top flat wall portion 17, a bottom flat wall portion 18, and a bend 19 connecting one of the sides of said top and bottom flat wall portions. This C-shaped member is adapted to be engaged upon the edge portion of the bottom strip 12 as clearly shown in Fig. 2.

A bridge-like member 20 is mounted on the outer edge of the top wall portion 17 of said C-shaped member and is for the purpose of engaging over the edge portion of said top strip 14, as clearly shown in Fig. 2. This bridge-like member 20 has a semi-tubular portion 21 extending longitudinally along its center for hold-

ing down said top strip portion 14 on said bottom strip portion 12 when the slide is being used. This semi-tubular portion 21 furthermore forms a passage for the buttons 13 when said strips 12 and 14 and said slide 16 are relatively moved longitudinally of each other, as clearly indicated in Fig. 3. The bridge-like member 16 is integral at one side, namely the side 22 with the free edge of the top wall portion 17.

Means is provided for slidably connecting said bridge-like member 20 with the edge portion of said top strip 14. This means includes small tubular portions 23 and 24 formed along the sides of the bridge-like member 20 and cooperative with beaded portions 25 and 26, respectively formed along the edge portion of said strip 14. These beaded portions 25 and 26 are formed by sewing cords 27 or similar strands within casing portions formed from the material of the top strip 14.

The top wall portion 17 is also formed with a hollow semi-tubular portion 28 for the said buttons 13 to pass through when said slide 16 is moved relative to the said strips 12 and 14. This semi-tubular portion 28 is located to the front of the bridge-like member 20. This semi-tubular portion 28 is formed with an inclined rear end 29 for progressively lifting said top strip 14 off of said buttons 13 when the slide 16 is moved in one direction, and dropping said top strip 14 on said buttons 13 when the slide 16 is moved in the other direction. The semi-tubular portion 28 is open at the bottom through which the buttons engage therein. The bottom strip 12 and top strip 14 are sewn together at one of their ends by the stitches 30. The slide 16 is engaged on the edge portions of the strips 12 and 14 by slightly flexing the top and bottom flat wall portion 17 and 18 thereof apart, and engaging the slide in position on the strips. The bottom strip 12 is also provided with beaded portions 25 and 26 formed with cords 27, for decorative purposes.

The operation of the device is as follows:

When the slide 16 is moved downwards as illustrated in Fig. 1, the bridge-like member 20 will force the top strip 14 downwards onto the bottom strip 12 so that when the buttons 13 come out from the inclined end 29 of the semi-tubular portion 28 they will be forced through the button-holes 15. Thus, the slide fastener is being closed. Then the slide 16 is moved upwards, the top strip 14 will be cammed upwards by the inclined rear end 29 of the hollow semi-tubular portion 28 so that the top strip 14 is forced free from the buttons 13.

In Figs. 8 to 10 a modified form of the invention is disclosed which distinguished from the prior form essentially in the fact that the bottom flat wall portion 18' of the slide 16' is provided with semi-tubular portions 32 which are cooperative with the beaded portions 25 and 26 formed along the edge of the bottom strip 12'. These beaded portions are formed with cords 27, or other strands encased in portions of the bottom strip 12'. The buttons 13 are located between the beaded portions 25 and 26. These beaded portions are cooperative with the semi-tubular portions 32 and serve to longitudinally, and slidably connect the bottom wall portion 18' of the slide 16' with the bottom strip 12'.

In other respects this form of the invention is identical to the previous form and like parts are indicated by like reference numerals.

In the modified form of the invention disclosed in Figs. 11 to 16, the slide fastener includes a bottom flexible strip 12 having a plurality of spherical buttons 13 along its length. This bottom flexible strip is cooperative with a top flexible strip formed with buttonholes 15 for said buttons 13. There is a slide 16' for buttoning and unbuttoning said buttons 13 and buttonholes 15. The construction of this slide embodies the modification of this form of the invention.

The slide 16' comprises a C-shaped member 35, see Fig. 16, having a top wall portion 36 and a bottom wall portion 37 for engaging upon the edge portion of the bottom strip 12. A bridge-like member 38 is mounted on the outer edge 38', see Figs. 13 and 15, of the top wall portion 35 and is for the purpose of engaging over the top edge of the top strip 14.

There is means for slidably connecting said bridge-like member 38 with said edge portion of the top strip 14 and comprises a tubular edge portion or arm 39 formed along and projecting forward from one side of the bridge-like member 38 and being opened at the side for slidably engaging the bead portion 25 formed along the edge of the strip 14. Another substantially identical arm 39' projects from and along the other side of the bridge-like member 38 and is for the purpose of holding the top strip 14 down. This portion 39' is solid and not tubular as may be seen from an inspection of Fig. 16. The bridge-like member 38 has a semi-tubular central portion 40 for forming a passage for said buttons 13 when said strips 12 and 14 and slide 16' are relatively moved longitudinally of each other. The front portion of the top wall portion 35 is formed with a hollow semi-tubular portion 42 for the buttons 13 to pass. This front portion has an inclined rear end 43 for progressively lifting the top strip 14 off said buttons when the slide 16' is moved in one direction, and dropping said strip 14 on said buttons when the slide is moved in the other direction.

In other respects this form of the invention is identical to the prior forms and it is believed that its operation will be clear.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a slide fastener having a bottom flexible strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, and a hollow semi-tubular portion on said top wall portion for said buttons to pass through and

located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction.

2. In a slide fastener having a bottom flexible strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, and a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction, said slide being constructed from one piece of sheet material.

3. In a slide fastener having a bottom flexible strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, and a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction, said means for slidably connecting said bridge-like member with the edge portion of said top strip comprising semi-tubular portions formed on said bridge-like member and cooperative with ribs formed along the length of said strip.

4. In a slide fastener having a bottom flexible strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, and a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction, said hollow semi-tubular portion being open along the bottom through which the buttons extend.

5. In a slide fastener having a bottom flexible strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction, and means for slidably connecting the bottom frame wall portion of said C-shaped member with said bottom strip.

6. In a slide fastener having a bottom flexible strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbottoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction, and means for slidably connecting the bottom frame wall portion of said C-shaped member with said bottom strip, comprising semi-tubular portions formed on said bottom flat wall portion and engaging beaded portions formed along the length of said bottom strip.

7. In a slide fastener having a bottom flexible

strip, having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a flat C-shaped member having top and bottom flat wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a semi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction, and means for slidably connecting the bottom frame wall portion of said C-shaped member with said bottom strip, comprising semi-tubular portions formed on said bottom flat wall portion and engaging beaded portions formed along the length of said bottom strip, said buttons being located between said beaded portions.

8. In a slide fastener having a bottom flexible strip having a plurality of spherical buttons along its length, and a top flexible strip having buttonholes along its length for said buttons, a slide for buttoning and unbuttoning said buttons, comprising a C-shaped member having top and bottom wall portions for engaging upon the edge portion of said bottom strip, a bridge-like member mounted on the outer edge of said top wall portion for engaging over the edge portion of said top strip, means for slidably connecting said bridge-like member with said edge portion of said top strip, said bridge-like member having a simi-tubular portion for holding down said top strip on said bottom strip and forming a passage for said buttons when said strips and slide are relatively moved longitudinally of each other, and a hollow semi-tubular portion on said top wall portion for said buttons to pass through and located to the front of said bridge-like member and having an inclined rear end for progressively lifting said top strip off of said buttons when the slide is moved in one direction and dropping said top strip on said buttons when the slide is moved in the other direction.

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