May 12, 1953 J. HORA 2,637,886

SLIDE FASTENER

Filed Dec. 5, 1950

FIG. 1

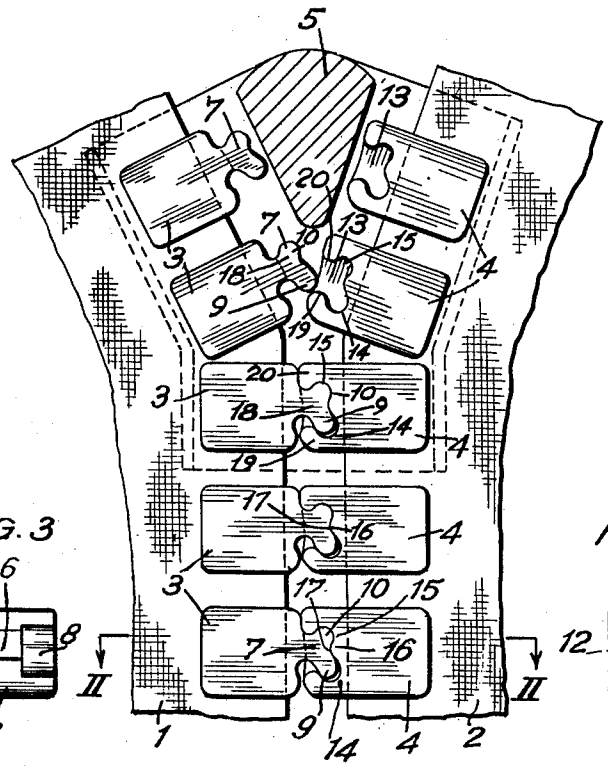



FIG. 3




FIG. 4

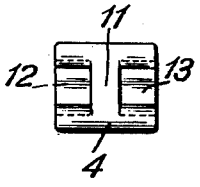
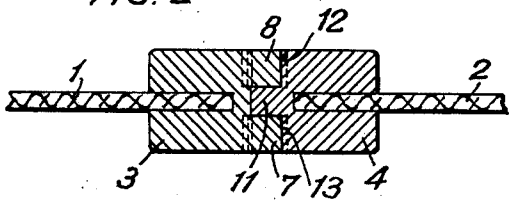



FIG. 2




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2,637,886

## SLIDE FASTENER

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4 Claims. (Cl. 24—205.13)

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The present invention relates to a slide fastener which comprises engaging members provided with projections and receiving members provided with recesses for receiving the said projections.

In such type of fastener, any two opposite members are interconnectable, without bearing on each other as in the case of known slide fasteners, thereby preventing the interengaged members from being disengaged. Such type of fastener therefore is more flexible than the known slide fasteners and is prevented from unintended opening even when subjected to pronounced buckling.

According to the present invention, a better engagement of the closure members is attained by so forming two noses on each projection of the engaging members and two hollows in each recess of the receiving members that one nose is introduceable into its appurtenant hollow when a pair of opposite members are inclined under a certain definite angle with respect to each other, whereupon the other nose is introduceable into the other hollow by twisting the members relatively to each other, the latter thus being secured against disengagement by the interengaged noses and hollows.

The drawing shows one form of invention.

Fig. 1 shows a portion of the slide fastener in elevation, the slide being shown in section,

Fig. 2 is a cross-section on the line II—II of Fig. 1, and

Figs. 3 and 4 are end views of the two kinds of fastener members used. Fastener members 3 and 4 are secured to the adjacent sides of two carrier tapes 1 and 2 respectively, and are engageable and disengageable by moving back and forth a slide 5. Each member 3 on its outside end face and on both sides of a centre slot 6 (Fig. 3) comprises a projection 7 and 8 respectively. Each of the latter comprises two engaging noses 9 and 10 spaced from the body of the respective fastener members by a restricted portion 18, the noses 9 being slightly longer than the noses 10. Each fastener member 4 comprises a center web 11 on its outside end face and a recess 12 and 13, respectively, on both sides of said web. In each recess two diverging hollows 14 and 15 are provided, of a shape corresponding to that of the engaging noses 9, 10 and which form opposed lugs 19 and 20 on opposite sides of the recesses. The hollow 14 is slightly larger than the hollow 15. Between the two hollows 14, 15 a land 16 is provided which coacts with a countergroove 17 formed on the

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fastener member 3 between the engaging noses 9 and 10.

When closing the slide fastener, the interengaging pairs of closure members 3, 4 are inclined towards each other under a certain angle in the slide 5, as shown in Fig. 1 by the two topmost pairs of members. First the engaging nose 9 of each closure member 3 is introduced into the hollow 14 past the lugs 19 and 20 of each closure member 4. By subsequently turning the two members, the other engaging noses 10 are introduced into the hollows 15 past the lugs 19 and 20, the lands 16 and grooves 17 are hobbing on each other and the engaging noses 9 are slightly moved out again from the hollows 14 without, however, entirely leaving the latter. The members 3, 4 thus are positively interengaged and secured against pulling apart. In this way, the fastener is prevented from springing open when being bent. Further, the members are secured in the closing position against lateral movement by means of the central groove 6 in the closure members 3 and of the central web 11 in member 4, which web enters groove 6. Instead of groove 6 and web 11, a plurality of interengaging grooves and webs or ribs could be provided for preventing the members 3 and 4 from laterally disengaging, which grooves and ribs could be laterally disposed.

What is claimed is:

1. In a slide fastener having opposed aligned pairs of cooperating fastener members mounted on the adjacent edges of parallel flexible stringers and a slide movable along the stringers to engage and disengage the fastener members, one fastener member of each pair having spaced projections extended toward the other fastener member of each pair, the other fastener member of each pair having recesses spaced by a central web and opening toward the spaced projections to receive the projections when the slide is moved to engage the pairs of fastener members and cause said web to be engaged in the spaces between said spaced projections to retain said fastener members against transverse separation, each of said projections having a pair of noses separated from the respective fastener member by a restricted portion said noses of each pair being of unequal length and diverged toward the respective other fastener member in a plane parallel to the plane of the stringers, each of said recesses having a pair of hollows of unequal length and diverged away from the respective one fastener member in a plane parallel to the plane of the stringers, the longer nose of each

pair of noses and the longer hollow of each pair of hollows being extended in a direction away from the direction in which the slide is moved to engage the pairs of fastener members, so constructed and arranged that when the slide is moved to engage the pairs of fastener members said projections are inserted into said recesses with the longer noses of said projections moving first into the longer hollows of said recesses, after which the shorter noses of said projections are moved into the shorter hollows of said recesses retaining the fastener members against being pulled apart by sidewise pulls on the stringers.

2. A slide fastener according to claim 1, wherein the hollows of each recess are separated by a land extended toward the respective one fastener member, said noses of said projections being separated by a countergroove, said lands being received in said countergrooves when the fastener members are engaged to retain the respective noses in position in their respective hollows.

3. In a slide fastener having opposed aligned pairs of cooperating fastener members mounted on adjacent edge portions to be releasably joined together and a slide for moving the fastener members relative to the edge portions to engage and disengage the pairs of fastener members, one fastener member of each pair having a projection extended toward the other fastener member of each pair, the other fastener member of each pair having a recess opening toward said projection to receive the respective projection when the slide is moved to engage the pairs of fastener members, each of said projections having a pair of noses separated from the respective fastener member by a restricted portion said noses of each pair being of unequal length and



diverged toward the respective other fastener member in a plane parallel to the plane of the stringers, each of said recesses having a pair of hollows of unequal length and diverged away from the respective one fastener member in a plane parallel to the plane of the stringers, the longer nose of each pair of noses and the longer hollow of each pair of hollows being extended in a direction away from the direction in which the slide is moved to engage the pairs of fastener members, so constructed and arranged that when the slide is moved to engage the pairs of fastener members said projections are inserted into said recesses with the longer noses of said projections moving first into the longer hollows of said recesses, after which the shorter noses of said projections are moved into the shorter hollows of said recesses retaining the fastener members against being pulled apart by sidewise pulls on the stringers.

4. A slide fastener according to claim 3, including means for retaining the fastener members against being separated by relative movement in a plane normal to the stringers.

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**References Cited in the file of this patent**

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 1,813,385 | Dalton | July 7, 1931 |
| 1,893,379 | Sundback | Jan. 3, 1933 |
| 1,918,721 | Sundback | July 18, 1933 |

FOREIGN PATENTS

| Number | Country | Date |
|---|---|---|
| 548,898 | Germany | of 1932 |