

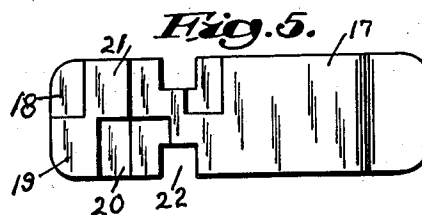
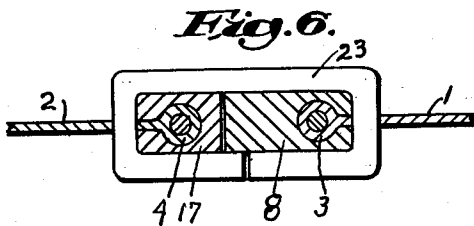
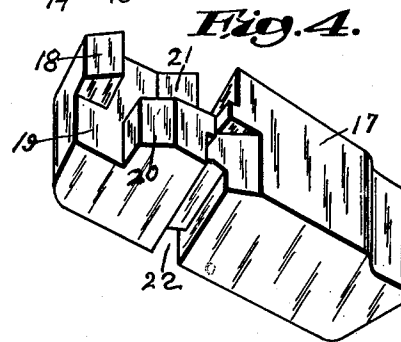
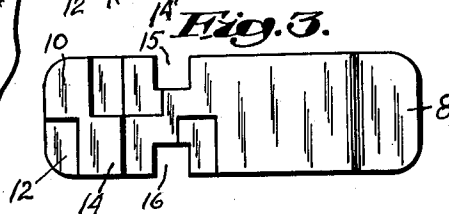
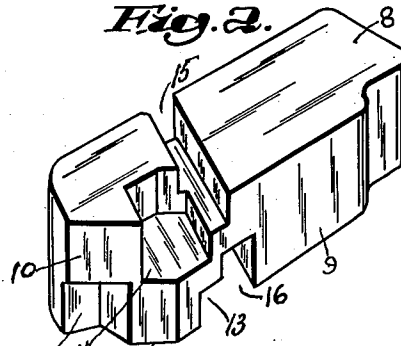
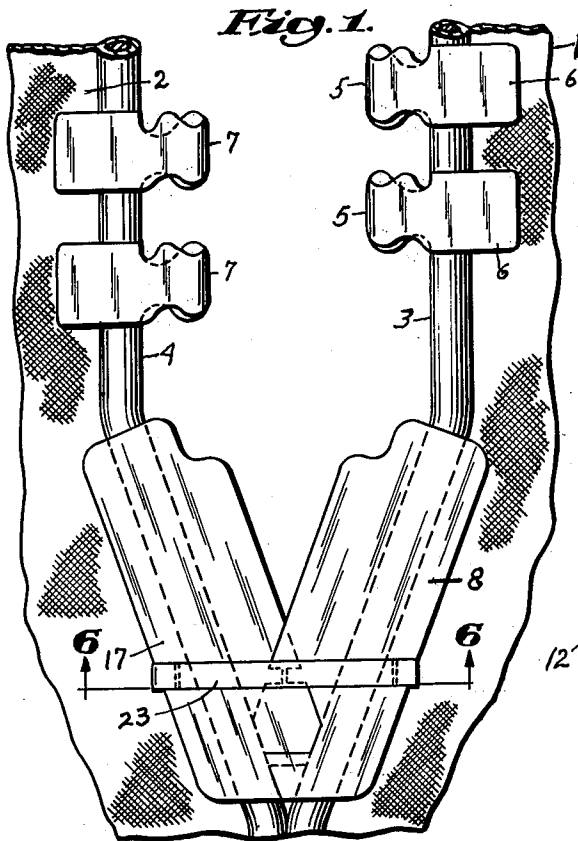
June 13, 1950

E. E. DAY
SIMULTANEOUSLY MOLDED BRIDGE STOP CONSTRUCTION
FOR SLIDING CLASP FASTENERS

2,511,397

Filed March 13, 1946

2 Sheets-Sheet 1



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Fig. 7.

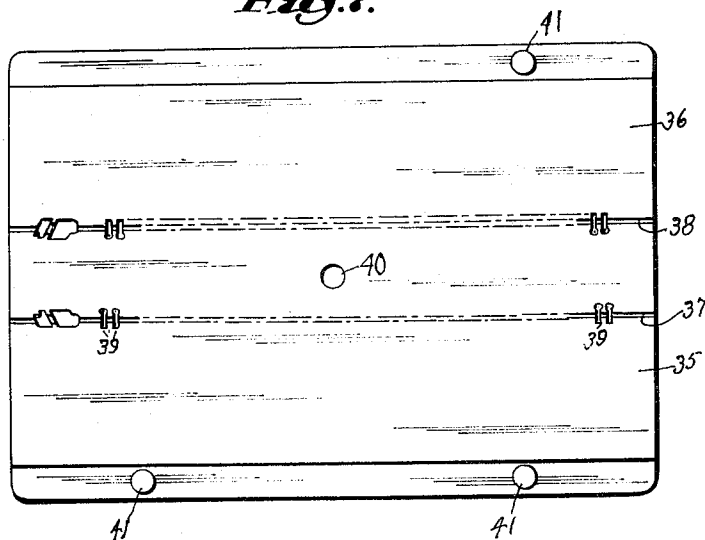
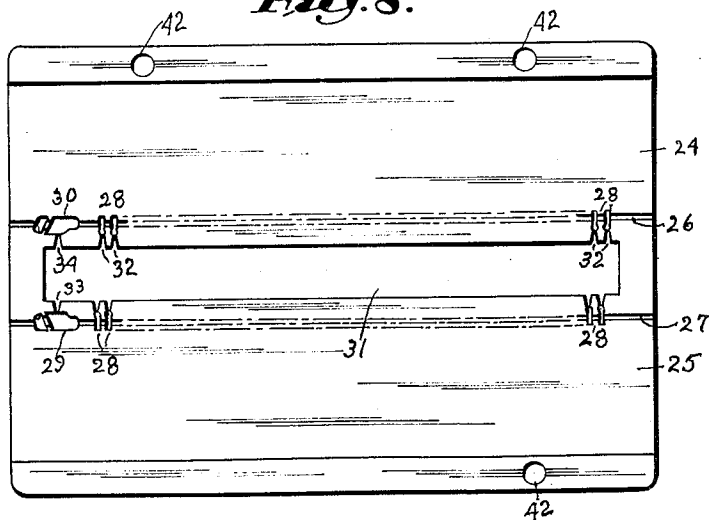


Fig. 8.



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SIMULTANEOUSLY MOLDED BRIDGE STOP
CONSTRUCTION FOR SLIDING CLASP
FASTENERS

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This invention relates to bridge top stops for sliding clasp fasteners having a pair of stringers provided with complementary series of interlocking elements adapted to be moved into and out of engagement by a slider and in which the upper ends of the stringers are connected together by a staple or other means commonly known in the art as a "bridge." One of the objects of the invention is to provide a top stop construction adapted to keep the edges of the stringer above the bridge top stop together while holding them apart below the top stop in such parallelism as to facilitate the movement of the slider upon the complementary interlocking members of the stringers.

Another object of the invention is to provide a construction of this character in which the top stop members and the interlocking elements of the stringers can simultaneously be molded upon the stringers, thereby eliminating all problems of location of the top stop and the respective interlocking elements and providing a relatively inexpensive construction.

A further object of the invention is to provide a strong bridge top stop which when molded upon the stringers will impregnate the material thereof and adhere thereto with greater firmness.

A further object of the invention is to provide a construction in which the top stops and the interlocking elements of both stringers can be simultaneously molded by injection of thermoplastic material rendered fluid by heat and injected under pressure through a runner and gates leading to the respective interlocking elements and top stop members, whereby the material of the runner and gates can after cooling be broken away and reground and used again.

A further object of the invention is to provide a bridge top stop having complementary stop members each extending lengthwise of the edge of the stringer having anchoring means embracing and fixedly secured to the edges of the respective stringers and having end portions provided with complementary interlocking means so constructed as to hold the top stop members in such angularly diverging relation to each other as properly to space the interlocking members of the stringer for free sliding engagement by the slider.

A further object of the invention is to provide top stop members of the character above described of uniform thickness symmetrically embracing the edges of the respective stringers and having at their ends interlocking means adapted to be assembled in interengagement in edge to

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edge relation and having means for preventing disengagement when thus assembled.

These and other objects and features of the invention will more fully appear from the following description and the accompanying drawings and will be particularly pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view of a pair of stringers having complementary series of interlocking elements and top stop members anchored upon the stringers with the top stop members assembled and bound in such symmetrical diverging relation to each other as to position the respective series of interlocking elements in properly spaced relation;

Fig. 2 is a perspective view of a stop member for one of the stringers, the beaded edge of the stringer to which it is applied being omitted for the sake of clearness of illustration;

Fig. 3 is an inner edge view of the stop member shown in Figs. 1 and 2;

Fig. 4 is a similar perspective view of the stop member which is applied to the other stringer;

Fig. 5 is a view looking downwardly toward the upper surface of Fig. 4;

Fig. 6 is a vertical sectional view on line 6-6 of Fig. 1;

Fig. 7 is an underneath plan view of an upper die provided with recesses and cavities for simultaneously casting or molding the interlocking elements and top stop members upon both stringers; and

Fig. 8 is a plan view of the lower die complementary to that shown in Fig. 7, illustrating the runner and gates to the mold leading therefrom to the interlocking elements and the top stop members.

The invention as illustrated in Fig. 1 comprises a pair of stringers 1 and 2 having respectively beaded edges 3 and 4, the stringer 1 having secured to it a series of interlocking elements 5 of thermoplastic material molded or die cast upon the stringer having leg portions 6 embracing the beaded edge of the stringer and impregnating the fabric thereof. The stringer 2 has similarly secured to it a series of complementary interlocking elements 7. The beaded edges of each of the stringers also has molded or die cast upon it top stop members having internengaging upper end portions so constructed that the stop members diverge symmetrically in such manner as to hold the interlocking elements of the respective

stringers in properly spaced relation to enable the slider to run easily upon them.

The stop members which are secured to the respective stringers may be provided with any sort of interlocking means adapted to retain them in properly diverging directions. In the particular embodiment of the invention illustrated herein the stop member 8, which is similarly cast or molded upon the stringer 1 with an anchoring portion embracing the edge of the stringer, is of a construction illustrated in Figs. 2 and 3, and comprises a body of general rectangular form of uniform thickness the upper end portion of the inner edge 9 of which is provided with an angularly slabbed portion 10, at the upper side of the medial plane of the stop member in which the edge of the stringer is located. A recess 11 is provided which extends inwardly from the edge 9 and slabbed-off portion 10 and upon the other side of the plane of the stringer recesses 12 and 13 are provided which likewise extend inwardly respectively from the slabbed-off and side portions 9 leaving a projection 14. A transverse groove 15 extends across said upper portion and a complementary groove 16 extends across the lower portion which as shown merges into the recesses 13. The stop member 17, which is similarly cast or molded upon the stringer 2 with an anchoring portion embracing the edge of the stringer, is of generally rectangular form illustrated in Figs. 4 and 5 and provided with a slabbed-off end 18 complementary to the slabbed-off end 10 of the stop member 8. Upon one side of the plane of the stringer the stop member 17 is provided with an end recess 19 complementary to the projection 10 of the stop member 8 and a projection 20 complementary to the recess 12 of the stop member 8. The under side of the stop member 17 is provided with a recess 21 adapted to receive the projection 14 of the stop member 8. The stop member 17 is also provided with an external transverse groove 22 which when the stop members 8 and 17 are interlocked in edge to edge relation is in alinement with the groove 15 in the stop member 8. The opposite side of the stop member 17 is likewise provided with a groove in alinement with the groove 22, the grooves 15 and 22 of the respective stop members when assembled registering and being adapted to receive a metal binding band 23 as illustrated in Figs. 1 and 6 adapted firmly to hold the interlocked end portions of the stop members firmly in position and to prevent lateral separation thereof. The binding member 23 preferably is of a thickness equal to the depth of the groove and may be in the form of a staple having its ends bent toward each other in such manner as to form a substantially continuous rectangular ring, as shown in Fig. 6.

The manner in which the interlocking elements of the respective stringers and the respective stop members thereof may be simultaneously cast is shown in Figs. 7 and 8 in which the upper and lower dies for thus molding or casting the same is shown. The lower die member shown in Fig. 8 comprises a plate having longitudinally extending parallel shallow areas 24 and 25 to receive the respective stringer tapes and longitudinal grooves 26 and 27 to receive the beaded edges of the stringers. The lower mold is provided with a series of suitably spaced cavities 28 for the respective interlocking elements and cavities 29 and 30 for the stop members. The mold is provided intermediate of these cavities with a longitudinally extending runner 31 and gates 32 extend-

ing therefrom lead to the cavities of the respective interlocking elements. Similar gates 33 and 34 lead from the runner 31 to the cavities 29 and 30 for the stop members. The upper die illustrated in Fig. 7 is provided with longitudinally extending shallow areas 35 and 36 complementary to the shallow areas 24 and 25 respectively to receive the respective stringers. The upper mold shown in Fig. 7 likewise is provided with longitudinally extending stringer-receiving grooves 37 and 38 complementary to the stringer-receiving grooves 26 and 27 with series of suitably spaced cavities 39 for the interlocking elements registering with the cavities 28 of the lower series. The upper mold section is provided with a preferably central sprue hole 40 through which the flowing thermoplastic material may be introduced by pressure when the upper mold is superimposed upon the lower mold and held in proper position relatively thereto by suitable studs 41 projecting downwardly from the upper mold and firmly seated in sockets 42 in the lower mold.

By reason of this mold construction all of the interlocking elements of both stringers and the stop members of both stringers can be simultaneously cast or molded by supplying material preferably under suitable pressure through the sprue hole 40 to the runner and from the runner to the respective cavities of the mold. The mold may thereafter be cooled sufficiently to harden the thermoplastic material, the mold members separated and both stringers with the interlocking elements and stop members molded thereon removed from the mold together with the material of the runner and that of the gates of the mold. The runner and gates may then be readily broken away and reground and any roughness upon the heads of the interlocking elements and upon the stop members ground off and the ground sections polished to produce a completed pair of stringers having the interlocking elements and stop members fixedly and rigidly secured thereto. The stop members may then be readily assembled and firmly bound together by the strap 23 in the manner above described.

It will be obvious that by thus simultaneously casting or molding the interlocking members and the stop members upon the respective stringers the production of such members of a sliding clasp fastener can be expeditiously performed in a minimum of time, without wastage of material, and at a minimum of expense.

It will be understood that the particular embodiment of the invention shown and described herein is of an illustrative character and is not restrictive and that various modifications in the form of interlocking elements and stop members and the manner of securing the stop members together may be made within the spirit and scope of the following claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A top stop for sliding clasp fasteners having a pair of stringers provided with complementary series of interlocking elements adapted to be moved into and out of interengagement by a slider, said top stop comprising complementary stop members of thermoplastic material extending lengthwise of the upper end portions of the respective stringers and embracing and impregnating the edge portions thereof and provided respectively in upper adjacent end portions with complementary interlocking projections and recesses, positioning the stop members in such

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downwardly diverging V-shaped relation as to space the stringers and the interlocking elements thereof sufficiently apart to facilitate the movement of the slider thereon, and means for permanently securing the interlocking stop members firmly in interlocked position.

2. A top stop for sliding clasp fasteners having a pair of stringers provided with complementary series of interlocking elements adapted to be moved into and out of interengagement by a slider, said top stop comprising complementary stop members of thermoplastic material extending lengthwise of the upper end portions of the respective stringers and embracing and impregnating the edge portions thereof and provided respectively in upper adjacent end portions with complementary interlocking projections and recesses, positioning the stop members in such downwardly diverging V-shaped relation as to space the stringers and the interlocking elements thereof sufficiently apart to facilitate the movement of the slider thereon, said assembled stop members having complementary aligned transverse grooves surrounding the interengaged portions thereof, and a band fitting in said groove embracing said members and fixedly securing them in assembled position.

3. A top stop for sliding clasp fasteners having a pair of stringers provided with complementary series of interlocking elements adapted to be moved into and out of interengagement by a slider, said top stop comprising complementary stop members of thermoplastic material extending lengthwise of the upper end portions of the respective stringers symmetrically embracing and impregnating the edge portion thereof and provided respectively at their end portions with complementary projections and recesses of different contour on opposite sides of the plane of said stringers which when engaged in edge to edge relation will prevent lateral relative displacement of said stop members and position said stop members in such downwardly diverging V-shaped relation to each other as to space the stringers and inter-

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locking elements thereof sufficiently apart to facilitate the movement of the slider thereon, and means for permanently securing said interengaged projections and recesses firmly in interlocked position.

4. A top stop sliding clasp fastener construction comprising a pair of stringers having simultaneously molded thereon complementary series of cooperating interengaging elements of thermoplastic material accurately spaced for interengagement by a slider movable longitudinally thereon and cooperating stop members of thermoplastic material embracing the edges of the respective stringers and impregnating the adjacent edge portions thereof, said stop members extending lengthwise of the upper end portions of the respective stringers and provided at their upper inner edge portions with complementary projections and recesses of different contour on opposite sides of the plane of the stringers adapted when interengaged to prevent lateral relative displacement thereof and so constructed as to position the stop members in such downwardly diverging V-shaped relation as to space the stringers and interlocking elements thereof sufficiently apart to facilitate the movement of the slider thereon, said assembled stop members having complementary aligned transverse grooves extending transversely around the interengaged portions thereof, and a band fitting said groove permanently securing the interengaged portions of the stop members firmly in interlocked position.

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