

Oct. 17, 1939.

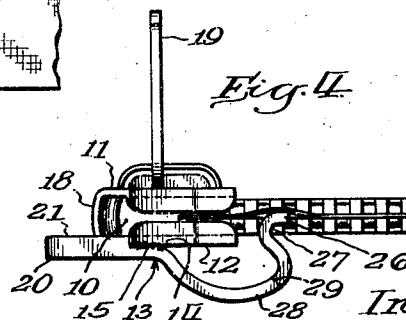
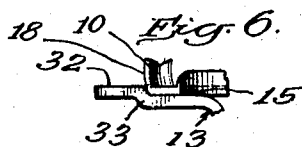
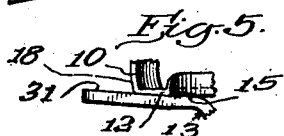
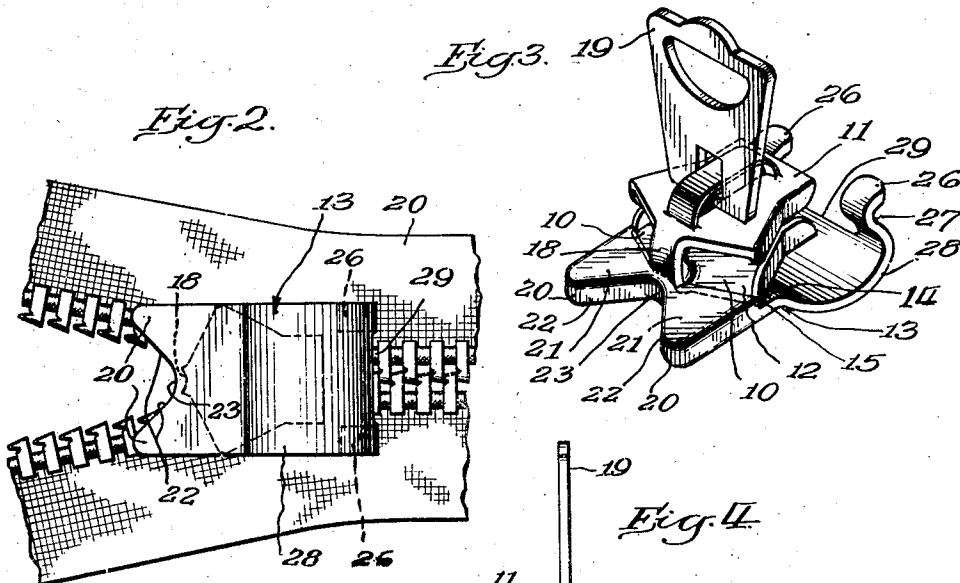
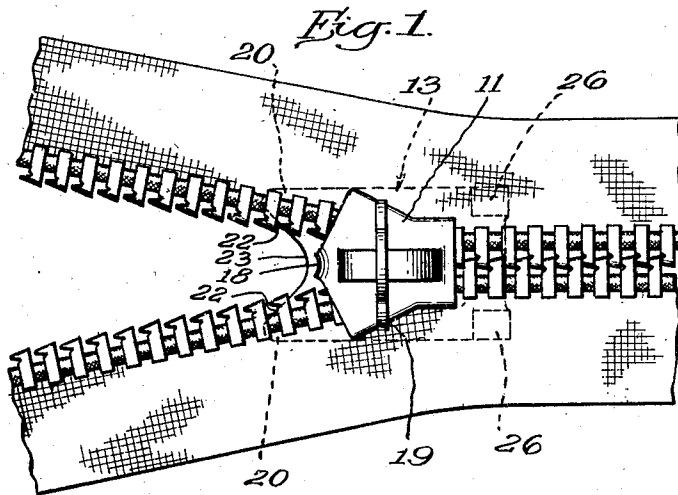
F. A. L'AMIE

2,176,445

FASTENER SLIDE

Filed March 11, 1938

2 Sheets-Sheet 1



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FASTENER SLIDE

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2 Sheets-Sheet 2

Fig. 7.

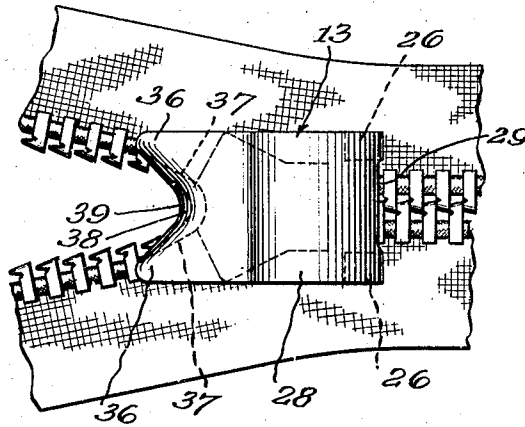


Fig. 8.

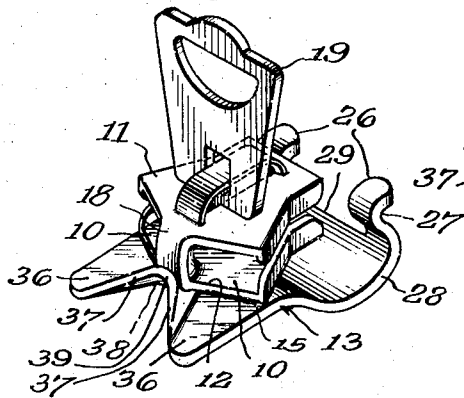


Fig. 9.

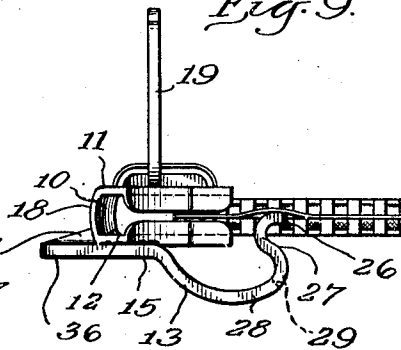


Fig. 10.

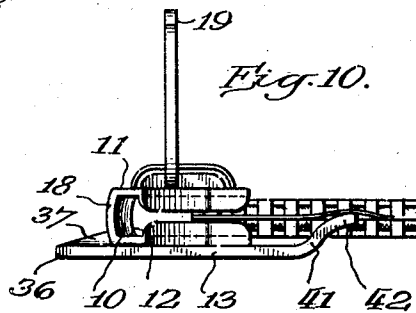
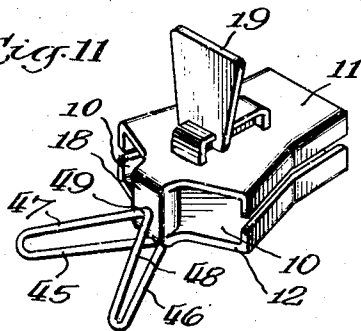


Fig. 11



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UNITED STATES PATENT OFFICE

2,176,445

FASTENER SLIDE

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Application March 11, 1938, Serial No. 195,214

19 Claims. (Cl. 24—205)

My invention relates to improvements in fastener slides of the general type in which the adjacent rows of fastener elements are secured to strips of fabric or tape and are progressively brought into interlocking relation by a guiding member or slide, movable longitudinally of the fastener elements in one direction to engage them, and movable in the opposite direction to disengage them. The present application is a continuation in part of application Serial No. 174,539 filed November 15, 1937, and now abandoned.

An object of my invention is to provide a fastener slide with improved means for guiding the fastener elements into interlocking relation and for preventing fabrics or other materials, either adjacent to or lying between the rows of elements, from clogging the slide or becoming caught between the rows of fastener elements when these are converged into interlocking relation.

A more specific object of my invention is to provide a slide of the class described with improved fastener guiding arms extending forward of the slide proper whose primary function is to serve as a separator progressively to move the adjacent or interposed materials inwardly toward the center line of slide travel, and then simultaneously inwardly and downwardly below the level of the fastener elements in advance of the engagement of such elements.

A further object of the invention is to provide a slide with improved rearwardly extending tape contacting means whereby the fabrics to the rear of the slide are prevented from being caught in the latter as the slide is moved to separate the fastener elements. These tape contacting elements, which take the form of fingers, are adapted to contact the individual tapes relatively near the fastener elements, are designed to insure a preliminary separation of the fabrics or other materials from the fastener elements and the fastener guiding portion of the slide itself in advance of the entry of the elements into the passageways wherein the actual separation of elements takes place.

A further object of the invention is to provide a slide of the class described with not only the afore-described guiding arms and tape contacting means, but also with an intermediate portion extending a substantial distance below the bottom of the fastener slide. This downwardly extending portion is hereinafter referred to as a depressant and it is operative to depress the materials lying below the slide as the slide is moved

in either direction. In particular, it cooperates with the tape contacting means effectively to prevent the clogging of the slide as the latter is moved rearwardly to disengage the fastener elements.

Heretofore numerous attempts have been made to accomplish the purposes herein stated, but so far as I am aware, all of the slide fasteners heretofore designed have failed to prevent clogging of the slide by other materials, or engagement of such materials with the fastener elements. This clogging has resulted in damage, not only to the elements, but also to the materials, such as silk and other delicate fabrics when the slide is forcibly actuated.

It may be seen, therefore, that it is a general object of my invention to eliminate all difficulties heretofore encountered in the operation of such slides and substantially completely eliminate the danger of damage to the fastener elements and materials.

Other objects and advantages of my invention will become apparent from the ensuing description in the course of which reference is had to the following drawings, in which:

Fig. 1 is a plan view of a fastener slide embodying my invention and showing fragments of the tapes and interlocking fastener elements;

Fig. 2 is an inverted view of the slide and associated fragments of the tapes and fasteners illustrated in Fig. 1;

Fig. 3 is a perspective view of the slide per se; Fig. 4 is a side elevation of the same showing a fragment of one of the tapes and its associated fastener and illustrating in particular the action of the tape contacting means at the rear of the slide;

Fig. 5 is a fragmentary side elevation of a fastener slide provided with a modified form of my invention;

Fig. 6 is a view similar to Fig. 5 showing a further form which my invention may take;

Figs. 7, 8 and 9 are views similar to those of Figs. 1, 2 and 3 of a further modification of my invention;

Fig. 10 is a side elevation illustrating a modified form of tape contacting means; and

Fig. 11 is a perspective view of a further modified form of my invention.

In the description of the invention about to follow, the same reference numerals are used to identify like parts throughout the several views.

The fastener element engaging portion of my improved slide, which may be of ordinary con-

struction, is provided with passageways 10 adapted to bring the adjacent rows of fastener elements into interlocking relation when the slide is moved in one direction and to release them from such relationship when the slide is moved in the opposite direction. The adjacent rows of fastener elements are ordinarily mounted upon carrying tapes, as well known to those skilled in the art, and it is believed, therefore, that detailed description thereof and illustration of their mode of operation as the slide is moved in opposite directions is not required.

For convenience in description, the normally exposed side 11 of the slide is referred to as the outer or top plate, and the opposite portion 12 is referred to as the inner or bottom plate. While this bottom plate may also serve as a bearing plate adapted to ride over the material to be enclosed, in my improved slide it is preferably mounted upon, or attached to, or made a part of a larger bearing plate 13.

In my improved slide, if the bearing plate is formed integrally with the bottom plate 12, the latter might be said to constitute the central portion of the bearing plate, and the marginal portions of the bearing plate might be described as flanges projecting laterally, forwardly, and rearwardly from the bottom plate 12.

However, for convenience in description, the bearing plate 13 has been illustrated as a plate having a substantially triangular centrally located flat upper surface 14 upon which the bottom plate 12 is mounted and secured to in suitable manner as by welding, or soldering, as indicated at 15 in Fig. 4.

The plates 11 and 12 and other walls defining the passageways 10 may be either separately or integrally formed but are preferably integrally connected by what may be termed the front end portion 16. It is immaterial whether the slide operating member comprises a chain and ring or other grasping piece, or whether it comprises the pivoted handle 19 that has been illustrated.

The end of the slide at which the two rows of fastener elements enter or emerge from in separated relationship may be conveniently termed the forward end, and, correspondingly, the end at which the elements enter or emerge from in interlocked relationship may be conveniently termed the rear end. Thus, in Figs. 1 to 4, inclusive, the left end is the forward end, and the right the rear end.

At the forward end of my improved slide, the bearing plate 13 is provided with means for preventing fabrics or other materials lying below or between the rows of fastener elements from clogging the slide or from getting caught between the rows of elements. This means comprises a pair of forwardly projecting divergent fork arms 20 defining a V-shaped groove opening toward the forward end of the slide and located centrally with respect to the line of fastener element engagement.

As may be noted best from Figs. 3 and 4, the upper surfaces 21 of the arms are located substantially in the plane of the bottoms of the passageways 10. These upper surfaces are maintained in firm contact with the under sides of the fastener elements, as will be described more fully hereinafter, to prevent the forward ends thereof from plowing into obstructing fabrics or other materials instead of riding over them.

The divergent arms 20 define a centrally located crotch having oblique opposed edges 22 and a central apex 23. The apex 23 is located

below and substantially merges with the forward end of the fastener slide and it, with the opposed inner edges 22 of the arms, forms, as stated above, a V-shaped groove located centrally with respect to the line of fastener element engagement. The width of the bearing plate 13 is such that the inner or opposed faces of the fastener elements are normally located substantially as illustrated in Fig. 1, that is, over the opposed oblique edges 22 of the arms. In some cases, the fastener elements may diverge at lesser or greater angles, but for most satisfactory operation the angle of divergence of these elements should not be so great as to cause them to extend laterally beyond the forward rounded ends of the two arms. If they so extend the fabrics, etc., are likely to get jammed between the fastener elements and ends of the arms.

The fork arms described in detail are preferably slightly rounded in order to prevent their catching or cutting delicate fabrics as they are moved back and forth in operation of the slide. When the slide is moved forward, the fork arms push any material lying in, or above the plane of the bearing plate 13, or between the adjacent rows of fastener elements toward the center line of fastener element engagement and downwardly out of the path of the bearing plate, while at the same time preventing the materials from being caught between the fastener elements or between the fastener elements and the passageways 10.

In practical operation, these fork arms or separating shoes are found to be reliably effective for the purpose of separating extraneous materials in advance of the movement of the slide proper over any given area. Such separation has heretofore been difficult to accomplish particularly when fastener slides are employed to close luggage carriers which have been filled to capacity and in the closing of which fabrics or other materials exert a considerable upward force and are themselves pushed upwardly between the adjacent rows of fastener elements. My invention, however, is designed not only for use with luggage carriers but is applicable wherever slide fasteners are used and there is a likelihood of their catching extraneous material.

Fabrics or other materials are not only caught and drawn into the fastener element passages when the slide is moved forward, but are also caught when the slide is moved rearwardly for the purpose of disengaging the interlocked fastener elements. To avoid this disadvantage, I provide the rear end of the bearing plate 13 with a pair of upwardly extending tape contacting means, which take the form of fingers, located at the outer rear corners of the plate at a sufficient distance from each other to allow the engaged fastener elements readily to pass between them. The location of the tape contacting means relative to the fastener elements is best illustrated in Fig. 2. These fingers have rounded extremities 26, the upper surfaces of which are adapted to contact the tapes to which the fastener elements are secured. In the present instance, the height of the extremities is sufficient to lift the tape slightly as illustrated in Fig. 4.

In some cases it may be desirable to either raise or lower the extremities, the height being dependent somewhat upon the degree of flexibility of the tapes carrying the fastener elements. In the present illustration, the height extends slightly above the normal tape level and is the height used in connection with tapes secured to the jaws of luggage carriers. When so applied

the tapes are relatively rigid. In any event, a firm contact between the tape contacting means and tape is required. This is essential to prevent the materials from entering between the tape and the associated tape contacting means and likewise to maintain the slide in balance, i. e., to keep the arms 20 in engagement with the under sides of the separated fastener elements and tapes, as it is moved in opposite directions. It may be noted at this point that the slide may be so operated that the fork arms extend downwardly away from the tape. This results when the slide is moved forward tipped at an angle such that the fork arms extend down and away from the fastener element. This, it should be understood, is not the usual mode of operation and is merely mentioned at this point to bring out the fact that in the usual mode of operation, the fork arms are in engagement with the under sides of the fastener elements and tapes.

The effectiveness of the tape contacting means is enhanced by providing them with transversely extending grooves 27 which cooperate with an intermediate curved downwardly extending depressant 28 connecting the forward end of the bearing plate 13 to the tape contacting means to cause a downward folding or bunching of extraneous material at the rear of the slide so that movement of the slide rearwardly results in a downward movement of the bunched material. From Fig. 4, it may be noted that the depressant lies below the rear half and somewhat behind the slide. The curvature of the forward portion is somewhat less than the rear portion in order to make the rear portion more effective to separate the extraneous materials from the passageways, and to prevent the material from getting between the tape and the tape contacting means. The portion of the depressant is cut away as indicated by reference numeral 29 to provide an opening for the fastener elements. The dimensions of the fingers and opening are such as to permit free movement of the elements and prevent the fabrics from extending therebetween to the slide passageways.

The intermediate depressant mentioned above is effective to depress the material a substantial distance below the level of the fastener elements when the slide is moved in either a forward or rearward direction. When the slide is moved in a forward direction, it serves to depress the extraneous material directed toward the line of fastener element engagement by the fork arms 20 and when the slide is moved in a rearward direction, it likewise serves to depress the material contacted thereby.

Therefore, it may be seen that a progressive separation of extraneous materials from the slide occurs in advance of the entry of any given portion of the tapes and associated fastener elements into the slide passageways, irrespective of the direction in which the slide is moved.

The construction of the forward end may be modified without detracting from the advantages resulting from the use of the slide fastener of my invention. From Fig. 5, it may be noted that the bottom plate is made of substantially the same thickness throughout. When so made, the fork arms are bent upwardly so that the upper surfaces of the forward end portions 31 thereof lie substantially in the plane of the bottoms of the passageways 10.

In Fig. 6 there is illustrated another modification also comprising a bearing plate of uniform thickness. The fork arms 32 of this embodiment

are flat and their upper surfaces lie in the plane of the bottom surfaces of the passageways 10. This construction is obtained by stamping the plate with an offset portion 33 that forms a convenient abutment against which the forward end of the slide rests.

The modified form of slide fastener illustrated in Figs. 7, 8 and 9 is substantially the same as that of the first described modification, except as to the construction of the fork arms at the forward end of the bearing plate 13. In this modification, the bearing plate is of uniform thickness and is preferably fabricated by a stamping process. In the stamping process the fork arms 36 are provided with upwardly extending flanges 37 made integral with the opposed inner edges of the former. The heights of the flanges increase gradually as they approach the center line of fastener element engagement where they terminate in an apex 38 located adjacent the forward end 13 of the slide. The flange surfaces are rounded and inclined toward the rear of the bearing plate to provide what might be termed a convex surface. This surface is indicated by reference character 39 and is illustrated best in Fig. 7 from which it may be seen that the length of the curved portion is greatest at the center or apex where it extends back of the forward end of the slide.

The provision of the fork arms with flanges that are inclined and curved as described enhance the operation of the slide, because this makes it somewhat easier for the slide to depress the extraneous material as it is moved in a forward direction.

In this modification, as in the previous ones, the upper surfaces of the fork arms bear against the under sides of the tapes and fastener elements. In Fig. 7 is illustrated the position of the fastener elements with respect to the fork arms when the slide is used in a luggage carrier. From this figure it may be noted that the fastener elements ride upon the flanges. In some instances, the angle of divergence of the fastener elements may be considerably greater, in which event the fastener elements ride upon the flat upper surfaces of the fork arms 36.

The operation of the fastener slide last described and illustrated in Figs. 7, 8 and 9 is substantially the same as that of the previously described modifications. Consequently, it is believed that further elaboration of the mode of operation is not required to be repeated at this point.

In Fig. 10, I have illustrated a modified form of construction from which the intermediate depressant 28 has been omitted and the construction of the tape fingers has been changed by omitting the transverse grooves.

A slide constructed in this fashion is better adapted for use in connection with articles where the depressant would cause a certain degree of uncomfortableness. This is true in the application of the slide to wearing apparel where the depressant is likely to project into the body of a person.

The slide and forward end of the bearing plate illustrated in Fig. 10 correspond to those last described. The bearing plate terminates in a pair of rearwardly extending and upwardly curved fingers 41 having upper extremities 42 adapted to contact the under sides of the tapes. It has been found in practice that when the depressant is omitted, the operation of the slide is improved by making the tape contacting portions somewhat longer. Consequently, if the modifications

illustrated in Figs. 9 and 10 be compared, it will be noted that the tape contacting means of the latter extends rearward about twice as far from the rear end of the slide as that of the former.

It has been found that the length of the rearwardly extending tape contacting means is an important factor in the construction of the slide of my invention, because it determines to a great degree the adaptability of the device to fastener elements attached to curved tapes. For instance, while the fastener slide illustrated in Fig. 9 is particularly adapted for, but not limited to, use with luggage where the interlocking fastener elements extend around a corner of a mouth-defining portion of the luggage, the fastener slide of Fig. 10 could not be readily adapted for such use. This results from the fact that it would be rather difficult to force the slide around the sharp corners usually found in luggage. However, this fact is no disadvantage when the slide fastener is used with relatively straight pieces of tape, such as are usually found in wearing apparel.

The elimination of the transverse groove from the slide illustrated in Fig. 10, while affecting somewhat the operation of the device, does not deleteriously affect operation of the device. The omission of the transverse grooves can be compensated for by the increasing length of the tape contacting means.

In Fig. 11, I have illustrated a further modified form of construction in which the slide proper conforms to ordinary practice, and to the front end of which I have attached a wire configured to define a pair of divergent fork arms. The wire fork comprises bottom arms 45 and 46 which are upwardly and reversely bent at their forward ends to provide top arms 47 and 48 converged to form a rounded apex 49. The apex 49 and the ends of the wire (not shown in Fig. 11) are secured to the front end 18 and the bottom of the slide, respectively, in suitable manner as by welding or soldering. The lower arms 45 and 46 may lie in a plane extending slightly downwardly with respect to the plane of the bottoms of the passageways 10 better to prevent material from getting caught therebetween and the fastener elements.

In operation the lower arms 45 and 46 of the wire fork serve to depress extraneous materials and likewise to guide the same toward the longitudinal center line of fastener element engagement. The upper arms 47 and 48 also serve so to guide the material and when the material reaches the apex of the fork, it is depressed by the forward end 18 of the slide. The slide itself thus serves as a depressant to force the material downwardly so that the slide proper can travel over it.

The rear end of the slide is not illustrated in Fig. 11. It may or may not be provided with a separator similar to the depressant 28 and with guard fingers similar to the guard fingers 26, the purpose of the Fig. 11 illustration being merely to illustrate a modified form of front fork.

From the foregoing detailed description of my invention it may be gathered that my invention resides in providing a fastener slide of ordinary construction with means for preventing it from catching when moved over fastener elements in either a forward or rearward direction. The means for accomplishing these results consists of a pair of divergent fork arms defining a V-shaped groove centrally located with respect to the line of fastener element engagement, an intermediate depressant, and a pair of tape contacting fingers located to the rear of the fastener slide. It is

contemplated that in its broader aspects, invention may be practiced by using only the fork arms, or the tape contacting means or both with or without the depressant. However, if a slide fastener is constructed with only one or more of these elements, it is obvious that the advantages of the portions omitted will not be obtained, and that best results will be obtained when all three cooperating parts are used.

From the modifications of my invention that have been described above, it should be apparent also that it is susceptible of modification. It is contemplated that the embodiments described above are illustrative only and are not to be construed as limiting the invention in any way.

What I claim as new and wish to secure by United States Letters Patent is as follows:

1. A fastener slide of the type provided with passageways for guiding tape-mounted fastener elements into interlocking relationship when moved in one direction and for unlocking the elements when moved in the opposite direction, having a bottom plate provided at one end with a pair of arms projecting beyond the passageways in said one direction defining a substantially V-shaped crotch substantially centrally of the slide, said crotch having its apex substantially in alignment with the line of fastener element engagement, tape contacting means extending beyond the passageways in said opposite direction at the other end, and an intermediate depressant.

2. An attachment for a fastener slide of the type movable in one direction to guide adjacent rows of tape mounted fastener elements into interlocking relation and in the opposite direction to unlock them, and of the type wherein the interlocked elements emerge from and enter a single passageway at the rear of the slide and the unlocked rows of elements normally lie in lines diverging from the front end of the slide as the slide is moved in said opposite directions, comprising a member having a length greater than the slide and provided at its front end with a pair of divergent arms defining a substantially V-shaped crotch, tape contacting means at the rear end, and an intermediate depressant, said member being attachable to the slide fastener with the crotch located in front of the slide in substantial alignment with the line of fastener element engagement, and said tape contacting means projecting beyond the passageway at the rear end of the slide, said arms having a length such that they extend beyond the lines normally occupied by the unlocked elements and having surfaces that lie closely adjacent the fastener elements when said member is attached to said slide.

3. A fastener slide of the type having guideways for rows of mutually engageable tape-mounted fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, having at one end a forked element, the arms of which project forward of the guideways closely adjacent the tapes divergently on opposite sides of the center line of slide movement beyond the lines normally occupied by the fastener elements as the slide is moved relative to the latter and are adapted progressively to guide extraneous material lying in the path of the slide toward the line of fastener element connection and to push the same downwardly as the forked element progressively moves over such material in said one direction.

4. An attachment for a fastener slide of the

type movable in one direction to guide adjacent rows of tape mounted fastener elements into interlocking relation and in the opposite direction to unlock them, and of the type wherein the unlocked rows of elements normally lie in lines diverging from the front end of the slide as the slide is moved in said opposite directions, comprising a member provided at its front end with a pair of divergent arms defining a substantially V-shaped crotch and attachable to the slide fastener with the crotch located in front of the slide in substantial alignment with the line of fastener element engagement, said arms having a length such that they extend beyond the lines normally occupied by the unlocked elements and having surfaces that lie closely adjacent the fastener elements when said member is attached to said slide, whereby said arms are adapted progressively to separate extraneous material from fastener elements having a relative approach to the slide when said slide is moved in said one direction to bring the rows of fastener elements into interlocking relationship.

5. A fastener slide of the type having guideways for interlocking fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, in combination with a pair of divergent fork arms projecting away from and beyond one end of the slide closely adjacent the fastener elements and on opposite sides of the center line of slide movement, each of said arms having the upper surfaces of forward ends thereof lying substantially in the plane of the bottom surfaces of said guideways and having a width such that the forward ends thereof extend underneath the fastener elements as the latter enter or emerge from said end of the guideways.

6. A fastener slide of the type having guideways for interlocking fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, in combination with a pair of divergent fork arms projecting away from and beyond one end of the slide closely adjacent the fastener elements and on opposite sides of the center line of slide movement, each of said arms having a relatively flat upper surface lying substantially in the plane of the bottom surfaces of said guideways and a width such that the forward ends thereof extend underneath the fastener elements as the latter enter or emerge from said end guideways.

7. A fastener slide of the type having guideways for interlocking fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, in combination with a pair of divergent fork arms projecting a substantial distance away from one end of the slide and beyond the adjacent ends of the guideways substantially in the plane of the bottom of the slide, each of said fork arms having a width such that the forward ends thereof extend underneath the fastener elements as the latter enter or emerge from said end of the guideways, said arms being provided also with flanges at their opposed inner margins, said flanges gradually increasing in height as they approach the apex of the fork and having their opposed inner surfaces rounded and inclined rearwardly to define with said arms a crotch having a bottom surface curving toward and below the slide.

8. A fastener slide of the type having guide-

ways for rows of mutually engageable fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, having at one end a fork, the arms of which project from the slide divergently on opposite sides of the center line of slide movement, said arms being made of wire and comprising upper and lower portions, the upper and lower portions of each arm being joined together at their forward ends by a reverse bend, the upper portions of the two arms being secured to the front end of the slide intermediate the guideways, and the lower portions of the two arms being secured to the bottom of the slide at a point to the rear of the front end of the latter, whereby extraneous material between the fastener elements is guided toward the longitudinal center line of travel when the slide is moved in said one direction.

9. A fastener slide of the type having a body provided with means for guiding adjacent rows of mutually engageable tape-supported fastener elements into interlocking relationship and wherein the engaged elements emerge from a single passageway at the rear of the slide when the slide is moved in one direction, including a pair of arms projecting rearwardly from the body at opposite sides of the line of fastener element engagement and terminating in portions extending above the normal position of and into firm contact with the under sides of the fastener element supporting tapes at opposite sides of said line of engagement.

10. A fastener slide of the type having guideways for rows of mutually engageable tape-supported fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, having substantially rigid rearwardly extending guard fingers flanking said guideways, said fingers projecting upwardly from the bottom portion of the slide into position for contact with undersides of the fastener supporting tapes at opposite sides of interlocked rows of fasteners, each of said fingers having a rounded upper end for contact with the tape and a rear face having a transverse groove located below said upper end aiding to prevent extraneous material from being pushed over said rounded ends.

11. A fastener slide for mutually engageable rows of fastener elements mounted on tapes having passageways for the fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, said slide having a bottom plate provided with a forked element projecting forward of said slide and its passageways comprising a pair of arms projecting from the slide divergently on opposite sides of the center line of slide movement closely adjacent the tapes and beyond the lines occupied by the fastener elements as the slide is moved relative to the latter, whereby extraneous material lying between the elements is guided toward the line of fastener element connection, and to push the same downwardly as the apex of the forked portion moves progressively over such material, said bottom plate being provided also with tape contacting means comprising a pair of arms projecting rearwardly from the slide at opposite sides of the line of fastener element engagement and terminating in portions extending to a height above the normal position of the tapes whereby each arm is in contact with its associated tape.

12. A fastener slide for mutually engageable

rows of fastener elements mounted on tapes having passageways for the fastener elements and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, said slide having a bottom plate provided with a forked element projecting forward of said slide and its passageways comprising a pair of arms projecting from the slide divergently on opposite sides of the center line of slide movement closely adjacent the tapes and beyond the lines occupied by the fastener elements as the slide is moved relative to the latter, whereby extraneous material lying between the elements is guided toward the line of fastener element connection, and to push the same downwardly as the apex of the forked portion moves progressively over such material, said bottom plate being provided also with tape contacting means comprising a pair of arms projecting rearwardly from the slide at opposite sides of the line of fastener element engagement and terminating in portions extending to a height above the normal position of the tapes whereby each arm is in contact with its associated tape, said rearwardly extending arms lying substantially in the plane of said divergent arms except for said tape contacting terminal portions.

13. A fastener slide of the type having a body provided with a bottom plate and with passageways for guiding adjacent rows of mutually engageable fastener elements mounted upon tapes into interlocking relationship, said passageways being so constructed that the fastener elements are brought into interlocking relationship when the slide is moved in one direction and are unlocked when the slide is moved in the opposite direction, including in combination, a pair of divergent fork arms projecting away from the slide at one end, tape contacting means at the other, and an intermediate depressant, each of said fork arms having upper surfaces the forward ends of which lie substantially in the plane of the bottom surfaces of said passageways a width such that the forward ends thereof extend underneath the fastener elements as the latter enter or emerge from said end of the guideways.

14. A fastener slide of the type having a body provided with a bottom plate and with passageways for guiding adjacent rows of mutually engageable fastener elements mounted upon tapes into interlocking relationship, said passageways being so constructed that the fastener elements are brought into interlocking relationship when the slide is moved in one direction and are unlocked when the slide is moved in the opposite direction, including in combination, a pair of divergent fork arms projecting away from the slide at one end, tape contacting means at the other, and an intermediate depressant, said tape contacting means including a pair of arms projecting from the body at opposite sides of the line of fastener element engagement and terminating in portions adapted to contact the fastener element supporting tapes at opposite sides of said line of engagement.

15. A fastener slide of the type having a body provided with a bottom plate and with passageways for guiding adjacent rows of mutually engageable fastener elements mounted upon tapes into interlocking relationship, said passageways being so constructed that the fastener elements are brought into interlocking relationship when the slide is moved in one direction and are unlocked when the slide is moved in the opposite direction, including in combination, a pair of

divergent fork arms projecting away from the slide at one end, tape contacting means at the other, and an intermediate depressant, each of said fork arms having a width such that the forward ends thereof extend underneath the fastener elements as the latter enter or emerge from said end of the guideways, said arms being provided also with flanges at their opposed inner margins, said flanges gradually increasing in height as they approach the apex of the fork and having their opposed inner surfaces rounded and inclined rearwardly to define, with said arms a crotch having a bottom surface curving toward and below the slide, said tape contacting means including a pair of arms projecting from the body at opposite sides of the line of fastener element engagement and terminating in portions adapted to contact the fastener element supporting tapes at opposite sides of said line of engagement.

16. A fastener slide of the type having a body provided with a bottom plate and with passageways for guiding adjacent rows of mutually engageable fastener elements mounted upon tapes into interlocking relationship, said passageways being so constructed that the fastener elements are brought into interlocking relationship when the slide is moved in one direction and are unlocked when the slide is moved in the opposite direction, including in combination, a pair of divergent fork arms projecting away from the slide at one end, tape contacting means at the other, and an intermediate depressant, each of said fork arms having a relatively flat surface lying substantially in the plane of the bottom surfaces of said guideways and a width such that the forward ends thereof extend underneath the fastener elements as the latter enter or emerge from said end of the guideways, said tape contacting means including a pair of arms projecting from the body at opposite sides of the line of fastener element engagement and terminating in portions adapted to contact the fastener element supporting tapes at opposite sides of said line of engagement.

17. A fastener slide for mutually engageable rows of fastener elements mounted on tapes having passageways adapted to bring said elements into interlocking relationship when the slide is moved in one direction and to unlock the elements when moved in the opposite direction, said slide having a bottom plate provided with a forked element projecting forward of said passageways comprising a pair of arms projecting from the slide divergently on opposite sides of the center line of slide movement and substantially in the planes of the bottoms of said passageways, the crotch formed by said divergent arms lying substantially in the line of fastener element connection and the tips of the arms lying under the tapes, whereby the fastener elements slide over the arms and the arms progressively guide extraneous material toward the line of fastener element connection and push the same downwardly as the apex of the forked portion moves progressively over such material, said bottom plate being provided also with a depressant extending below and to the rear of said slide and the passageways.

18. A fastener slide of the type having guideways for rows of mutually engageable fastener elements mounted upon supporting tapes and movable in one direction to bring the elements into interlocking relationship and in the opposite direction to unlock them, having rearwardly projecting guard fingers flanking said guideways,

said fingers projecting upwardly from the bottom portion of the slide in position for firm contact with fastener supporting tapes at opposite sides of interlocked rows of fasteners, each of said fingers having an outer surface curving generally 5 below the bottom plane of the slide to depress extraneous materials in advance of the movement of the slide thereover in fastener element unlocking direction.

10 19. An attachment for a fastener slide of the type movable in one direction to guide adjacent rows of tape mounted fastener elements into interlocking relation and in the opposite direction to unlock them, and of the type wherein the in-

terlocked elements emerge from and enter a single passageway at the rear of the slide as the latter is moved in opposite directions, comprising a member provided at its rear end with a pair of arms projecting, when said member is attached 5 to the slide, rearwardly from the slide at opposite sides of the line of fastener element engagement and terminating in portions extending above the normal level of and into firm contact with the undersides of the tapes at opposite sides of 10 the line of engagement of and close to the engaged elements.

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