June 8, 1937. S. QUISLING 2,083,279

SLIDING FASTENER

Filed Feb. 9, 1934

Fig. 1.

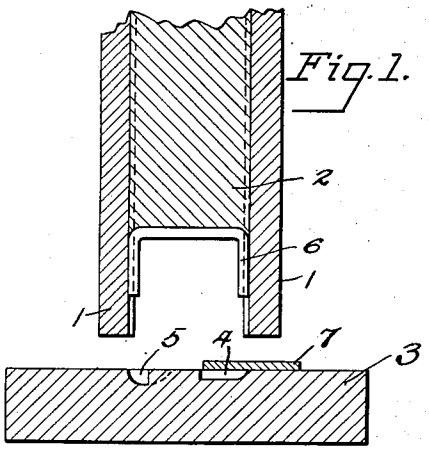


Fig. 2.

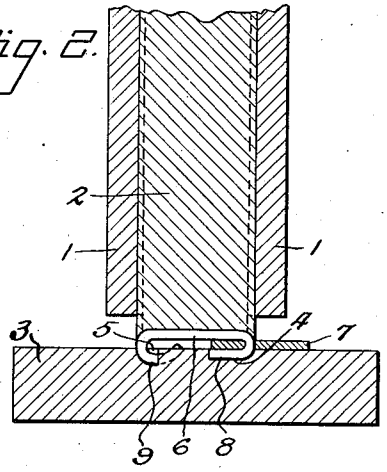


Fig. 3.

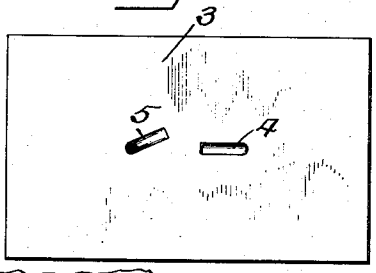


Fig. 4.

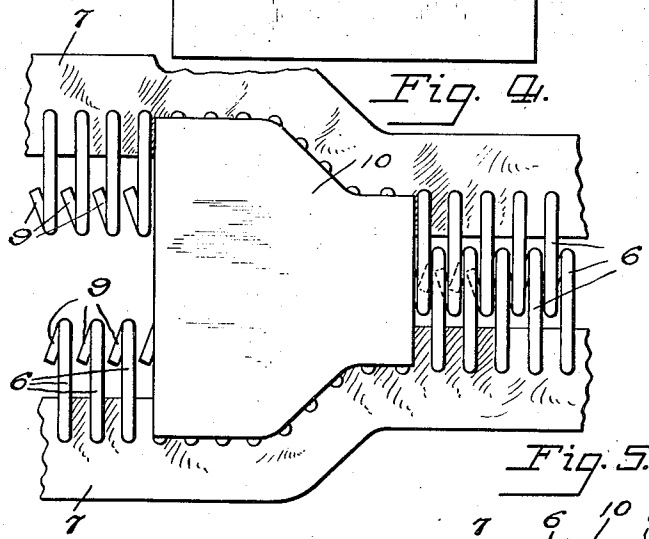


Fig. 5.

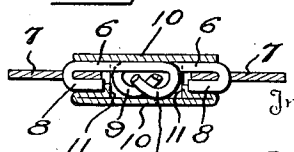
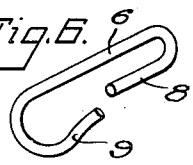


Fig. 6.



Inventor

Sverre Quisling

Patented June 8, 1937

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UNITED STATES PATENT OFFICE

2,083,279

SLIDING FASTENER

Sverre Quisling, Madison, Wis., assignor to Hookless Fastener Company, Meadville, Pa., a corporation of Pennsylvania

Application February 9, 1934, Serial No. 710,501

4 Claims. (Cl. 24—205)

This invention is directed to fastener means of that type wherein the adjacent free edges of a closure are brought together or separated by means of a slider.

One object of the present invention is to provide fastener elements, so shaped as to provide guide means for the slider whereby the slider may move along, contacting the metal elements only and thereby save excessive wear upon the tape to which the fastener elements are secured.

Another object of the invention is the provision of fastener elements which may be secured to a tape and formed into proper shape with but a single operation.

A further object is to provide such elements so designed that the cost of manufacture is kept at a minimum.

With these and other objects in view, the invention resides in the combination and arrangement of parts hereinafter described and shown, it being understood that changes may be made without departing from the scope of what is claimed.

In the drawing:—

Figure 1 shows a portion of a stapling machine with the material for forming a fastener element in place, and a tape, to which the elements will be secured, upon the anvil of the machine;

Figure 2 is a view similar to Figure 1 with the fastener element secured to the tape and formed into shape;

Figure 3 is a plan view of the anvil of the stapling machine;

Figure 4 is a plan view of two rows of the elements with an operating slider in place;

Figure 5 is a transverse section of Figure 4 taken thru the slider, and,

Figure 6 is a perspective view of one of the fastener elements.

Referring to the drawing in detail, Figures 1 and 2 show a stapling machine, by means of which the fastener elements described herein may be made, consisting of guide members 1, a plunger 2, and an anvil 3. Formed in the base plate or anvil 3 are two grooves 4 and 5, which act as guides in shaping the fastener elements. It will be clearly seen in the drawing that the groove 4 is parallel to the sides of the anvil in plan view, and the bottom of the groove is parallel to the top of the base plate in longitudinal section. The groove 5 however, is at an angle to the sides of the block in plan view and its bottom is substantially semicircular in longitudinal section. The anvil with the grooves, forms a die by means of which the fastener elements are formed. An ordinary staple of any size is shown at 6 and a tape at 7.

As is shown in Figure 2, when the plunger 2 is depressed, the staple 6 is forced downward, one depending leg passes thru the tape 7 and upon contact with the groove 4 is turned under as at 8 clamping the staple to the tape. The other leg of the staple following the groove 5, is turned upwardly and outwardly as at 9. As the fastener element is now completely formed, the tape is moved forward and the foregoing operation is repeated until a unit of the desired length is obtained.

In Figure 4, two of the units are shown together with a slider 10. This slider brings the elements of one unit in contact with the elements of the opposite unit at the proper angle so that the outer end of the curved portion 9 of one element passes into the loop formed by 9 of an adjacent oppositely disposed element. This securely fastens the opposing units together.

As will be seen in Figure 5, the slider 10 has upturned flanges 11 which ride over the inner ends of the turned under portions 8 of the fastener elements. The bottom portion of the slider as viewed in Fig. 5, comprises a sheet metal wing which extends substantially over the full width of the fastener when engaged, with the side edges of the sheet metal wing bent upon itself to extend toward the longitudinal center line of the slider. The edges of these in-bent portions are then turned at right angles toward the opposite wing to form the flanges 11. Thus a slider is provided in which the wing material extends beyond the guide flanges, such extensions serving to guide and align the fastener members more positively into the same plane so that they may be more easily interengaged. By this means, the slider may be so formed that it will ride only on the metal of the fastener elements and thus save wear on, and prolong the life of the tape.

Having thus described my invention, what I claim is:—

1. A fastening device of the class described comprising a pair of flexible tapes having meeting edges to be fastened, rows of fastener elements secured to said meeting edges in uniformly spaced relation, each element comprising a length of wire, with one end piercing the tape adjacent its edge and bent down on the opposite side of said tape to secure the same in position, and the other end projecting outwardly from the edge of the tape and bent to form a loop, the extreme end of the wire bent to extend out of the plane

of the loop to interlock in a loop of a similar member on the opposite row.

2. A fastening device of the class described comprising a pair of flexible tapes having meeting edges to be fastened, rows of fastener elements secured to said meeting edges in uniformly spaced relation, each element comprising a length of wire, attaching means on one end of said wire for securing it to the tape and the other end projecting from the edge of the tape bent into the form of a loop, the space within the loop being at least as large as the cross-section of the wire, the extreme end of the wire being bent to extend out of the plane of the loop into the space within a loop of a similar member on the opposite edge.

3. A fastening device of the class described comprising a pair of flexible tapes having meeting edges to be fastened, rows of fastener elements secured to said meeting edges in uniformly spaced relation, each element comprising a length of round wire having one end piercing the tape and clinched over on the opposite side of the tape, the other end of the wire projecting outwardly from the edge of the tape and bent to form a loop, the extreme end of the wire being bent upwardly to form an interlocking projection to engage in an overlapping loop of a similar member on the opposite row, and a slider mounted on said fastener members for engaging and disengaging the same.

4. In a fastener of the class described, the combination with a pair of flexible tapes, cooperating rows of fastener elements secured to adjacent edges of the tape, and a slider mounted to slide along said fastener elements, said slider comprising opposite wing portions adapted to contact opposite sides of the fastener elements, both of said wing portions extending over substantially the entire width of both rows of fastener elements and at least one of said wings having its side edges bent inwardly upon itself with the extreme edges of said in-bent portions turned at right angles to said wing, to provide guide flanges, the portions of said wing adjacent said bend which lie outside said flanges being adapted to guide said fastener members into the same plane to facilitate interengagement of the fastener elements.

SVERRE QUISLING.