May 9, 1933. J. B. FREYSINGER 1,907,779

SEPARABLE FASTENER

Filed Jan. 29, 1932

Fig. 1

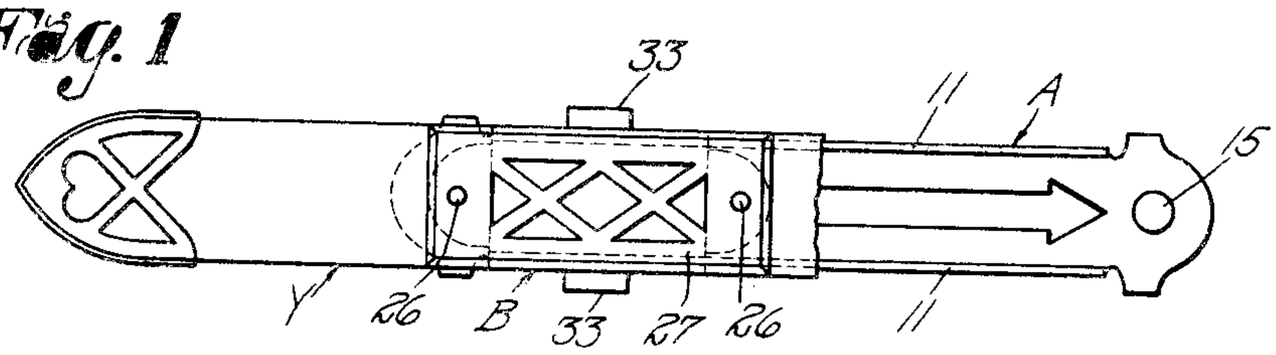


Fig. 2

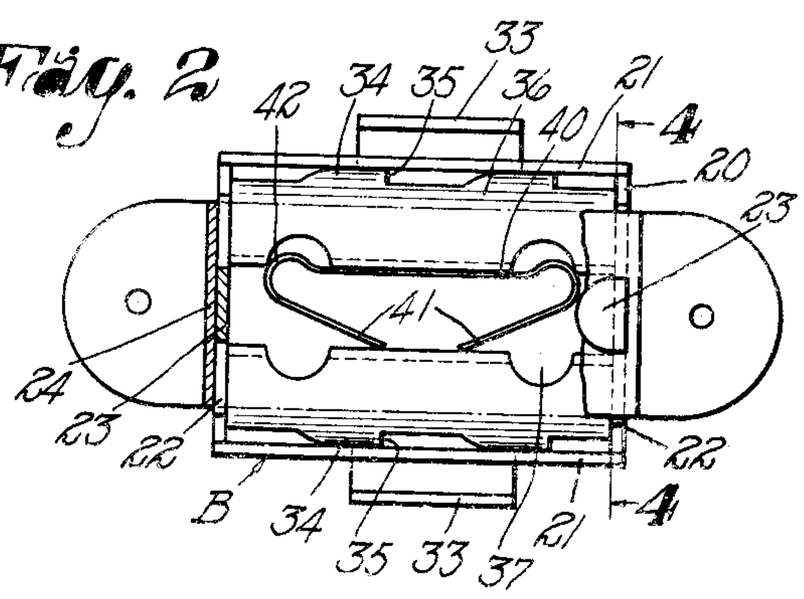


Fig. 3

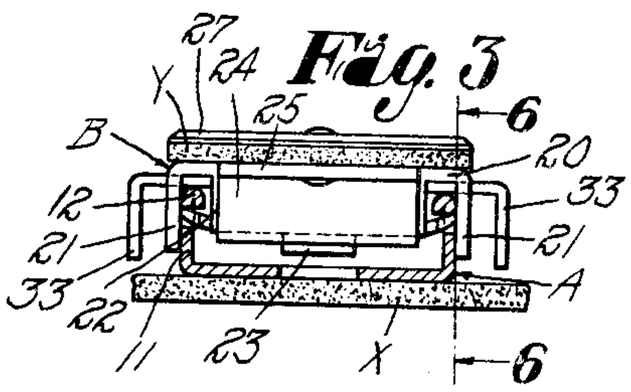


Fig. 4

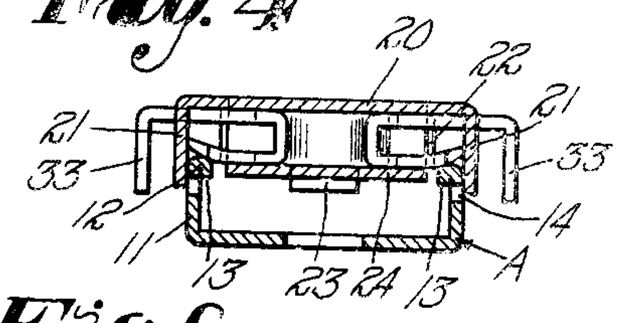


Fig. 5

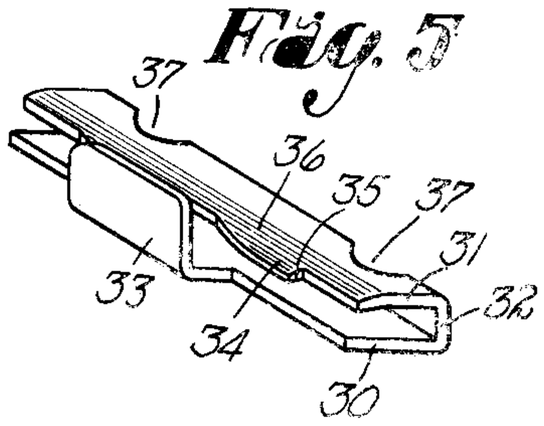


Fig. 6

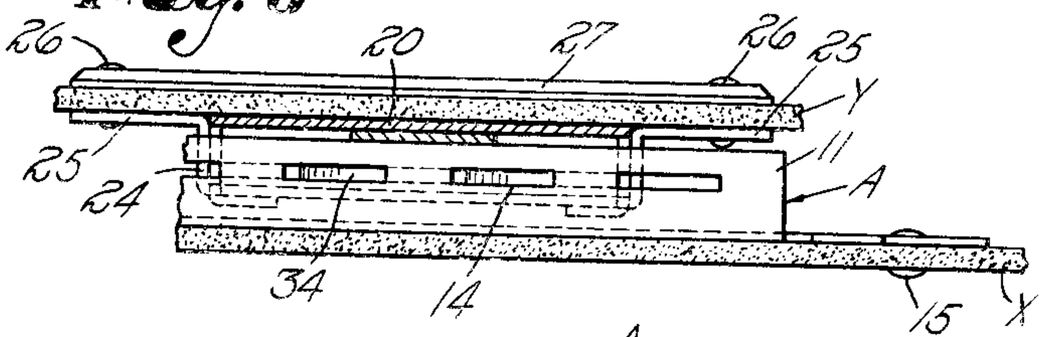
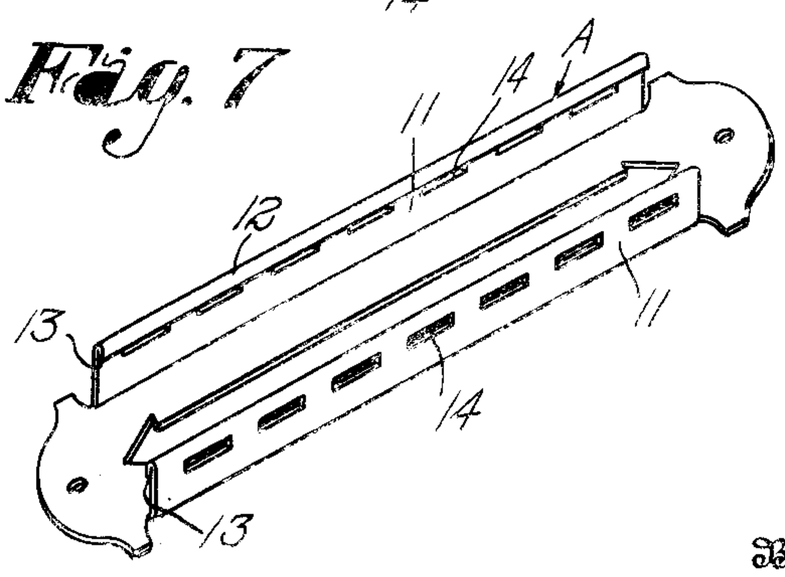


Fig. 7



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UNITED STATES PATENT OFFICE

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SEPARABLE FASTENER

Application filed January 29, 1932. Serial No. 589,666.

This invention relates to fastening devices of the type having two general parts, one slidable relative to the other. As instances of uses to which fastening devices of the present invention may be applied, reference may be had to straps or belts, wearing apparel, bags such as brief bags, etc.

An aim of the invention is to provide a separable fastener of this sort, the two major portions of which may be very quickly and conveniently assembled, one on the other, at any point within the range of adjustment, and the two parts may, after they have been engaged with one another, be relatively adjusted by merely moving one part longitudinally of the other. Also, the slide and track parts may be readily disconnected one from the other at any point along the track part by merely disengaging the catches from the track part and then lifting off the slide part.

A further aim of the invention is to provide a separable fastener having the above and other advantages and which is particularly characterized by its simplicity and economy in manufacture, the ease and facility with which the parts may be assembled, by its strength and durability, and by its effectiveness in operation.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawing, wherein is shown one embodiment which the present invention may take:

Figure 1 is a front view of my improved fastening device;

Fig. 2 is a view looking towards the rear of the slide part, a portion of the attaching bracket or bridge being broken away;

Fig. 3 is a view showing the slide part in end elevation and the track part in transverse section;

Fig. 4 is a sectional view through the slide and track parts, this view being taken substantially on line 4—4 of Fig. 2;

Fig. 5 is a perspective view of one of the catches, the same being shown in inverted position;

Fig. 6 is a side view, partly in section and partly in elevation, this view being taken substantially on line 6—6 of Fig. 3; and

Fig. 7 is a perspective view of the track part or guide member.

Referring to the drawing in detail, A designates, generally, a track or guide part which may be in the form of an elongated plate of sheet metal, the same having its side edges bent forwardly so as to provide a pair of trackways in the form of side cheeks or flanges 11. The forward edges of these flanges or cheeks are folded back upon themselves in order to form beads 12 and rearwardly facing ledges 13. At least one, and preferably both, of the side cheeks or flanges is provided with a series of elongated slots or openings 14. These openings are spaced apart at like distances and extend in a line parallel to the forward edges of the flanges or cheeks. The ends of these slots constitute abutments. The track part may be secured to the end of a strap X, for example. In the present instance, the track part is shown as connected to the strap end by rivets 15. Obviously, it may be connected in any suitable manner.

The slide part B of the fastener has a body portion or slide member 20 in the form of a plate, the side edges of which are bent rearwardly so as to provide flanges 21 which are spaced apart so as to more or less closely receive between them the track member, as shown more clearly in Fig. 3. Thus, the slide part is held against substantial lateral movement with respect to the track part. At

the opposite ends of the slide member are rearwardly turned webs 22 which terminate in lugs 23 and which lugs extend through openings in an attaching strip or bridge 24. The ears are turned over so as to clamp this strip to the slide member. The attaching strip has terminal tongues 25 lying in the plane of the body portion of the slide member and adapted to be secured to the other element Y, as by means of rivets 26. The elements X and Y may be the opposite ends of a belt or strap; the tabs on a garment or the like; or they may be respectively the body portion of a brief bag and the tab on the flap of the brief bag, etc. The numeral 27 designates a face plate of suitable design positioned on the outer face of the element Y and secured in place by said rivets 26.

Positioned between the body portion of the slide member and the attaching strip are a pair of oppositely disposed sliding catches adapted to respectively cooperate with the side cheeks of the track member. Each of these catches comprises a strip of metal stamped to the desired configuration and then bent into generally U shape form, as shown in Fig. 5. Each of these catches has a front wall 30 slidably engaging the rear surface of the slide member, a rear wall 31 slidably engaging the front surface of the attaching strip, and a posterior or connecting wall 32. Extending outwardly and then rearwardly from the outer edge of the front wall 30 is a finger piece 33. The side flanges of the slide member are suitably slotted to accommodate the laterally extending portions of these finger pieces. On each catch, the outer edge of the rear wall 31 terminates in one or more ratchet teeth 34, two such ratchet teeth being shown for illustrative purposes only in the present case. Each of these teeth has an inclined side edge and a squared end or abutment 35. The outer edge of the rear wall 31 of each catch is inclined forwardly and outwardly so as to provide a cam surface 36. The posterior wall 32 may have a pair of spaced notches 37. These catches, as previously stated, slidably fit in the space provided between the body portion of the slide member and the attaching strip, with their finger pieces extending outwardly through the side flanges of the slide member, and when the slide part is off of the track part, the points of the teeth engage the side flanges 21.

The catches are urged apart by a suitable spring which is here shown as being in the form of a resilient metal strip having a connecting portion 40 and a pair of inclined arms 41. The ends of the body portion are bent, as at 42, in a direction opposite to that in which the arms extend so as to form projections adapted to be received by the notches 37. As shown in Fig. 2, when the spring is in place, the cross portion engages one of the posterior walls 32 of the catches, and the ends of the arms engage the ends of the posterior wall of the other catch, the projections 42 being received by the notches 37 of the first catch in order to hold the spring against longitudinal movement.

When it is desired to connect the two parts of the fastener together, the slide part is brought to the position shown in Fig. 4 where the cam portions 36 of the catches contact with the forward edges of the web. The slide part is then pushed rearwardly towards the guide or track member whereupon, due to the cam portions 36, the catches will be cammed towards each other and the toothed edges of the catches will ride past the beads 12. When the teeth 34 have been brought into alignment with the openings 14, the spring will force the catches apart and cause the teeth to engage in those openings. The parts are now secured together against accidental removal and, due to the engagement of the squared ends 35 of the teeth against the opposed ends of the openings 14, the slide part cannot slide in one direction, that is towards the right referring to Fig. 2. However, the inclined side edges of the teeth allow the slide part to be slid longitudinally of the track in the opposite direction. Thus the strap ends are normally held against being drawn apart, but they may be readily adjusted in overlapping relation by merely moving the slide part longitudinally in the proper direction relative to the track part. It is apparent, of course, that the slide part may be adjusted in either direction longitudinally of the track part and without removing or lifting the slide part from the track part by merely pushing in the finger pieces far enough to disengage the teeth 34 from the side flanges or webs of the track member and then slide the slide member in the desired direction. In this operation, it is not necessary to push the catches all of the way in, but, on the other hand, engagement of the teeth behind the ledges 13 of the track may be maintained. When it is desired to remove the slide part from the track, the catches are pushed all of the way in so that the teeth will clear the ledges 13 and then the slide part may be lifted off.

It is obvious that my improved catch may be assembled on the track at any point along the length of the latter by merely pushing the slide member at an angle onto the track, as previously described. Then the slide may be ratcheted along the track in order to tighten up the belt, strap or other elements which carry the two parts of the fastener. The slide may also, as previously described, be adjusted in either direction along the track after it has been placed thereon.

As many changes could be made in the above construction and many apparently widely different embodiments of this inven-

tion could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. In a separable fastener, a guide part having a pair of trackways one at least of which is provided with a series of longitudinally spaced apart abutments; and a slide part having a slide member adapted to slide longitudinally on said guide part, catches on the slide part and formed and positioned to respectively engage said trackways, one at least of said catches having ratchet teeth formed and positioned to cooperate with said abutments, and a spring formed and arranged on said slide member to normally urge said catches into engagement with said trackways.

2. In a separable fastener, a guide part having a pair of webs, one at least of which is provided with a series of equally spaced apart slots, a slide member adapted to slide longitudinally on said guide part, oppositely acting catches carried by said slide member and formed and positioned to respectively cooperate with said webs, one at least of said catches having ratchet teeth formed and positioned to engage in said slots, and a spring formed and arranged on said slide member to normally urge said catches into engagement with said webs.

3. In a separable fastener, a guide part having a pair of parallel spaced apart webs each provided with a series of equally spaced apart slots; and a slide part having a slide member adapted to slide longitudinally on said webs, and spring pressed catches on the slide part and having teeth formed and positioned to respectively cooperate with said slots.

4. In a separable fastener, a guide part having a pair of trackways one at least of which is provided with a series of abutments, a slide part having a slide member adapted to slide longitudinally on the guide part, and spring pressed catches on the slide part and formed and positioned to engage said trackways, one at least of said catches having ratchet teeth formed and positioned to cooperate with said abutments, said slide part and guide part being so formed and arranged that said slide part may be mounted on the guide part at any point in the length of the latter by merely pushing the slide part laterally towards and onto the guide part.

5. In a separable fastener, a guide part having a pair of webs each provided with a series of equally spaced apart slots; and a slide part having a slide member adapted to slide longitudinally on the guide part, and spring pressed catches on the slide part and having teeth formed and positioned to cooperate with the slots of the respective webs, said slide part and guide part being so formed and arranged that said slide part may be mounted on the guide part at any point in the length of the latter by merely pushing the slide part laterally towards and onto the guide part.

6. In a separable fastener, a guide part having a pair of parallel spaced apart webs provided with a series of spaced apart slots; and a slide part adapted to slide longitudinally on said guide part and having catches each provided with ratchet teeth, the teeth of one catch being formed and positioned to cooperate with the slots of one web and those of the other catch being formed and positioned to cooperate with the slots of the other web, and a spring formed and arranged on said slide member to normally urge the teeth of said catches into operative relation with said slots, said catches having cam portions formed and positioned to engage the edges of said webs when the slide part is pushed laterally towards and onto the guide part.

7. In a separable fastener, a guide part having a pair of webs each provided with a series of openings; a slide part having a slide member longitudinally slidable on said webs, a pair of catches carried by said slide part and having ratchet teeth formed and positioned to respectively cooperate with the series of slots of the respective webs, a spring formed and arranged on said slide member to normally urge said catches apart, and finger pieces formed and arranged to press said catches towards each other.

8. In a separable fastener, a guide part having a pair of webs each provided along its free edge with a rearwardly facing ledge, one at least of said webs having a series of spaced apart abutments; and a slide part having a slide member adapted to slide on said webs, a pair of catches carried by said slide member, said catches having edges formed and positioned to respectively cooperate with said webs, the edge of at least one of said catches having ratchet teeth formed and positioned to cooperate with said abutments, said catches adjacent said edges having cam portions formed and positioned to engage the edges of said webs when the slide part is pushed laterally towards and onto the guide part whereby said catches are cammed to a position where said edges thereof may engage said webs behind said ledge and where the said teeth may engage said abutments.

9. In a separable fastener, a guide part having a pair of webs each provided with a

series of spaced apart slots; and a slide part having side flanges formed and positioned to straddle said webs, a pair of catches carried by said slide part and having ratchet teeth formed and positioned to respectively engage in said slots, a spring formed and arranged on said slide member to normally urge said catches apart, and finger pieces formed and arranged for pushing said catches towards each other.

10. In a separable fastener, a guide part having a pair of webs each provided with a series of spaced apart slots, said webs having adjacent their free edges and on their opposed sides inwardly facing ledges; and a slide part slidably mounted on said guide part, slidable catches carried by said slide part and having ratchet teeth formed and positioned for respectively cooperating with said slots, and a spring formed and arranged for normally urging said catches apart.

11. In a separable fastener, a guide part having a pair of webs each provided with a series of spaced apart slots and each having adjacent its free edge and on its inner surface a rearwardly facing ledge; and a slide part including a slide member having flanges formed and positioned for straddling said webs; an attaching member secured to said slide member, a pair of slidable catches located between said slide member and attaching part, each of said catches having an outwardly facing edge provided with teeth, said edges being formed and positioned to respectively cooperate with said webs, and a spring formed and arranged on said slide member for normally urging said catches apart.

12. In a separable fastener, a guide part having a pair of spaced apart parallel webs each provided with a series of spaced apart openings and a rearwardly facing ledge; and a slide part having a slide member with a pair of flanges formed and positioned for straddling said webs; an attaching part secured to said slide member and having a bridge portion spaced rearwardly thereof, a pair of oppositely disposed catches slidable between said slide member and attaching member, each of said catches having a wall with a free edge provided with ratchet teeth, said wall adjacent said edge being inclined outwardly and forwardly to provide cam surfaces, a spring so formed and arranged between said catches as to normally urge the same apart, and finger pieces on said catches and extending through slots in said flanges.

13. In a separable fastener, a slide part having a slide member provided with a pair of side flanges; an attaching member secured to said slide member and having a bridge portion between said flanges and rearwardly of the body portion of the slide member; and a pair of catches positioned between the body portion of said slide member and said attaching member each of said catches comprising a piece of metal bent into U-shape to provide an upper wall engaging the rear surface of the body portion of said slide member, a bottom wall engaging the front face of said attaching portion and a posterior wall connecting said front and rear walls, the outer edges of said bottom wall being provided with ratchet teeth and being inclined outwardly and forwardly, and finger pieces extending from the said front wall through slots in said flanges.

14. In a separable fastener, a slide part having a slide member provided with a pair of side flanges; an attaching member secured to said slide member and having a bridge portion between said flanges and rearwardly of the body portion of the slide member; and a pair of catches positioned between the body portion of said slide member and said attaching member, each of said catches comprising a piece of metal bent into U-shape to provide an upper wall engaging the rear surface of the body portion of said slide member, a bottom wall engaging the front face of said attaching portion and a posterior wall connecting said front and rear walls, the outer edges of said bottom wall being provided with ratchet teeth and being inclined outwardly and forwardly, finger pieces extending from the said front wall through slots in said flanges, said posterior walls having a pair of spaced notches, and a spring between said catches having a portion adapted to engage one of said posterior walls between said notches, said spring having a pair of arms engaging the other posterior wall, and a pair of projections engaging in the notches of the first mentioned posterior wall.

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