May 9, 1933. J. B. FREYSINGER 1,908,232

SEPARABLE FASTENER

Filed Jan. 25, 1932

Fig. 1.

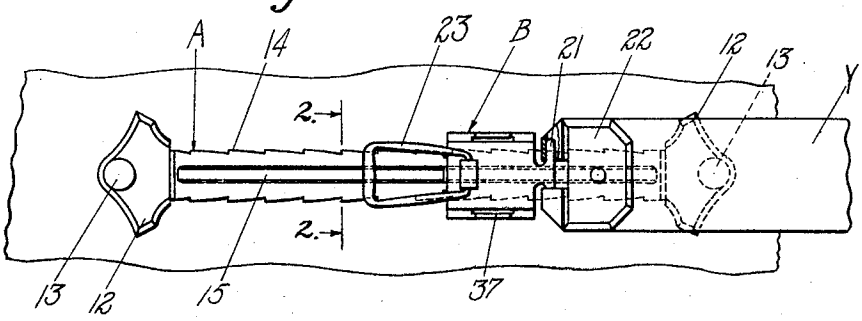


Fig. 2.

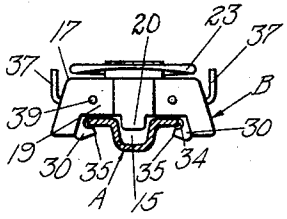


Fig. 3.

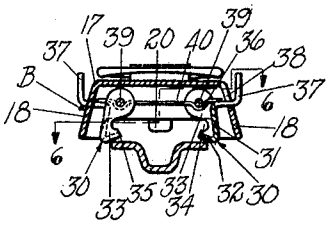


Fig. 4.

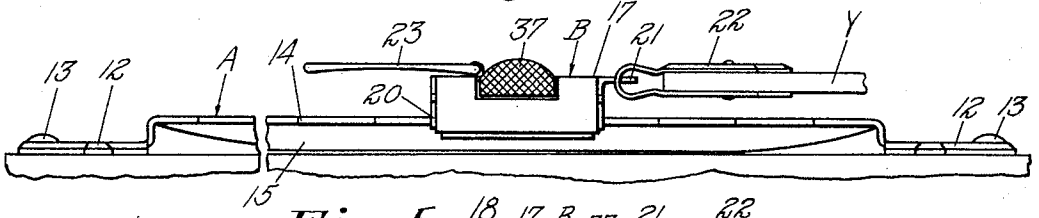


Fig. 5.

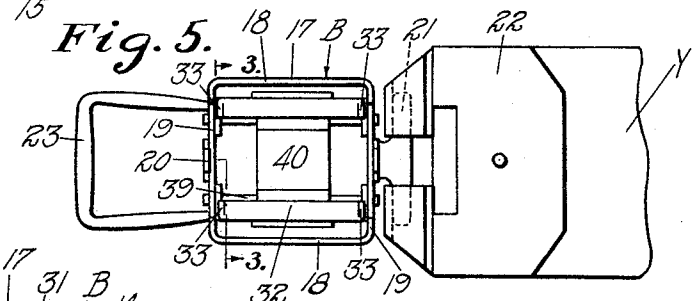
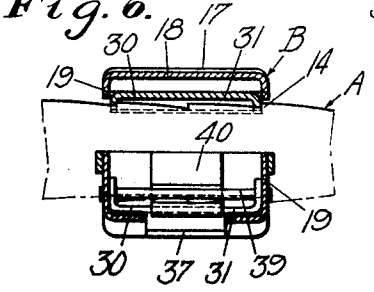


Fig. 6.



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UNITED STATES PATENT OFFICE

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SEPARABLE FASTENER

Application filed January 25, 1932. Serial No. 588,535.

This invention relates to fastening devices for connecting two members or parts of the same member together. As instances of uses to which the improvements of the present invention may be applied, reference may be had to belts, wearing apparel, baggage, such as brief bags, et cetera.

An aim of the present invention is to provide a simple, strong, durable, and inexpensive fastening device which may be very quickly and easily operated.

A further aim of the invention is to provide a fastening device the two parts of which may be very conveniently assembled at any point within the range of adjustment and which parts may be very readily adjusted after they have been engaged. The two parts may also be very readily separated.

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,

Fig. 1 is a front view of my improved fastening device;

Fig. 2 is an end view thereof with a portion of the track or guide part in section, this view being taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a transverse sectional view through the slide part, this view being taken substantially on line 3—3 of Fig. 5;

Fig. 4 is a side or edge elevational view of the complete assembly;

Fig. 5 is a bottom or rear view of the slide part; and

Fig. 6 is a view taken substantially on line 6—6 of Fig. 3.

Referring to the drawing, A designates generally the guide or track member, and B designates generally the slide portion or part of the fastening device. The track part A may be in the form of an elongated strip of sheet metal provided with suitable means for securing the same to an element intended to be connected to another element. For example, the track member is shown as having at each end a tongue 12, and these tongues may be secured by means of rivets 13 to the element X which may be one end of a strap or belt, the body of a brief bag, et cetera. The body portion of the track member is raised or offset out of the plane of the tongues and, while here shown as being straight, it may obviously be longitudinally curved. It has along at least one side, and preferably along each side, a series of teeth 14, each tooth having a squared end or abutment, and an inclined side edge. The bar or guide A also has along its medial line a depressed rib 15 which forms a longitudinally extending groove in the outer or forward face of the track. The edges of the track constitute flanges.

The slide part B of the fastening device has a slide member 17 preferably formed of sheet metal and provided with a top or outer wall, outwardly and rearwardly inclined side walls 18, and end walls 19, the latter being notched, as shown in Fig. 2, so as to accommodate the track. Secured to (or formed integrally with) the end walls are lugs 20 which are adapted to engage in the groove of the track member and thus prevent excessive lateral movement of the slide part relative to the track. At one end of the slide member 17 is an integral T-head 21 which affords means for securing the slide member to the other element Y which may be the end of a belt or the strap with which a brief bag is usually provided. In the present in-

stance, this element Y has secured to its end a bent over clip 22 which receives the head 21, as illustrated. Obviously, other means for securing the slide member to the element Y may be employed. A pull ring 23, or other grasping device, may be suitably connected to the slide member 17.

Pivotally mounted within the slide member 17 are two spring pressed catches 30 which are adapted to straddle the guide bar A and to interlock with the teeth thereof. These catches may be of like construction. Each has a main or longitudinally extending wall 31 terminating at its rear or inner edge in an inclined lip 32 which provides a cam surface, as hereinafter described more in detail. These lips are inclined forwardly toward the center of the slide. Each of the catch members has at each end an end wall 33, and these walls are notched, as at 34, so as to provide a nose 35 adapted to take in behind the ratcheted edges of the bar, as shown most clearly in Fig. 2. Extending laterally and then forwardly from the catches are finger pieces 37 which are accommodated by slots 38 in the side walls 18 of the slide member. The catches are pivoted on pins 39 which extend through the end walls 33 of the catches and are fixed in the end walls 19 of the slide member. The free or inner edges of the catches are normally urged towards each other by a substantially flat spring 40, which is here shown as being held in place by the pins 39. The spring is provided with ribs 36 which form grooves for accommodating the pins 39. The ends of the spring rest upon the laterally extending portions of the finger pieces.

When it is desired to assemble the slide part of the fastener on the track, it is merely necessary to bring the slide part to the desired position, as shown in Fig. 3, and then press the slide member laterally towards and onto the track. The lips 32 of the catches engage the side edges of the track (see Fig. 3) and, due to the inclination of these lips, the catches are automatically cammed apart when the slide part is forced home. When the slide member is brought to position, the catches, under the influence of the spring 40, move towards each other and into the locking position shown in Fig. 2. In this position, the edges of the lips and the noses 35 engage behind the side edges. The end walls of the catches immediately adjacent the notches 34 engage the squared ends of the teeth 14; as shown most clearly in Fig. 6. The parts are now engaged and cannot accidentally come apart. The slide part cannot be moved towards the right in Figs. 1 and 6 while the end walls of the catches are engaged with the teeth 14. The slide member, however, can be readily adjusted in the opposite direction by merely pulling on the pull ring 23. When this is done, the catches ratchet, so to speak, along the teeth as the slide member is drawn to the left. Thus, the slide member may be very quickly and readily brought to the adjusted position. It is obvious that the slide-part may be adjusted in either direction longitudinally of the track part by pressing the finger pieces slightly towards each other to thereby disengage the abutments 35 of the catches from the squared ends of the teeth on the track, and then slide the slide part in the desired direction. In doing this, it is not necessary to move the catches to full open position, it being permissible to allow the lips of the catches to engage behind the flanges. When it is desired to take the fastener apart, it is merely necessary to engage the forefinger and thumb with the finger pieces and push those finger pieces towards each other to thereby open the catches, whereupon the slide portion may be lifted out of place, and this can be done at any point along the length of the track.

It will be seen from the foregoing description, taken in connection with the accompanying drawing, that a very simple, inexpensive, and yet effective fastening device is provided. The device may be very quickly assembled and readily adjusted and provides a very secure interlock.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention 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 track provided with a series of teeth on at least one of its outer edges, a removable slide part having a pair of spring pressed catches formed and positioned to straddle the track and respectively engage behind the side edges thereof, one of said catches having a tooth cooperating with said teeth, and a spring formed and arranged on said slide part to normally urge said catches towards each other and into gripping relation to the track.

2. In a separable fastener, a guide part having a track provided with a series of teeth on at least one of its outer edges, a slide part adapted to slide on said track and having a pair of catches formed and

positioned to straddle said track and respectively engage behind the side edges thereof, said catches being pivoted to the slide part for swinging movement on axes extending longitudinally of the track, one of said catches at least having portions formed and positioned to cooperate with said teeth; and a spring formed and arranged on said slide part to urge said catches towards each other.

3. In a separable fastener, a guide part having a track provided with a series of ratchet teeth on each of its outer edges, a slide part adapted to slide on said track and having catches formed and positioned to straddle said track and respectively cooperate with the series of teeth thereof, and a spring formed and arranged on said slide part to urge said catches towards each other.

4. In a separable fastener, a guide part having a track provided on at least one of its outer edges with a series of ratchet teeth having square ends, a slide part adapted to slide on said track and having catches formed and positioned to straddle the track, said catches having portions formed and positioned to engage the square ends of the teeth and portions formed and positioned to engage behind the track, and a spring formed and arranged on said slide part to urge said catches towards one another and into engagement with the track.

5. In a separable fastener, a guide part having a track provided on at least one of its outer longitudinal edges with a series of teeth having square ends, a slide member, a pair of catches pivoted thereto on axes extending longitudinally of the track, said catches having portions formed and positioned to engage behind the edges of said track, at least one of said catches having a portion formed and positioned to engage the square ends of the teeth, a spring formed and arranged on said slide member to normally urge said catches towards each other and into engagement with the track, and finger pieces formed and positioned to operate said catches.

6. In a separable fastener, a guide part having a track provided with a series of ratchet teeth on each of its outer longitudinal edges, a slide member, pivot pins carried by said slide member and extending longitudinally of the track, catches respectively pivoted on said pins and having portions formed and positioned to engage said series of teeth, said catches also having laterally and outwardly extending finger pieces, and a spring formed and positioned on said slide member to have its ends resting on the laterally extending portions of the finger pieces, said spring having grooves which accommodate said pins.

7. In a separable fastener, a guide part having a track comprising a strip of sheet metal having ratchet teeth on at least one of its longitudinal edges and a longitudinally extending groove in its front face, a slide member, a pair of catches pivoted to said slide member and formed and positioned to straddle said track member, a spring formed and arranged on said slide member to normally urge said catches towards each other and into gripping relation to the track, finger pieces on said catches, and lugs on said slide member engaging in said groove.

8. In a separable fastener, a guide part having a track provided with a series of teeth on at least one of its side edges, and a slide part adapted to slide on said track and having spring pressed catches formed and positioned to straddle and engage behind the side edges of said track, one at least of said catches having a portion formed and positioned to cooperate with said teeth, said track and catches having cooperating retracting means adapted to move the catches to inoperative position when the slide part is pushed laterally towards and onto the guide part whereby said slide part may be mounted on said guide part at any point in the length of the latter.

9. In a separable fastener, a guide part having a track provided with a series of ratchet teeth on at least one of its longitudinal side edges, a slide part, catches carried by the slide part and formed and positioned to straddle said track, said catches having portions formed and positioned to engage behind the side edges of the track, one at least of said catches having portions formed and positioned to interlock said teeth, said catches also having cam portions formed and positioned to engage the side edges of the track whereby said catches are cammed apart when the slide part is pushed laterally towards and onto the track at any point in the length of the latter, and finger pieces on said catches, said slide part being so formed and positioned that it may be separated from said guide part at any point in the length of the latter.

10. In a separable fastener, a guide part having a track provided on each of its longitudinal outer edges with a series of ratchet teeth having squared ends, a slide member, pivot pins carried thereby and extending longitudinally of the track member, catches pivoted on said pins and formed and positioned to straddle said track member, said catches having portions formed and positioned to engage the squared ends of the teeth, and portions formed and positioned to engage behind the teeth, finger pieces formed and positioned on said catches for disengaging them from the track, said catches also having inwardly and forwardly inclined cam surfaces formed and positioned to engage the edges of the track and be cammed outwardly thereby when the slide

part is pushed onto the track, and a spring formed and arranged on said slide member to normally urge said catches into engagement with said track.

11. In a separable fastener, a guide part having a track provided with a series of ratchet teeth on at least one of its outer longitudinal edges, a slide part having spring pressed catches formed and positioned to straddle said track, one at least of said catches having portions formed and positioned to interlock with said teeth, said catches also having cam portions formed and positioned to engage the side edges of said track when the slide part is pushed laterally towards and onto the track, whereby said catches are cammed to a position where the first mentioned portions of said catches may interlock with said teeth.

12. In a separable fastener, a guide part having a track provided with a series of ratchet teeth on each of its outer longitudinal edges, a slide part having spring pressed catches formed and positioned to straddle said track and having portions formed and positioned to interlock with said teeth, said catches also having cam portions formed and positioned to engage the teeth when the slide part is pushed laterally towards and onto the track, whereby said catches are cammed to a position where the first mentioned portions of said catches may interlock with said teeth.

13. In a separable fastener, a guide part having a track provided on at least one of its outer longitudinal edges with a series of ratchet teeth having squared ends, a slide member, a pair of catches pivoted to said slide member and formed and positioned to straddle said track, one at least of said catches having portions formed and positioned to engage the squared ends of the teeth whereby the slide member is held against movement relative to the track in one direction, said catches also having portions formed and positioned to engage behind said track and said catches also having cam surfaces formed and positioned to respectively engage the side edges of the track when the guide part is pushed laterally towards and onto the track, and a spring formed and arranged on said slide member to normally urge said catches into engagement with said track.

14. In a separable fastener, a guide part having a track provided on each of its longitudinal outer edges with a series of ratchet teeth having squared ends, a slide member, pivot pins carried thereby and extending longitudinally of the track, catches pivoted on said pins and formed and positioned to straddle said track member, said catches having portions formed and positioned to engage the squared ends of the teeth, and portions formed and positioned to engage behind the teeth, finger pieces on said catches, said catches also having inwardly and forwardly inclined cam surfaces formed and positioned to engage the edges of the track and be cammed outwardly thereby when the slide part is pushed laterally toward and onto the track, and a spring formed and arranged on said slide member to normally urge said catches into engagement with said track.

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