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J B. FREYSINGER

1,908,231

SEPARABLE FASTENER

Filed Feb. 11, 1932

Fig. 1

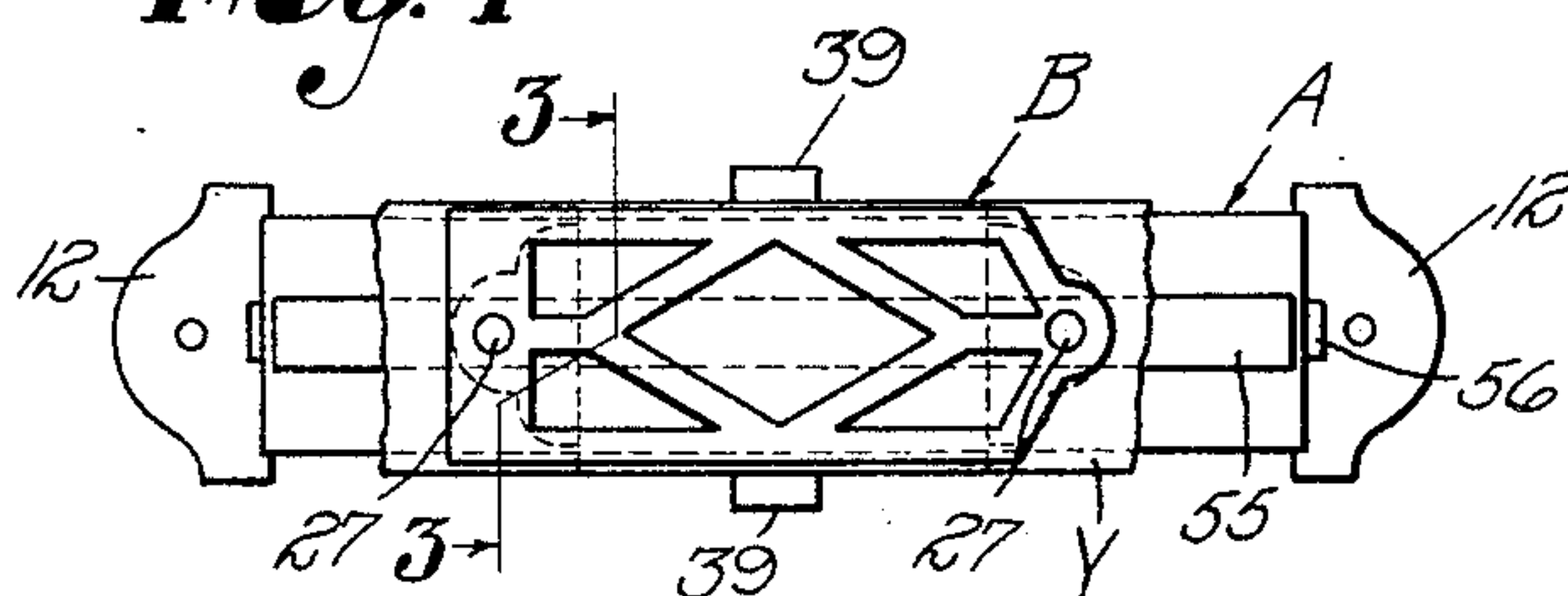


Fig. 2

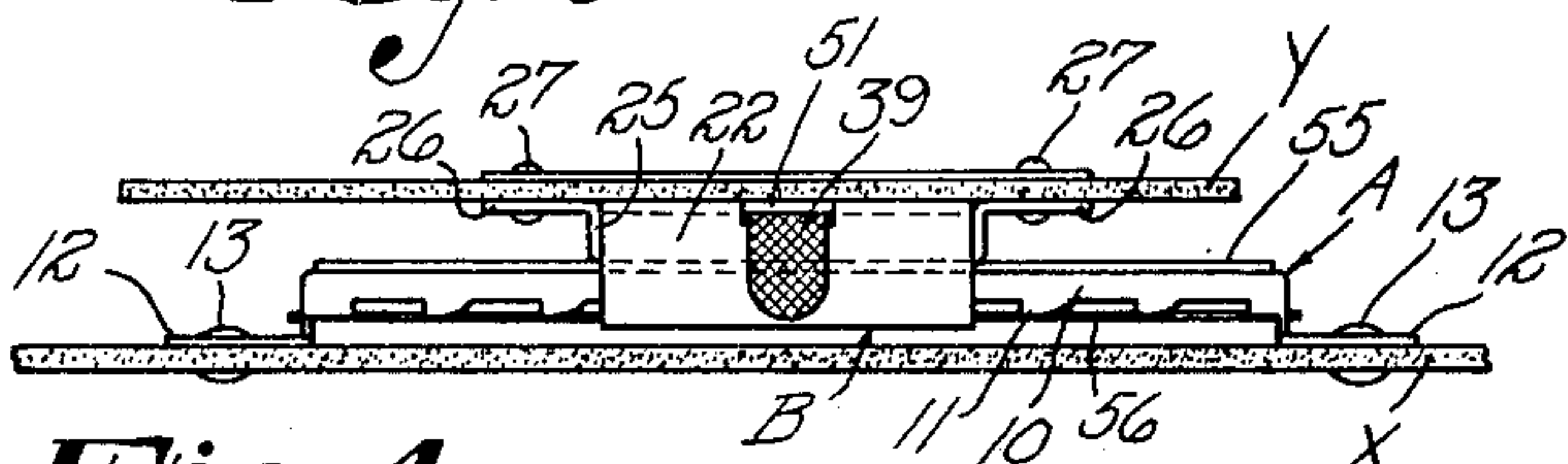


Fig. 3

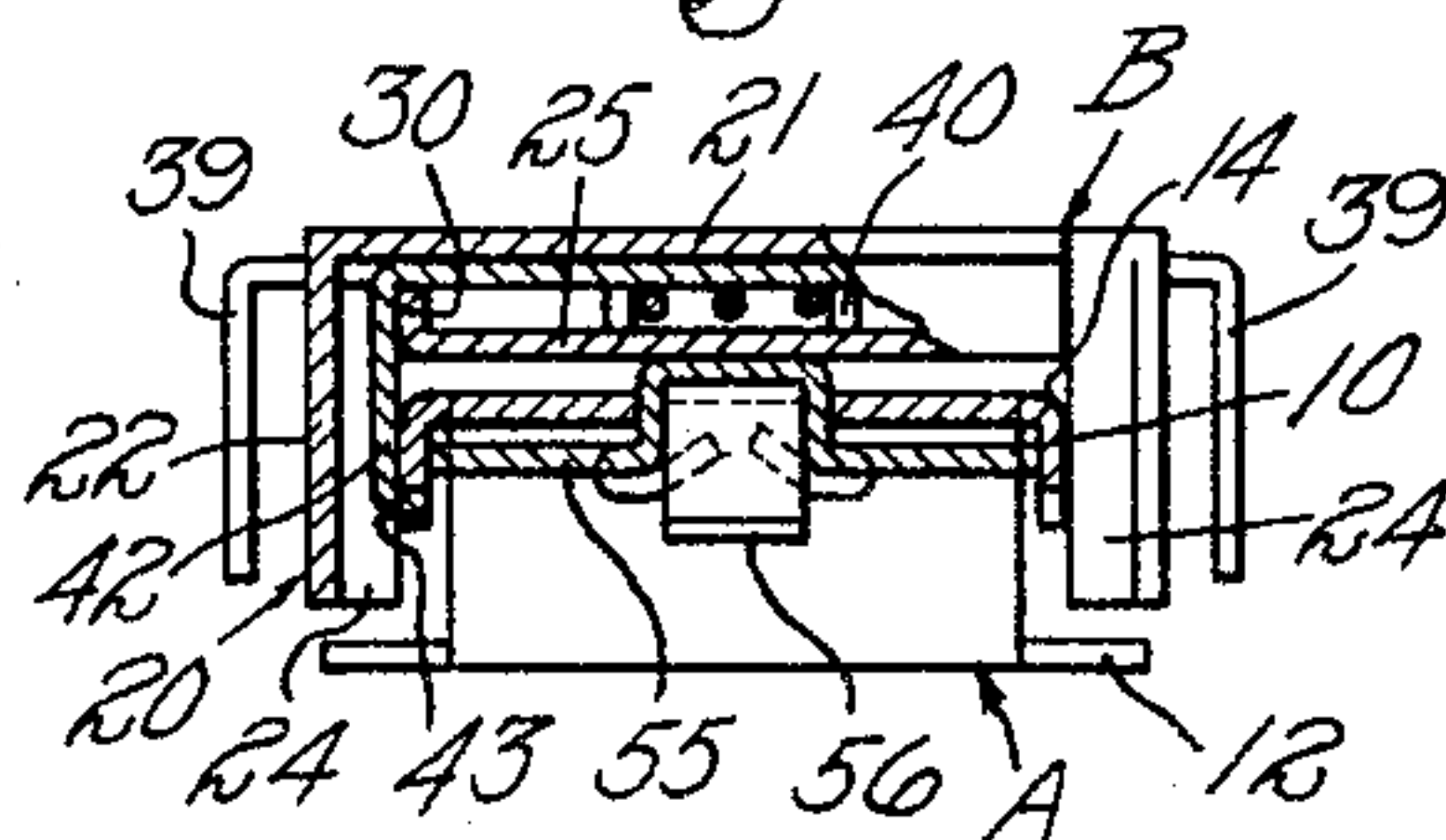


Fig. 4

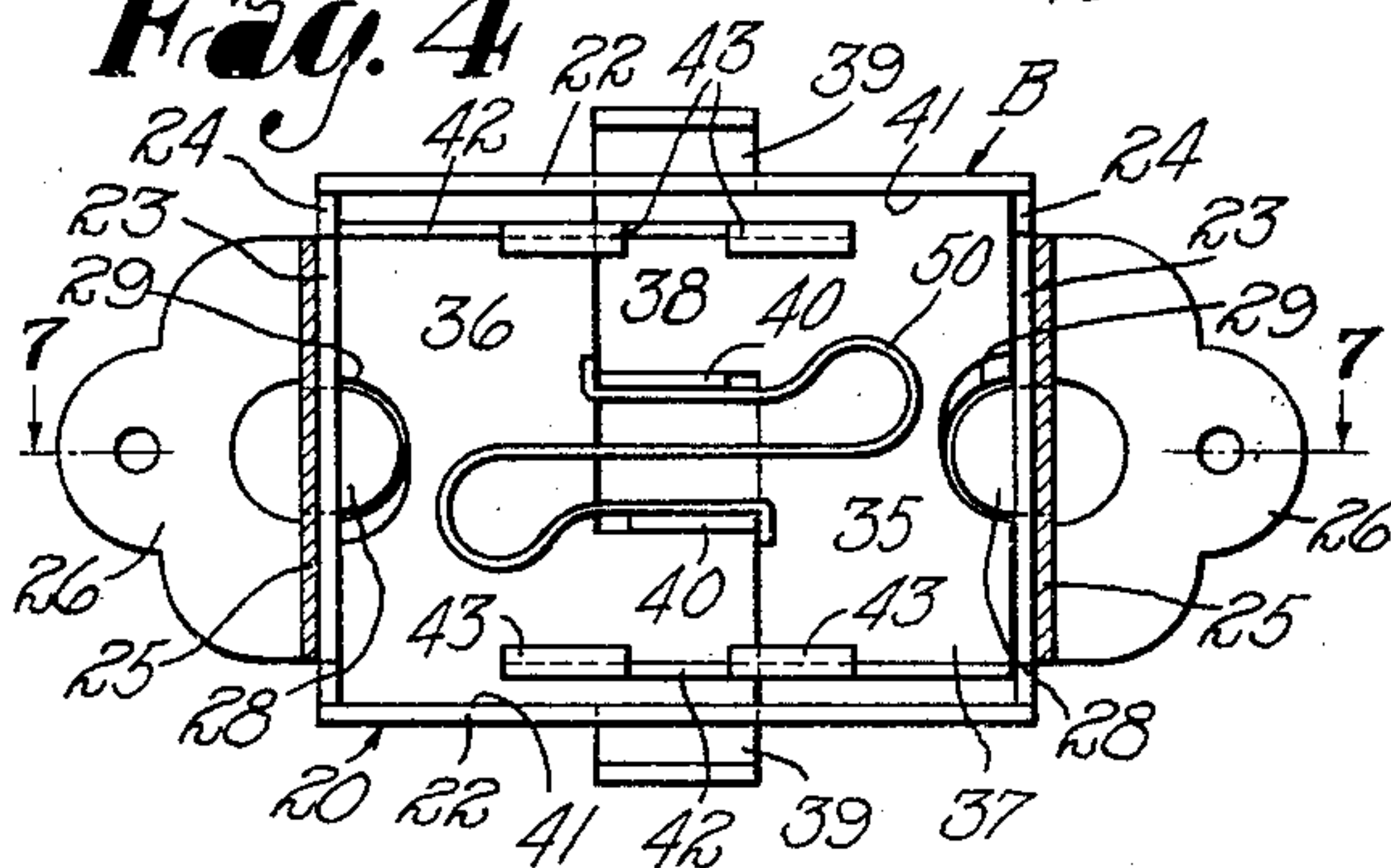


Fig. 5

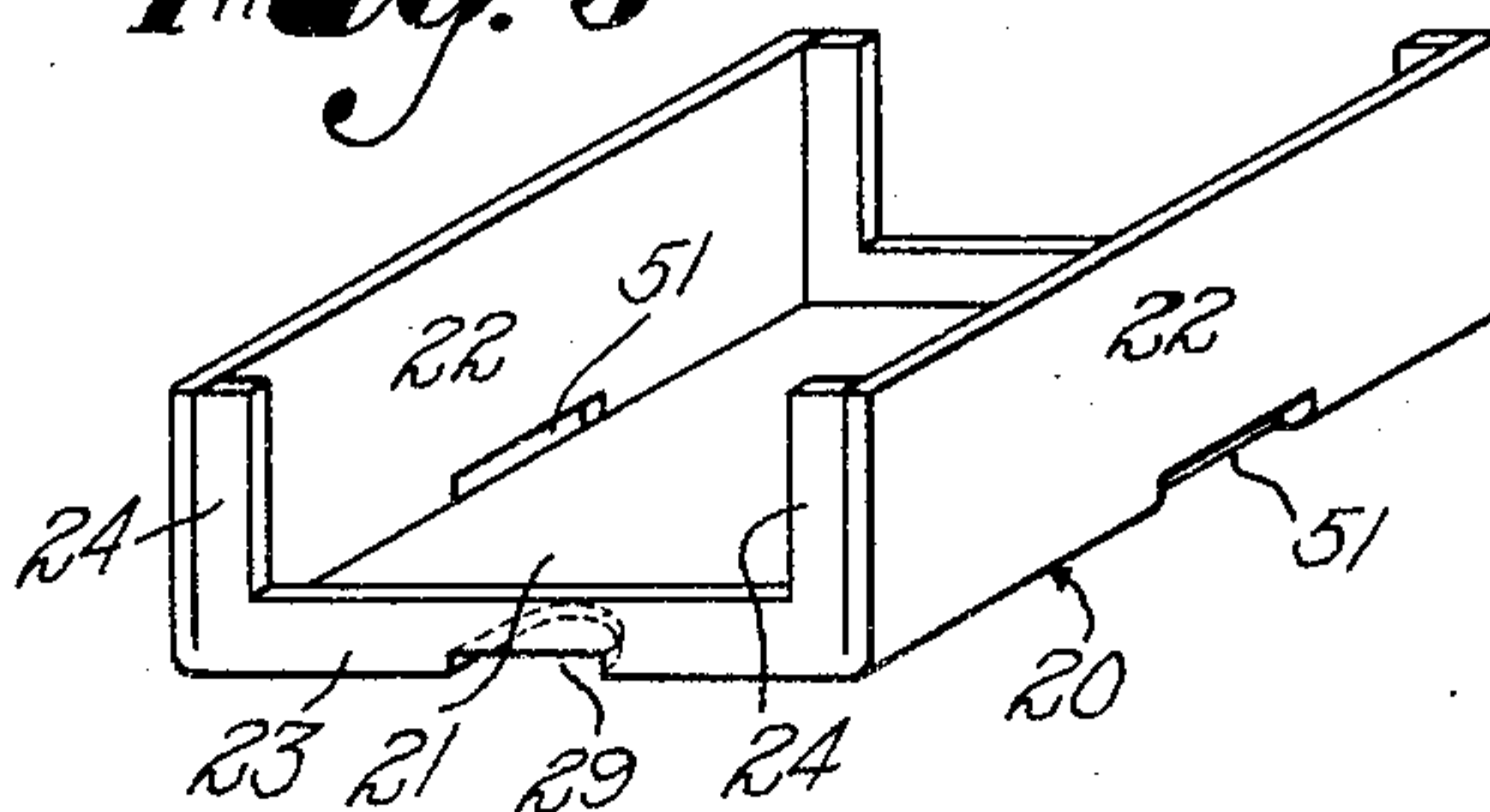


Fig. 6

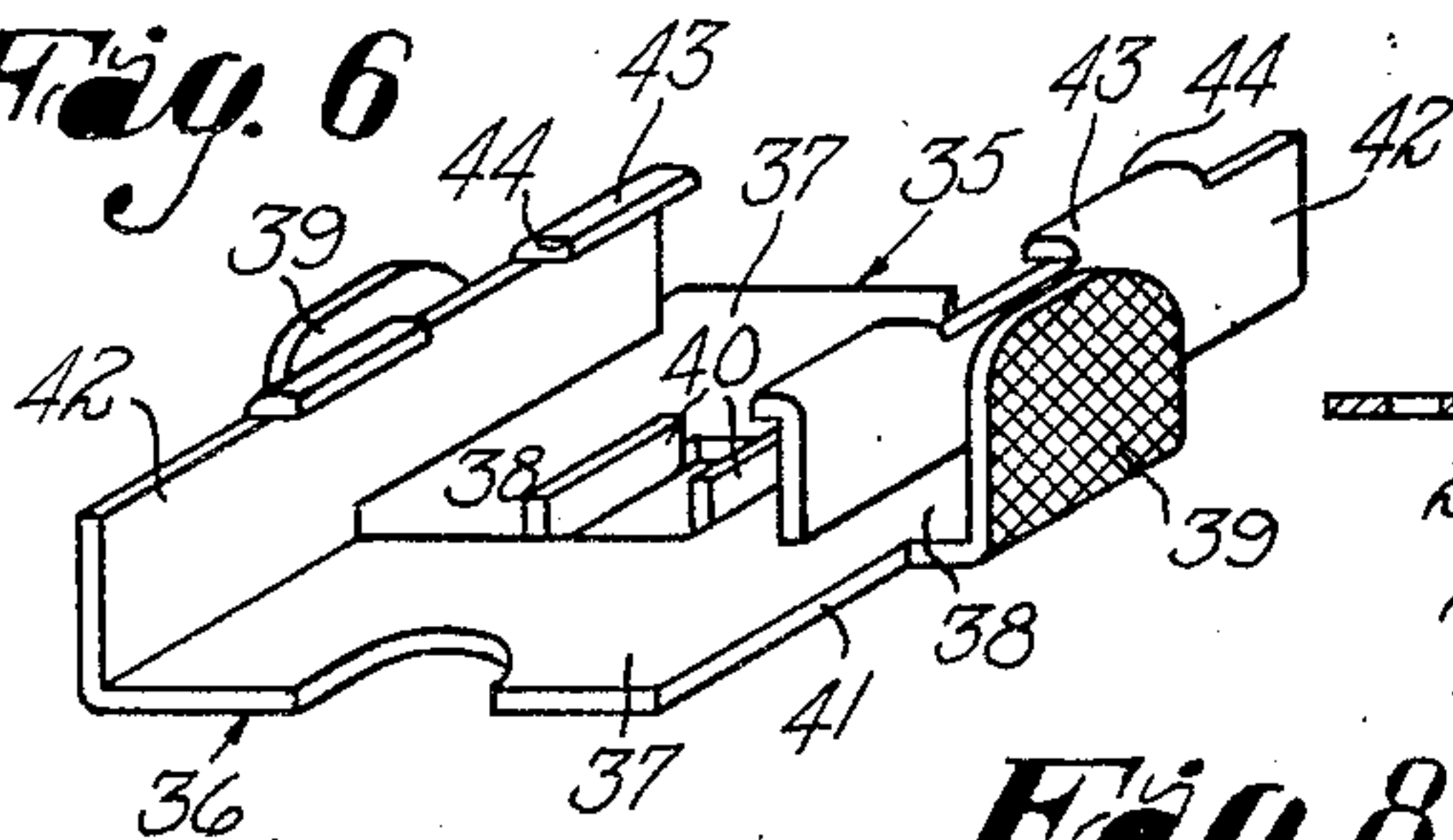


Fig. 7

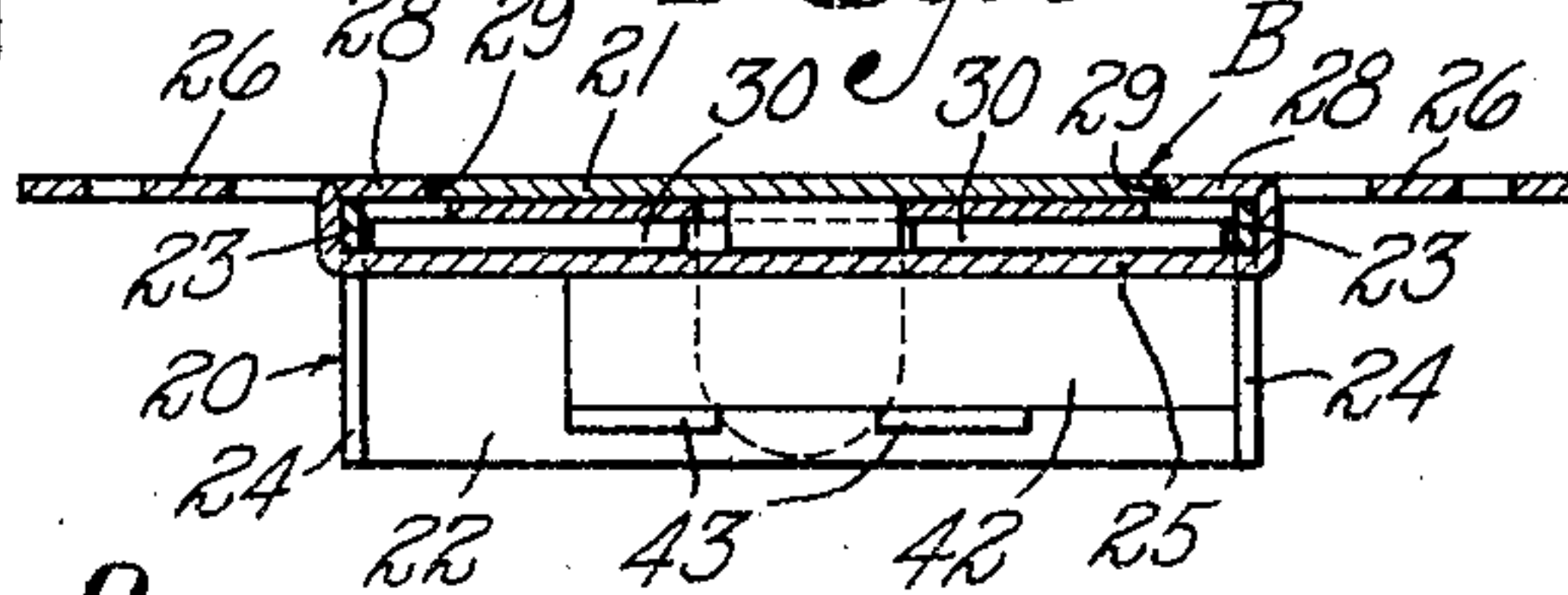


Fig. 8

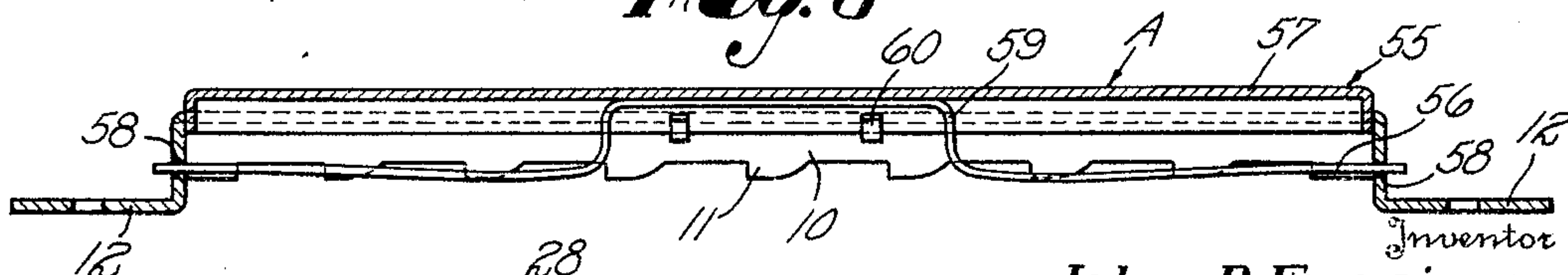
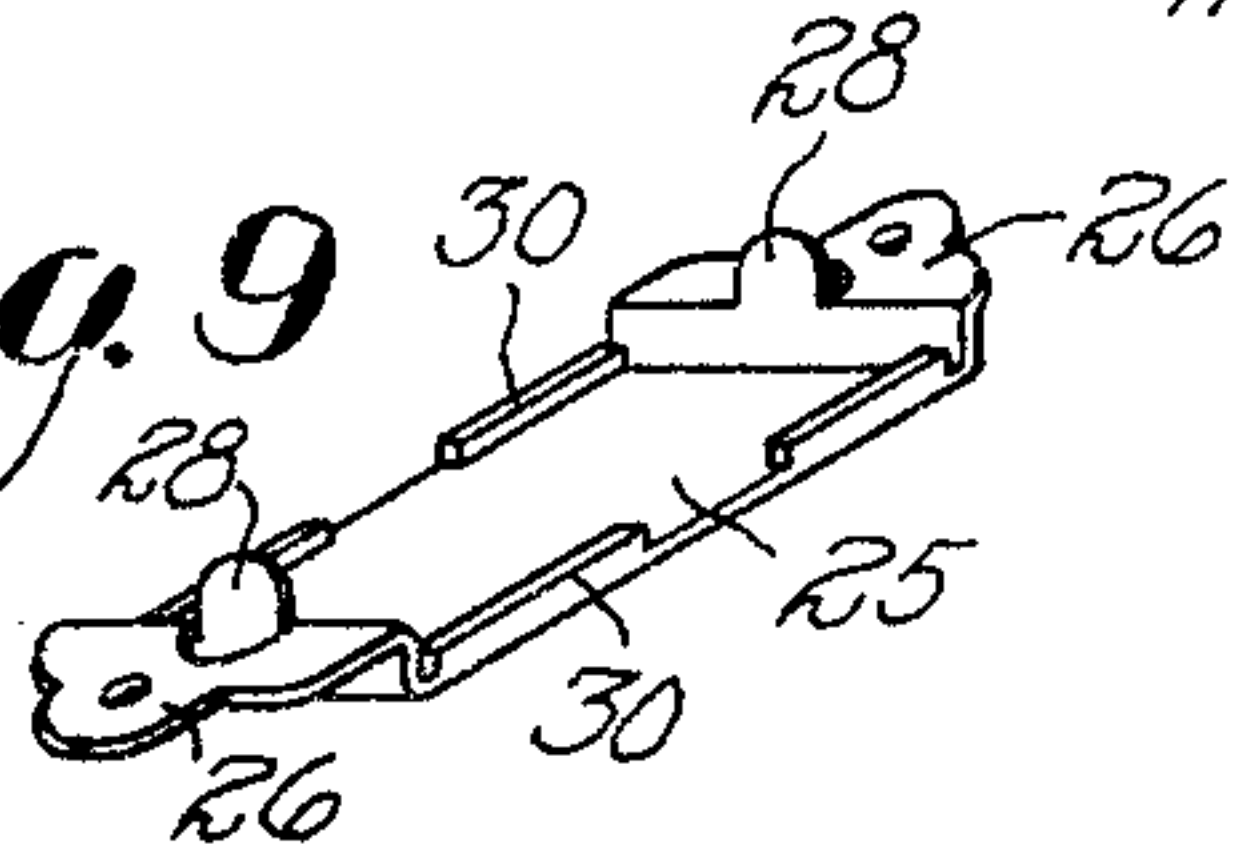


Fig. 9



John B. Freysinger

By *W. C. Hay Lindsey*

Attorney

UNITED STATES PATENT OFFICE

JOHN B. FREYSINGER, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO NORTH & JUDD MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT

SEPARABLE FASTENER

Application filed February 11, 1932. Serial No. 592,279.

This invention relates to fastening devices for connecting two elements 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, straps, wearing apparel, baggage, such as brief bags, etc.

An aim of the invention is to provide a separable fastener having a track or guide part and a slide part, the slide part being adapted to be conveniently assembled on the guide part at any point within the length of the latter and being readily adjustable along the guide part after the two parts have been assembled.

A further aim of the invention is to provide a fastener of this sort wherein the ratchet teeth with which the track or guide member is provided are rearwardly directed and thus being so disposed that there is little danger of injuring the same or pieces of cloth or the like catching thereon.

A further aim of the invention is to provide a separable fastener of this kind having various features of novelty and advantage and which is particularly characterized by its simplicity and durability and by its effectiveness.

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 side view thereof;

Fig. 3 is a transverse sectional view on an enlarged scale, this view being taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a view looking at the bottom of the slide part, a portion of the attaching member being broken away;

Fig. 5 is a perspective view of the slide member in inverted position;

Fig. 6 is a perspective view of the catches in inverted position;

Fig. 7 is a sectional view taken longitudinally and centrally through the slide part on substantially line 7—7 of Fig. 4;

Fig. 8 is a longitudinal sectional view through the guide part; and

Fig. 9 is a perspective view of the attaching member.

Referring to the drawing, A designates, generally, the track or guide part, and B designates, generally, the slide portion or part of the fastening device. The track A is in the form of an elongated strip of metal having a pair of rearwardly extending side flanges 10 each provided with a series of rearwardly directed teeth 11 of ratchet shape, that is, each tooth has a squared end or abutment and an inclined lower edge. It is within the scope of the present invention to provide but one of these flanges with a series of teeth. The track member has, at its ends, suitable means for securing the same to an element which is adapted to be connected to another element. For example, the track member may have at each end a tongue 12 adapted to be secured by rivets 13 or the like to the element X which may be the end of a strap or belt, the body portion of a brief bag, etc. The track at each side, that is, at the junctures of the front wall of the track and the side flanges thereof, is curved, as at 14, so as to provide cam surfaces, the purpose of which will be described hereinafter more in detail. The plane of sliding movement of the slide member or part is generally parallel to the plane of the front wall of the track, and the flanges 10 are rearwardly directed with respect to that plane.

The slide part of the fastening device has a slide member designated generally by the numeral 20 which is preferably formed of sheet metal. It has an outer or top wall 21 and a pair of rearwardly directed side flanges 22 which are spaced apart a greater distance than are the flanges 10 of the track member. The slide member has, at each end, a shal-

low, transversely extending and rearwardly directed web 23 and, at each side, a rib 24. These ribs are adapted to straddle the track member, as shown in Fig. 3. The numeral 5 25 designates an attaching strip or bridge shown most clearly in Fig. 9. This bridge has a pair of offset tongues 26 adapted to lie in the plane of the top wall 21 of the slide and also adapted to be secured to the 10 other element Y, as by means of rivets 27. 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 15 the flap of the brief bag; etc. The attaching strip is adapted to engage against the rear edges of the end webs 23, and it is secured to the slide member by means of ears 28 which are adapted to be bent into notches 29. 20 The opposite side edges of the body portion of the bridge are turned forwardly so as to provide lugs 30 which, when the parts are assembled, are spaced from the front wall 21 of the slide member.

25 Within the casing formed by the slide member 20 and the attaching member 25 are a pair of slidable catches 35 and 36, respectively, which may be of similar construction, but these catches are reversely positioned, 30 one with respect to the other and end to end, within the casing. Each has a flat plate or body portion 37 adapted to engage and slide along the inner face of the top wall 21 of the slide member. The adjacent ends of 35 the plate portions 37 have extensions 38 from which project finger pieces 39. On the opposed edges of these extensions are rearwardly turned lugs 40, the inner edges of which are closely adjacent to the front face 40 of the attaching strip when the parts are assembled. Each plate portion 37 has an edge 41 adapted to engage against the respective side flange 22 of the slide member. The other side edge of each plate 37 carries 45 a rearwardly extending web 42 which projects behind the other catch. These webs 42 have, on their rear edges, one or more inturned lugs or teeth 43 which are adapted to cooperate with the teeth of the track, as 50 hereinafter described more in detail. The lips or inner rear edges of these teeth are slightly bevelled, as at 44, for the purpose which will be hereinafter described more in detail. The ends of these teeth form abut- 55 ments, so to speak, which are adapted to engage the abutments or squared ends of the teeth 11. It will be observed, from Figs. 3 and 7, that the flanges 42 extend rearwardly beyond the attaching member or strip 25. 60 For the purpose of urging the catches in the direction to engage the teeth 43 thereof with the teeth 11 of the track member, a suitable spring is provided which is here in the form of a double reversely bent wire 50 positioned 65 between the lugs 40. The arms or end por-

tions of the spring respectively engage these lugs. In the assembled slide part, the lugs 30 of the attaching strip or bridge engage the inner or rear faces of the plate portions 37 of the catches so as to hold the catches 70 in parallelism with the top wall of the slide member. The finger pieces 39 of the catches respectively extend through slots 51 in the side flanges 22 of the slide member. It will 75 be seen that the finger piece of each catch extends from one side of the slide member and the track part while the teeth or abutments on the catch are located adjacent the 80 other side flange of the slide member and to the opposite side of the track. Therefore, while the spring 50 tends to force the finger pieces apart, the teeth of the two catches are urged towards each other.

As hereinafter explained more in detail, 85 the slide part may be moved or ratcheted in one direction along the guide part without disengaging the catches from the toothed flanges of the track part. In order to permit of this, and also insure that the teeth 90 of the catches, when in locking position, will engage the squared ends of the teeth of the track part, means is provided for normally urging the slide part outwardly and forwardly of the track part. This means 95 may take various forms but, in the present illustrative disclosure, it is shown as comprising what may be termed for convenience a breather strip 55 on the track part and a 100 spring 56 for urging the breather strip forwardly. This breather strip comprises a length of metal having a raised centrally disposed rib 57 projecting forwardly through a longitudinal slot along the medial 105 line of the track part. The breather strip fits between the flanges 10 of the track member, as shown most clearly in Fig. 3. The spring 56 is in the form of a resilient ribbon or strip, the ends of which are supported in 110 openings 58 in the offset portions of the track member. This spring has a central hump 59 engaging the rear face of the rib 57. The spring may be secured to the breather strip by bent over ears 60.

The operation of my improved fastener 115 will be readily understood from the foregoing description taken in connection with the accompanying drawing. When it is desired to connect the two parts of the fastener together, the slide part is brought to the 120 desired position on the track with the curved lips 44 of the catches engaging the outer curved corners 14 of the track, and then the slide part is pushed rearwardly towards the track, with the result that the cooperating 125 cam surfaces 44 and 14 will force the toothed edges of the catches apart, thus permitting the slide part to be moved to a position where the teeth or lugs of the catches may engage behind the toothed side flanges of 130 the track, as shown in Fig. 3. This may be

done at any point in the length of the track by merely pushing the slide part onto the track without manually manipulating the finger pieces. The breather strip now engages the attaching portion of the slide part so that that part is normally urged outwardly of the track, which means that the teeth of the catches are resiliently held in the notches between the teeth 11 of the track. As the teeth of the catches are positioned behind the flanges of the track, accidental separation of the slide part from the track part is prevented. The parts are now held against sliding movement relative to one another in one direction, that is, towards the right in Fig. 2, but the slide part may be slid along the track member in the opposite direction due to the fact that the teeth of the catches will ratchet over the teeth of the track member. Thus, the strap ends are normally held against being drawn apart, but they may be readily adjusted in overlapping relation by merely gripping the slide part and moving it longitudinally in the proper direction relative to the track part. It is, of course, apparent that the slide part may be adjusted in either direction along the track part by moving the finger pieces towards each other and thus disengaging the catches from the flanges, that is, moving the teeth of the catches outwardly beyond the planes of the side flanges of the track. The slide part may be readily separated from the track at any point along the length of the latter by merely pushing the finger pieces towards each other and then lifting the slide member away from the track.

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 slide part having a slide member provided with a front wall, side flanges, and end webs of less depth than the side flanges, a bridge member extending longitudinally of said slide member and engaging the rear edges of said webs, a pair of similar catches within the space between said front wall and bridge member, said catches being reversely placed end to end, each catch having a flat plate portion along one side edge of which is a

rearwardly directed web provided with in-turned teeth, each catch also having extending from its other side edge a finger piece, opposed lugs on said catches, and a spring between said lugs.

2. In a separable fastener, a guide part having a pair of flanges each provided on its rear edge with a series of ratchet teeth, a slide member adapted to slide longitudinally on the guide part, said flanges extending rearwardly with respect to the plane of sliding movement of said slide member, a pair of oppositely acting catches on said slide member and having teeth formed and positioned to engage behind the respective flanges and cooperate with the teeth thereof, a spring formed and arranged on said slide member for normally urging said catches in a direction to engage the same with said flanges, and finger pieces on the catches and so formed and positioned as when moved towards each other to release the catches from said flanges.

3. In a separable fastener, a guide part having a pair of flanges each provided with a series of abutments, a slide member straddling said guide part and adapted to slide longitudinally thereon, a pair of slidable catches carried by said slide member and having toothed portions formed and positioned to straddle said flanges, said toothed portions having teeth formed and positioned to cooperate with said abutments, each catch having a finger piece, the finger piece and the toothed portion of each catch being disposed to opposite sides of the guide part when the parts are assembled, and a spring formed and arranged on said slide member for urging the toothed portions of the catches towards each other and the finger pieces away from each other.

4. In a separable fastener, a guide part, a slide member adapted to straddle said guide part and slide longitudinally thereon, said guide part having a pair of flanges rearwardly directed with respect to the plane of sliding movement of said slide member, a pair of catches slidably mounted in said guide part and having portions formed and positioned to engage behind the rear edges of said flanges, each of said catches having a finger piece located outside of the slide member, the finger piece and the engaging portion of each catch being disposed at opposite sides of the guide part when the parts are assembled, and a spring formed and arranged on said slide member for normally urging said catches into locking relation to the guide part.

5. In a separable fastener, a guide part having a pair of flanges one at least of which is provided on its rear edge with rearwardly directed ratchet teeth, a slide member adapted to slide on said guide part and having side flanges straddling the guide part,

said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, a pair of catches slidably mounted in said slide member and having rearwardly extending webs within the side flanges of the slide member and formed and positioned to straddle the guide part, said webs having inwardly directed portions formed and positioned to engage the rear edges of the flanges of the guide part, said catches having finger pieces located outside of said slide member, and a spring formed and arranged on said slide member for normally urging said webs towards each other.

6. In a separable fastener, a guide part having a pair of flanges each provided on its rear edge with a series of ratchet teeth, a slide member slidably mounted on said guide part and adapted to straddle the same, said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, a pair of catches on said slide member and each having a rearwardly extending web provided with inwardly turned teeth at its rear edge, said webs being formed and positioned to straddle said flanges of the guide part and the teeth thereof being formed and positioned to cooperate with the teeth on the guide part, each catch having a finger piece disposed outside of the slide member, the finger piece and web of each catch being on opposite sides of the guide part, and a spring between said catches and normally urging the webs thereof towards each other.

7. In a separable fastener, a guide part having a pair of flanges each having a series of ratchet teeth on its rear edge, a slide member slidably mounted on said guide part and adapted to straddle the same, said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, and a pair of like catches reversely positioned relative to one another and in end to end relation within said slide member, each catch having a rearwardly extending web and each web having on its rear edge an inwardly directed tooth, said webs being formed and positioned to straddle said guide part and the teeth of the webs being formed and positioned to respectively cooperate with the teeth of said flanges, finger pieces on said catches, and a spring between said catches normally urging the same in a direction to move the webs towards each other.

8. In a separable fastener, a guide part having a pair of flanges one at least of which is provided on its rear edge with a series of abutments; a slide part having a slide member adapted to slide longitudinally on the guide part, said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, and spring pressed catches on the slide part and formed

and positioned to respectively engage the rear edges of said flanges, one of said catches having means for cooperating with said abutments to prevent sliding movement of the slide part in one direction but permitting sliding movement in the opposite direction; and resilient means for urging said slide part away from said guide part.

9. In a separable fastener, a guide part having a pair of flanges one at least of which is provided on its rear edge with a series of rearwardly directed ratchet teeth; a slide part having a slide member adapted to slide longitudinally on the guide part, said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, catches on the slide part having portions formed and positioned to engage the rear edges of said flanges, one at least of said catches having a tooth formed and positioned to cooperate with said ratchet teeth to prevent sliding movement of the slide part in one direction but permitting of sliding movement in the opposite direction, and spring means normally urging said catches in a direction to engage the same with said flanges; and resilient means carried by said guide part for urging said slide part outwardly and thereby resiliently hold the tooth of said catch against the teeth of said guide part.

10. In a separable fastener, a guide part having a pair of flanges each of which is provided on its rear edge with a series of ratchet teeth; a slide part having a slide member adapted to slide longitudinally on the guide part, said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, and spring pressed catches on the slide member and having teeth formed and positioned to respectively engage behind the rear edges of said flanges and cooperate with the teeth thereof; and a spring pressed member formed and arranged on said guide part for urging said slide part outwardly of the guide part.

11. In a separable fastener, a guide part having a pair of flanges one at least of which is provided on its rear edge with rearwardly directed ratchet teeth; a slide part having a slide member adapted to slide on said guide part and having side flanges straddling the guide part, said flanges being rearwardly directed with respect to the plane of sliding movement of said slide member, a pair of catches slidably mounted in said slide member and having rearwardly extending webs within the side flanges of the slide member and adapted to straddle the guide part, said webs having inwardly directed portions formed and positioned to engage the rear edges of the flanges of the guide part, said catches having finger pieces located outside of said slide member, and a

spring formed and arranged on said slide member for normally urging said webs towards each other; a strip extending longitudinally of said guide part and formed
 5 and positioned to engage the rear face of said slide part, and a spring formed and arranged on said guide part for urging said strip against said slide part.

12. In a separable fastener, a guide part
 10 having a pair of flanges one at least of which is provided on its rear edge with a series of abutments, a slide part having a slide member adapted to slide longitudinally on the guide part, said flanges being rear-
 15 wardly directed with respect to the plane of sliding movement of said slide member, and spring pressed catches on the slide part and having engaging portions formed and positioned to engage behind the rear edges of
 20 said flanges, the engaging portions of one of said flanges being formed and positioned to cooperate with said abutments to prevent sliding movement of the slide part in one direction and permit of sliding movement in
 25 the opposite direction, said flanges 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
 30 whereby said slide part may be mounted on said guide part at any point in the length of the latter.

13. In a separable fastener, a guide part having a pair of flanges one at least of
 35 which is provided on its rear edge with a series of rearwardly directed ratchet teeth; a slide part having a slide member adapted to slide longitudinally on the guide part, said flanges being rearwardly directed with
 40 respect to the plane of sliding movement of said slide member, catches on the slide part having engaging portions formed and positioned to engage behind the rear edges of said flanges, the engaging portions of one
 45 of said catches being formed and positioned to cooperate with said ratchet teeth to prevent sliding movement of the slide part in one direction but permitting of sliding movement in the opposite direction, and
 50 spring means normally urging said catches in a direction to engage the same with said flanges; said guide part having cam surfaces against which said engaging portions of said catches are adapted to engage so
 55 that said catches are cammed in opposite directions when the slide part is pushed laterally towards and onto the guide part.

14. In a separable fastener, a guide part comprising a strip having a front wall and
 60 flanges extending rearwardly from the side edges of said front wall, each of said flanges being provided on its rear edge with a series of ratchet teeth, the longitudinal corners of said guide part being curved; a
 65 slide part having a slide member adapted to

slide longitudinally on the guide part, a pair of oppositely acting catches on said slide member and formed and positioned to straddle said guide part and having teeth
 70 formed and positioned to engage behind the respective flanges thereof, and a spring formed and arranged on said slide member, for normally urging said catches in a direction to engage the same with said flanges;
 75 the edges of the teeth of said catches being formed and positioned to engage the curved edges of said guide part and be cammed outwardly thereby when the slide part is pushed laterally onto and towards the guide
 80 part.

JOHN B. FREYSINGER.

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