Jan. 21, 1930. E. LUKACS 1,744,560

FASTENING DEVICE FOR FLAT ARTICLES

Original Filed Oct. 25, 1927

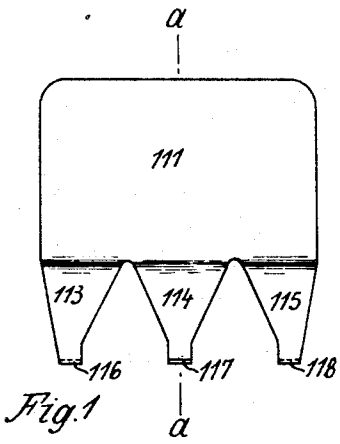


Fig. 1

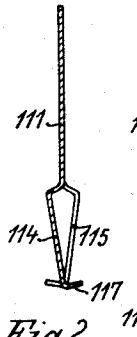


Fig. 2

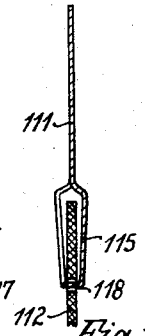


Fig. 3

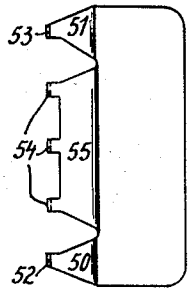


Fig. 6

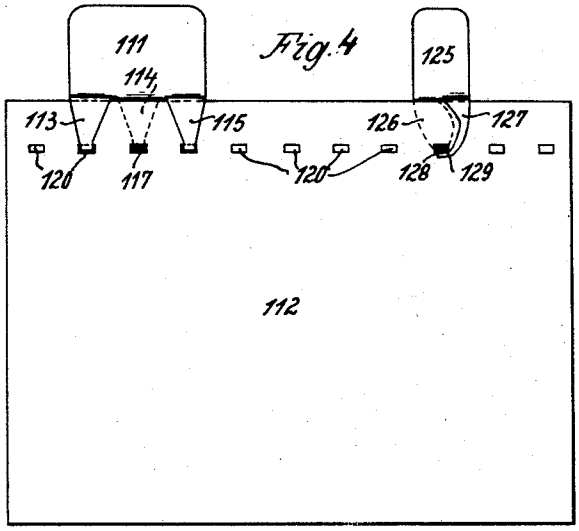


Fig. 4

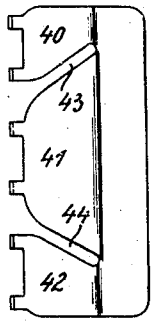


Fig. 5

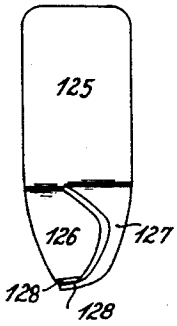


Fig. 7

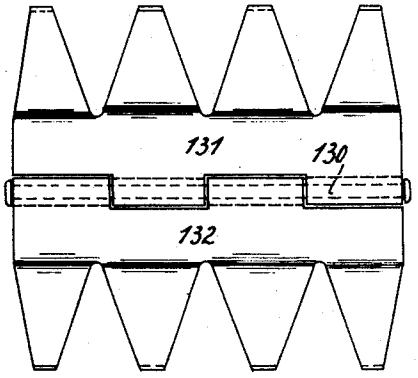


Fig. 8

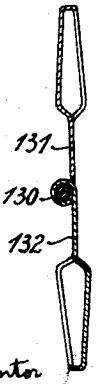


Fig. 9

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UNITED STATES PATENT OFFICE

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FASTENING DEVICE FOR FLAT ARTICLES

Original application filed October 25, 1927, Serial No. 228,604, and in Germany June 1, 1927. Divided and this application filed June 16, 1928. Serial No. 285,874.

My invention which is a division of my copending application Serial No. 228,604, filed October 25, 1927, relates to a fastening device for flat articles, such as sheets, plates, cards of paper, pasteboard, metal or any other suitable material as used for books, card indexes, registers and any other purposes. The fastening device may serve for joining the flat articles or as supporting device or carrier or as clip, rider clip or marking clip. It may hold special index marks, such as plates or labels, on the flat articles or mark the flat articles. It may also be used for distinguishing files, portfolios and the like in the manner of tags bearing suitable inscriptions or numbers.

The object of my invention is to provide a particularly favorable or improved construction or design of such a fastening device, which ensures an extraordinary firm seat or grip upon the flat article and is at the same time easily detachable without the aid of any appliances and which thus joins, holds or marks the flat articles such as the leaves or cards of a register, card index or a book.

According to my invention the fastening device consists of a plate-like main body on which are mounted alternately oppositely offset limb members. The limb members are elastically resilient in such a way as to be forced towards each other and are provided at their ends with prongs which are respectively presented in directions opposite to those in which the limbs are offset. These prongs lock the limb members at the points of engagement with the said flat articles. The locking is effected in such a way that the fastening device is firmly united with the flat body and, in particular, cannot be pulled off, the limbs clasping the edge of the leaf or plate or other flat articles from both sides being provided with tongues, teeth, prongs, projections, hooks or the like with which they engage alternately from both sides recesses, depressions, perforations and the like in the flat article. In a preferred embodiment of my invention, the prongs are arranged in one line and at a distance from each other.

In the drawings affixed to my specification and forming part thereof a number of embodiments of my invention are illustrated diagrammaticaly by way of example.

In the drawings

Fig. 1, is a front elevation, and

Fig. 2, a cross-section along line *a—a* of Fig. 1 of the improved fastening device intended to serve as rider clip,

Fig. 3, illustrates the way the improved fastening device is seated or mounted upon the edge of a card in section through the fastening device, one tooth and the card,

Fig. 4 shows in front elevation the mounting of two fastening devices, according to the invention upon the card,

Figs. 5, 6 and 7 are side elevations of further designs of the device,

Fig. 8, is a front elevation of a twin joining device according to the invention, and

Fig. 9, a cross-section through the same.

In the Figures 1 to 4 there is illustrated a fastening device 111, for instance a marking or index rider which clasps or embraces the edge of a card 112 of a card index or register from both sides with its limbs or members 113, 114, 115 alternately oppositely offset as particularly clearly shown in section in Fig. 3 and in elevation in Fig. 4 of the drawings. The limbs or members are provided with hooks, tongues or prongs 116, 117, 118 which alternately i. e. from both sides, enter into perforations 120 of the register card 112.

In the embodiment illustrated in Fig. 4 the prongs 116, 118 (Fig. 1) of the limbs 113, 115 enter the perforations 120 from the front, the prongs 117 of the limb 114 from the back. The prongs or teeth of the limbs are, as the drawing shows, narrow and of small overall dimensions so that small openings only need be provided in the edge of the card so that a very small quantity of the material of the card is wasted. If the prongs of the fastening device and the respective perforations, recesses or depressions in the card are made of equal pitch and are thus equally spaced, the fastening device or the marker may be moved along the edge of the card to any one of several positions at will. Since the limbs enter the cards with their teeth from both sides, the fastening device or the rider clip is so to say closed at its lower edges at both

sides of the flat article upon which it is mounted, for instance the card, so that the advantage results that adjacent cards cannot slip underneath and be caught by the fastening device or clip.

The number of the limbs of the fastening device provided with tongues, prongs, teeth, projections, hooks and the like is by no means limited to three and any larger number of them may be provided and on the other hand it is also possible to provide the clip with two limbs only. The limbs are, however, preferably so arranged in such relation to one another that tipping, turning or swinging motions in regard to the edge of the body or article which remove one of the limbs or a portion of it from said body induce the other limb or other limbs to exert a firmer grip or more intimate contact.

This will be readily understood on referring to Fig. 4 of the drawings, for instance. If here the upper plate or top portion 111 of the clip, for example, is bent backwards so that the limbs 113, 115 with their tongues 116, 118 are raised off the article upon which the clip is mounted, the tongue 117 engages the perforation 120 appertaining to it more firmly or energetically so that the clip or marker cannot be detached without a substantial effort. If conversely the plate or vane 111 of the clip or fastening device is bent forwards the tongue 117 at the center issues from its opening 120 in the card, but the tongues or prongs 116, 118 then penetrate more deeply into the card. The clip holds equally well if subjected to a rotary or tipping action. If on the other hand, the edge of the card is bent into a corrugation equal in pitch to the spacing of the outer limbs the rider becomes detached forthwith. Since such a deformation of the cards does not occur in practice the rider or fastening device will not become detached inadvertently. If the release of the clip by corrugating the card is to be prevented, this may be attained by providing in the clip oblique slits 43, 44 between adjacent limbs 40, 41 or 41, 42 into which the edge of the card, leaf or other flat article enters. If now the flat body is bent into corrugations of the pitch of the limbs, the limbs participate in the bending and the fastening device again engages intimately the recesses, depressions or perforations of the flat article with individual limbs, so that a disengagement of the fastening device is effectively prevented. According to the degree of bias of the recesses and the cross-sectional areas remaining in the fastening device the individual cross-sections subjected to bending stresses may be adjusted at will in relation to one another.

Fig. 5 of the drawings illustrates more particularly another arrangement of the limbs. It will be observed that the individual teeth or prongs are here not mounted on angularly cut portions, but at the edge of straight pieces. A combination of the arrangement in which the teeth 52, 53 form part of or are attached to angularly cut pieces 50, 51, and other teeth 54 to a straight piece 55, is illustrated in Fig. 6 of the drawings. The dimensions of the teeth and thus also of the perforations, depressions or recesses, which they engage are chosen as small as possible and the shape of the latter is adapted to the shape of the teeth or prongs. It may, as shown in Fig. 4, be rectangular.

Referring to Fig. 7 of the drawing, it will be noticed that the fastening device 125 illustrated here is provided with two limbs 126, 127 of which one with the tongue 128 is destined to engage a single card perforation from the rear, the other 127 with the tongue 129 from the front, as clearly visible in Fig. 4 of the drawings.

It will be understood that it is not absolutely necessary to punch perforations into the card. It is sometimes ample to emboss depressions or recesses or to secure by other means the firm seating of the limb provided with the said projections in the form of tongues, prongs and the like. The invention is, of course, by no means limited to marking or indicating riders and may equally well serve for fastening devices and as such it fulfills owing to its peculiar construction all the conditions with which other fastening devices comply which are secured by rivets, screw bolts and the like.

The fastening device according to the invention may also serve as carrier or support for cards, for instance for fixing or mounting them in the back of a book in the manner of leaves. It may, furthermore, be employed as a tag on files or port-folios. The fastening member is then so to say made in duplex form by being provided with hooks, prongs or the like at both ends. The two portions may also be joined by an articulated member, for instance a hinge 130, as shown in Figs. 8 and 9 of the drawings. In these figures the vanes 131, 132 of the fastening device are provided with four limbs each which alternately engage the front and the back of the article.

It is not absolutely necessary that a limb engaging the front of the flat article be always followed by a limb engaging the back. The sequence may be different and, for instance, outer limbs may engage the front and central ones the back of the flat article or the arrangement may be still different as long as from both sides alternately limbs provided with prongs, projections, teeth, hooks and the like engage suitable recesses, depressions, or openings of the said flat bodies.

The fastening devices with their alternately oppositely offset limbs may be punched out of a plate or sheet and the limbs may be forced towards one another so as to cross each other as shown in Figure 2.

I desire it to be understood that my invention is not limited to the details of construction shown and described by way of example, as various changes and modifications within the ambit of my claims will suggest themselves to those skilled in the art.

I claim:—

1. In a fastening device for flat articles, in combination, a plate-like main body, alternately oppositely offset and elastic resilient limbs mounted thereon, said limbs being provided with prongs at their ends, the prongs upon the respective offset limbs being presented from the direction in which said limbs are offset.

2. In a fastening device for flat articles, in combination, a plate-like main body, alternately oppositely offset and elastic resilient limbs mounted thereon, one limb projecting between two other limbs, said limbs being provided with prongs at their ends, the prongs upon the respective offset limbs being presented from the direction in which the said limbs are offset, the said prongs being arranged in one line and at a distance apart from each other.

3. In combination with a card provided with perforations adjacent to one edge thereof, a rider clip adapted to ride upon the edge of said card and comprising a plate, three elastic resilient limbs alternately oppositely offset upon said plate, one limb being adapted to enter between the other limbs, prongs upon said limbs, said prongs upon the respective offset limbs being presented from the direction in which the said limbs are offset, said perforations being correspondingly arranged with respect to said prongs, said prongs being adapted to project into said perforations from both sides.

4. In combination, a card, a rider clip adapted to ride upon the edge of said card and comprising a plate, elastic resilient limbs alternately oppositely offset upon said plate, one limb being adapted to enter between the other limbs, prongs upon said limbs, the prongs upon the respective offset limbs being presented from the direction in which said limbs are offset, said prongs being arranged in alignment and at a distance from each other, said card being provided with perforations adjacent the edge thereof, said perforations being equally spaced and said prongs being correspondingly arranged with respect to the spacing of said perforations, the prongs of said limbs being adapted to enter the perforations alternately from opposite sides.

5. The combination with a card provided with equally spaced perforations near one edge of said card and parallel thereto, of a rider clip adapted to ride upon the edge of said card and comprising a plate, elastic resilient limbs alternately oppositely offset upon said plate, one limb being forced towards one side of the plate and the other limbs towards the other side of said plate, said limbs being adapted to cross one another scissors-wise and the limbs of one side arranged to enter between the limbs of the other side, said limbs being constructed of an elastic resilient material, prongs upon the limbs, the prongs upon the respective offset limbs being presented from the direction in which the said limbs are offset, said prongs being arranged in one line equally spaced and adapted to enter said perforations alternately from opposite sides.

In testimony whereof I affix my signature.

ELMAR LUKACS.