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L. H. MORIN

2,264,580

METHOD OF MAKING SEPARABLE FASTENERS

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Fig. 1.

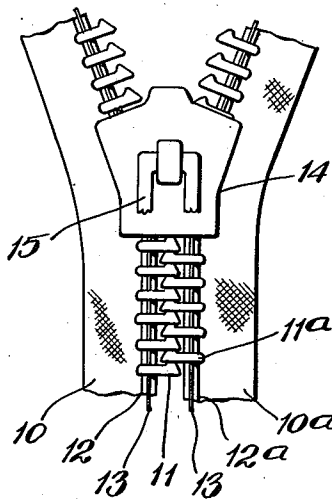


Fig. 2.

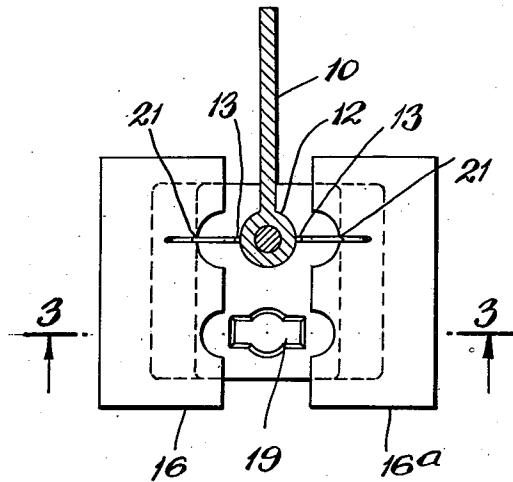


Fig. 3.

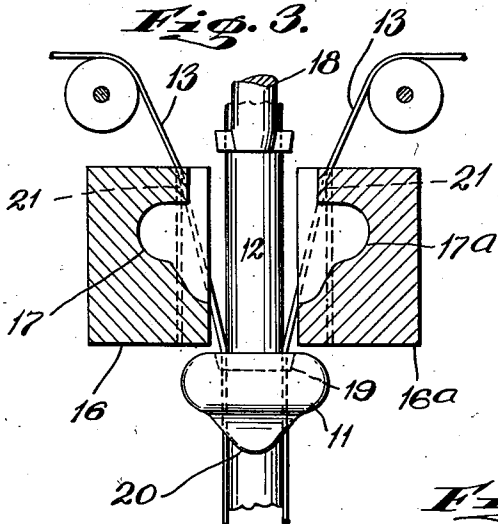


Fig. 4.

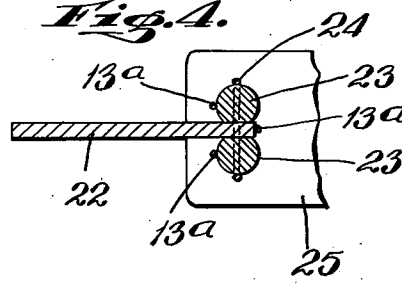
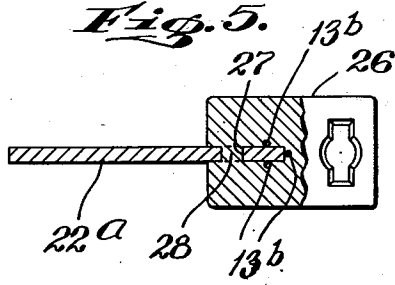


Fig. 5.



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METHOD OF MAKING SEPARABLE
FASTENERS

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5 Claims. (Cl. 204—23)

This invention relates to separable fasteners and particularly to the construction of various type and kinds of metallic fastener stringers; that is to say, fastener stringers employing metallic links adapting the same for various electro-plating operations. More particularly, the invention relates to an arrangement of one or more metallic strands or tinsels along the edge portion of a stringer tape to which the links or scoops are attached so as to establish a positive electric connection with all of the links on a given stringer length to facilitate electroplating of the links, as well as in the method of constructing fastener stringers as hereinafter set forth. The novel features of the invention will be best understood from the following description and annexed drawing in which certain embodiments of the invention are disclosed and in which the separate parts are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a plan view of a portion of two fastener stringers made according to the invention and indicating the conventional slider thereon.

Fig. 2 is a sectional view through one stringer tape illustrating the dies used in forming die cast links or scoops on said tape, showing the dies in a partially open position.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a cross-sectional view through another form of stringer tape which I employ; and,

Fig. 5 is a view similar to Fig. 4 showing another form of construction.

The construction and method forming the subject matter of this invention constitutes an improvement over the invention described and claimed in my prior Patent #2,063,515, issued December 8, 1936. In the present disclosure means is provided for guiding the lay of an electric conductor strand or strands longitudinally of the edge portion of the stringer tape to which the links are attached to and support the same in proper position in the operation of pressure casting the links directly upon the stringer tape in providing an electric conductor positively engaging all of the links arranged on the stringer to facilitate electroplating of said links.

It is one of the distinctive features of my invention to provide mounting or stringer tapes for separable fastener stringers of the character described having incorporated therein, or in the edge portion of the tape to which the metallic links are secured, a wire or metallic strand or what is commonly referred to as a tinsel; that is to say, a fabric strand or thread wrapped spirally with a fine wire so that each link attached to the

tape contacts the metallic strand thereby completing an electric circuit to all of the links facilitating the electroplating of said links. This plating is not only for the purpose of applying the conventional nickel, chromium, silver, brass, copper, and other platings, but also for the purpose of applying various color platings to the links in accordance with more recent processes. In connection with the color plating, the same has been applied successfully on devices composed of aluminum; and in this connection it will be understood that the links of the stringers may be composed of aluminum, or if desired, may be suitably plated prior to the application of the color platings thereto.

The color plating of the links of separable fastener stringers is desirable in many uses of the fasteners to match or blend the links to the merchandise or products in connection with which the same are used. By constructing the stringer tapes in the manner herein described, a very simple and economical means is provided for performing the electroplating operations upon the links of the stringers, while at the same time producing thoroughly and completely plated links or scoops which will result in a neat and finished appearance.

My invention lends itself especially to the formation of stringer tapes where the links or scoops are made from die cast materials which may be die cast upon the tape directly in a successive series of casting operations or separately cast and attached to the stringer tapes. It will thus be seen that cast aluminum links may be employed or zinc castings or other metal castings may be provided and plated in the manner set forth.

In Fig. 1 of the drawing I have shown to illustrate the general assemblage of a separable fastener made according to the invention, parts of two stringers 10, 10a, to one edge portion of which are attached coupling links or scoops 11, 11a. As is shown in Figs. 1 and 2 of the drawing, the links or scoops are attached to beaded edges 12, 12a, along which are laid one or more electric conductors 13 to establish positive contact with each of the links or scoops 11, 11a, as will be apparent. At 14 is shown a slider for coupling and uncoupling the stringers; and at 15 is indicated a part of a pull or finger piece for operating the slider.

In that both stringers are of identical construction in the several adaptations of the invention herein illustrated, it will be understood that the brief description of one will be applied to both. For purposes of illustration in Fig. 2 of

the drawing, the stringer 10 is shown with two conductor strands 13 arranged thereon, one at each side surface of the beaded edge 10; it being understood that only one of these strands need be employed to accomplish the desired result. The strands 13 may simply consist of a fine wire or what is known as a tinsel; that is to say, a cord or thread covered with a fine wire in accordance with the teachings in my prior patent above referred to.

In Figs. 2 and 3 of the drawing are shown relatively movable dies 16, 16a employed for forming the separate links or scoops on the stringers, for example the links 11. The dies have the usual mold cavities 17, 17a, which collectively form the contour of the desired link to be formed in conjunction with a core pin 18. The core pin 18 forms the female socket 19 in one surface of the link to receive the projecting element 20 on the opposed surface of an adjacent link in accordance with known practices in this art.

My present invention consists in forming in adjacent surfaces of the dies 16, 16a, grooves 21 to receive and guide as well as to locate the conductor strands 13 upon the beaded edge of the stringer tape or upon that portion of the tape to which the links are attached. The grooves 21 in addition to guiding the strands and locating the strands on the tape also provide a space for the strands intermediate adjacent links so as to insure firm engagement of the dies one with the other to produce a substantially sealed impression and to eliminate flare around the parting line of the die as might otherwise be the case. With this construction the strands 13 actually extend across the impression or mold cavity or cavities of the respective dies and thereby a positive contact of the resulting casting with the conductor strand is assured.

In Fig. 4 of the drawing I have shown a slight modification which consists in providing a plain stringer tape 22 to one edge of which is secured two cords 23 to form a beaded edge portion on the tape. The cords 23 are secured in position in any desired manner, for example, by a line of stitching as indicated at 24. With this construction, two or more of the conductor strands as at 13a may be supported adjacent the cords and the tape 22 in the manner illustrated to establish electrical connection between all of the links or scoops 25 which are cast onto the stringer tape in accordance with the teachings disclosed in Figs. 2 and 3. Here again, it will be understood that only one of the conductor strands need be employed, and if one only is employed, it is preferable that the one arranged at the edge of the tape 12 proper be employed as this strand would be less visible in the resulting product.

In Fig. 5 of the drawing I have shown another modification wherein a plain stringer tape 22a is employed and instead of providing the cords 23 to form beaded edges, the edge portion of the tape to which the links 26 are attached or die cast is provided with apertures or openings 27 so that the cast material will pass through the apertures to establish a binder 28 securely retaining the link upon the tape 22a. In this construction one or more of the conductor strands 13b will be arranged at the edge portion of the tape, one at each side thereof and one at the edge thereof. It will be apparent that only one of these conductors need be employed, but with this type of a stringer con-

struction, the use of several strands would provide a greater reinforcement of the resulting stringer as will be apparent.

After the stringer tapes have been formed, the same may be passed through suitable machines for the attachment of the links or scoops 11, 11a, 26, thereon. These scoops may be formed and applied in any desired manner or be directly die cast on the beaded edges of the tapes. It will also be apparent that the links or scoops may be constructed of any suitable metals, and in the case of producing what I term color plated links in accordance with my process, I may use links composed entirely of aluminum or aluminum alloys, or links composed of metals or other alloys, in which latter event the same will be first suitably plated and then passed through the color plating process to produce the desired color on the resulting links in accordance with the anodic method or other processes.

In connection with the plating operation of the links of the stringers, it will be understood that these stringers may be plated as stringer units or a successive series of stringer sections may be plated in one operation in accordance with conventional practice in what is termed a continuous chain-like plating operation. After the plating operation, the separate stringer lengths are subdivided.

With the present construction, it will be apparent that the conductor strand or strands employed may be said to constitute a strand simply laid along the stringer tape at the edge thereof to which the links are directly attached. While I have described the invention as adaptable to the formation of die cast links upon the stringer tapes, it will be understood that the same principle may be employed in coupling, attaching, or mounting pre-formed links upon the stringer tape by simply constructing the links to receive the conductor or conductors employed and in providing suitable means to support and guide the conductor or conductors in the operation of attaching the links. Another way of expressing the thought here in mind would be to say that each link of a complete stringer has a recess adjacent the tape or the bead thereof for the reception of the conductor in the assemblage of the respective parts.

It will be apparent that while I have shown and described my invention as applicable to the construction of stringer tapes, the same may be applied to the construction of any other product wherein a plurality of metallic elements or castings are arranged longitudinally of a mounting member where a metallic strand is associated with said member and is secured to each of the castings formed thereon.

With the present construction it will appear that the conductor strands are actually supported in position by the links or scoops, it being desirable in all forms of links to have a recess which will at least partially receive the conductor when the links are compressed or otherwise attached to the mounting tape. When the links are die cast in the manner herein specifically disclosed for illustrative purposes, it will appear that the material of the cast links surrounds the major portion of the strands in securely anchoring the same in position; and when a tinsel is employed on a fine twisted wire the casting material will be imbedded in the crevices of strands of this type.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The herein described method of forming separable fastener stringers to adapt the same for the electroplating of metallic links attached to and spaced longitudinally of one edge of each stringer, which consists in providing an elongated mounting tape of fibrous material, arranging an electric conductor along but unattached to one edge portion of said tape throughout the length thereof, guiding and supporting the conductor in a predetermined position on the tape, applying each link to the tape edge and said conductor while so supported and spacing the links longitudinally of the tape in forming a stringer of predetermined length, all of the links directly contacting the conductor to facilitate the electroplating of all of said links, and electroplating said links.

2. The herein described method of forming separable fastener stringers to adapt the same for the electroplating of metallic links attached to and spaced longitudinally of one edge of each stringer, which consists in providing an elongated mounting tape of fibrous material, arranging an electric conductor along but unattached to one edge portion of said tape throughout the length thereof, guiding and supporting the conductor in a predetermined position on the tape, applying each link to the tape edge and said conductor while so supported and spacing the links longitudinally of the tape in forming a stringer of predetermined length, all of the links directly contacting the conductor to facilitate the electroplating of all of said links, forming recesses in the links for the reception of at least part of said conductor, and electroplating the links on the stringer.

3. The herein described method of forming separable fastener stringers to adapt the same for the electroplating of metallic links attached to and spaced longitudinally of one edge of each stringer, which consists in providing an elongated mounting tape of fibrous material, arranging an electric conductor along but unattached to one edge portion of said tape throughout the length

thereof, guiding and supporting the conductor in a predetermined position on the tape, applying each link to the tape edge and said conductor while so supported and spacing the links longitudinally of the tape in forming a stringer of predetermined length, all of the links directly contacting the conductor to facilitate the electroplating of all of said links, electroplating said links, and then applying a plating of another color upon said plated links.

4. The herein described method of forming separable fastener stringers to adapt the same for the electroplating of die cast metallic links attached to and spaced longitudinally of one edge of each stringer, which consists in providing an elongated mounting tape of fibrous material, arranging an electric conductor along but unattached to one edge portion of said tape throughout the length thereof, guiding and supporting the conductor in a predetermined position on the tape, die casting each link to the tape edge and said conductor while so supported and spacing the links longitudinally of the tape in forming a stringer of predetermined length, all of the links directly contacting the conductor to facilitate the electroplating of all of said links, and electroplating said links.

5. The herein described method of forming a plurality of successive die castings at spaced intervals upon an elongated mounting member to establish electric communication between all of said castings to facilitate electroplating thereof, which consists in moving dies intermittently toward and from longitudinally spaced sections of the mounting member in forming a successive series of die castings thereon, arranging an electric conductor longitudinally of the mounting member prior to casting the links thereon, guiding and supporting said conductor in at least one of the dies and upon said mounting member, forming each die casting on said member and conductor while so supported, forming the castings at spaced intervals on said mounting member while leaving the conductor free intermediate adjacent castings, and electroplating said castings.

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