W. P. MITCHELL.

SAFETY FASTENER.

APPLICATION FILED AUG. 7, 1915.

1,193,588. Patented Aug. 8, 1916.

Fig. 1,

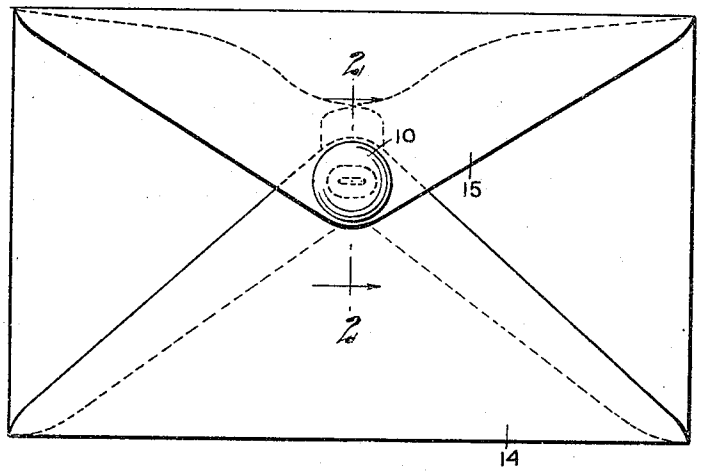


Fig. 2,

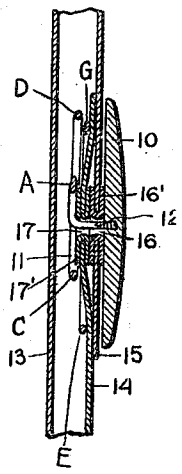


Fig. 3,

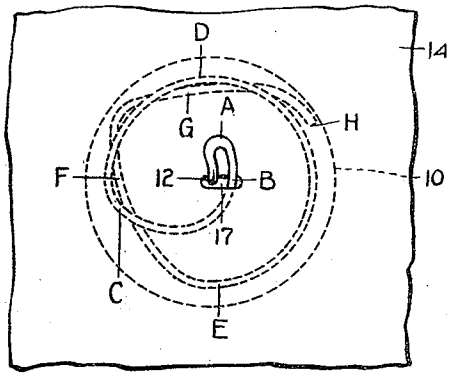
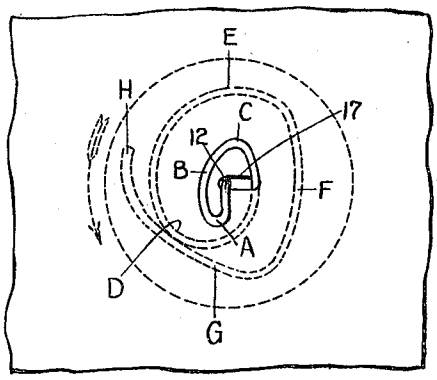


Fig. 4,



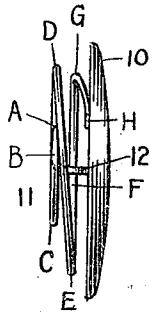


Fig. 5.

WITNESSES

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SAFETY-FASTENER.

1,193,588. Specification of Letters Patent. Patented Aug. 8, 1916.

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To all whom it may concern:

Be it known that I, WILLIAM P. MITCHELL, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Safety-Fastener, of which the following is a full, clear, and exact description.

This invention relates to fastening devices, and is of a nature adapted for application to many different uses.

Among the objects of the invention and as illustrated in the drawings, the device is designed for the purpose of sealing an envelop to prevent the opening thereof by any one except the party addressed, or to provide a means for detecting such surreptitious opening. It is obvious, however, that the device may be applied to various other packages, boxes, wrappers, bags, etc., sent by mail or by other conveyances for delivery.

A further object of the invention is to provide an irremovable fastener which may be easily applied with advantage to any article of merchandise sold in sealed packages such, for instance, as high grade coffees, teas, sugars, etc.

A still further object of the invention is to provide a fastener in the nature of a button for application to metal ceilings, walls, or the like, where the application must be made from one side only of such wall.

With the foregoing and other objects in view, the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like characters of reference designate the same parts in the several views, and in which—

Figure 1 is a view in elevation of the back or flap side of an envelop fastened with my improved device; Fig. 2 is an enlarged sectional detail on the line 2—2 of Fig. 1; Figs. 3 and 4 are diagrams indicating progressive stages of operation of the fastener through a perforated or slotted sheet; and Fig. 5 is an edge view of the fastener complete.

Referring more particularly to the drawings, I show a fastener comprising a head 10 and a flexible coil portion 11. The head is shown as practically flat and disk-like, and to the center of the inner wall thereof is secured a shank or stem portion 12 of the coil, said shank being substantially perpendicular to the head, and is thence bent practically at a right angle and carried outwardly radically to a distance approximately equal to one-third of the radius of the disk head where it is bent sharply upon itself forming a loop or point A. This point or loop constitutes the entering or advancing portion of the coil when the fastener is being secured or applied in position in practice. The metal of the coil is then carried around in a spiral direction and outwardly from the axis of the shank approximately through two or more complete turns where it terminates in a free end H arranged at a radial distance from the shank 12 approximately equal to the radius of the disk or head 10 when the parts are in normal position.

The coil 11 is constructed of flexible and resilient metal of any suitable form in cross section. The first turn thereof beginning with the point A, and including the points B, C and D, lies in the same plane, and the main portion of the last turn, including the points E, F and G, lies in a different plane parallel to the first mentioned plane. From D to E the direction of the coil is spiral with respect to the shank 12 or inclined with respect to the two planes aforesaid, and so likewise the final end portion from G to H is deflected laterally from the plane of the points E, F and G. As will be noted also in Fig. 3 with the different parts of the coil in normal position with respect to one another, as viewed in a direction parallel to the axis of the stem or shank, the two main turns of the coil cross one another at several different points, parts of the latter or free turn of the coil lying directly between the former turn thereof and the head.

By way of further and fuller explanation of one practical adaptation of the fastener, I provide an envelop having a front 13 and back 14 with a sealing flap 15. The sealing flap and back portion beneath the same are provided with short slots 16 and 17 respectively which are adapted to register with each other and through which the loop or point A is first introduced when applying the device in the fastening operation. To facilitate this operation the point A may be flattened as indicated. I also show the slots

16 and 17 reinforced as indicated at 16′ and 17′ to prevent any danger of tearing the parts and enlarging the slots in practice.

The mode of operation of the device may be summarized as follows: With the parts of the package arranged as shown and described with the slots 16 and 17 in registry, the operator will grasp the head 10 of the device and force the point A through the slots as indicated in Fig. 3. He will then rotate the device in a clockwise direction bearing upon the head thereof, and such rotation will cause the larger and free end portion of the coil to be passed through the slots, the metal of the coil being sufficiently flexible to permit such action as indicated in Fig. 4 which indicates the device substantially at the end of the first half of the first rotation. In other words, while the device is being turned as described, the shank 12 will lie snugly against one end of the slots while the free portion of the coil will glide along the opposite end of the same. When, however, the entire coil is passed through the slots, the extreme end H will snap away from the slots and occupy its normal position, as indicated in dotted lines in Fig. 3, so far from the slots that by no possibility can the device be removed by a reverse or any other operation without multilating the envelop or destroying the fastener. Furthermore, due to the latter part of the coil lying directly between the intermediate or entrance part of the coil and the head, it is impossible for said entrance part to be projected outwardly through the slot. Said free end from G to H may be flattened to increase the flexibility thereof in a direction parallel to the axis of the shank. The coil of this device may be described as having two points, one of which is in the form of a loop constituting the entering or advancing point and the other of which is single.

I am aware that fastening devices for buttons or the like have been made heretofore in which a flexible coil is employed, but, so far as I know, the entering point of the coil has always been the free point remote from the central or shank portion of the coil, and in such prior devices it seems to be always possible for the fastener to be removed by a reverse movement of the coil, the shank portion, or the part last to enter the holding structure, being started out first. In my improvement, however, the portion of the coil adjacent the shank is constructed so as to be the entering or advancing point, and the free end or point portion enters the supporting structure last instead of first. Said free point of a coil fastener, as heretofore made, can never be the leading point on an attempt to remove the fastener, and in this instance the free portion of the coil being located directly between the intermediate portion thereof and the head or operating part of the device, it is impossible for the advancing point or loop portion of it to be withdrawn first to permit the withdrawal or removal of the device without mutilation of the supporting structure.

As a fastener or sealing device for envelops, the shank 12 may extend through the end sealing flaps as well as the top and bottom ones, as indicated in dotted lines in Fig. 1, but to avoid confusion of the lines such feature is not indicated in the remaining figures. It will also be noted that the head 10 or equivalent manipulating means for the fastener may be detachably secured to the shank as by means of screw threads. While the detachment would not ordinarily be desirable in the case of an envelop fastener, yet the device is, as has been heretofore suggested, well adapted for many other purposes; for instance, if the coil and shank were made of heavier metal, the coil could be applied to a metal ceiling or similar places where an inside fastener must be put on from the outside. The shank, therefore, could be employed for fastening other things, with the head unscrewed from it.

I claim:

1. The herein described fastener comprising a head and a coil secured to one side of the head, said coil comprising a shank secured to the head and extending perpendicularly therefrom, that portion of the coil directly adjacent the shank being formed into a laterally directed sharp loop and thence turned in a spiral direction ending in a free point remote from the shank, said loop constituting the advancing and entering portion of the coil when being applied, and the latter free portion of the coil lying in a plane directly between the intermediate portion of the coil and the head.

2. The herein described irremovable fastener comprising a head and a coil, said coil comprising a shank secured rigidly and permanently to one side of the head and extending perpendicularly therefrom, the coil being thence bent parallel to the head and thence bent upon itself forming a loop constituting the advancing entering point and thence continued in a spiral direction terminating in a free point at a distance from the shank greater than the radial distance from the shank to any other point of the coil, the latter portion of the coil lying directly between the head and that portion of the coil adjacent the entering loop aforesaid.

3. The combination with an envelop having a pair of short registering slots in the back and flap portions, of a sealing fastener therefor comprising a head and a coil, said coil comprising a shank secured to the inner wall of the head and also comprising directly adjacent the shank a sharp loop constituting an entrance point for initial passage through the slots, said point extending

laterally radially from the shank and to a distance greater than the length of the slots, and the latter free portion of the coil lying in a plane between the immediate or entering part of the coil and the head.

4. The herein described fastener comprising a head and a coil, said coil comprising a shank secured rigidly to one side of the head, the coil being bent thence laterally in a plane parallel to the head and thence bent sharply upon itself forming a loop constituting the entering portion of the fastener when applying it, and said coil being thence continued in a spiral direction terminating in a free end portion lying in a plane between the plane aforesaid and the head, certain portions of the intermediate part of the coil overlapping said free end portion, the extreme free end of the coil being flattened and deflected laterally slightly with respect to the main portion of the coil.

5. The combination with an envelop having registering slots formed in its back and sealing flap portions, of a fastener therefor comprising a head and a coil, said coil comprising a shank secured to the head and adapted to constitute the only connection between the head and the remaining portion of the coil in fastening position, said coil also including a loop portion extending radially directly from the shank, said loop being flattened and constituting the starting point for inserting the fastener, and the coil extending thence in a spiral direction terminating in a single free end at a distance from the shank greater than the length of said slots.

6. The herein described fastener comprising a coil including a straight shank and means to manipulate the coil through the shank, said coil being formed with a loop-shaped point projecting radially from the axis of the shank and constituting the entering and advancing portion of the coil being fastened, said coil having its opposite end single and free and being irremovable by a reverse operation.

7. The herein described fastener comprising a spiral coil, one end of the coil constituting a shank extending perpendicular to the general plane of the coil, the other end of the coil being remote from the shank and free, the intermediate portion of the coil adjacent the shank constituting a loop-shaped point adapted to be projected through the part to be fastened to initiate the attachment of the fastener, the free end portion of the coil being bent outwardly from said plane, substantially as set forth.

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Witnesses:
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