

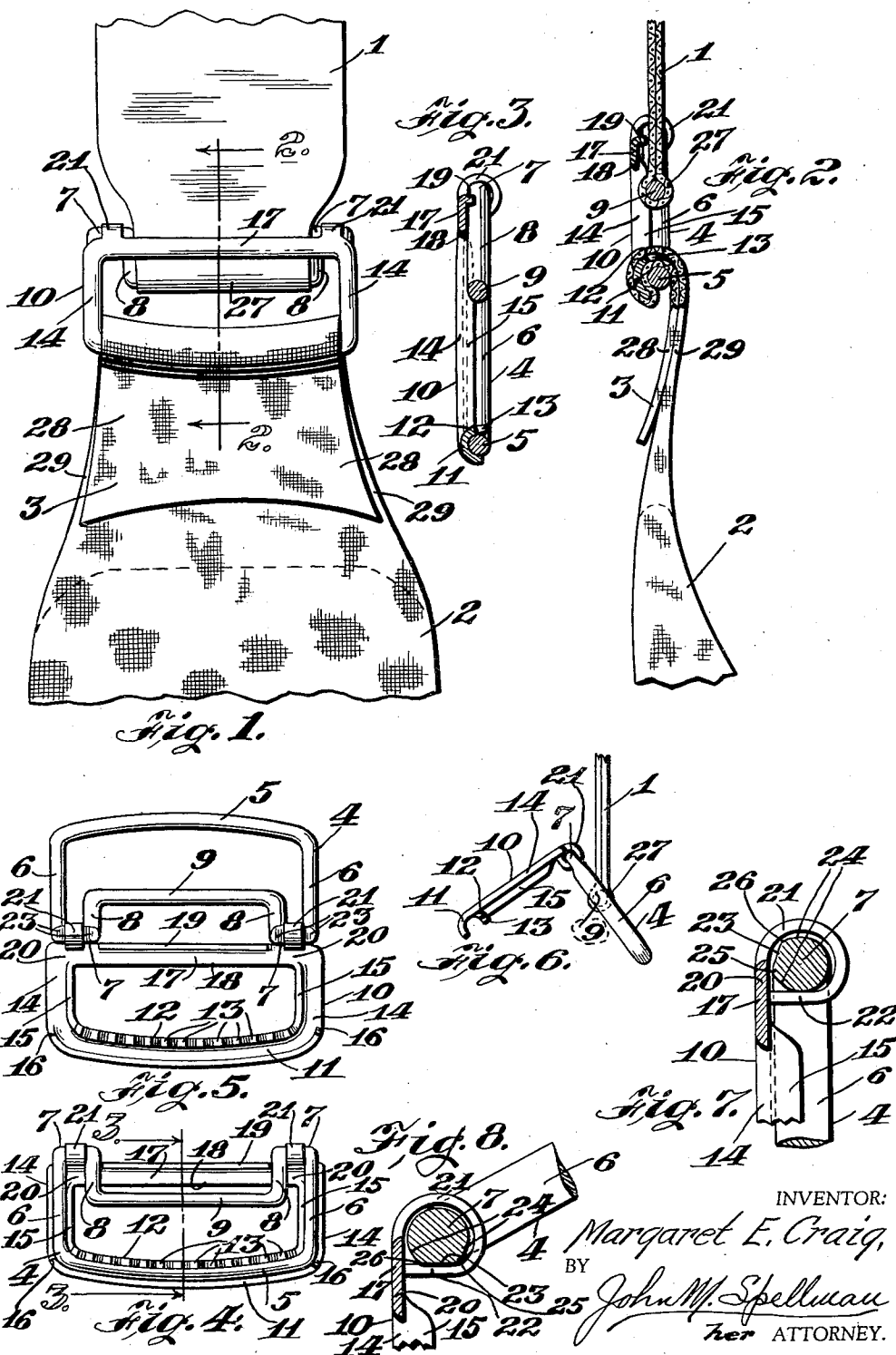
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SAFETY FASTENER

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SAFETY FASTENER

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This invention relates to safety fasteners and more particularly to a device for securing sanitary napkins or catamenial pads to a belt or other support, and it has for its principal objects to produce a simple, compact, durable and positive fastener to which the napkin or pad is readily attached with security and without bulkiness of folds; to provide for easy adjustment of the end portions of the napkin or pad on the fastener to properly and ideally shape the attached article for its purposes and to avoid discomfort to the wearer; and to attain certain other advantages as will hereinafter more fully appear in the following description.

The invention consists in the novel general construction of the fastener and in the parts and combinations and arrangements of parts hereinafter described and pointed out with particularity in the appended claims.

In the accompanying drawing illustrating a practical adaptation of the invention,—

Figure 1 is a view, on a somewhat enlarged scale, showing in elevation of the outer side, the fastener as applied to the tab member of an ordinary belt or support, and the end portion of a napkin or pad of the character described as adjustably attached to the fastener;

Figure 2 is a view partly in edge elevation and partly in section on the line 2—2 of Figure 1, also on an enlarged scale to show more clearly the details of structure;

Figure 3 is a cross section of the fastener detached, and on a still further enlarged scale, the section being taken substantially on the line 3—3 of Figure 4;

Figure 4 is a plan view, looking at the back of the fastener, detached and in closed condition;

Figure 5 is a view similar to Figure 4, but with the member to which the support is to be attached in use shown in opened condition;

Figure 6 is an end view of the fastener in the opened condition shown in Figure 5 and further showing the support attached to its member of the fastener;

Figure 7 is a fragmentary view, on a greatly enlarged scale, partly in section and partly in elevation, illustrating a preferred construction and arrangement of the hinge portions of the fastener, the fastener being in closed condition; and

Figure 8 is a view similar to Figure 7, but showing the fastener members in opened relation.

Referring now to the drawing, the numeral 1 designates the tab member of an ordinary belt or other support for a sanitary napkin or catamenial

pad and the numeral 2 designates the napkin or pad which may be of any desirable character. However, as shown, the article 2 is one of the kind at present commonly merchandised and generally used, and more specifically described as comprising a pad of absorbent material within a gauze envelope, the end portion 3 of which latter is attached, in use, usually by a safety pin or some specially provided fastener, to the depending tab of a supporting belt, none of such means of fastening, as far as the present inventor is aware, being fully satisfactory or dependable and each having certain disadvantages which the present invention is designed to avoid.

The fastener, as shown, comprises a bail-like member 4 of wire or metal of round cross section. The one side portion 5, about which the end portion of the napkin or pad 3 is folded in use, is preferably slightly arcuate or curved outwardly, the advantage of which will be later more fully described. At the ends of the portion 5 are straight portions 6, said portions 6 being turned at right angles, as at 7, to form hinge portions, and again bent, as at 8, and cross connected by a straight bar 9 substantially paralleling the curved side bar 5.

A companion member 10 co-operates with the member 4, said member 10 being constructed of sheet metal of relatively thin gauge but of relative stiffness and durability of the character of that commonly used in the manufacture of buckles and fasteners of the kind usually provided for wearing apparel and similar articles. As shown, this member 10 comprises a side portion 11 of arcuate concavo-convex cross section (see Figures 2, 3 and 6, for clearer detail), the inner edge portion 12 thereof being formed with a series of blunt ended teeth 13. At the ends of the portion 11 are straight portions 14, it being noted that the portion 11 is curved or bowed outwardly correspondingly to the curvature of the side portion 5 of the member 4 which fits into the concaved portion of the portion 11 of the member 10 (see Figures 3 and 4), the end portions 14 having flanges 15 only at their inner margins as continuations of the inner edge portion 12 of the part 11 of said member 10 (see Figures 3, 4, 5 and 6), the outer margins of the portions 14 being without a flange from the point 16 to the opposite end of said portion 14 (see Figures 4, 5 and 6).

The portions 14 are cross connected by a straight portion 17, the inner margin 18 of which is without any flange, but the outer margin being flanged, as at 19, throughout the intermediate portion of its length, the portions 20, adjacent its ends

which merge with the end portions 14 being without a flange. Extending from the portions 20 are tongues 21 which are looped to provide eyes to receive the hinge portions 7 of the member 4. As shown, these eye portions are rolled in general circular form, but with one flat side 22 (see Figures 7 and 8 for clearer detail). So, too, the hinge portions 7 are of generally circular cross section, but, as shown, each has a flattened side 23, the face of said side being substantially tangential with the arc of the circular portion of the member 7 and said round portion merging with said flattened portion 23 through tapering opposite sides 24 which are flat, or nearly so, thereby producing corners 25, 26. The diametrical distance from the respective corners 25 and 26 to the round surface of the member 7 is, of course, greater than the diametrical distance across the round part of said hinge member 7. By this form and the proportions of the hinge member 7 and the eye portion 21, the two buckle members 4 and 10 are relatively loosely hinged and one member is freely movable with respect to the other throughout an opening movement in an angle of approximately ninety degrees, beyond which angularity the corner 25 of the member 7 impinges against the flat portion 22 of the eye loop 21, thereby causing said portion 22 to be sprung slightly from normal condition and continued forcible actuation of the member 4 or 10 relative to the other effects a snap action and the flat face 23 of the member 7 is positioned in abutting relation to said flat portion 22 of the eye loop 21, at which time the two members 4 and 10 are in the relative angular relation as shown in Figure 8, or, in other words, said members have been moved through an angle somewhat in excess of the approximate ninety degrees above noted, from which relation said members 4 and 10 have to be first forcibly moved to close them one upon the other, or, in other words, while the corner 25 is moving in engagement with the flat portion 22 of the eye loop 21.

In the use of the fastener the portion 9 of the member 4 has the tab 1 of the support looped thereabout, as at 27, see Figures 1, 2 and 6, it being understood that the tab 1 depends from a belt (not shown) and there being a similar tab at the front and rear of the body of the wearer and a like fastener is provided on both tabs.

The end portions 3 of the napkins or pads 2 are applied to the fasteners, by first passing the end portion 3 through the buckle members 4 and 10 with said members in closed relation as shown in Figure 4. In passing the portion 3 through said members, which is accomplished easily, the frictional contact of the portion 3 of the napkin or pad with the inner marginal portion 12 of the part 11 of the member 10, which member at the time is loosely movable at the hinge portions, automatically moves the member 10 to opened position to an angle of a few degrees to an approximate maximum of that illustrated in Figure 6. During this time the end portion of the napkin or pad is rather freely movable and manipulable. After a sufficient amount of the napkin or pad is drawn through the buckle members 4 and 10 it is folded over the portion 11 of said member 10 and carried back through the member 4 and drawn under the side portion 5 of said member 4, so that the free end portion 28 of the napkin or pad overlaps the adjacent portion 29; and by pulling upon both portions 28 and 29 the buckle members 4 and 10 are closed in clamping effect on the portions folded about the parts 11 and 5. This affords a secure fastening for the napkin or

pad which will not accidentally work loose, yet, at the same time, adjustment of the napkin or pad to the body of the wearer is readily and conveniently effected without necessitating removal of the article to accomplish the adjustment.

After the napkin or pad is attached, as above described, the wearer can draw the end portion of the napkin or pad further through the buckle, if necessary, by merely pulling the free end portion 28, either to bring the napkin or pad closer to the body or to adjust the form of the article. In the latter case, for example, if it is desired to draw the side marginal portions of the napkin or pad tighter and leave plenty of slack between the side marginal portions to create a hollow pocket or hammock effect, the corners of the free end portion 28 are alone pulled. The slightly arcuate or outwardly bowed form of the parts 5 and 11 facilitates the ideal attachment of the napkin or pad to the fastener and obviates the necessity for making the last aforesaid adjustment to any great extent, the curvature of the parts 5 and 11 being of relatively slight though predetermined degree.

The blunt toothed marginal portion 13 of the member 11 serves to grip more firmly the adjacent portions of the napkin or pad folded around the members 5 and 11 and adds to the security of the fastener, yet, as hereinabove stated, does not interfere with the necessary adjustments. The device is simple and compact, made of light weight material, yet strong and durable and is ideally adapted for the use more particularly intended. So, too, by having the attaching portion 9 for the supporting tab 1, offset as it is from the axis of the hinge members 7, the tendency is to throw the lower portion of the fastener inwardly towards the body of the wearer, but without uncomfortable or injurious pressure, thereby holding the napkin or pad closely and snugly to the person. Furthermore, the manner of attaching the napkin or pad to the fastener produces no appreciable protuberance or bulging of the outer garments of the wearer, which is an important advantage in the use of the device of the present invention.

It may be here noted that the illustrative figures of the drawing show the fastener in greatly enlarged or exaggerated size. The ideal proportions and dimensions of the members 4 and 10, as found from experimentation and actual use, is one inch inside measurement between the end bars 6 of the member 4 and between the end bars 14 of the member 10, and five sixteenths of an inch between the side bars 11 and 17 of said member 10. The invention, however, is not limited to any specific dimensions of the fastener members, except, that in use, the distance between the side bar 6 or 14, as the case may be, must be sufficient to accommodate the attached end portions of the napkin, pad or article without deforming the natural or normal shape of the napkin, pad or article.

Obviously, the structure of the fastener may be modified in many respects without in the least departing from the spirit and scope of the invention as defined in the appended claims. The invention, therefore, is not limited to the specific construction, arrangement and application of the device shown in the accompanying drawing.

What is claimed is:

1. The herein described fastener, comprising a wire member having an outwardly bowed side bar, right angular end bars, right angular hinge portions at the ends of said end bars remote from

said side bar, right angular members extending inwardly toward said outwardly bowed bar from said hinge portions, and a bar connecting said inwardly extending members and extending substantially parallel with said first named side bar, a companion member of sheet metal having hinged portions looped about said hinge portions of said wire member, said sheet metal member having a bar at its hinge side, end bars correlated to the end bars of said wire member, and a side bar correlated to the first mentioned side bar of the wire member and correspondingly bowed.

2. The fastener set forth in claim 1, and the correlated side bar of the sheet metal member being concavo-convex in cross section.

3. The herein described fastener, comprising a pair of co-operating buckle members hingedly attached together, the hinge including a looped tongue extension of one member, said looped extension being rolled generally round but having one flat and resiliently yieldable side portion, the other member having a hinge portion rotatable within said looped extension and being of generally round cross section but having a flat face at one side, said flat faces of both said looped and said hinged portions being substantially tangential with the arc of the round portion thereof, said hinge portion having corners at opposite sides of its flat face protruding at a distance from the axis greater than the radius of the round portion thereof.

4. The fastener as set forth in claim 3, and the hinge portion of the second mentioned buckle member having two opposite tapering faces approximately flat and merging at one extremity with the periphery of the round portion and joining angularly with the substantially tangential flat face.

5. A fastener of the character described, comprising a co-operating pair of buckle members hingedly attached together, the engaged hinge portions of said members being fitted to rotate generally loosely the one within the other, the outer one of said hinge portions having a part thereof flattened tangentially with respect to its generally round bearing surface and resiliently yieldable, and the inner hinge portion having a similarly flattened tangential face with peripherally protruding corners, whereby during part of the relative rotative movement of the one hinge portion with respect to the other impingement of a corner of the inner hinge portion occurs upon the flattened part of the outer hinge portion with a springing effect of the latter, after which

occurrence the cooperatively juxtaposed flattened parts of the two hinge portions maintain the two buckle members normally in the moved relation until forcibly moved reversely with such aforementioned impingement and springing effect.

6. The fastener set forth in claim 1, and the end bars of the sheet metal member having flanges at their inner margins, but being smooth and unobstructed at their outer margins.

7. A fastener for sanitary napkins, pads and the like, comprising a bail-like member in the form of a continuous open frame, one side of said member having opposed aligned hinge portions near its opposite ends, the portion of said side intermediate the hinge portions being inwardly offset but extending parallel with the axis of said hinge portions and the opposite side of said member being in substantially parallel relation to said inwardly offset portion, the inwardly offset portion provided for the attachment of a supporting element, and a correlated companion bail-like member comprising an open frame formed of sheet metal and conforming in general to the shape of said first described bail-like member, said companion member having looped extensions at one side, near the opposite ends thereof, pivotally sleeved on the hinge portions of said first described bail-like member, the opposite side of said second described bail-like member being concavo-convex in cross section and cooperatively conforming receptively to the side of said first described bail-like member paralleling its hinged and inwardly offset opposite side portions.

8. The fastener structure set forth in claim 7, and further describing the concavo-convex cross sectional side of the companion bail-like member as having a series of teeth formed on its inner marginal portion.

9. A fastener of the character described, comprising a pair of bail-like frame members hingedly attached together at one side, one of said members being made of material of round cross section, the companion member being of substantially the same general shape of said first described member but made of sheet metal, the side of said first described member opposite its side at which it is hinged to said companion member being slightly bowed arcuately outwardly and the corresponding side of said companion member being likewise bowed to cooperatively conform to and receive said bowed side of said first described member, said bowed side of said companion member being of concavo-convex cross section.