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E. JAFFE

2,058,020

SELF FASTENING BUTTON

Filed May 17, 1935

Fig. 1

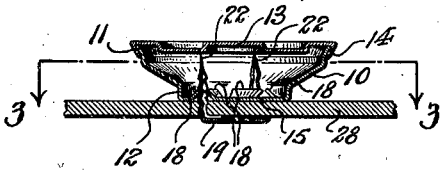


Fig. 2

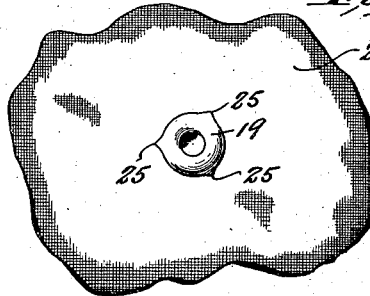


Fig. 3

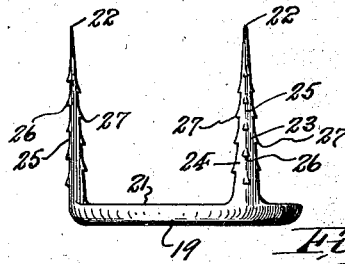
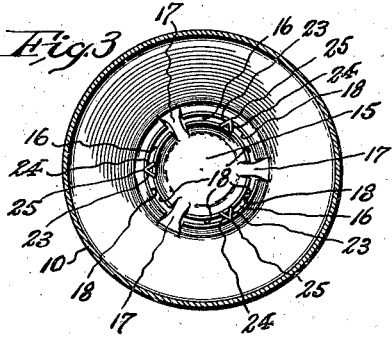


Fig. 4

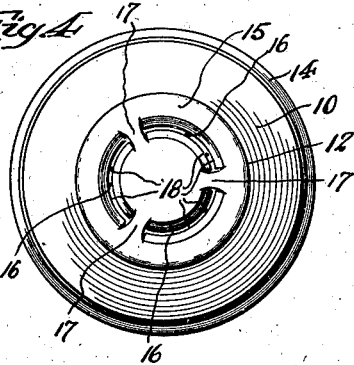


Fig. 5

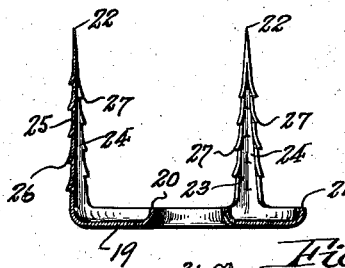


Fig. 7

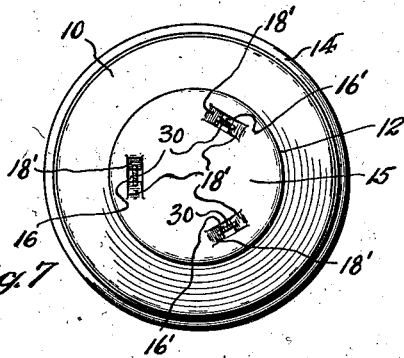


Fig. 6

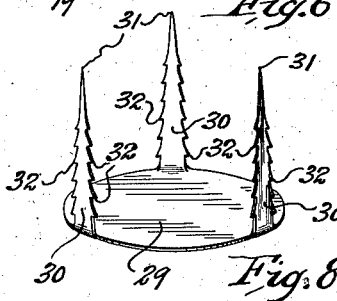


Fig. 8

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2,058,020

SELF-FASTENING BUTTON

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8 Claims. (Cl. 24-90)

This invention relates to improvements in self-fastening buttons for garments and the like, frequently referred to as "bachelor" buttons because adapted to be secured to the garment without the use of thread, as commonly done with sewn on buttons.

This invention has for a general object to provide a button having a body shell provided in its base with openings bordered by opposed inwardly pressed convergent clutch or gripping lips with which are engageable by a novel form of penetrating clutch prongs carried by an anchor piece, after said prongs are pushed through the material to which the button is desired to be attached, and thence into the button body shell with the anchor piece engaged against the back or inner face of said material.

The invention has for a more specific object to provide the openings of the button shell base which are bordered by said gripping lips in the form of arcuate slots, whereby the same may be easily located relative to the anchor-piece prongs, so as to make it easy and quick to assemble the button elements together in attached relation to the material.

The invention has for a further specific object to provide the anchor piece prongs of angular cross-sectional shape and with a plurality of serrations both along the apex of its angular faces as well as along the free margins thereof, whereby the prongs, when inserted through the gripping lip bordered openings of the body shell base, are firmly gripped by the opposed lips, and whereby such gripping is effective regardless of the extent of penetration of the prongs into the body shell as governed according to the particular thickness of material through which the prongs may first be passed. This novel construction of clutch prongs assuring a strong and uniform non-slipping or non-rotating connection between the button body and anchor piece at a plurality of points, so that the button will retain its position upon the material without the least risk of accidental loosening or displacement.

Other objects of this invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

Illustrative embodiments of the invention are shown in the accompanying drawing, in which:—

Fig. 1 is a vertical sectional view of the button according to this invention as operatively attached to material to be secured thereto; Fig. 2 is a back view of the attached button assembly; Fig. 3 is a horizontal section, taken on line 3-3

in Fig. 1, but drawn on an enlarged scale; Fig. 4 is a bottom view of the button body per se, also drawn on an enlarged scale; Fig. 5 is a side elevation, on a considerably enlarged scale, of the anchor piece and the novel clutch prong formation thereof; and Fig. 6 is a vertical sectional view of the same.

Fig. 7 is a bottom view of a modified form of the button body per se; and Fig. 8 shows another form of serrated pronged anchor piece usable with said modified form of button body.

Similar characters of reference are employed in the hereinabove described views, to indicate corresponding parts.

Referring to the drawing, the body of the button is preferably formed of a sheet metal stamping providing a hollow upwardly open body shell 10 having an outwardly flared marginal rim portion 11 and a central base portion 12 of reduced diameter. Applied over the upper open side of said body shell 10 is any suitable form of button top 13 having its marginal portions beaded over the shell rim portion 11, as at 14. Provided in the bottom wall 15 of the base portion 12 of the button body shell are a series of arcuate slot-like openings 16 arranged in an annular row concentric to the vertical axis of the button body shell; the same being separated by intervening necks 17 forming parts of the base portion bottom wall 15. The marginal portions bordering the opposite sides of said slot-like openings 16 are inwardly and upwardly pressed into the interior of the body shell to form opposed upwardly inclined convergent clutch or gripping lips 18 along the opposed sides of said slot-like openings 16. The convergent clutch or gripping-lips 18, by reason of their inwardly pressed and inclined relation to the plane of the bottom wall 15, form, on the exterior under side of the latter, inverted V-shaped guide troughs, the advantage of which will be presently referred to.

The anchor piece of the button device comprises an anchor plate 19, which may be of any suitable form; but which is preferably in the form of a perforate washer like body or annulus, having an upturned inner marginal flange 20 and a like upturned outer marginal flange 21, thereby not only stiffening the body or annulus against distortion, but, when applied to the back of the material to which the button is to be secured, permitting the flange edges to sink or bite into the material so as to assure a firm grip thereon well calculated to resist displacement or tearing or pulling through the material of the anchor piece as a whole, when the applied button is subjected to pulling strains

or stresses in use. Integral with the outer margins of the anchor plate 19 are a plurality of upstanding clutch prongs. These clutch prongs taper to sharp piercing points 22 at their free ends, and the same are of angular or hollow ribbed shape in cross-section, preferably comprising laterally angular sides 23 and 24 converging on an outwardly presented longitudinal central apex or rib 24. Along the apex or rib 25 are outwardly pressed a series of longitudinally spaced downwardly and outwardly inclined teeth or stop projections 26. In like manner, along the free margins of the sides 23 and 24 are formed a series of longitudinally spaced similar downwardly and outwardly inclined teeth or stop projections 27.

To mount the button on the material 28, to which it is desired to be secured, the anchor plate 19 is applied at the rear face of said material, and the clutch prongs thereof are thrust outwardly and thus pierced through the latter. The body of the button is now opposed to the outwardly projecting clutch prongs of the thus applied anchor plate 19, and the piercing points 22 of the latter are easily and quickly registered with the slot-like openings 16 in the bottom wall 15 of the button base portion 12, the inverted V-shaped guide troughs serving to quickly and easily guide the clutch prongs into registration with said openings 16 for entrance therethrough. This guiding effect in addition to the length of the openings 16, greatly facilitates the operation of entering the clutch prongs into operative relation to the button body, and eliminates necessity for feeling out the location of the receiving openings through which it is required to pass the clutch prongs. Once the free ends of the clutch prongs are entered in the openings 16, the operator merely presses the button body firmly down upon the clutch prongs, whereby the latter are moved into the button body interior and between opposed clutch or gripping lips 18. Owing to the tapering of the clutch-prongs, the clutch or gripping lips 18 will be spread or sprung apart by the in-wedging action of the clutch prongs, and will therefore be put under a tensional stress whereby the same will strongly grip the latter, which gripping effect increases proportionally to the degree of outward pulling stress which may be exerted upon the button in use. Owing to the substantially triangular cross-sectional shape of tapered clutch prongs, a three point engagement thereof by the opposed clutch or gripping lips 18 is attained; one clutch or gripping lip engaging the apex or rib 25, and the other or opposing clutch or gripping lip engaging, by spaced portions thereof, the respective free margins of the angular sides 23 and 24 of said clutch-prongs. This relation assures an extremely powerful "bite" of the clutch or gripping lips 18 upon the clutch prongs, whereby the button body is held engaged thereto against turning, shifting, wiggling or other undesired loose movement or play. In order to further assure a rigid and non-slipping attachment of the button body to the clutch prongs of the anchor plate, the chamfered teeth or stop-projections 26—27 respectively provided along the apex or rib and free margins of the sides of the clutch prongs, will, upon any tendency of the prongs to pull out and away from the button body, abut the free margins of the clutch or gripping lips, and will effectively arrest any such movement. It will be obvious, that the attachment means, thus operative, readily adjust themselves to any particular thickness of material 28, since the clutch prongs will be strongly gripped regardless of the longitudinal

extent of their projection into the button body interior, the clutch or gripping lips readily yielding to the entrance thereof to any degree.

While the above-described constructions constitute a preferred form of button body and serrated pronged anchor piece cooperative therewith, I have shown in Figs. 7 and 8 a somewhat modified and simpler arrangement of the button construction which satisfies the general objects and which is within the principles of the broader aspects of this invention. In this modified arrangement a plurality of spaced openings 16' are formed in the bottom wall 15 of button base portion 12, the ends of said openings 16' being bordered by inwardly pressed convergently inclined and opposed clutch or gripping lips 18'. The anchor piece for use with this arrangement of the clutch or gripping lips is shown in Fig. 8, and may comprise a body disc or plate 29 from the margins of which spring a plurality of upstanding flat clutch prongs 30, the lateral edges of which taper toward the free ends of the prongs so as to terminate in sharp piercing points 31. Formed along the said lateral edges of these prongs are a series of longitudinally spaced downwardly and outwardly inclined teeth or stop projections 32. In the use of this modified button structure, the clutch prongs 30 are pierced through the material to which the button is to be fastened, and thereupon entered through the openings 16' with their opposite serrated lateral edges opposed to the convergent clutch or gripping lips 18, which yield to the inward projection of the clutch prongs, and which firmly grip the edges of the latter, the serrations 32 resisting any outward retraction of the thus entered prongs. It will thus be obvious that a strongly anchored attachment of the button body to the material upon which the same is mounted will be assured.

Having now described my invention, I claim:—

1. In a button device of the kind described, a hollow button body having in its bottom wall at least three openings spaced apart on a line concentric to the vertical axis of said body, said openings being bordered by inwardly pressed convergently inclined and opposed clutch lips, an anchor plate, said anchor plate having tapered clutch prongs projecting therefrom and corresponding in number to the number of said openings, said prongs terminating at their free ends in sharp piercing points, and said prongs having stop-teeth laterally projecting therefrom for engagement by the opposed clutch lips.

2. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of spaced arcuate openings concentric to the vertical axis of such body, said openings being bordered by inwardly pressed convergently inclined and opposed clutch lips, an anchor plate, said anchor plate having tapered clutch prongs projecting therefrom and terminating at their free ends in sharp piercing points, and a series of longitudinally spaced stop-teeth along opposite lateral portions of said prongs adapted to be engaged by the free ends of the opposed clutch lips to prevent retraction of said prongs from said button body.

3. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of openings bordered by inwardly pressed convergently inclined and opposed clutch lips, an anchor plate, said anchor-plate having tapered clutch prongs projecting therefrom and terminating at their free ends in sharp piercing points, said clutch prongs being of hollow ribbed

shape in cross-section as formed by angular sides converging on an outwardly presented longitudinal central rib, and a plurality of stop-teeth spaced along said central rib and along the free margins of said angular sides of the clutch prongs.

5 4. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of openings bordered by inwardly pressed convergently inclined and opposed clutch lips, an anchor plate comprising an annular body having rearwardly projected inner and outer marginal flanges to stiffen the same and to grip the face of material against which said anchor plate is applied, said anchor plate having tapered clutch prongs projecting from the outer marginal flanges thereof and terminating in sharp piercing points, said clutch prongs being of hollow ribbed shape in cross section as formed by angular sides converging on an outwardly presented longitudinal central rib, and a plurality of stop-teeth spaced along said central rib and along the free margins of said angular sides of the clutch prongs.

5 5. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of arcuate slot-like openings arranged in an annular row concentric to the longitudinal vertical axis of said button body, convergently inclined and opposed clutch lips inwardly struck from said bottom wall along the margins of said slot-like openings, an anchor plate, said anchor plate having tapered clutch prongs projecting therefrom and terminating at their free ends in sharp piercing points, said clutch prongs being of hollow ribbed shape in cross-section as formed by angular sides converging on an outwardly presented longitudinal central rib, and a plurality of stop-teeth spaced along said central rib and along the free margins of said angular sides of the clutch prongs.

40 6. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of arcuate slot-like openings arranged in an annular row concentric to the longitudinal vertical axis of said button body, convergently

inclined and opposed clutch lips inwardly struck from said bottom wall along the margins of said slot-like openings, an anchor plate comprising an annular body having rearwardly projected inner and outer marginal flanges to stiffen the same and to grip the face of material against which said anchor plate is applied, and said anchor plate having tapered clutch prongs projecting from the outer marginal flanges thereof and terminating in sharp piercing points, said clutch prongs being of hollow ribbed shape in cross section as formed by angular sides converging on an outwardly presented longitudinal central rib.

7. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of arcuate slot-like openings arranged in an annular row concentric to longitudinal vertical axis of said button body, convergently inclined and opposed clutch lips inwardly struck from said bottom wall along the margins of said slot-like openings, an anchor plate comprising an annular body having rearwardly projected inner and outer marginal flanges to stiffen the same and to grip the face of material against which said anchor plate is applied, said anchor plate having tapered clutch prongs projecting from the outer marginal flanges thereof and terminating in sharp piercing points, said clutch prongs being of hollow ribbed shape in cross section as formed by angular sides converging on an outwardly presented longitudinal central rib, and a plurality of stop-teeth spaced along said central rib and along the free margins of said angular sides of the clutch prongs.

8. In a button device of the kind described, a hollow button body having in its bottom wall a plurality of openings bordered by inwardly pressed convergently inclined and opposed clutch lips, an anchor plate, said anchor plate having tapered clutch prongs of substantially triangular cross-sectional shape, and said clutch prongs having a plurality of stop-teeth spaced longitudinally therealong.