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DOOR HANDLE, DRAWER PULL, AND LIKE HARDWARE ARTICLE

Filed Nov. 23, 1944

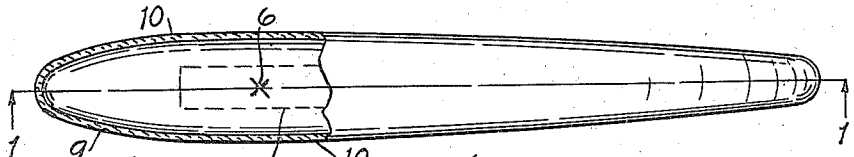


FIG. 2

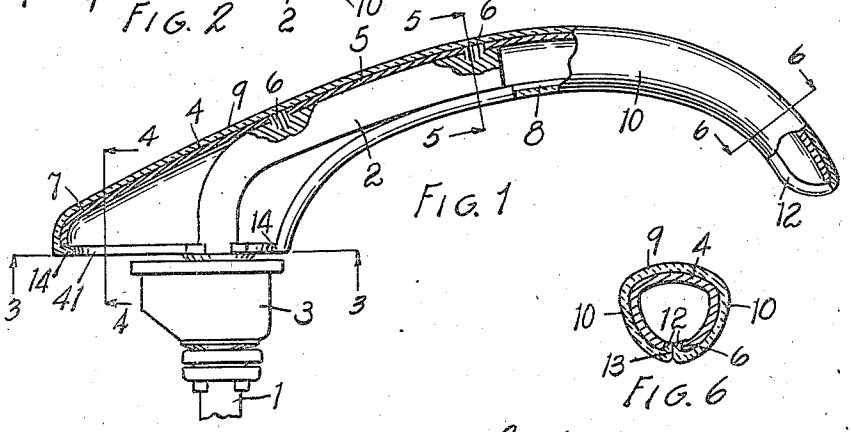


FIG. 1

FIG. 6

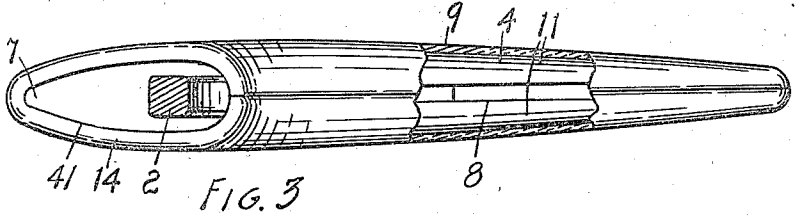


FIG. 3

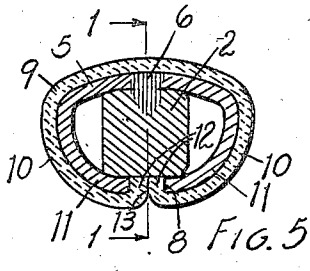


FIG. 5

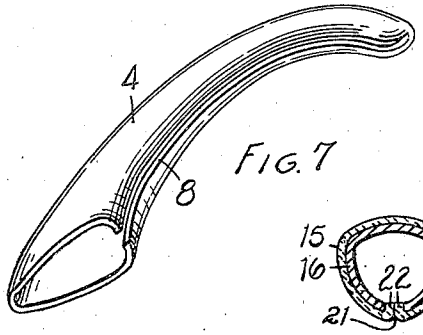


FIG. 7

FIG. 9

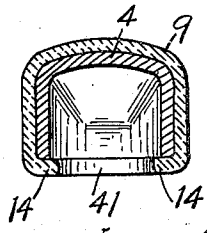


FIG. 4

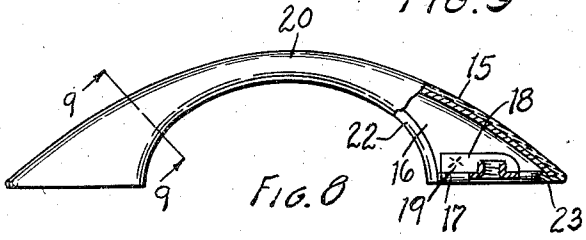


FIG. 8

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DOOR HANDLE, DRAWER PULL, AND LIKE HARDWARE ARTICLES

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9 Claims. (Cl. 292—347)

1

This invention relates to improvements in door handles, drawer pulls and like hardware articles.

The main objects of this invention are:

First, to provide a hardware article of the door handle type which may be very economically produced in a wide variety of shapes and at the same time is economical in structure and strong and durable.

Second, to provide an article of hardware of this type in which the exterior is formed of moldable thermoplastic material and may be made in a wide variety of designs so far as longitudinal and transverse conformation is concerned and in a wide range of colors for adapting the same to finish and color schemes of related parts.

Objects relating to details and economics of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

Preferred embodiments of the invention are illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary side elevation partially in central longitudinal section on line 1—1 of Figs. 2 and 5 of a door handle embodying our invention.

Fig. 2 is a fragmentary front elevational view, the casing being partially in transverse longitudinal section.

Fig. 3 is an inside view sectioned on line 3—3 of Fig. 1, the casing being partially broken away and partially in longitudinal section.

Fig. 4 is an enlarged transverse section on line 4—4 of Fig. 1.

Fig. 5 is an enlarged transverse section on line 5—5 of Fig. 1.

Fig. 6 is an enlarged transverse section on line 6—6 of Fig. 1.

Fig. 7 is a perspective view of the handle bar or core member of the embodiment of our invention shown in Figs. 1 to 6.

Fig. 8 is a fragmentary side elevational view partially in central longitudinal section of an adaptation of our invention to a drawer pull.

Fig. 9 is a cross section on line 9—9 of Fig. 8.

In the embodiment of our invention illustrated, 1 designates the spindle or chill of a door handle, the outer end of this spindle terminating in a laterally turned arm 2 as shown in Fig. 1. 3 is a combined supporting bearing and escutcheon unit.

In Figs. 1 to 7 inclusive, we illustrate our invention as embodied in a door handle. In this embodiment, we provide a tubular longitudinally curved handle bar or core member 4 formed of

2

sheet metal. This core member is longitudinally and transversely conformed or shaped to the desired design. At its base end, the core member has a rearwardly facing opening 41 receiving the spindle. The arm of the spindle is curved to fit against the outer wall 5 of the handle bar and is welded thereto at 6, thus providing a rigid connection for the sheet metal handle bar or core to the spindle arm, the spindle arm constituting a reinforcing and supporting member for the sheet metal handle bar or core so that it may be formed of quite light gauge stock and still possess rigidity and strength and this is particularly true inasmuch as the member 4 is of tubular section.

The handle bar or core member has a heel portion 7 which extends rearwardly beyond the spindle as is clearly shown in the drawing. At its inner side, the handle bar or core member has a longitudinal slot 8 extending from the opening 41 at its base end to its tip.

The tubular casing 9 is preformed of material that is commonly known in the art as thermoplastic material, this material being of a non-metallic nature and rendered plastic and moldable by heat. "Tenite" is a suitable example but other moldable thermoplastic materials may be used. The casing 9 is cross-sectionally shaped to closely embrace the handle bar or core member and is preferably in supported engagement therewith throughout as is illustrated in the longitudinal and sectional views of the drawing.

The side walls 10 of the casing are in practice preferably plasticized and molded around the side and inner walls 11 of the core member and the edges 12 of the casing are turned inwardly into interlocking engagement with the longitudinal slot 8, see Figs. 1, 3, 5 and 6. The inturned portions 12 are plasticized and turned inwardly and the inturned portions are preferably in side by side abutting relation as shown at 13, the width of the groove being substantially twice the wall thickness of the casing. By reference particularly to Figs. 5 and 6 it will be noted that the longitudinal edge portions of the tubular core member 4 adjacent the longitudinal slot 8 thereof are disposed in planes substantially at right angles to the inturned edge portions 12 of the casing 9 which are disposed in said slot. This facilitates a relatively strong handle structure of substantial cross sectional area from a relatively small amount of metal in the core member 4 and thermoplastic material in the tubular casing 9. The edges of the heel portion of the casing are

turned inwardly at 14 around the edges of the heel portion of the handle bar or core, see Figs. 1 and 4. This not only effectively secures and integrally unites the casing to the handle bar or core member but it provides a very attractive structure, there being no exposed metal parts and therefore no finishing of metal parts is required.

The casing being formed of thermoplastic material, as previously described, may be of a wide range of colors and forming the core member or handle bar of sheet metal, it may be readily formed in quite a wide range of designs—that is, so far as longitudinal curvature or shape and cross-sectional shape is concerned.

In Figs. 8 and 9, we illustrate our invention in a drawer pull designated generally by the numeral 15. In this structure, the handle bar or core member 16 is symmetrical at each end and is provided with inwardly facing base openings 17. The attaching member 18 is disposed within and welded to the walls of the core member at 19. The casing 20 is formed of thermoplastic moldable material and in this case is conformed longitudinally and cross-sectionally to the core member as has been described. The core member 16 has its longitudinal edges slightly spaced from each other forming a longitudinal slot 21 extending between the openings 17. The edges of the casing are turned inwardly into the slot as shown at 22 substantially as in the handle embodiment which has been described. The edges 23 are flanged inwardly around the edges of the base opening 17 substantially as in the handle embodiment.

We have illustrated and described two embodiments which we consider highly practical. We have not attempted to illustrate or describe other embodiments or adaptations as we believe this disclosure will enable those skilled in the art to embody or adapt our invention as may be desired.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a hardware article, the combination with a spindle provided at its outer end with a laterally disposed longitudinally curved arm of substantial length and having an outer curved face and side faces on opposite sides of said curved face, of a tapered longitudinally curved tubular handle bar of sheet metal opening inwardly at the base end thereof to receive said spindle, said spindle arm being arranged within said handle bar and said handle bar being supportingly engaged by and welded to the outer curved face of said arm, and the side walls of the handle bar being substantially spaced from said side faces of the curved arm, substantially throughout the width of said side faces, said handle bar being extended rearwardly beyond said spindle to provide a heel portion and having longitudinal edge portions projecting towards each other adjacent the inner side of said spindle arm and spaced from each other forming a longitudinal slot in its inner side extending from its said base and opening to the tip of the handle bar, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said handle bar, the sides of said casing being molded around the inner curved side of said handle bar to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, the width of the said slot being substantially twice the wall thickness of the casing, the inturned edge portions of said casing being in side by side abutting relation, the edges of the heel portion of said casing being flanged inwardly around the edges of the heel portion of said handle bar.

2. In a hardware article, the combination with a spindle provided at its outer end with a laterally disposed longitudinally curved arm of substantial length and having an outer curved face and side faces on opposite sides of said curved face, of a tapered longitudinally curved tubular handle bar of sheet metal opening inwardly at the base end thereof to receive said spindle, said spindle arm being arranged within said handle bar and said handle bar being supportingly engaged by and welded to the outer curved face of said arm, and the side walls of the handle bar being substantially spaced from said side faces of the curved arm, substantially throughout the width of said side faces, said handle bar having longitudinal edge portions projecting towards each other adjacent the inner side of said spindle arm and spaced from each other forming a longitudinal slot in its inner side extending from its said base end opening to the tip of the handle bar, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said handle bar, the sides of said casing being molded around the inner curved side of said handle bar to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, the width of the said slot being substantially twice the wall thickness of the casing, the inturned edge portions of said casing being in side by side abutting relation.

3. In a hardware article, the combination with a spindle provided at its outer end with a laterally disposed longitudinally curved arm of substantial length and having an outer curved face and side faces on opposite sides of said curved face, of a tapered longitudinally curved tubular handle bar of sheet metal opening inwardly at the base end thereof to receive said spindle, said spindle arm being arranged within said handle bar and said handle bar being supportingly engaged by and welded to the outer curved face of said arm, and the side walls of the handle bar being substantially spaced from said side faces of the curved arm, substantially throughout the width of said side faces, said handle bar being extended rearwardly beyond said spindle to provide a heel portion and having longitudinal edge portions projecting towards each other adjacent the inner side of said spindle arm and spaced from each other forming a longitudinal slot in its inner side extending from its said base end opening to the tip of the handle bar, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said handle bar, the sides of said casing being molded around the inner curved side of said handle bar to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, the edges of the heel portion of said casing being flanged inwardly around the edges of the heel portion of said handle bar.

4. In a hardware article, the combination with a spindle provided at its outer end with a laterally disposed longitudinally curved arm of substantial length and having an outer curved face and side faces on opposite sides of said curved face, of a tapered longitudinally curved tubular handle bar of sheet metal opening inwardly at the base end

thereof to receive said spindle, said spindle arm being arranged within said handle bar and said handle bar being supportingly engaged by and welded to the outer curved face of said arm, and the side walls of the handle bar being substantially spaced from said side faces of the curved arm, substantially throughout the width of said side faces, said handle bar having longitudinal edge portions projecting towards each other adjacent the inner side of said spindle arm and spaced from each other forming a longitudinal slot in its inner side extending from its said base end opening to the tip of the handle bar, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said handle bar, the sides of said casing being molded around the inner curved side of said handle bar to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof.

5. In a hardware article, the combination of a longitudinally curved tubular core member opening inwardly at at least one end thereof and having longitudinal edge portions thereof on the inner curved side thereof extending towards each other and laterally spaced from each other to form a longitudinal slot therebetween extending between the ends of the core member, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said core member, the sides of said casing being molded around the inner curved side of said core member to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, the width of the said slot being substantially twice the wall thickness of the casing, the inturned edge portions of said casing being in side by side abutting relation, said longitudinal edge portions of the core member adjacent the longitudinal slot thereof being disposed in planes substantially at right angles to the inturned edge portions of the casing which are disposed within said slot, the edges of the end portion of said casing being flanged inwardly around the edges of the end portion of said core member.

6. In a hardware article, the combination of a longitudinally curved tubular core member opening inwardly at at least one end thereof and having longitudinal edge portions thereof on the inner curved side thereof extending towards each other and laterally spaced from each other to form a longitudinal slot therebetween extending between the ends of the core member, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said core member, the sides of said casing being molded around the inner curved side of said core member to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, said longitudinal edge portions of the core member adjacent the longitudinal slot thereof being disposed in planes substantially at right angles to the inturned edge portions of the casing which are disposed within said slot, the edges of the end portion of said casing being flanged inwardly around the edges of the end portion of said core member.

7. In a hardware article, the combination of a

longitudinally curved tubular core member opening inwardly at at least one end thereof and having longitudinal edge portions thereof on the inner curved side thereof extending towards each other and laterally spaced from each other to form a longitudinal slot therebetween extending between the ends of the core member, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said core member, the sides of said casing being molded around the inner curved side of said core member to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, said longitudinal edge portions of the core member adjacent the longitudinal slot thereof being disposed in planes substantially at right angles to the inturned edge portions of the casing which are disposed within said slot, the width of the said slot being substantially twice the wall thickness of the casing, the inturned edge portions of said casing being in side by side abutting relation.

8. In a hardware article, the combination of a tapered longitudinally curved tubular core member opening inwardly at at least one end thereof and having longitudinal edge portions thereof on the inner curved side thereof extending towards each other and laterally spaced from each other to form a longitudinal slot therebetween extending between the ends of the core member, an attaching member disposed within said open end and secured therein, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said core member, the sides of said casing being molded around the inner curved side of said core member to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, said longitudinal edge portions of the core member adjacent the longitudinal slot thereof being disposed in planes substantially at right angles to the inturned edge portions of the casing which are disposed within said slot, the edges of the end portion of said casing being flanged inwardly around the edges of the open end portion of said core member.

9. In a hardware article, the combination of a tapered longitudinally curved tubular core member opening inwardly at at least one end thereof, and having longitudinal edge portions thereof on the inner curved side thereof extending towards each other and laterally spaced from each other to form a longitudinal slot therebetween extending between the ends of the core member, an attaching member disposed within said open end and secured therein, and a tubular casing of thermoplastic moldable material conformed longitudinally and cross-sectionally to closely embrace said core member, the sides of said casing being molded around the inner curved side of said core member to closely embrace the same and the edges of the casing being disposed inwardly within the said longitudinal slot thereof, the planes of said longitudinal edge portions of the core member adjacent the longitudinal slot thereof being disposed substantially at right angles to the inturned edge portions of the casing which are disposed within said slot.

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