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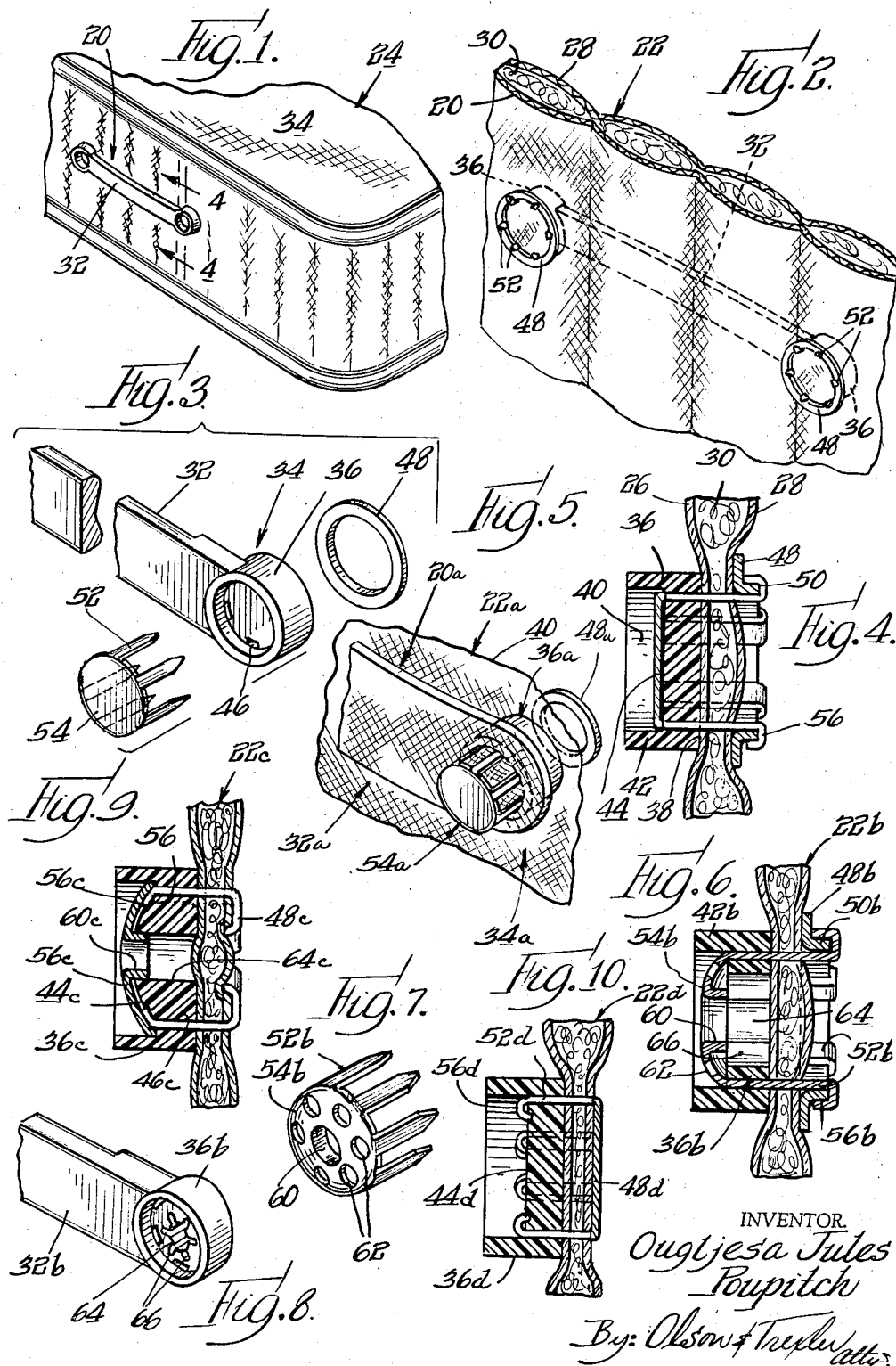
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MATTRESS HANDLE

Filed Sept. 30, 1957

2 Sheets-Sheet 1



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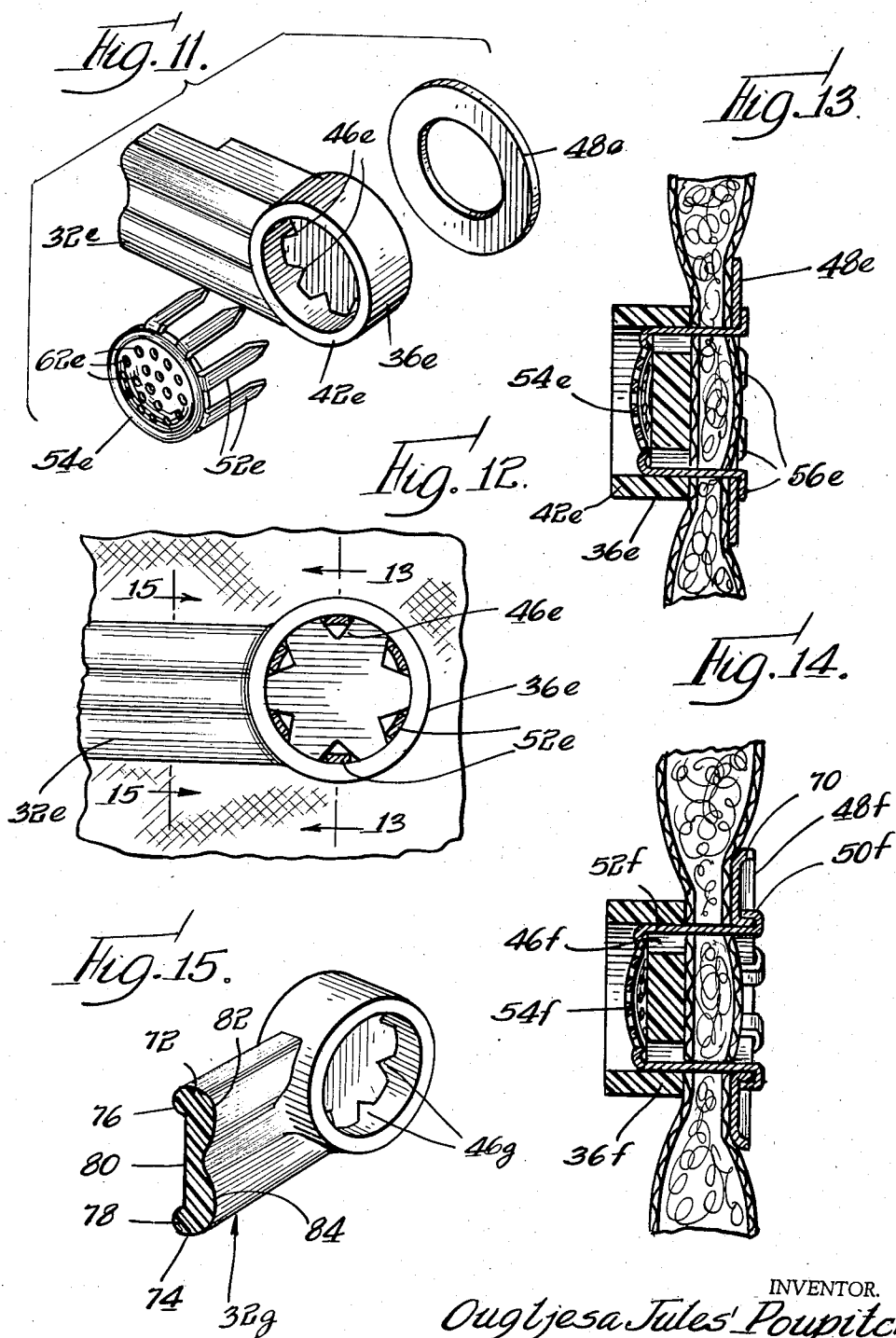
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2,876,465

MATTRESS HANDLE

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15 Claims. (Cl. 5—345)

The present invention relates to a novel handle structure, and more particularly to a novel handle structure of the type adapted to be applied to an article for lifting purposes.

The present invention contemplates a handle structure which is especially suitable for application to a portion of a workpiece made from fabric or other pierceable material, and while many uses for the structure of the present invention may suggest themselves it will be described with particular reference to its use in connection with a mattress or similar workpiece in order to facilitate the disclosure.

As will be understood, mattress structures are usually provided with edge or peripheral cover strips formed from one or more pieces of fabric or ticking and frequently including a layer of felt padding or the like. Handle devices have heretofore been secured to such peripheral covering strips for the purpose of facilitating lifting or maneuvering of the mattress, and considerable difficulty has been encountered in providing a handle device which may be easily and economically manufactured and applied to the peripheral cover strip and which is also sufficiently rugged and durable to be commercially acceptable. Therefore it is an important object of the present invention to provide a novel, rugged and durable handle structure which may be economically manufactured and which may be easily and securely fastened to a workpiece formed from fabric and the like such as a peripheral cover of a mattress.

A more specific object of the present invention is to provide novel fastening or securing means for a handle structure of the above described type, which fastening means may have a portion integrally connected to a handle element of the handle structure. Another specific object of the present invention is to provide a handle structure of the above described type having novel fastening or securing means provided separately from but easily connectable to a separate handle element of the handle structure.

A further object of the present invention is to provide a novel handle structure of the type mentioned in the preceding paragraphs wherein the fastening means may be constructed so as to provide breather openings for permitting ventilation of the interior of a workpiece such as a mattress.

Other objects and advantages of the present invention will become apparent from the following description and the accompanying drawings wherein:

Fig. 1 is a fragmentary perspective view showing a handle structure formed in accordance with the present invention and mounted on peripheral cover means of a mattress;

Fig. 2 is an enlarged fragmentary perspective view showing the inner surface of a peripheral cover means of a mattress structure and the manner in which the novel handle structure is secured to the cover means;

Fig. 3 is a fragmentary exploded perspective view

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showing a handle structure incorporating features of the present invention;

Fig. 4 is an enlarged fragmentary sectional view taken along line 4—4 in Fig. 1;

Fig. 5 is a fragmentary partially exploded perspective view showing a handle structure incorporating a modified form of the present invention;

Fig. 6 is a cross sectional view similar to Fig. 4 but shows another modified form of the present invention;

Fig. 7 is a perspective view showing an element of the fastening means of the embodiment shown in Fig. 6;

Fig. 8 is a fragmentary perspective view of a handle member and an integral portion of the fastening device of the embodiment shown in Fig. 6;

Fig. 9 is a fragmentary cross sectional view similar to Fig. 4 but shows another modified form of the present invention;

Fig. 10 is a similar fragmentary cross sectional view showing another modified form of the present invention;

Fig. 11 is an exploded perspective view showing another modified form of this invention;

Fig. 12 is an elevational view, partially broken away, showing the parts of Fig. 11 assembled with a workpiece;

Fig. 13 is a sectional view taken along line 13—13 in Fig. 12;

Fig. 14 is a sectional view similar to Fig. 13 but showing another slightly modified form of the present invention; and

Fig. 15 is a fragmentary perspective view showing another slightly modified form of the present invention.

Referring now more specifically to the drawings wherein like parts are designated by the same numerals throughout the various figures, a handle structure 20 incorporating one embodiment of the present invention is shown in Figs. 1—4. The handle structure is adapted to be applied to peripheral cover means 22 of a mattress 24. While the cover means 22 may be formed in accordance with various known practices, the cover means shown for the purpose of illustration herein is provided by a quilted assembly of outer and inner fabric strips 26 and 28 retaining a layer of padding material 30 therebetween.

The handle structure 20 is provided by an elongated handle element 32 which is adapted to have its opposite ends connected to the peripheral cover means 22 by identical fastening devices 34. Each of the fastening devices 34 is provided with a plastic body member 36 having a generally flat end surface 38 adapted to be placed against the outer side or surface of the cover means 22. The opposite end of the plastic body 36 is formed with a recess 40 so as to provide an axially extending flange 42 and a recessed end surface 44 well within the terminal free end of the annular flange 42. Annularly spaced relatively small apertures 46 extend through the body member 36 and generally parallel to its axis, which apertures are spaced around a circle having a diameter only slightly less than the internal diameter of the flange 42 for the purpose described below. It is important to note that in this embodiment the handle element 32 is formed of plastic material and the plastic body members 36 of each of the fastening devices are integrally connected to opposite ends of the handle element. Various strong and durable plastic materials such as nylon may be used for molding the handle element and the body members 36 in one piece.

Each of the fastening devices 34 includes a member 48 adapted to be positioned against the inner surface of the cover means 22. In this embodiment the member 48 is provided by an annular sheet material or metal body having an inner-marginal axially extending flange

50 which has an internal diameter similar to the internal diameter of the flange 42 of the plastic body member. A plurality of integrally connected prongs 52 is provided for connecting the body member 36 of each fastening device to its associated member 48. In this embodiment the prongs 52 are integrally connected with each other by means of a head member 54 having a diameter slightly less than the internal diameter of the plastic flange 42. The prongs 52 are adapted to be inserted through the apertures 46, and the prongs are provided with pointed ends so that they may readily pierce the fabric workpiece or cover means 22. As shown best in Figs. 2 and 4, the length or axial extent of the prongs 52 is sufficient to enable entering end portions of the prongs to pass entirely through the assembly provided by the plastic body 36, the cover means 22 and the member 48, which entering end portions 56 may then be bent by suitable die means, not shown, so as to extend around and back along the flange 50 for securely and positively connecting the parts together. It will be appreciated that the member 54 and prongs 52 may be easily and economically formed from sheet material such as steel. The prongs are provided with a generally rectangular transverse cross sectional shape which is similar to the generally rectangular transverse cross sectional shape of the apertures 46 through the plastic body member 36. However, the transverse dimensions of the prongs 52 are initially slightly greater than the corresponding transverse dimensions of the apertures 46 so as to insure a tight fit between the prongs and the plastic body member.

Fig. 5 shows a handle structure which is similar to the structure described above as indicated by the application of identical reference numerals with the suffix *a* added to corresponding elements. In this embodiment the handle element 32*a* is formed separately from the plastic body members 36*a* of the fastening devices 34*a* of which only one is shown. The handle member 32*a* is formed from a suitable fabric material. The handle member 32*a* is adapted to be pierced by the prongs 52*a* as indicated in Fig. 5 so that it is clamped between the body member 36*a* and the member 54*a*. Thus it will be appreciated that the handle member may be easily and securely connected to the fastening devices at the same time the fastening devices are applied to the cover means 22*a*.

Figs. 6, 7 and 8 show another embodiment of the present invention which is similar to the structures described above as indicated by the application of identical reference numerals with the suffix *b* added to corresponding elements. In this embodiment the head member 54*b* is provided with a central opening defined by an axially extending short flange 60. In addition, the head member is curved or dome-shaped and is provided with a plurality of annularly arranged apertures 62. The plastic body member 36*b* is provided with a central aperture 64 and axially extending slots 66 radiating from the aperture 64. The aperture 64 and the slots respectively register with the central opening and annularly arranged apertures in the head member 54*b* so as to provide vent opening means for permitting ventilation of the interior of a workpiece such as a mattress through the fastening device.

Fig. 9 shows another modified form of the present invention which is similar to the devices described above as indicated by the application of identical reference numerals with the suffix *c* added to corresponding elements. In this embodiment the prongs 52*c* are integrally joined to the member 48*c* at the inner side of the fabric cover means 22*c*. This device is secured to the cover means in much the same manner as the devices described above except that the prongs are pressed through the fabric cover means from the inner surface thereof and then through the apertures or slots 46*c* in the plastic body member 36*c*. End portions 56*c* of the prongs are

then bent so as to overly the outwardly facing surface 44*c* of the plastic body member. In this embodiment the surface 44*c* is dome-shaped and a complementary dome-shaped sheet material member 54*c* is inserted into the recess in the plastic body member with a force fit for overlying the inwardly turned ends of the prongs. The member 54*c* positively restrains the ends of the prongs against being reversely bent so as to preclude any possibility of the fastening device coming apart.

Fig. 10 shows a device similar to those described above as indicated by the application of identical reference numerals with the suffix *d* added to corresponding parts. This embodiment utilizes prongs 52*d* which are integral with the inner member 48*d* in much the same manner as the embodiment shown in Fig. 9. However, in this device the outer surface 44*d* of the plastic member is planar and the ends 56*d* of the prongs are reversely bent for biting into the plastic body member securely to fasten the parts together.

In Figs. 11 through 13 there is shown another embodiment of the present invention which is similar to the structures described above as indicated by the application of identical reference numerals with the suffix *e* added to corresponding elements. In this embodiment the apertures 46*e* have a triangular cross sectional shape while the prongs 52*e* have a rectangular shape. As a result, the apertures 46 will provide vent openings even when the prongs are forced or wedged into the apertures as shown in Figs. 12 and 13. This manner of providing vent openings is especially advantageous when a head member 54*e* having numerous small perforations 62*e* therethrough is provided. It is also to be noted that in this embodiment the washer-like member 48*e* is substantially flat or in other words has inner and outer margins of substantially the same thickness whereby it may be more readily fed through a coined changing mechanism, not shown, to a position for assembly with the remainder of the parts.

Fig. 14 shows a structure essentially similar to that described above as indicated by the application of identical reference numerals with the suffix *f* added to corresponding elements. In this embodiment the washer-like member 48*f* is provided with an internal axially extending flange 50*f* for cooperating with ends of the prongs 52*f*. The washer 48*f* is also provided with an outer peripheral axially extending flange 70 of the same length as the flange 50*f*. This washer-like member like the member 48*e* has substantially uniform inner and outer marginal thicknesses so that it may be more readily fed to a position for assembly with the remaining parts.

Fig. 15 shows a slightly modified plastic handle member 32*g* which may be used in place of any of the plastic handle members in the embodiments described above. The handle member 32*g* differs in that it is provided with generally rounded beads 72 and 74 along its opposite longitudinal margins, which beads have relatively small sections 76 and 78 extending upwardly or outwardly from a central web section 80. Relatively large rounded portions 82 and 84 of the beads project downwardly or inwardly from the central web section of the handle member. These beads increase the strength and ruggedness of the handle member and also provide rounded surfaces for promoting the comfort of a user during lifting or handling of a mattress.

While the preferred embodiments of the present invention have been shown and described herein, it is obvious that many structural details may be changed without departing from the spirit and scope of the appended claims.

The invention is claimed as follows:

1. A handle structure for attachment to a workpiece of the type described comprising plastic handle means, and fastening means connected to said handle means, said fastening means including a plastic body member integral with said handle means and having a plurality

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of annularly spaced apertures therethrough and adapted to be positioned against one side of said workpiece, said body member including an annular axially extending peripheral flange surrounding said apertures and projecting outwardly for defining a recess at an end of said body member into which said apertures open, said apertures being located substantially immediately adjacent said flange a member positionable against the opposite side of said workpiece, and means including a plurality of prongs for connecting said members together and insertable through said apertures and adapted to pierce said workpiece, said prongs having deformable entering end portions which may be bent over one of said members for connection thereto when the fastening means is fully assembled with the workpiece, an end of said last mentioned means being substantially completely located within said recess.

2. A handle structure, as defined in claim 1, wherein said apertures through said body member initially have transverse cross sectional shapes of predetermined size, said prongs having transverse cross sectional shapes larger than those of the apertures whereby to obtain a force fit between the prongs and the plastic body member when the prongs are inserted through the apertures.

3. A handle structure, as defined in claim 1, wherein said body member and said second mentioned member have aperture means therethrough for providing a breather opening through the fastening means.

4. A handle structure, as defined in claim 1, wherein said prongs are integral with said second mentioned member, said deformable entering end portions being bent over said body member when the fastening means is fully assembled with the workpiece.

5. A handle structure, as defined in claim 1, which includes a third member overlying an outer surface of said body member, said prongs being integral with said third member, said deformable entering ends of the prongs overlying said second mentioned member when the fastening means is fully assembled with the workpiece.

6. A fastening device of the type described for application to a workpiece comprising a plastic body member adapted to be positioned against one side of a workpiece, means defining a plurality of annularly spaced apertures through said body member, a second member positionable against an opposite side of a workpiece and in alignment with said body member, and means for interconnecting said members including a plurality of annularly arranged axially extending pointed and generally flat sheet material prongs for passing through said apertures and piercing the workpiece and interconnecting said members when the device is fully applied to the workpiece.

7. A fastening device, as defined in claim 6, wherein said prongs have transverse dimensions larger than initial corresponding transverse dimensions of said apertures

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so that the prongs will fit within the apertures with a force fit, and said prongs including deformable free end portions which may be bent over one of said members for connection thereto when the device is fully applied to the workpiece.

8. A fastening device, as defined in claim 7, wherein said prongs are integral with said second member, said deformable end portions overlying said plastic body member when the device is fully applied to the workpiece.

9. A fastening device, as defined in claim 8, wherein said plastic body member includes an annular axially extending flange surrounding said apertures, said device including a third member for fitting within said flange and substantially abutting the deformed end portions of the prongs when the device is fully applied to the workpiece for preventing the end portions from being reversely bent.

10. A fastening device, as defined in claim 6, which includes a third member, said prongs being integral with said third member, said third member overlying said plastic body member and said deformable ends of the prongs extending over said second member when the device is fully assembled with the workpiece.

11. A fastening device, as defined in claim 6, wherein said apertures have a predetermined cross sectional shape and said prongs have a smaller cross sectional shape whereby said apertures will provide vent openings.

12. A fastening device as defined in claim 6, wherein said second member is annular, said prongs having end portions adapted to extend along an inner margin of said annular member, and said annular member having inner and outer margins of substantially the same axial thickness.

13. A fastening device as defined in claim 12, wherein said annular member is substantially flat.

14. A fastening device as defined in claim 12, wherein said annular member includes inner and outer marginal axially extending flanges.

15. A fastening device as defined in claim 6, wherein said plastic body member includes an axially extending peripheral flange surrounding said apertures and projecting axially outwardly for defining a recess at an outer end of said body member into which said apertures open for accommodating an outer end of said interconnecting means substantially entirely within said recess.

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