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(54) CLIPS OF ATTACHMENTS FOR LABELLING AND THE LIKE AND METHOD OF MANIPULATING SAME

(71) We, DENNISON MANUFACTURING COMPANY, a corporation organised and existing under the laws of the State of Nevada, United States of America, of 300 Howard Street, Framingham, Massachusetts, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to attachments of a type designed to be inserted through an object, usually with a view to securing two objects together and quite widely used to secure tags or labels to garments and the like, and to ways of using them. In particular it relates to an assembly of such attachments which greatly facilitates the application of such attachments to the objects with which they are to be associated.

One form of attachment of the type in question is shown in Patents Nos. 950,402, 1,145,455 and 1,151,750, the latter disclosing the mould apparatus by which clips of a plurality of such attachments can readily be formed. Such attachments comprise an object-penetrating part at one end thereof, an elongated filament-like section extending therefrom, and a part at the other end of the filament-like section which is enlarged relative to the thickness or diameter of the said section. The object-penetrating part is designed to be passed through a hole in the object with which it is to be associated, that part then remaining on the far side of the object, the elongated section passing through the hole, and the enlarged part remaining on the near side of the object. The object penetrating is capable of passing end-wise through the hole, but after it has passed through it will assume its normal position substantially perpendicular to the elongated section and thereby prevent the attachment from escaping in one direction from the object in question.

Escape of the attachment in the other direction is prevented by the enlarged portion.

As is disclosed in the cited patents, attachments of the type in question are generally provided in the form of an assembly or "clip" of a plurality of such attachments—a typical clip includes 20 attachments. An attaching device or "gun" such as is disclosed in Bone's United States Patent No. 3,103,666 (hereinafter referred to as Bone '666) may be employed to form the hole through the object with which the attachment is to be associated, sever a single attachment from the clip of attachments, and force its object-penetrating part through the hole which it forms in the object in question and to the far side of that object.

Attachments of the type in question used in conjunction with attaching devices such as those shown in the Bone '666 patent have become extremely widely used in industry, not only for the attachment of tags and labels to articles to be sold on the retail market, where the attachments are particularly effective in preventing unscrupulous shoppers from switching tags—removing a tag from a low-priced article, attaching it to a high-priced article, and then paying only the lower price for the article—but also for securing any group of objects to one another, such as securing together a pair of shoes for the right and left feet respectively. The attachments in question, particularly when used in connection with attaching devices of the type described, permit the attachments to be operatively applied at an extremely rapid rate even by relatively unskilled personnel, thus greatly reducing the costs of tagging, labelling, and securing objects to one another in general. Indeed, in many commercial areas attachments of the type in question have virtually supplanted all other attaching methods.

There is, however, a particular problem which has been presented by clips of attach-

ments as heretofore very widely used. The individual elongated attachments are secured to one another only at one end, adjacent the object-penetrating parts. Moreover, in order for the attachments to perform their desired function the elongated connecting sections must be at least somewhat flexible. As a result there is a marked tendency for the attachments in a given clip or assembly to become tangled, for the elongated connecting sections of some of the attachments to become wrapped wholly or partially around similar sections of other attachments in a given clip, or in adjacent clips when a number of clips are packed together. It is essential that when a clip is to be used it be readily separable from the mass of other clips with which it is packaged, and that when an attachment is to be separated from the clip it is not tangled with any of the attachments remaining in that clip. It has, of course, been possible manually to untangle the attachments, and that is precisely what the users of the millions of these attachments which have been applied in the past have done, but the untangling process is troublesome and time-consuming. As has been indicated, attachments of the type under discussion have been very widely used despite this drawback, but the inconvenience involved in the untangling operation has been both a source of aggravation to the individual operators and, because the untangling operation involves time, a source of expense to the business involved.

According to one aspect of the present invention, there is provided a clip of a plurality of attached-together attachments each adapted to be engaged with an object, each attachment comprising an object-penetrating part, an enlarged part, and a narrow elongated section connecting the said parts, frangible means operatively connecting the penetrating parts to one another in spaced relationship, the elongated sections extending from the penetrating parts, and securing means securing the attachments together at points remote from the frangible means.

According to another aspect, the present invention consists in a method of attaching to an object one of a plurality of attachments which form a clip by being secured together at first and second points spaced along their length, the attachments comprising an object-engaging part, an enlarged part, and a narrow elongated section connecting the said parts, the first point being located relatively close to the object-engaging part and the second point being located relatively remote from the object-engaging part, which method comprises:

(a) freeing the attachment from the clip at the first point and passing the object-engaging part of the attachment through a hole in the object while the attachment

remains secured to the clip at the second point, and

(b) thereafter separating the attachment from the clip at the second point.

It will be understood that while the attachments remain secured together at spaced points they tend to remain substantially parallel to one another. However, when a particular attachment has been separated from the clip at its object-penetrating end it is then free to be moved relative to the other attachments remaining in the clip while remaining secured to the other attachments at a point remote from the penetrating part. For some purposes it may be desirable for the attachments to remain connected to one another in this way so that the objects to which they are connected may remain joined to one another. However, for most purposes it is preferred that the securing means is readily frangible so that once the penetrating part has been attached to an object, the attachment can be separated from the remainder of the clip by severing of the securing means. Although various frangible connections may be employed, in a preferred construction the securing means is so constructed as to be more readily severable in torsion than in tension. Indeed, the normal operations involved in manipulating a given attachment, as in securing a tag to a garment or otherwise securing two objects together, readily lends itself to the positive and purposeful rotation of the attachment in use relative to the clip to separate the attachment from the clip. One form of connection providing the desired characteristic is provided by a short narrow length of material having dimensions such as to have a substantially greater resistance to breaking when tensioned than when twisted. In another arrangement, the enlarged parts comprise elements having facing surfaces, the facing surfaces being adhesively secured to one another.

For convenience of manufacture and convenience of operation of the gun, the enlarged parts of attachments of the type concerned are usually spaced from one another by a distance such as to militate against the attainment of the tension-resistant and torsion-yielding characteristic referred to above. Accordingly, special constructions have been devised for providing such a tension-resisting and torsion-sensitive connection. Thus in one construction of clip the enlarged parts comprise elements arranged spaced from one another by a given distance and with facing surfaces, the securing means comprising relatively wide opposed protrusions from the surfaces the ends of which protrusions are spaced from one another by a distance less than the said given distance, and a relatively thin length of material the thickness and length of which is such as to have a substantially greater resistance to breaking when

tensioned than when twisted secured between the ends of the said protrusions. Such a clip may be produced in substantially the same way as the clips referred to in the specifications cited above, namely a moulding operation which may be combined with or followed by a stretching operation. In fact, it may be possible to produce clips according to the present invention by modification of the cavities of the moulds used to produce the attachment devices described in the cited patents. Alternatively, clips made exactly in the way described in the cited patents may have their enlarged parts moved into engagement with one another and there secured by means of an appropriate relatively weak adhesive.

The invention may be carried into practice in various ways, and a clip of attachments, a number of modified clips, and their method of use for attachment to an object will now be described by way of example with reference to the accompanying drawings, in which:—

Figure 1 is a three-quarter semi-schematic view showing a clip of attachments constructed in accordance with the present invention being used in conjunction with an attaching device of the type shown in United States Patent No. 3,103,666, with the needle of that attaching device about to penetrate an object, all of the illustrated attachments still being completely secured to one another;

Figure 2 is a view similar to Figure 1 but showing the needle of the attaching device having penetrated the object and the attaching device actuated so as to sever the object-penetrating part of the leading attachment from the clip and move it through the needle and the hole in the object formed by the needle to the far side of the object;

Figure 3 shows the attaching device having been withdrawn from the object and moved away therefrom, the leading attachment now being associated with that object and rotating with respect to the other attachments still remaining on the clip;

Figure 4 illustrates the condition of the parts just after the condition shown in Figure 3, with the leading attachment having been twisted off from the clip while the remainder of the clip moves away with the attaching device;

Figure 5 is a fragmentary three-quarter perspective view, on an enlarged scale, of a portion of a clip of attachments;

Figure 6 is an end view, on a further enlarged scale, of the attachments of Figure 5, the view being taken from the left-hand end of Figure 5;

Figure 7 is a cross-sectional view, on a still further enlarged scale, taken along the line 7-7 of Figure 6;

Figure 8 is a view similar to Figure 7 but illustrating a modification of the structure

thereof;

Figure 9 is a view similar to Figure 5 but showing a modification thereof;

Figure 10 is a view similar to Figure 5 but showing a different arrangement for securing together the enlarged parts of the attachments;

Figure 11 is a front elevational view, on a further enlarged scale, of the enlarged-part ends of the attachments of Figure 10;

Figure 12 is a view similar to Figure 5 but showing an alternative embodiment in which the enlarged attachment parts are secured together by adhesive; and

Figure 13 is a front elevational view of the enlarged-part ends of the attachments of Figure 12.

In the embodiment of Figures 5-8 the attachments themselves are, for purposes of illustration, shown as essentially the same as those described and claimed in Patent No. 950,402. Each attachment comprises a bar-like object-penetrating part 2 at one end, an enlarged part 4 at the other end, and an elongated filament-like section 6 connecting the parts 2 and 4. Each of the object-penetrating parts 2 is connected to a rod 8 by means of a narrow neck 10. As is made clear in the Bone '666 patent, and as is shown in Figures 1-4, the attaching gun generally designated 12 is provided with an object-penetrating needle 14 having a slot 16 along one side thereof communicating with a slot 16' on the side of the gun proper. The clip is adapted to be inserted into the gun 12 so that the rod 8 passes through the gun along with the object-penetrating parts 2, while the elongated section 6 passes through a slot 18 formed in the side of the gun, until the object-penetrating part 2 of a given attachment is brought in line with the slotted needle 14. Thereafter, when the handle 20 of the attaching device is squeezed, a plunger engages the end of the object-penetrating part 2 of the leading attachment, causes it to move relative to the neck 10 so as to break the latter, and then pushes the object-penetrating part 2 out through the needle 14, the elongated section 6 connected thereto moving along the slots 16' and 16. Thus in order to associate a given attachment with one or more objects, generally designated O, the operator, after he has inserted a clip of attachments into the attachment device 12, pushes the needle 14 through the object O, that needle forming a hole in that object in the event that no hole exists there already. Then actuation of the handle 20 separates the object-penetrating part of the leading attachment from the remainder of the clip and pushes that part through the needle 14 and out the tip of the needle, with attachment part 2 then assuming a position substantially parallel to the surface of the object O, thus preventing the attachment from disengaging itself from the object

O when the attaching gun 12 is withdrawn, pulling its needle 14 out from the object O. This is disclosed in Figures 1 and 2.

With the attachments shown in Patent No. 950,402 that was the end of the attaching operation. Since the attachments in the clips there described were secured to one another only adjacent the object-penetrating parts 2, this left the leading attachment presumably completely separated from the clip. However, because the elongated section 6 of that leading attachment might be tangled with the attachments remaining in the clip, the operator had to remain aware of this possibility and to be ready to manually disentangle the leading attachment if that condition existed.

In accordance with the present invention, the individual attachments in the clip are secured together, not only adjacent their object-penetrating parts 2, as by the neck 10 and rod 8, but also by frangible securing means generally designated 22 secured between the individual attachments adjacent the enlarged parts 4 thereof. The securing means 22 thus holds the attachments in proper orientation while they remain in the clip, and after the leading attachment has been severed from the clip at its penetrating part end and operatively associated with the object O, the securing means 22 is then broken in any suitable manner in order to permit attachments remaining in the clip to be moved away from the leading attachment now operatively associated with the object O.

It is most desirable that the leading attachment be very readily severable from the clip after it has been associated with the object O. However, the attaching means 22 must be sufficiently strong to withstand dislocative forces to which the attachment may be subjected while it still should remain a part of the clip. Thus the securing means 22 must be both weak and strong, and that presents a problem.

That problem has been solved by differentiating between tension and torsion. While the object-penetrating parts 2 of the attachments are secured together, the attachments must remain essentially parallel to one another, and hence the dislocative forces to which they are subjected will primarily be in tension, either longitudinal or shear (shear is here considered as analogous to tension). However, when the object-penetrating part 2 of the leading attachment has been severed from its neck 10, the clip can then be twisted or rotated with respect to that leading attachment, as is shown in Figures 3 and 4. Since rotation of the clip relative to the leading attachment can take place simply as a part of the continuous movement of the attaching device away from object O as a part of the attaching operation, if the securing means 22 is readily susceptible to breaking under torsional forces the leading

attachment may be readily separated from the clip as a part of the attaching procedure.

One securing structure which has this characteristic is a thin short filament formed of material sufficiently tough to withstand tension or such bending as it may be subjected to. By reason of the shortness of that filament, however, it can be broken relatively readily when twisted. The normal spacing between attachments in a clip, usually about .04 inch, is far too large to produce a connecting means having that characteristic. Accordingly, and as may best be seen from Figures 6 and 7, when the clip is moulded or otherwise formed, the enlarged parts 4, on their facing surfaces 24 separated from one another by the distance a which may, as indicated, be .04 inch, are provided with opposing protrusions 26 the ends of which are separated from one another by the small distance b which may, for example, be .005 inch, and a thin neck or filament 28 is provided between those protrusions 26, which filament 28, in one embodiment, may have a diameter of .005 inch as well as a length of .005 inch. (These values are given with respect to the attachments formed of moulded nylon, where the elongated sections have a diameter of about .020 inch. It will be appreciated that they are by way of example only, and that different dimensions and shapes will be applicable depending in part on the materials used and in part upon the applications involved and the forces to which the individual attachments are expected to be subjected during use.)

The protrusions 26 and filamentary neck 28 may be, and preferably are, integrally formed with the other portions of the attachment clip in the course of a single moulding operation, it being necessary only to provide cavities in the mould for the protrusions 26 and neck 28 in addition to the cavities already provided for the other portions of the clip.

The embodiment of Figure 8 is similar to that of Figure 7 except that the protrusions 26' are formed only at the lower half of the enlarged parts 4 and not at the upper half thereof. This type of construction can readily be utilized where the cavities in the mould separate along the axis of the neck 28, by providing cavities for the protrusions 26' and neck 28 only in the lower mould and not in the upper mould.

Figure 9 discloses an embodiment similar to that of Figure 5 except that the enlarged parts 4' for the embodiment of Figure 9 are not paddle-shaped, as in Figure 5, but instead are bar-shaped, comparable to the enlarged parts 2. However, the bars 4' constituting the object-penetrating parts in Figure 9 are secured to one another by securing means 22 comprising protrusions 26

and necks 28 in fully the same manner as in Figure 5.

In the embodiment of Figures 10 and 11 the enlarged parts 4 of the attachments, instead of being connected to one another at their facing surfaces 24, are connected to one another at their lower edges by securing means 22 connected between the individual enlarged parts 4 and a rod 30. This arrangement is analogous to that employed for securing together the object-penetrating parts 2, except that the securing means 22 for the enlarged parts 4 is more readily frangible than the necks 10 for the object-penetrating parts 2. The necks 10 are adapted to be severed by the operation of the attaching device 12, whereas the securing means 22 are adapted to be manually severed. Hence, the former may be significantly stronger than the latter. As may best be seen in Figure 11, it is preferred that the securing means 22 in the embodiment of Figure 10 also be more sensitive to torsion than to tension (or shear), and consequently such securing means 22 comprises, extending up from the rod 30, protrusions 26a and short thin necks 28a which may, like the necks 28, have a length and a diameter of approximately .005 inch.

While in the illustrated embodiments the securing means 22 engage and directly connect the enlarged parts 4 themselves, it will be appreciated that such a relationship is not essential provided that the securing means are located sufficiently remote from the securing means at the other end of the attachments—the rod 8 and necks 10—to maintain the attachments against relative rotation. For example, the securing means 22 could be located between the elongated sections 6 near the enlarged parts 4, particularly if, as is often the case, those elongated sections are thickened in that area.

Figures 12 and 13 illustrate yet another embodiment in which the clip is formed as described in Patent No. 950,402 with the enlarged part 4 initially unconnected to one another, but in a separate step the facing surfaces of those enlarged parts 4 are coated with a layer 32 of relatively weak adhesive, after which the parts 4 are moved into engagement with one another, as shown in Figures 12 and 13. That adhesive layer relatively strongly resists tension, but will be more yieldable to torsion, thus maintaining the attachments in a non-tangled condition during normal manipulation of the clip itself while still enabling the leading attachment to have its enlarged part 4 readily easily separated from the clip after that attachment has been operatively associated with an object.

As has been indicated, the primary use for an attachment of this type is to secure two objects together, e.g., a tag to a garment or right and left foot shoes to one another, but

it can also be used in and of itself to be secured to a single object, as a type of identification or by having appropriate data imprinted on its enlarged part 4, thereby itself to serve as a label or tag. Consequently in Figures 1-4 the attachments have been shown in association with only a single object O, but it will be understood that the attachment can be, and usually is, used in conjunction with more than one such object. Attachments of the type under discussion are commercially provided with elongated sections 6 of many different lengths, some rather short and some quite long. The particular length of the elongated section 6 here disclosed is by way of example only. Likewise the shapes and sizes of the penetrating parts 2 and enlarged parts 4 may all be relatively widely varied.

By means of the construction of the present invention clips of attachments may be formed with the same facility and relative inexpensiveness as is the case with comparable attachments now on the market, yet the clips thus formed will have the very significant advantage, over those previously available, that tangling of the individual attachments is virtually completely eliminated, and, moreover, in its preferred form this has been accomplished by a structure specifically designed to cooperate with the normal mode of manipulation of the attachments in the process of attaching them to objects so that an attachment when once operatively associated with an object can be completely separated from the clip without requiring any special action on the part of the operator other than movements normally associated with the attaching operation in any event. Indeed, the existence of the securing means 22 will have the effect of checking whether the leading attachment has been properly secured to the object O—if it has not, there will not be sufficient resistance to movement on the part of that attachment, the securing means 22 will not break, and the leading attachment will be pulled away from the object O along with the attaching gun 12 and the remainder of the clip, thus positively apprising the operator of an ineffective attaching attempt.

In certain embodiments the securing means 22 could be made highly strain-resistant, by increasing its length, thickness and/or using stronger material, so that the individual attachments may be associated with different objects O respectively, the strong securing means 22 thus enabling the still-secured-together attachments to assemble those objects O into a batch, the individual objects O thereafter being individually separable from that batch when desired by breaking the corresponding securing means 22, as by cutting it with a knife or scissors.

Reference has already been made to

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Patent No. 950,402. This patent, which is owned by our subsidiary company, Dennison Manufacturing Co. Limited, claims a tag attachment comprising, as parts of an integral structure, a bar, a button and a single filament joining the bar and button.

WHAT WE CLAIM IS:—

1. A clip of a plurality of attached-together attachments each adapted to be engaged with an object, each attachment comprising an object-penetrating part, an enlarged part, and a narrow elongated section connecting the said parts, frangible means operatively connecting the penetrating parts to one another in spaced relationship, the elongated sections extending from the penetrating parts, and securing means securing the attachments together at points remote from the frangible means.

2. A clip as claimed in Claim 1 in which the securing means is interposed between and connected to the enlarged parts.

3. A clip as claimed in Claim 1 or Claim 2 in which the securing means is readily frangible.

4. A clip as claimed in Claim 3 in which the securing means is more readily severable than the frangible means.

5. A clip as claimed in Claim 3 or Claim 4 in which the securing means is so constructed as to be more readily severable in torsion than in tension.

6. A clip as claimed in Claim 3 or Claim 4 in which the securing means comprises a short, narrow length of material having dimensions such as to have a substantially greater resistance to breaking when tensioned than when twisted.

7. A clip as claimed in Claim 3 or Claim 4 in which the enlarged parts comprise elements arranged spaced from one another by a given distance and with facing surfaces, the securing means comprising relatively wide opposed protrusions from the surfaces the ends of which protrusions are spaced from one another by a distance less than the said given distance, and a relatively thin length of material the thickness and length of which is such as to have a substantially greater resistance to breaking when tensioned than when twisted secured between the ends of the said protrusions.

8. A clip as claimed in any of Claims 1 to 6 in which the enlarged parts comprise elements arranged essentially parallel to one

another with facing surfaces, the securing means being interposed between and secured to the facing surfaces.

9. A clip as claimed in any of the preceding claims which is constituted by a one-piece moulding of plastics material.

10. A clip as claimed in Claim 2 or Claim 3 or Claim 4 in which the enlarged parts comprise elements having facing surfaces, the facing surfaces being adhesively secured to one another.

11. A clip as claimed in Claim 10 which, apart from the adhesive, is constituted by a one-piece moulding of plastics material.

12. A method of attaching to an object one of a plurality of attachments which form a clip by being secured together at first and second points spaced along their length, the attachments comprising an object-engaging part, an enlarged part and a narrow elongated section connecting the said parts, the first point being located relatively close to the object-engaging part and the second point being located relatively remote from the object-engaging part, which method comprises:—

(a) freeing the attachment from the clip at the first point and passing the object-engaging part of the attachment through a hole in the object while the attachment remains secured to the clip at the second point, and

(b) hereafter separating the attachment from the clip at the second point.

13. A method as claimed in Claim 12 in which step (b) is accomplished by rotating the attachment relative to the clip, thereby to exert a substantial torsional force on the means securing the attachment to the clip at the second point.

14. A clip of attachments substantially as described herein with reference to Figures 5, 6 and 7 of the accompanying drawings.

15. A clip as claimed in Claim 14 and modified substantially as described herein with reference to Figures 8 or Figure 9 or Figures 10 and 11 or Figures 12 and 13 of the accompanying drawings.

16. A method of attaching one of a plurality of attachments to an object substantially as described herein with reference to the accompanying drawings.

KILBURN & STRODE,
Chartered Patent Agents,
Agents for the Applicants.

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Patent No. 950,402. This patent, which is owned by our subsidiary company, Dennison Manufacturing Co. Limited, claims a tag attachment comprising, as parts of an integral structure, a bar, a button and a single filament joining the bar and button.

WHAT WE CLAIM IS:—

1. A clip of a plurality of attached-together attachments each adapted to be engaged with an object, each attachment comprising an object-penetrating part, an enlarged part, and a narrow elongated section connecting the said parts, frangible means operatively connecting the penetrating parts to one another in spaced relationship, the elongated sections extending from the penetrating parts, and securing means securing the attachments together at points remote from the frangible means.

2. A clip as claimed in Claim 1 in which the securing means is interposed between and connected to the enlarged parts.

3. A clip as claimed in Claim 1 or Claim 2 in which the securing means is readily frangible.

4. A clip as claimed in Claim 3 in which the securing means is more readily severable than the frangible means.

5. A clip as claimed in Claim 3 or Claim 4 in which the securing means is so constructed as to be more readily severable in torsion than in tension.

6. A clip as claimed in Claim 3 or Claim 4 in which the securing means comprises a short, narrow length of material having dimensions such as to have a substantially greater resistance to breaking when tensioned than when twisted.

7. A clip as claimed in Claim 3 or Claim 4 in which the enlarged parts comprise elements arranged spaced from one another by a given distance and with facing surfaces, the securing means comprising relatively wide opposed protrusions from the surfaces the ends of which protrusions are spaced from one another by a distance less than the said given distance, and a relatively thin length of material the thickness and length of which is such as to have a substantially greater resistance to breaking when tensioned than when twisted secured between the ends of the said protrusions.

8. A clip as claimed in any of Claims 1 to 6 in which the enlarged parts comprise elements arranged essentially parallel to one

another with facing surfaces, the securing means being interposed between and secured to the facing surfaces.

9. A clip as claimed in any of the preceding claims which is constituted by a one-piece moulding of plastics material.

10. A clip as claimed in Claim 2 or Claim 3 or Claim 4 in which the enlarged parts comprise elements having facing surfaces, the facing surfaces being adhesively secured to one another.

11. A clip as claimed in Claim 10 which, apart from the adhesive, is constituted by a one-piece moulding of plastics material.

12. A method of attaching to an object one of a plurality of attachments which form a clip by being secured together at first and second points spaced along their length, the attachments comprising an object-engaging part, an enlarged part and a narrow elongated section connecting the said parts, the first point being located relatively close to the object-engaging part and the second point being located relatively remote from the object-engaging part, which method comprises:—

(a) freeing the attachment from the clip at the first point and passing the object-engaging part of the attachment through a hole in the object while the attachment remains secured to the clip at the second point, and

(b) thereafter separating the attachment from the clip at the second point.

13. A method as claimed in Claim 12 in which step (b) is accomplished by rotating the attachment relative to the clip, thereby to exert a substantial torsional force on the means securing the attachment to the clip at the second point.

14. A clip of attachments substantially as described herein with reference to Figures 5, 6 and 7 of the accompanying drawings.

15. A clip as claimed in Claim 14 and modified substantially as described herein with reference to Figures 8 or Figure 9 or Figures 10 and 11 or Figures 12 and 13 of the accompanying drawings.

16. A method of attaching one of a plurality of attachments to an object substantially as described herein with reference to the accompanying drawings.

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