

Opinion under section 74A

Patent	EP(UK) 0765281 B1
Proprietor	Millepede Marketing Limited
Exclusive Licensee	
Requester	Millipede Marketing Limited
Observer	Rapstrap Limited
Date Opinion issued	27 th February 2009

The request

1. The comptroller has been asked by Millipede Marketing Limited (the “requester”) via their Agent HGF LAW to issue an opinion as to whether a cable tie product made by a company called Rapstrap Limited (the “respondent”) falls within the scope of claims 1 & 5 of the patent EP0765281B1 (the “patent”) which designates GB and is in force in the UK. In support of the request the following have been provided:

a figure identifying the different portions of a Rapstrap® cable tie;

an excerpt from the Daily Mail newspaper explaining how the Rapstrap® cable tie product works;

examples of the Rapstrap® product; and

the website address of Rapstrap Limited (www.rapstrap.com) giving details of how the Rapstrap® product works.

Observations

2. Observations in response to the request for an opinion were received from Agile IP on behalf of Rapstrap Limited by fax on the 5th January 2009 disputing the allegation of infringement.

Observations in reply

3. Observations in reply were received from HGF LAW on behalf of Millepede Marketing on the 19th January 2009

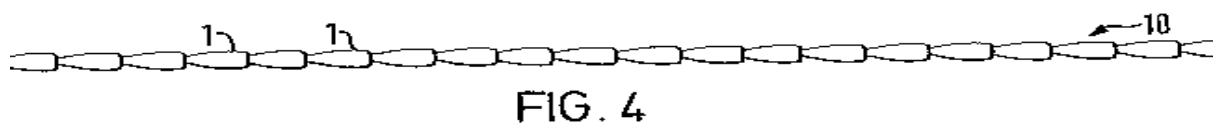
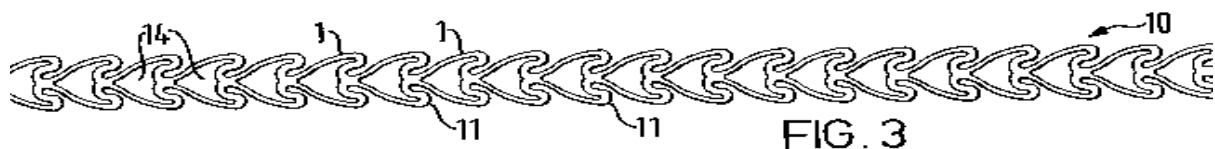
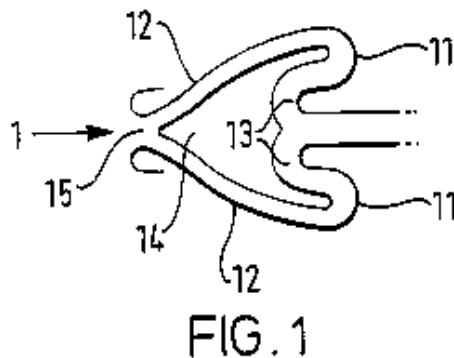
Allowance of the request

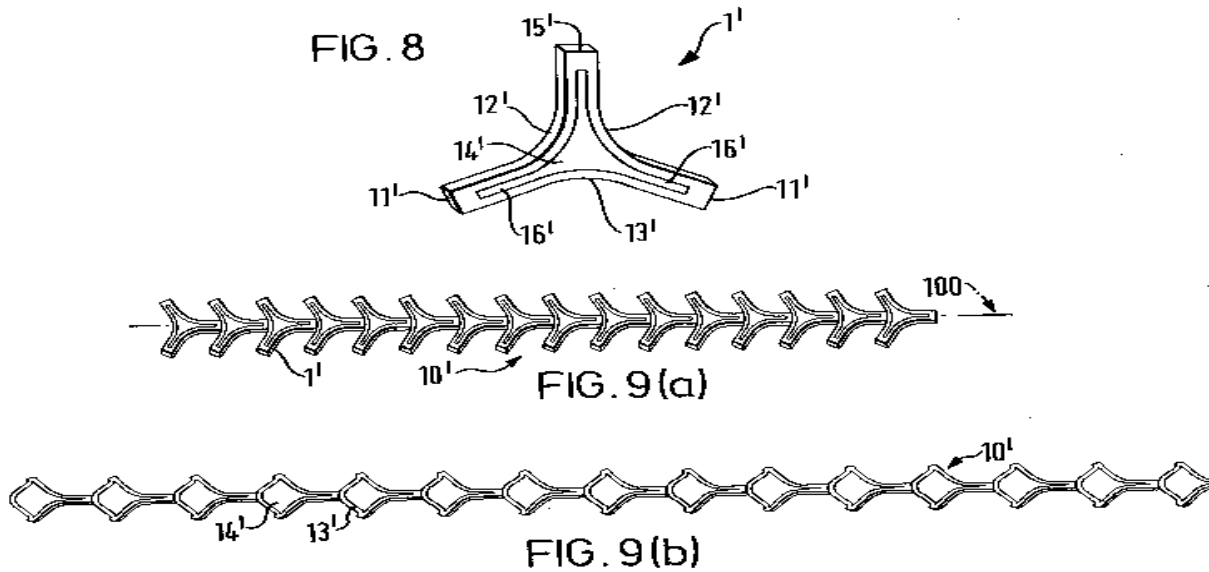
4. The patent has been granted, designates GB as a contracting state and is in force in the UK. The Rapstrap® website indicates that the company is based in the UK and produces Rapstrap® cable ties for the world market. The website also provides links to a number of suppliers based in the UK. The observer has not disputed whether or not the Rapstrap® product has been manufactured, used or offered for sale in the UK.

The patent

5. The patent has a filing date of 23rd June 1995, claims an earlier priority date of 24th June 1994 and was granted on 24th March 1999. The patent relates to a cable tie in which an end unit is threaded through the aperture of another unit to form a closed loop for securing cables and the like. The cable tie described in the specification is configured such that any excess cable tie material left over after forming a closed loop can be re-used to form another closed loop. The cable tie thus reduces wastage compared with other cable tie arrangements. Relatively little force is required to pull an end of the cable tie through the aperture of a selected unit cell of the cable tie and it is not necessary to twist the cable tie in order to effect passage through the aperture or to lock the latch members.

6. The following selected drawings help to understand the patent.

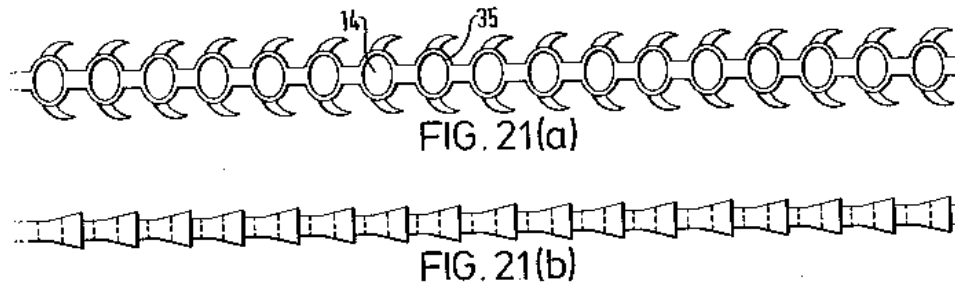




7. Figures 1, 3 & 4 show a unit cell, top and side views respectively of a first embodiment of the cable tie of the patent. The unit cell 1 of the cable-tie is generally heart-shaped in form when the cable-tie is free from tension. The unit cell has a re-entrant part or spring portion 13 joined to an apical part 15 by opposite side parts 14 passing through the unit cell portion. On opposite sides of the spring portion 13 are latch members 11. A series of unit cells 1 are joined together to form the cable tie as shown in the plan view in figure 3 and side view in figure 4.

8. An alternative unit cell in the general form of an isosceles triangle for forming the cable tie is shown in figure 8. Figure 9(a) and 9(b) show such a cable tie in relaxed and tensioned conditions respectively. The application of longitudinal tension to the strip causes the apertures to open up which facilitates the passage therethrough of an end unit cell portion of the strip which would allow the strip to be formed into a closed loop. The application of longitudinal tension to the strip shown in figure 3 causes similar resilient deformation although the re-entrant part or spring portion 13 will tend to straighten rather than bow outwardly like the base parts 13' shown in figure 9(b). Closed loops can also be formed by passing an end portion unit cell through a selected relaxed (untensioned) unit cell. After the end unit of the cable tie has passed through a selected unit cell the latch members 11' resist withdrawal. Applying tension to the strip during loop formation allows the cable tie to tighten around an object to be secured after the tension is released and the latch members of a unit cell lock into position.

9. A further cable tie embodiment is shown in figures 21(a) and 21(b) of the patent where 21(a) is a plan view and 21(b) is a side view:



This embodiment is described in the patent as having portions 35 which define apertures 14 and provide spring portions. Barb-like latch members are also provided. This embodiment operates in the same manner as the embodiments described in relation to figures 1, 3, 4, 8 & 9.

10. There is one independent claim, which reads:

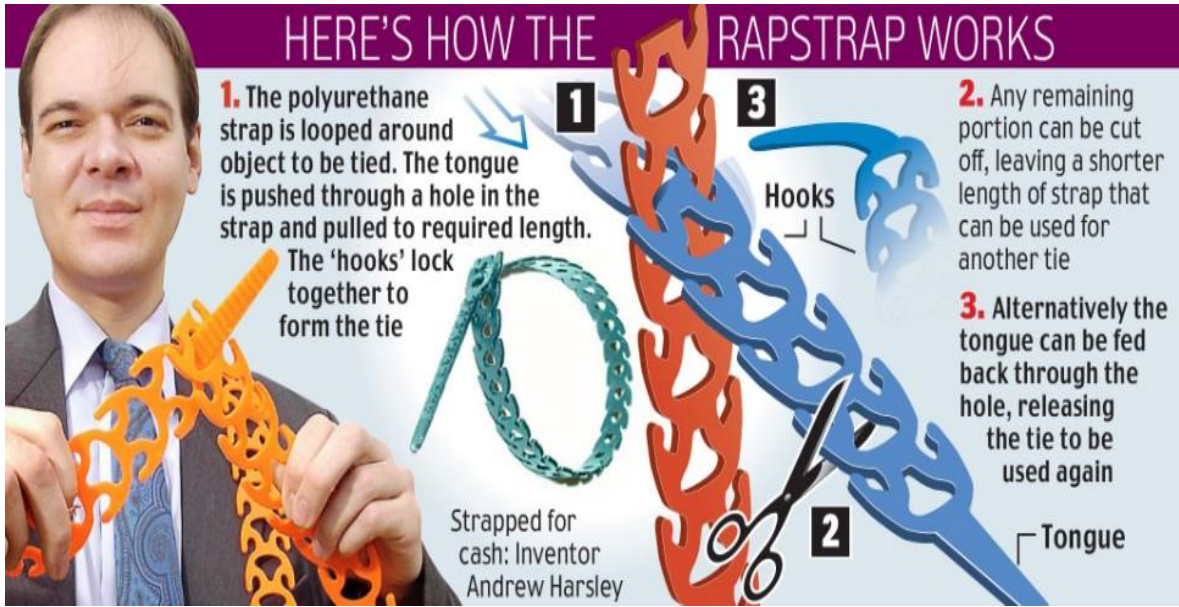
Claim 1: An integrally formed tie strip (10), made of a semi-rigid resiliently bendable material, comprising a series of unit cell portions (1) connected one to the next along the strip, each of the said unit cell portions (1) being formed to define at least one latch member (11) projecting laterally of the strip's longitudinal axis, and to define an aperture (14) through the strip, characterised in that the aperture (14) of each unit cell portion (1) is bounded on at least one side by a spring portion (13) formed by parts (13) of the strip that extend transversely with respect to the said longitudinal axis, the spring portion (13) being resiliently deformable so as to enable the shape of the aperture (14) to be changed, wherein a first unit cell portion (1) of the strip can be passed through the aperture (14) of a second unit cell portion (1) of the strip so as to form a closed loop by way of the spring portion (13) of the first and/or second unit cell portion (1) being bendingly deformed such that the shape of the aperture (14) of the first and/or second unit cell portion (1) is respectively changed upon relative passage of the unit cell portions (1), and where the spring portion (13) of the first and /or the second unit cell portion (1) relaxes after said passage so that the at least one latch member (11) of the said first unit cell portion (1) inhibits withdrawal thereof from the aperture (14) of the said second cell portion.

The other claim which is relevant to this request, reads:

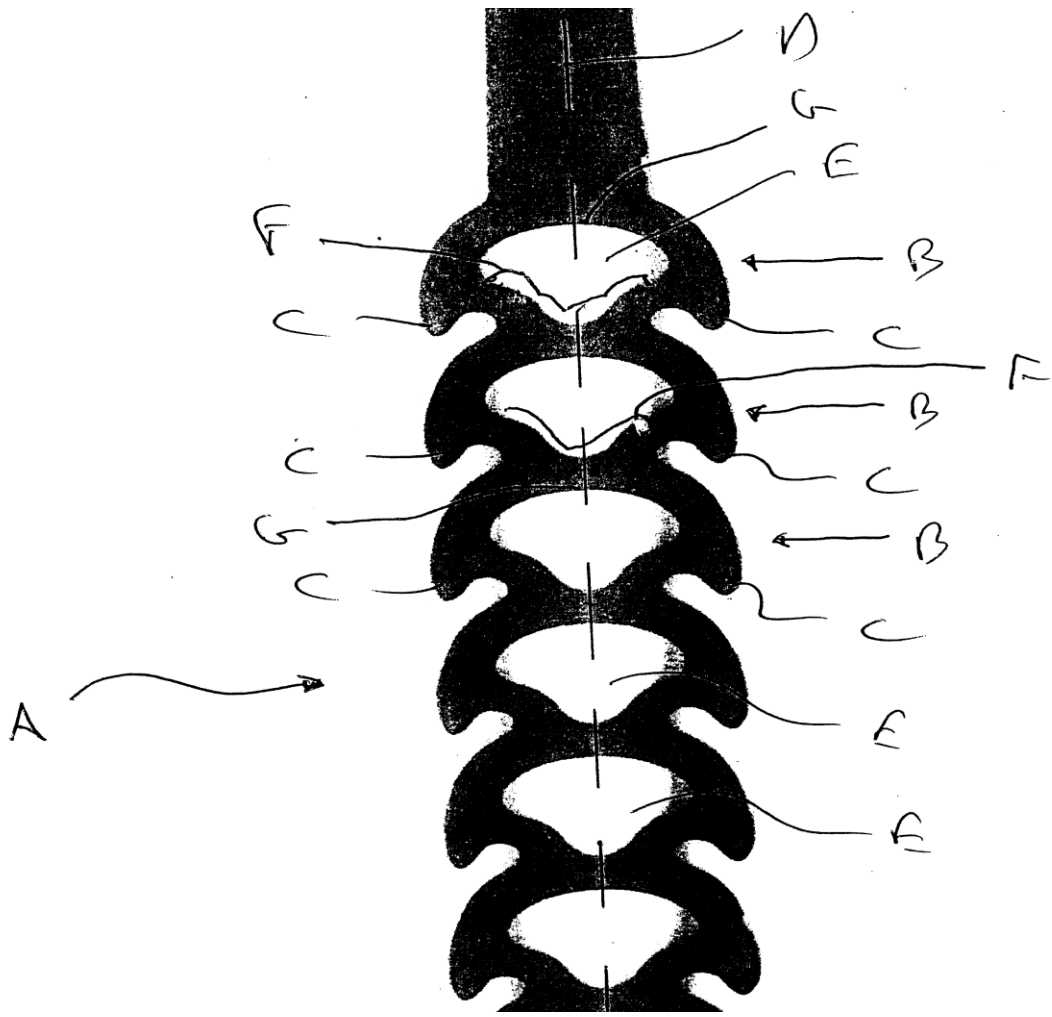
Claim 5: A strip as claimed in any preceding claim, wherein each of said unit cell portions is formed so that one of them can be passed through another of them without any twisting of the strip about its longitudinal axis.

The Rapstrap® product

11. The excerpt from the Daily Mail newspaper supplied by the requester explaining how the Rapstrap cable tie works is reproduced below.

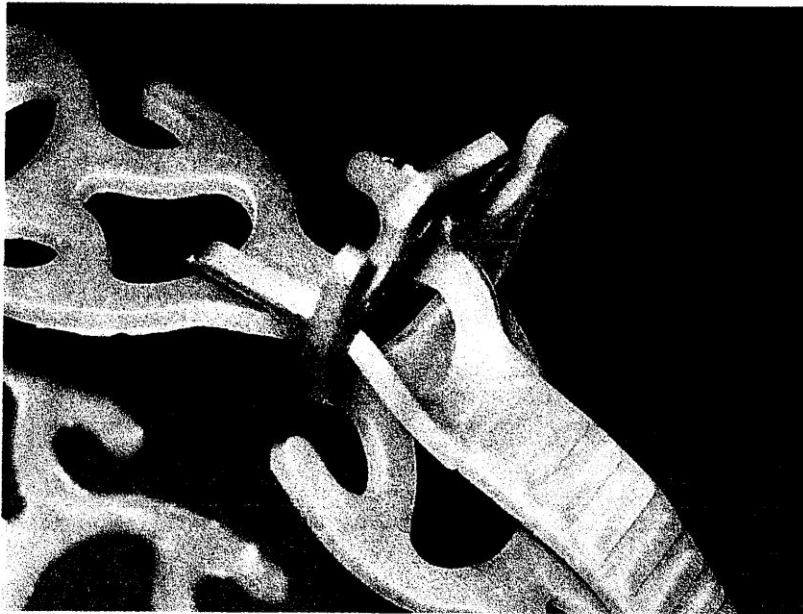


12. A figure showing labelling different parts of the Rapstrap® cable tie provided by the requester is reproduced below:



- A Rapstrap®
- B Unit cell
- C Hook
- D Longitudinal axis
- E Aperture
- F Re-entrant portion

13. An image of one Rapstrap® unit cell being threaded through another unit cell submitted by the respondent is shown below:



Threading of the Rapstrap®

14. The Rapstrap® is a thin, flexible multi-cell cable-tie in which the cells can fold over and curl around their longitudinal axis during a threading operation to form a loop in the Rapstrap®. During the threading operation the threading unit cell is bent upwards and compressed with respect to the longitudinal axis so that its aperture has a narrower shape that permits the passage of the threading unit cell through another cell's aperture to form closed loops. The cells have hooks which secure the loop and prevent the loop from undoing.

Discussion

15. The alleged infringement relies on establishing that the Rapstrap® has the features as specified in claims 1 and 5 of the patent.

16. The respondent's observations argue that the Rapstrap® cable tie cannot fall within the scope of claim 1 because it does not have a feature which corresponds to the spring portion as required by the patent. The observations focus on the necessary requirements of the spring portion of the patent in the context of forming a closed loop in the cable tie by passing an end unit cell through another unit cell. The respondent highlights the specific shapes of the spring portion of the patent i.e. the re-entrant part 13 of the embodiment shown in figure 1 which undergoes a large change in shape and area so that cells can more freely pass through enlarged apertures to form closed loops. The large shape change is more clearly shown in the embodiment depicted in figures 8, 9(a) & 9(b). The respondent maintains that the Rapstrap® cable tie unit cell does not undergo a large shape change as described in the specification of the patent and is formed from a stretchable elastomer material and so does not comprise a spring as required by the patent.

17. In order for me to decide whether or not the Rapstrap® cable-tie falls within the scope of claim 1 of the patent it is necessary for me to decide how the term "spring portion" should be construed. To do this I shall follow the standard principles of claim construction as set out in *Kirin Amgen and others v Hoescht Marion Roussel Limited and others* [2005] RPC 9. I must put a purposive construction on the claims; interpret them in the light of the description and drawings as required by section 125(1) of the Patents Act 1977 and take account of the Protocol to Article 69 of the EPC. In more straightforward terms I must decide what a person skilled in the art would have understood the patentee to have used the language of the claim to mean.

18. The spring portions 13, 13' and 35 of the cable tie unit cell are shown in figures 1, 8 and 21(a) respectively. The spring portions partially bound the unit cell apertures (14, 14') and extend transversely with respect to the longitudinal axis of the cable tie. The cable tie of the patent can afford resilient longitudinal extension of the strip by means of the spring portions. The longitudinal resilience allows objects to be securely fastened by forming a closed loop around the object whilst applying tension to the cable tie. After the unit cells have locked into position and the applied tension is released the loop contracts around the object to hold it securely.

19. The extension of the spring portions also allows the passage of one end unit cell of the cable tie to pass through another unit cell to form a closed loop. Applying tension to the cable tie causes the apertures to open up longitudinally of the strip which facilitates the passage of another unit cell portion. However, the specification also describes a method of forming a closed loop by passing an end unit cell which is not under tension through a selected relaxed (untensioned) unit cell.

20. It is clear therefore that the spring portions are dual purpose in that they allow for longitudinal extension of the cable tie and also allow an end unit cell to be passed through another unit cell. The material used for fabricating the cable tie strips is a semi-rigid resiliently bendable material and examples of Nylon 66, polyamide derivatives, titanium or steel are given.

21. I consider that the person skilled in the art would understand that the spring portion envisaged by the patentee therefore must comprise: a portion of the cable

tie unit cell which bounds at least one side of a unit cell aperture, extends transversely with respect to the longitudinal axis of the cable tie, and be made of semi-rigid resiliently bendable material.

22. In use, the spring portion must be able to bend under applied tension so that the unit cell changes shape and so that the cable tie can elongate. Also, the passage of one unit cell through another unit cell must involve a bending movement of the spring portion. I consider that a large shape change of the unit cell aperture is not a necessary consequence of the invention. For example, the embodiment of the invention described in relation to figures 21(a) and 21(b) has spring portions 35 which would have a smaller degree of bending than the other embodiments of the invention. There is no specific limitation in claim 1 with regard to the shape change of the aperture caused by bending of the spring portion. Also, although only bending of the spring portion in the longitudinal direction is described there is no such limitation in claims 1 or 5.

23. The Rapstrap® is made of a flexible elastomer which the requester argues is a semi-rigid bendable material. The respondent has not denied this but did point out that the patent does not specify a requirement for the use of stretchable elastomeric materials, and also highlighted the fact that nylon, steel and titanium do not have elastomer properties. The respondent did not comment on the elastomeric properties of polyamide materials. On consideration of both viewpoints and from inspecting the Rapstrap®, I accept the requester's argument that the Rapstrap® is made of a semi-rigid bendable material.

24. When passing an end unit cell through another unit cell to form a loop in the Rapstrap® cable tie, the threaded unit cell bends upwards from the longitudinal axis of the cell to the ends of the latch members, changing the size of the aperture of the unit cell being threaded. The curve extends through the re-entrant portion of the unit cell. After the end unit cell has passed through the other unit cell the threaded unit cell relaxes and the latches bend back to prevent the threaded unit cell from being pulled back through the other unit cell. During the threading process the bend in the unit cell extends through the re-entrant part.

25. Consequently, I consider that the re-entrant part of the Rapstrap® cable tie unit cell has all of the features required for the spring portion of the cable tie unit cell described in the patent.

26. The respondent has drawn my attention to the disclosure of US 3,438,095 with the argument that if the scope of claim 1 was sufficient to cover the Rapstrap® cable tie then the patent would be anticipated by this disclosure. However, consideration of the validity of the patent is beyond the scope of this opinion.

27. Now that I have decided that the re-entrant part of the Rapstrap® cable tie unit cell falls within the scope of the spring portion of the patent cable tie unit cell I will consider whether the article falls within the scope of claim 1.

Infringement

28. In order to determine possible infringement, I will break claim 1 down into convenient integers and consider each in turn.

- (a) *An integrally formed tie strip (10), made of semi-rigid resiliently bendable material,*

The Rapstrap® is formed in one piece and so is integrally formed. The flexible elastomer material used for the tie strip is semi-rigid and resiliently bendable.

- (b) *comprising a series of unit cell portions (1) connected one to the next along the strip,*

The Rapstrap® is formed from a series of unit cells connected to one another.

- (c) *each of the said unit cell portions (1) being formed to define at least one latch member (11) projecting laterally of the strip's longitudinal axis,*

The Rapstrap® has hooks projecting laterally of the longitudinal axis of the cable tie.

- (d) *and to define an aperture (14) through the strip,*

Each of the Rapstrap® unit cells has an aperture

- (e) *characterised in that the aperture (14) of each unit cell portion (1) is bounded on at least one side by a spring portion (13) formed by parts (13) of the strip that extend transversely with respect to the said longitudinal axis,*

The aperture of the Rapstrap® unit cell is bounded by the re-entrant part of the unit cell and it extends transversely with respect to the longitudinal axis. The re-entrant part, as discussed above, has all of the features required of the spring portion of the patent.

- (f) *the spring portion (13) being resiliently deformable so as to enable the shape of the aperture to be changed,*

When the end unit cell of the Rapstrap® is threaded through another unit cell the re-entrant or spring portions bend upwards which necessarily changes the shape of the aperture and after it has passed through it returns to its original shape. Also, when the Rapstrap® cable tie is stretched under applied tension the shape of the unit cell aperture is elongated and when the tension is removed it returns to its original form.

- (g) *wherein a first unit cell portion (1) of the strip can be passed through the aperture (14) of a second unit cell portion (1) of the strip so as to form a closed loop*

To form a loop in the Rapstrap® cable tie it is necessary to pass an end unit cell through another unit cell.

- (h) *by way of the spring portion (13) of the first and/or second unit cell portion (1) being bendingly deformed such that the shape of the aperture (14) of the first and/or the second unit cell portion (1) is respectively changed upon relative passage of the unit cell portions (1),*

When the end unit cell of the Rapstrap® cable tie is passed through the another unit cell the spring/re-entrant part of the unit cell bends upwards which necessarily causes the shape of the aperture of the end portion to change.

- (i) *and wherein the spring portion (13) of the first and/or second unit cell portion (1) relaxes after said passage so that the at least one latch member (11) of the said first unit cell portion (1) inhibits withdrawal thereof from the aperture (14) of the second cell portion (1).*

The spring/re-entrant portion of the Rapstrap® cable tie end unit cell relaxes into its original shape once it has passed through another unit cell and the end unit cell hook portions are positioned so as to prevent the withdrawal of the end unit cell from the aperture of the other unit cell.

29. Consequently, I consider that the Rapstrap® cable tie falls within the scope of claim 1 of the patent.

30. I also need to consider claim 5 of the patent:

A strip as claimed in any preceding claim, wherein each of the said unit cell portions is formed so that one of them can be passed through another of them without any twisting of the strip about its longitudinal axis.

The Rapstrap® cable tie does not require any twisting action to thread one unit cell through another.

31. Consequently, I consider that the Rapstrap® cable tie falls within the scope of claim 5 of the patent when dependant on claim 1.

Conclusion

32. I therefore conclude that the Rapstrap® cable tie falls within the scope of claims 1 and 5 of the patent.

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.

Steven Morgan
Examiner