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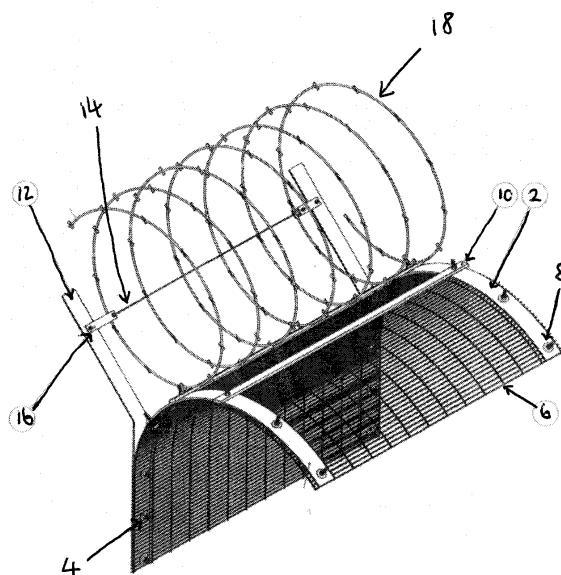
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(54) A security apparatus

(57) A security apparatus comprising a plurality of brackets (2) for securing to the top of a fence or wall at spaced intervals along the length thereof, each bracket (2) has a lower portion which is intended for securing to the fence or wall and a curved portion extends upwardly and away from the upper end of the lower portion, a metal mesh (6) is secured between the brackets (2) to provide

a curved overhang which is intended to extend along the top of the fence or wall on the side of the fence or wall open to attack, a back support (12) that extends upwardly from the upper end of the lower portion, and a coil of razor wire (18) secured at least to the back support (12) and held there by at least one line wire (14) between the upwardly extending back supports.

FIGURE 1



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Description

[0001] The present invention relates to security fences and walls and in particular to a security apparatus which may be secured to the top of a security fence or wall.

[0002] It has been previously proposed to provide an overhanging portion at the top of a security fence or wall as a deterrent to the scaling of a fence or wall. The overhanging portion is normally designed to be flexible, and therefore to move, when people attempt to climb it, thereby upsetting their balance and hand holds. Furthermore, it is known to provide a coil of razor wire fixed within the shape of the overhanging portion and/or provide a coil of razor wire that sits directly on the top of the frame of the overhanging portion, at an approximate 90° angle to the plane of the frame. For example, see United Kingdom Registered Design No. 2061635 and United States Design Patent Nos. 424702 and 429342.

[0003] These previously proposed security toppings comprise an overhanging portion and at least a single coil of razor wire, one of the coils is fixed on top of the security topping. These toppings have been used on detention facilities and are designed to hinder progress from the side of the overhanging portion of detainees. However the coil on top of the overhanging portion introduces a potential danger due to movement caused by the flexing of the overhang.

[0004] An aim of the present invention is to provide a security apparatus that overcomes the disadvantages discussed above.

[0005] Accordingly, the present invention is directed to a security apparatus comprising a plurality of brackets for securing to the top of a fence or wall at spaced intervals along the length thereof, each bracket has a lower portion which is intended for securing to the fence or wall and a curved portion extends upwardly and away from the upper end of the lower portion, a metal mesh is secured between the brackets to provide a curved overhang which is intended to extend along the top of the fence or wall on the side of the fence or wall open to attack, a back support that extends upwardly from the upper end of the lower portion, and a coil of razor wire secured at least to the back support and held there by at least one line wire between the upwardly extending back supports.

[0006] This provides the advantage that the razor wire coil is secured in a position between the back support and the curved portion of the bracket, thus away from the side of attack and thereby reducing potential danger and allowing its use in situations where less deterrent is required. The use of a separate back support also allows the razor wire coil to be attached firmly to the security apparatus at more than one point, thus making it more secure.

[0007] Preferably the extending back support is cranked, with the razor wire coil positioned towards, or at, the rear of the overhanging portion and having support on line wires. This provides the advantage that when the bracket, and especially its overhanging portion, moves

it allows the razor wire coil to move with it.

[0008] In a preferred embodiment of the invention, the extension of the back support is positioned at less than a 60° angle to the plane of the brackets. More preferably the angle is from 30°- 50°. This provides the advantage that the razor coil wire is positioned further away from the side of attack.

[0009] Preferably the razor wire coil is secured at more than one point. More preferably it is secured to the back support and also to the overhanging portion.

[0010] Advantageously one or more parallel rails are provided for securing the mesh and the razor wire to. This provides the advantage of more support to the razor wire coil.

[0011] Preferably the metal mesh is a welded metal mesh, defining sets of square or rectangular sections, welded at each intersection. This provides the advantage that it is a relatively cheap and available material that is easy to install and integrate into the security apparatus. Furthermore, it has the advantage over alternatives, such as chainlink wire, that it has higher intrinsic strength and is therefore harder to cut.

[0012] Preferably the metal mesh is an expanded metal mesh, defining sets of closely spaced louvers running parallel to the top of the fence or wall, with the louvers on the portions of the mesh secured to the upright portions of the brackets sloping downwardly towards the side open to attack. This provides the advantage that the louvers will not provide a grip for scaling the security apparatus.

[0013] Preferably the brackets are produced from spring steel. This provides the advantage that, when an attempt at scaling the security apparatus is made, they will collapse, but also spring back into place when the scaling attempt ceases.

[0014] An example of security apparatus made in accordance with the present invention will now be described in relation to the accompanying drawings, in which:

Figure 1 shows a front perspective view of a security apparatus;

Figure 2 shows a side view of the security apparatus in Figure 1;

Figure 3 shows a rear perspective view of the security apparatus in Figure 1; and

Figure 4 shows a rear view of the security apparatus in Figure 1.

[0015] Figure 1 shows a security apparatus comprising a bracket (2) for securing to the top of a wall or fence (not shown), the intended top of which is curved to form an overhanging portion. The bracket (2) is secured to the top of a wall or fence by way of suitable fastening means, for example security bolts (4). A welded metal mesh (6) is secured between the brackets (2) so as to complete the overhanging portion. The welded metal mesh (6) is secured to the brackets by way of suitable fastening means, for example security bolts (8). Horizontal rails

(10) also run between the brackets (2) and above the welded metal mesh (6). Upwardly extending back supports (12) are secured to the brackets (2) by way of suitable fastening means, for example security bolts (4). A line wire (14) is secured between the upwardly extending back portions (12) by way of a wire fixing means (16). A razor wire coil (18) is positioned towards the rear of the overhanging portion.

[0016] Figure 2 shows a side view of the security apparatus and illustrates that the rear bottom part of the razor coil wire (18) is secured to the back portion (12) by bolt (16), and also the front bottom part is secured to the bracket (2) by bolt (8) which is attached through a rail (10). The back portion (12) has a bottom part (20) that is parallel to the bracket (12) and a top part (22) angled rearwardly. The angle α between the top and bottom parts (20, 22) can be varied depending upon the position required for the razor wire coil (18).

[0017] Figure 4 is the view of the security apparatus from the front or intended angle of attack. As can be seen, the razor wire coil (18) is clearly mounted away from the front. If the security apparatus is made of spring steel and a potential scaler grabs the front of the apparatus the flexing of the structure will now bring the razor wire down on top of the scaler.

[0018] As shown in Figures 1, 3 and 4, the welded metal mesh comprises a series of parallel wires (20) interconnected by web portions (22). The mesh (6) is formed from metal sheet of about 3 mm thickness and the spacing between the parallel wires (20) is of the order of 6 mm wide. The mesh is made of metal of sufficient strength to resist manual deformation of the wires (20). The wire mesh (6) is secured by rails (10) running above and secured to the brackets (2).

Claims

1. A security apparatus comprising a plurality of brackets for securing to the top of a fence or wall at spaced intervals along the length thereof, each bracket has a lower portion which is intended for securing to the fence or wall and a curved portion extends upwardly and away from the upper end of the lower portion, a metal mesh is secured between the brackets to provide a curved overhang which is intended to extend along the top of the fence or wall on the side of the fence or wall open to attack, a back support that extends upwardly from the upper end of the lower portion, and a coil of razor wire secured at least to the back support and held there by at least one line wire between the upwardly extending back supports.
2. A security apparatus according to claim 1 in which the back support is cranked, with the razor wire coil positioned towards, or at, the rear of the overhanging portion and having support on line wires.

3. A security apparatus according to claim 1 or claim 2 in which the extension of the back support is positioned at less than a 60° angle to the plane of the brackets.
4. A security apparatus according to claim 1 or claim 2 in which the extension of the back support is at an angle from 30° - 50° to the plane of the brackets.
5. A security apparatus according to any preceding claim in which the razor wire coil is secured at more than one point.
6. A security apparatus according to any preceding claim in which the razor wire coil is secured to the back support and also to the overhanging portion.
7. A security apparatus according to any preceding claim in which one or more parallel rails are provided for securing the mesh and the razor wire.
8. A security apparatus according to any preceding claim in which the metal mesh consists of a welded metal mesh, defining sets of square or rectangular sections.
9. A security apparatus according to any one of claims 1 to 7 in which the metal mesh is an expanded metal mesh, defining sets of closely spaced louvers running parallel to the top of the fence or wall, with the louvers on the portions of the mesh secured to the upright portions of the brackets sloping downwardly towards the side open to attack.
10. A security apparatus according to any preceding claim in which preferably the brackets are produced from spring steel.

FIGURE 1

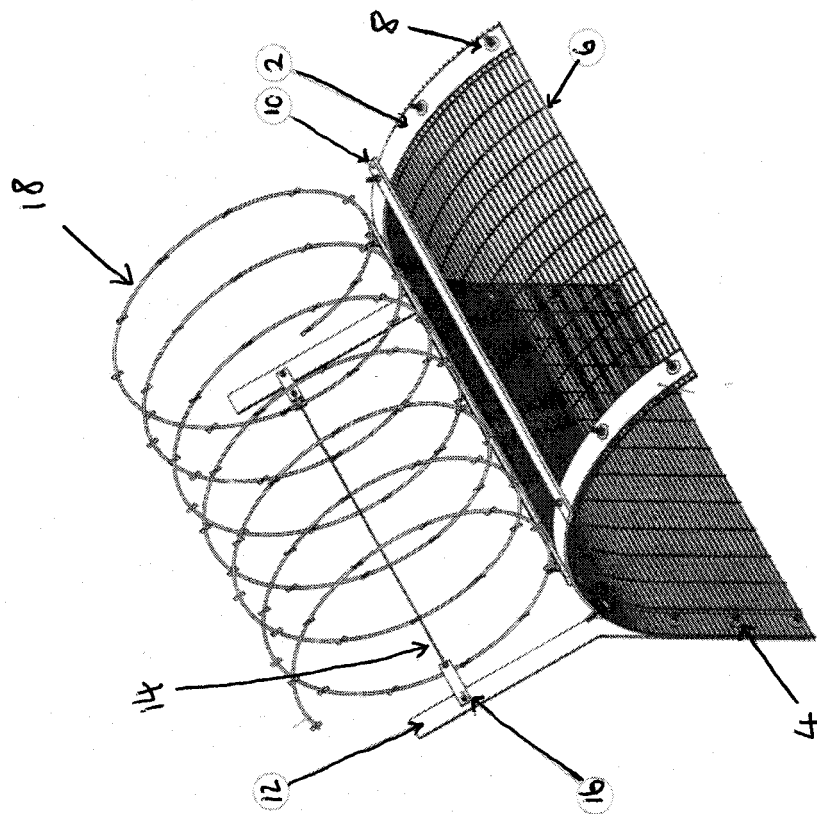
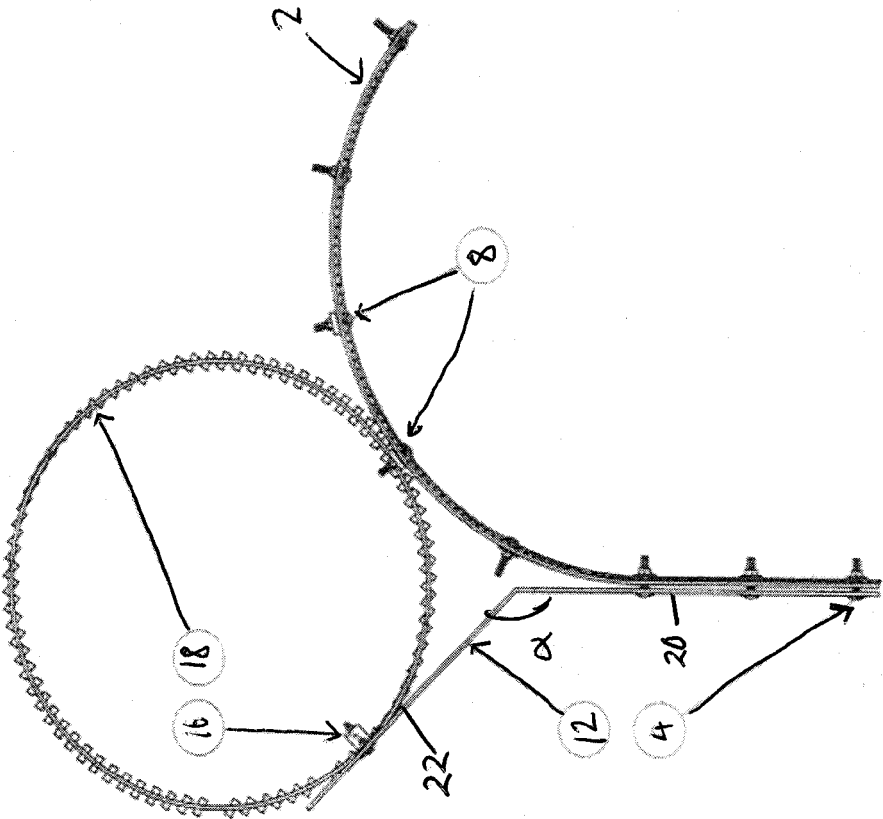


FIGURE 2



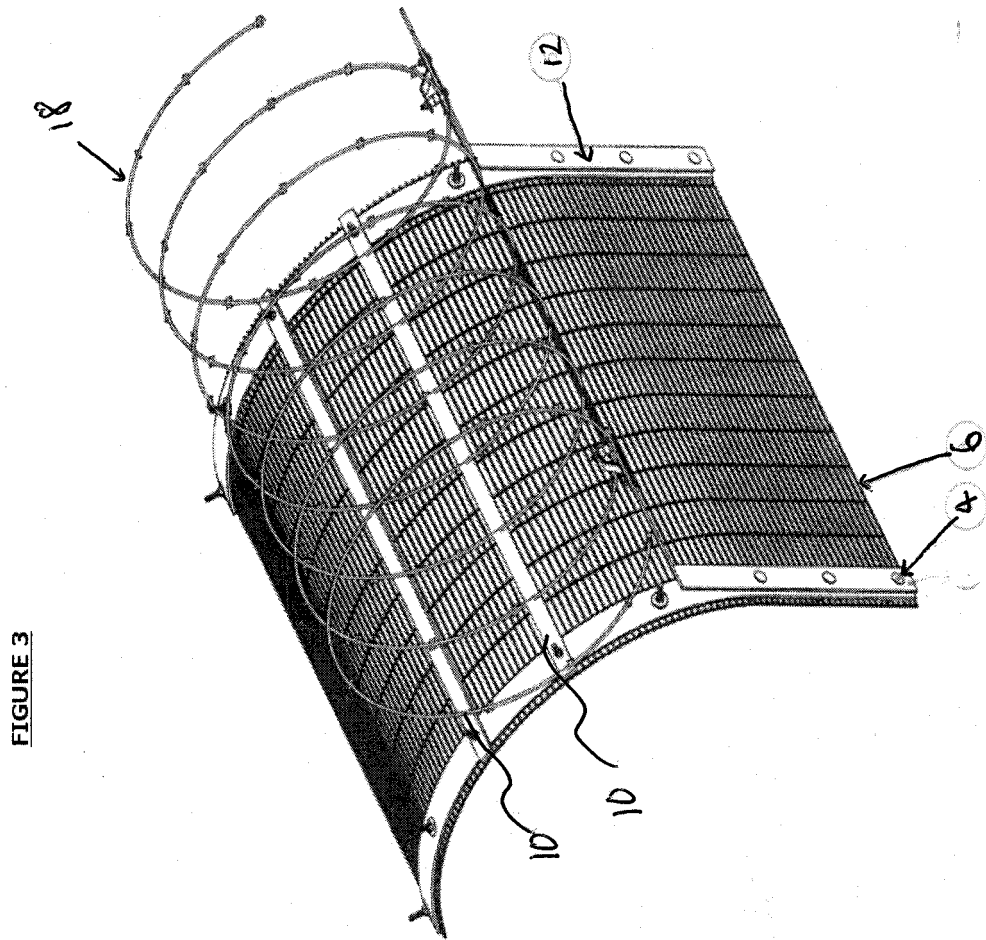


FIGURE 3

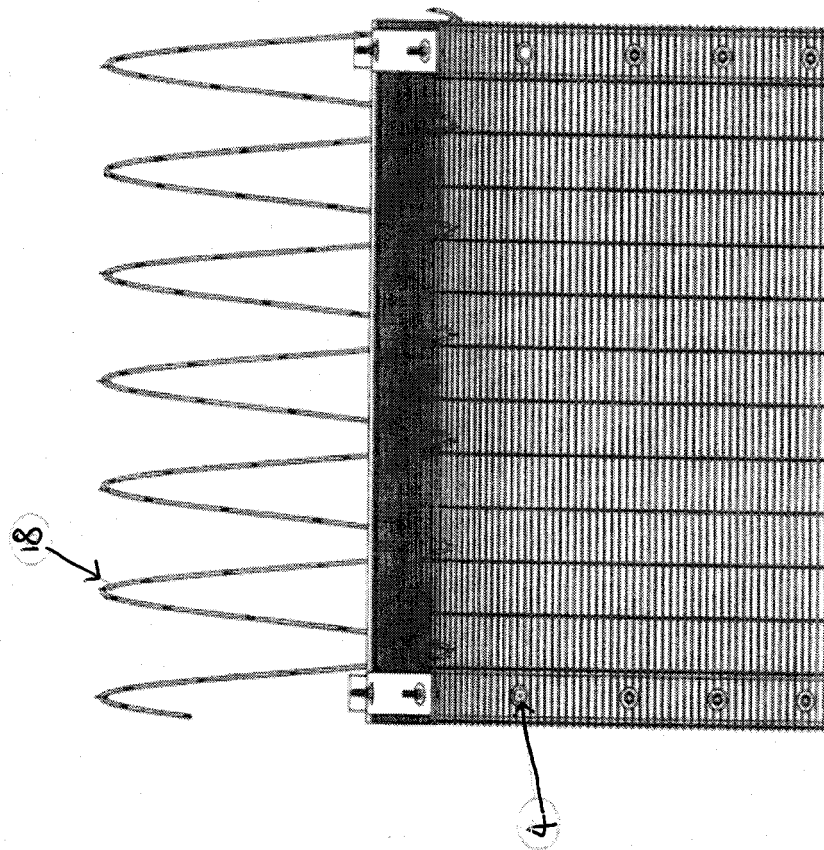


FIGURE 4



EUROPEAN SEARCH REPORT

Application Number
EP 14 19 4202

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	W0 2004/113650 A1 (HARPER CHALICE GROUP LTD [GB]; HARPER GRAHAM D [GB]) 29 December 2004 (2004-12-29) * page 3, line 6 - page 5, line 3; figures 1-5 *	1,8-10	INV. E04H17/00 E04H17/24
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			TECHNICAL FIELDS SEARCHED (IPC)
			E04H G08B A01K H01B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 23 April 2015	Examiner Stefanescu, Radu
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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The members are as contained in the European Patent Office EDP file on
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23-04-2015

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REFERENCES CITED IN THE DESCRIPTION

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- US 424702 A [0002]
- US 429342 A [0002]