

(21) Application No: 1320891.3
(22) Date of Filing: 27.11.2013
(30) Priority Data:
(31) 1221546 (32) 29.11.2012 (33) GB

(51) INT CL:
E04H 17/20 (2006.01) A01K 3/00 (2006.01)
A01K 13/00 (2006.01) A01M 29/00 (2011.01)
A01M 29/24 (2011.01) A01M 29/30 (2011.01)

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JPH11315648

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(58) Field of Search:
INT CL A01K, A01M, E04H
Other: EPODOC, TXTE, WPI

(54) Title of the Invention: **The B-A fencing**
Abstract Title: **Anti-cribbing fencing with a solar powered laser**

(57) A fence made of a man-made material and including a vertical post 4 and at least one horizontal rail 15 both moulded to look like tree trunks or tree branches, e.g. with roots around the base and bark. Solar panels 10 are recessed into the post and provide power for a laser system. A laser is located within the rail and sends a beam through a tunnel 16 inside each rail. The laser is triggered by a sensor. The purpose of the laser is to prevent animals, especially horses from biting and chewing on the rail – so called cribbing, wood-chewing or wind sucking. The posts may be hollow and may be filled with water for strength and stability. The posts are mounted in tubs (1 Fig 5) that are submerged in the ground, the top of the tub being at ground level. The rails 15 may fit into the posts using vertical rails 14 that enter channels in the post.

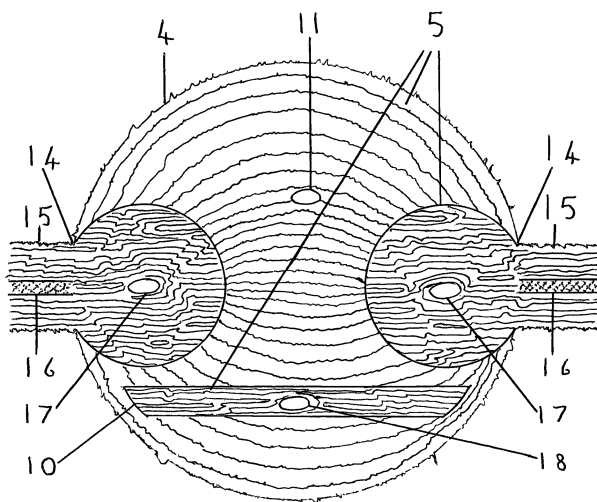


Figure 7

Aerial view of the post with both ver-
tical rails in position and the solar
panel

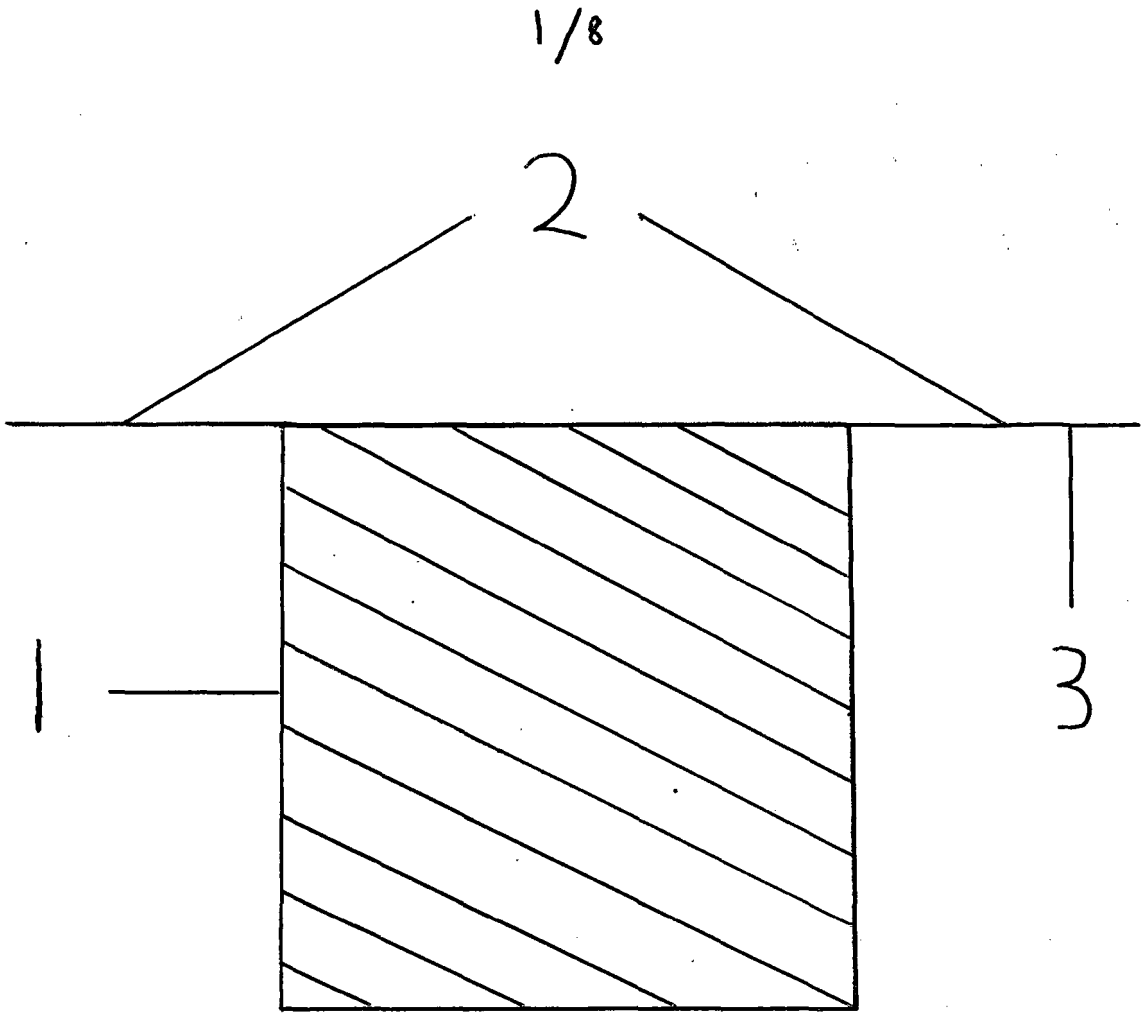


Figure 1

Side elevation of the Tub

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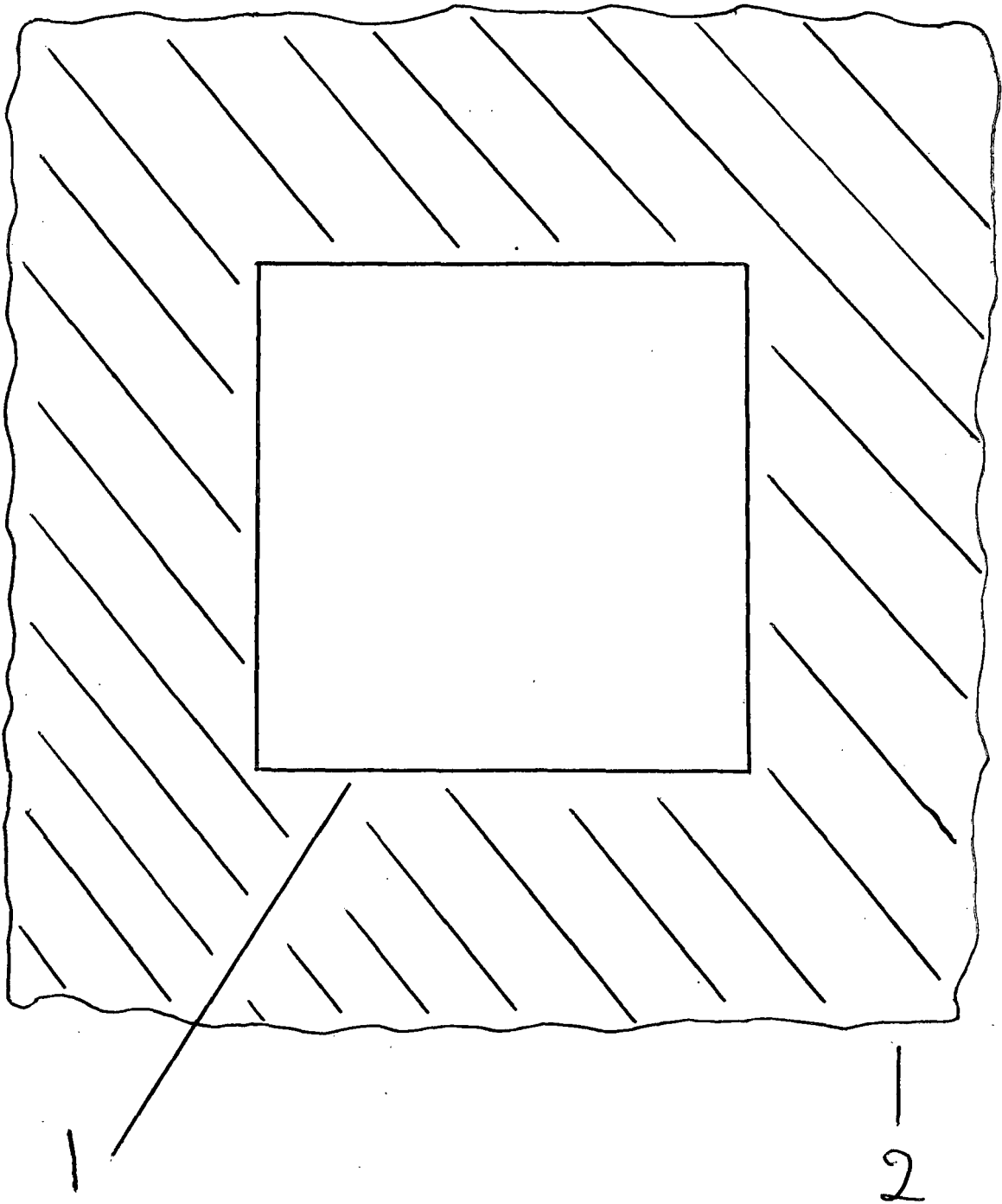


Figure 2

Aerial view of the tub

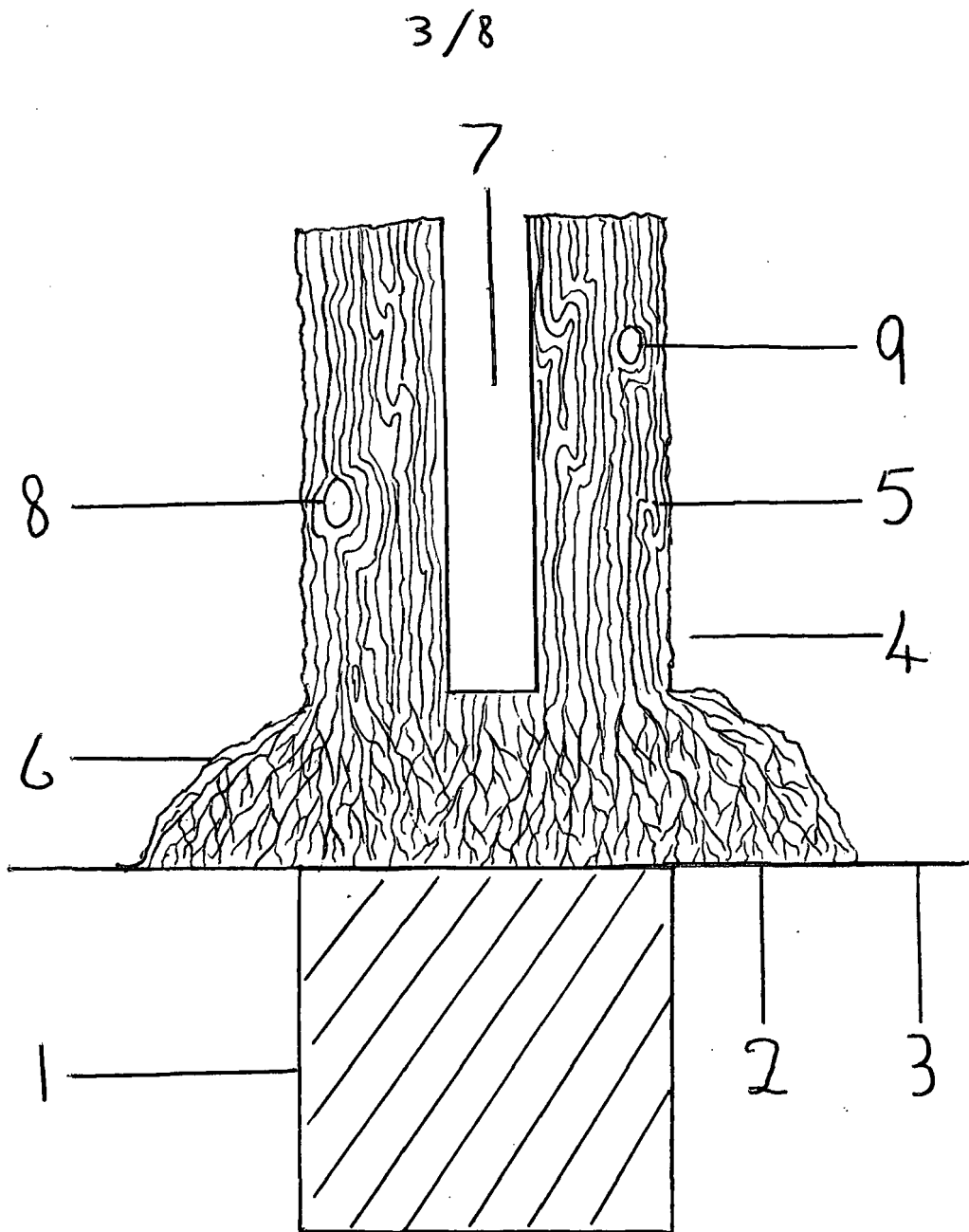


Figure 3

Side elevation of the post

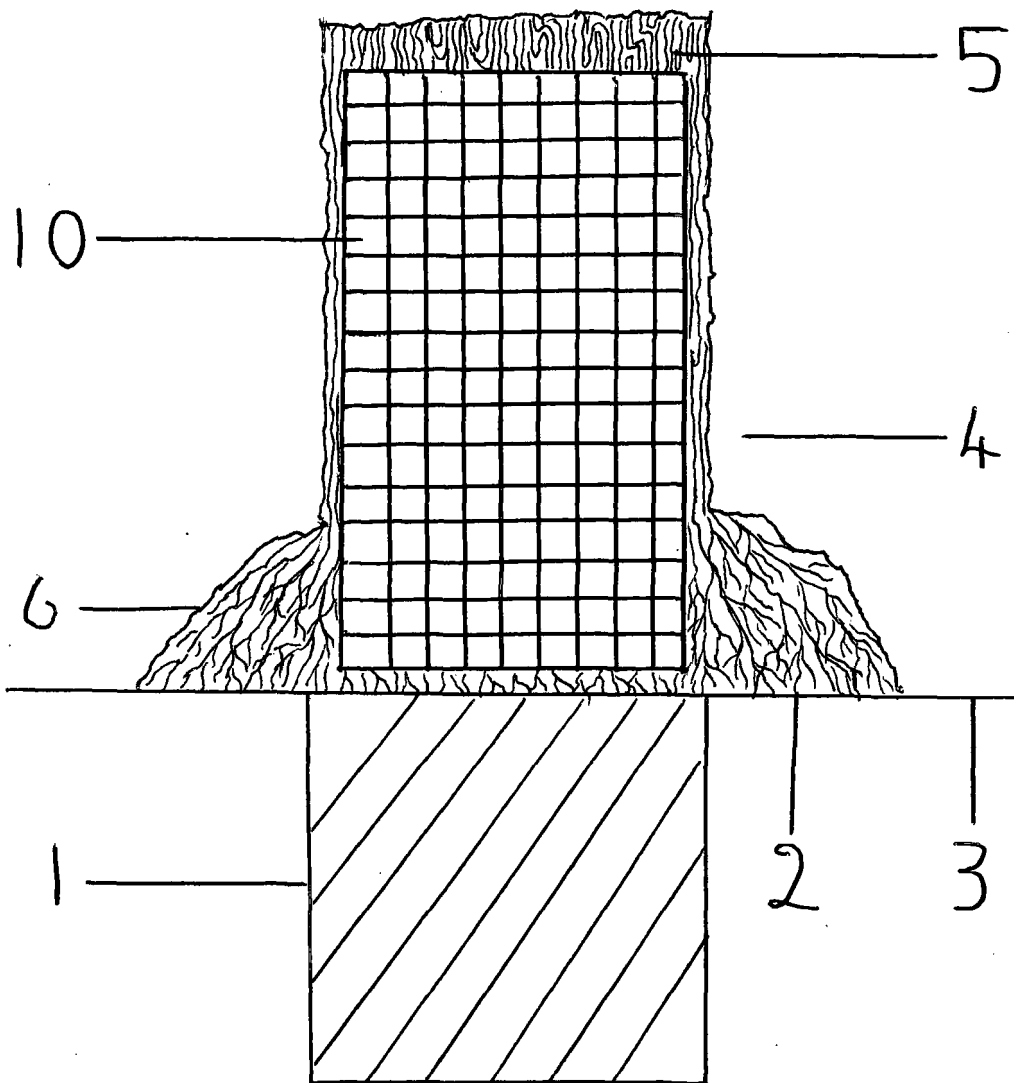


Figure 4

Elevation of the post with solar panel

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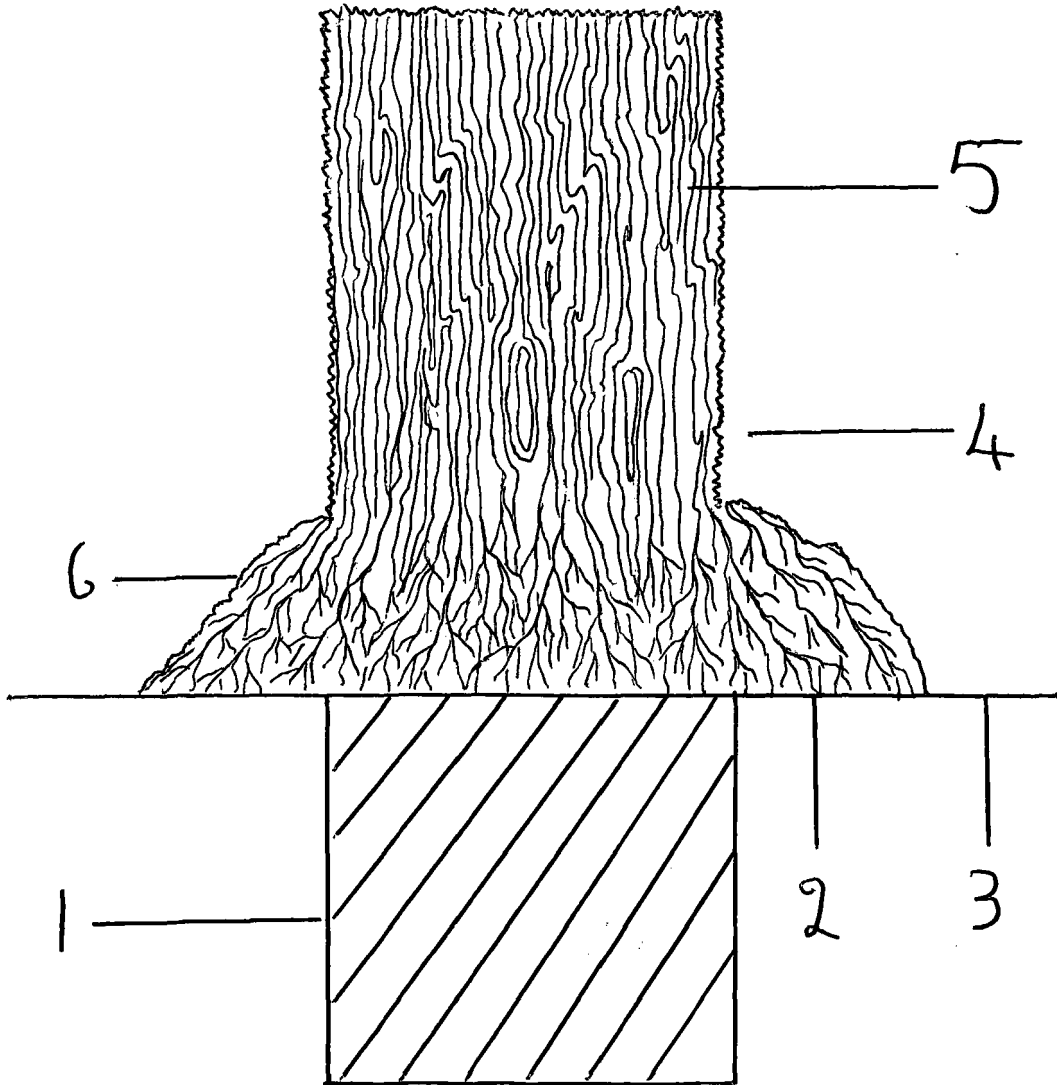


Figure 5

Elevation of the post the opposite side to the solar panel

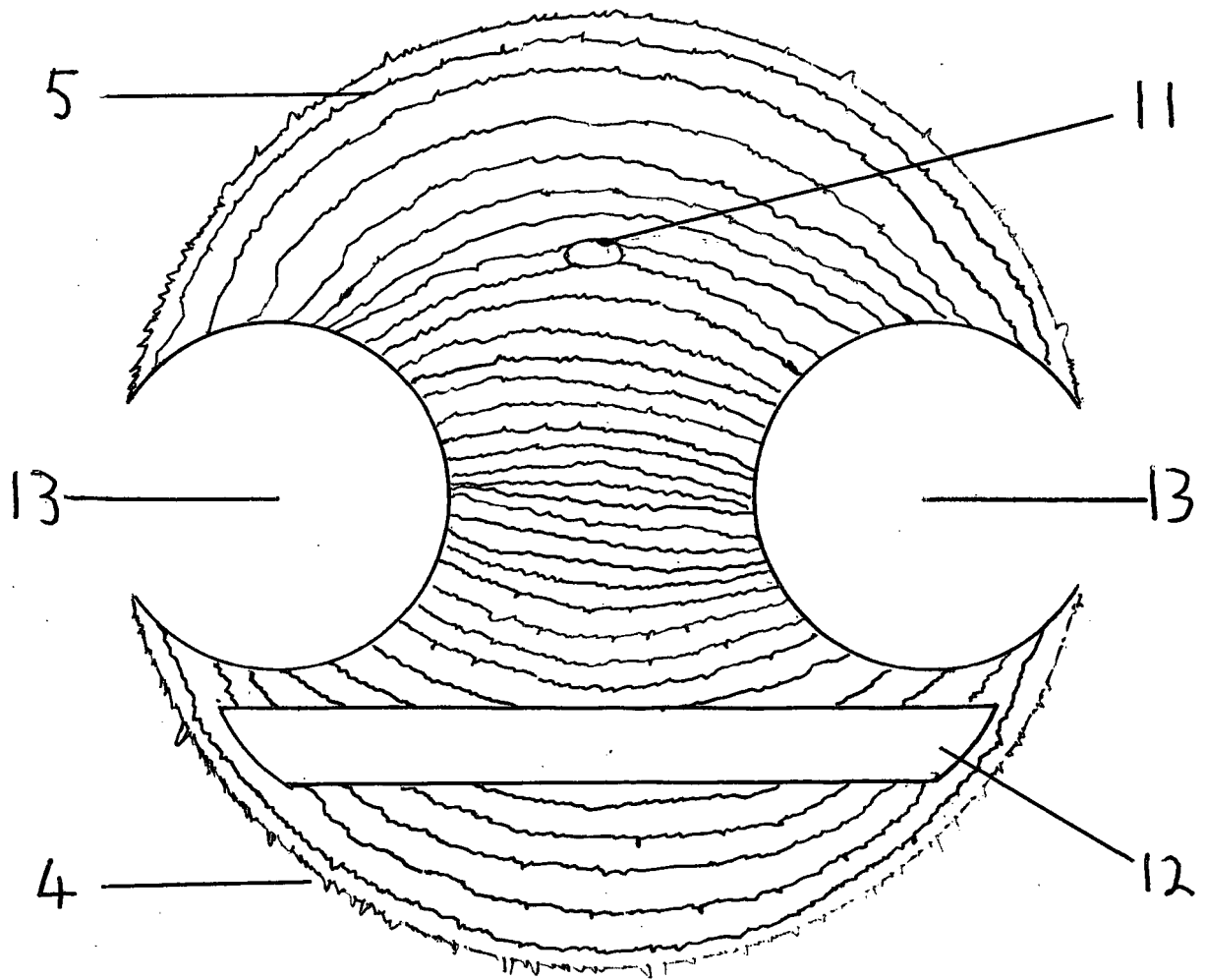


Figure 6

Aerial view of the post with neither
of the vertical rails in position nor the
solar panel

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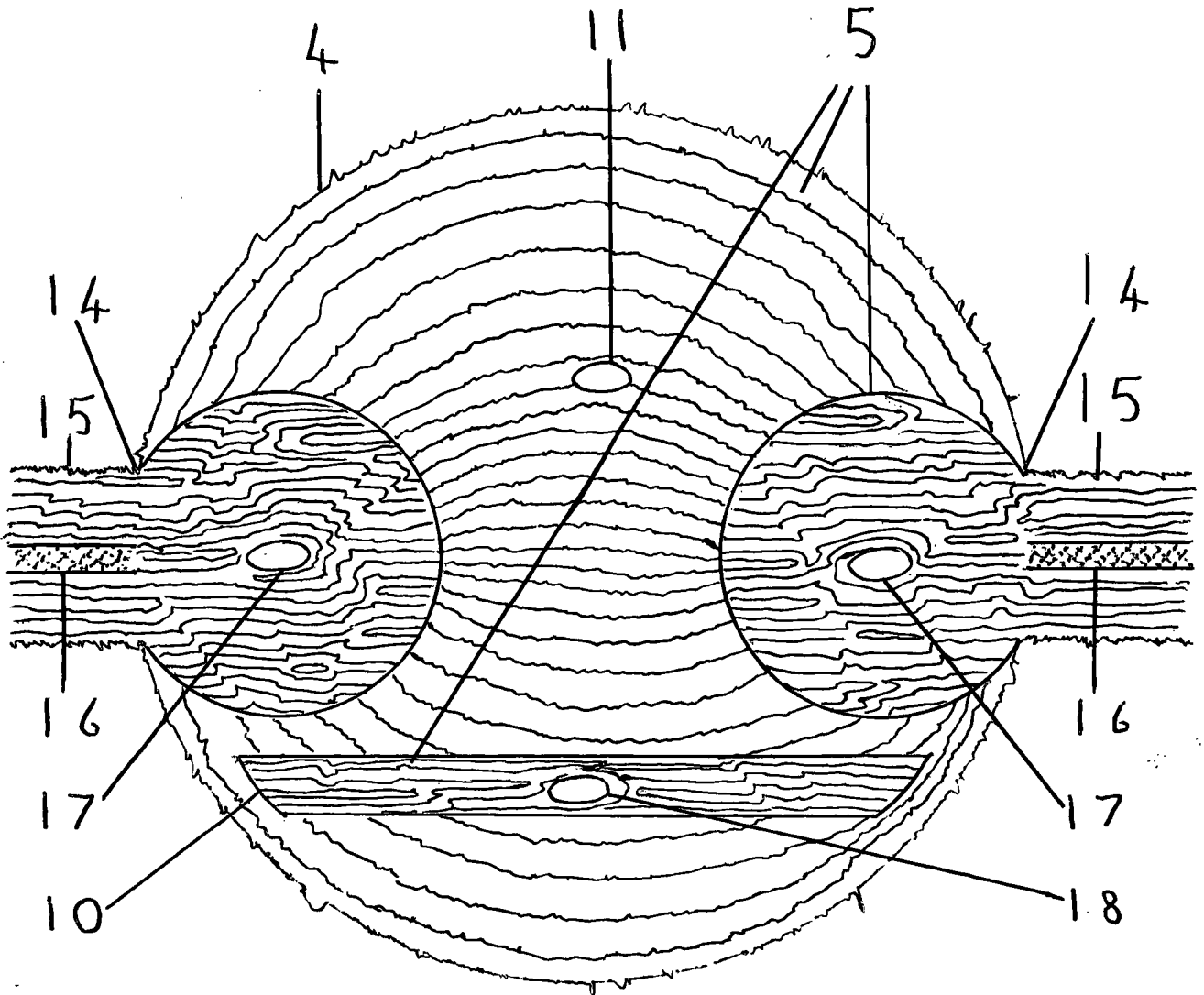


Figure 7

Aerial view of the post with both ver-
tical rails in position and the solar
panel

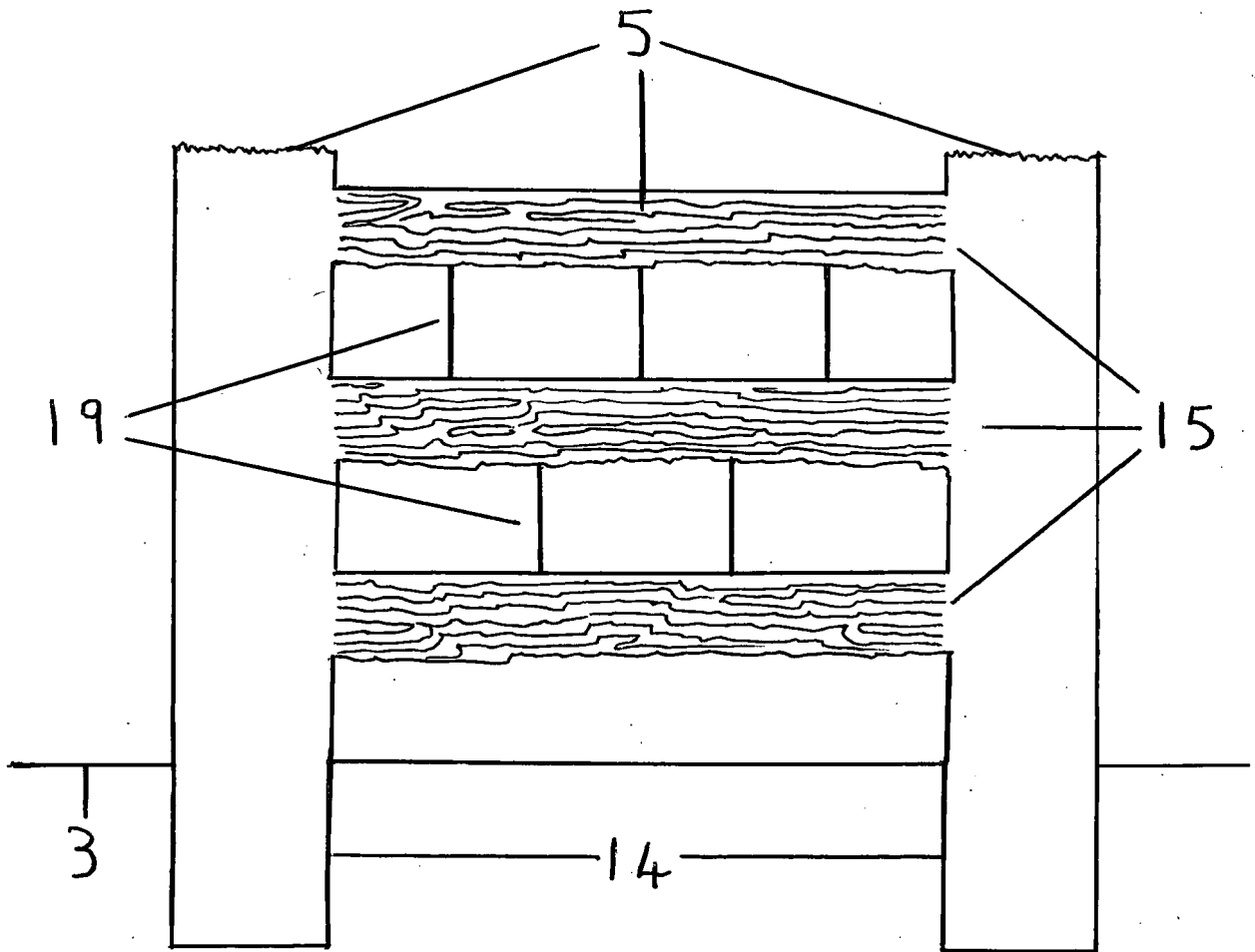


Figure 8

Side elevation of the rail section

A hosepipe attachment with the same thread is screwed into the water point which can also be used to pump the water out.

With the water point plug 11 screwed in, the post 4 is water tight.

The rails are constructed taking the formula from a gate.

A vertical rail 14 at each end to which the horizontal rails 15 are attached.

As the rails are all joined together, they are made in one mould and go between two posts 4, a vertical rail 14 at each end.

The rails are hollow and filled with water once in the secured position in the posts 4.

The rails are filled with water to make them more sturdy.

The rails have one water point which is on the top of one of the vertical rails 14. The water point plug 17 is screwed into the rails making them water tight.

The vertical rails 14 are round and the exact height of the posts 4.

Two straight round tubes 13, the exact height of the posts 4 are very stoutly moulded to the inside walls of the posts 4. One each side of the posts 4 and directly opposite each other making them an integral part of the posts 4.

The vertical rails 14 fit perfectly into the tubes 13, as the vertical rails 14 enter the tubes 13 simultaneously they are pointed at the bottom making it easy to locate the top of the tubes 13.

The horizontal rails 15 are accommodated by a channel 7 (vertical aperture). This is achieved by cutting out a section from the post 4 wall and tube 13 the same width as the horizontal rail 15 with just a slight tolerance allowing the horizontal rail 15 to slide down the tubes 13.

On the outside of the post 4 half way up from the ground is a button 8 operating a spring-loaded catch, a groove in the vertical rail 14 clicks into the catch securing the rails.

In this position the top of the vertical rails 14 are flush with the tops of the posts 4. The channel 7 accommodating the horizontal rails 15 stops at the bottom of the bottom rail which is where the horizontal rails 15 are in the secured position.

Finally, incorporated in the posts 4 are solar panels 10 which go from ground level to the top of the post 4, but do not encroach onto the other side of the fence.

The solar panels 10 are recessed into the post 4 and slide down channels moulded into the posts 4. There are two channels one each side of the solar panels 10.

A spring loaded catch, like that used to secure the rails is used to secure the solar panels 10 and again operated by a button 9 on the outside of the post 4, three-quarters of the way up from ground level.

Fixed to the top of the solar panels 10 is a moulding made of the same material as the post and rails, which, in the secured position is flush with the top of the post 4.

The moulding has a thread moulded into it the same as a stud 18, which is screwed in.

The stud 18 is unscrewed and a handle with the same thread is screwed in allowing the solar panels 10 to be removed by pressing in the catch button 9, releasing the solar panels 10 and enabling them to be lifted out of the post 4.

The aim is to make the posts 4 and rails 14 and 15 look as realistic as possible. This is done in stages,

First stage

The most elementary and probably the most important is an exact copy of tree bark embossed on the posts 4 and horizontal rails 15,

also the top of the vertical rails 14 and the moulding on the top of the solar panels 10.

An image of a knot in the wood is embossed on the top of the water point plugs 11 and 17, the buttons operating the catches for securing the rails 14 and 15, and solar panels 10. Also, the stud 18 in the moulding on the top of the solar panels 10.

In an attempt to minimise theft it is advisable to have the owners name and address embossed on the post and rails.

Second stage

The posts 4 are a recreation of a tree trunk. At ground level tree roots 6 are moulded all round the post 4 going as high as the bottom of the channel 7 housing the horizontal rails 15 and protrude out. The roots 6 have a dual purpose, covering the tubs large lips 2 which are flat on the ground and secondly the prime function making the posts 4 a great deal more stable.

Third stage

The horizontal rails 15 are not the uniform cut rails of today but period style using tree branches, complemented with all the iron work from the same era.

Bracket nails and vertical strengtheners between the horizontal rails 15 all captured in accurate detail. The brackets and nails are cosmetic, the vertical strengtheners between the horizontal rails 15 are functional.

Fourth stage

The final stage, but equally important, is the colouring.

The brackets, nails and vertical strengtheners between the horizontal rails 15 are black.

Figure 1
Side elevation of the tub

- 1) Tub
- 2) Tub lip, the and lip are all one, being made in one moulded.

The lip goes around the top of the tub and is flat to the ground enabling the tub to be put in the ground with spirit level accuracy ensuring the post stands perfectly straight.

- 3) Ground level

Figure 2
Aerial view of the tub

- 4) Tub
- 5) Tub lip

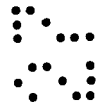


Figure 3
Side elevation of the post

- 1) Tub
- 2) Tub lip
- 3) Ground level
- 4) The post
- 5) Tree bark embossed onto the post
- 6) Tree roots are moulded around the post going as high as the bottom horizontal rail and protruding out.

The roots have a dual purpose, covering the tubs large lip which is flat on the ground, and secondly the prime function making the post a great deal more stable.

- 7) Channel (Vertical Aperture) This is achieved by cutting out a section from the post wall and tube to accommodate the horizontal rails.

When the rail section is in the secured position the bottom of the horizontal rail is at the bottom of the channel.

- 8) Knot in the bark which is the button operating the catch to secure the rail section.

Continued on the next page

Figure 3
Side elevation of the post

- 9) Knot in the bark which is the button operating the catch to secure the solar panel.

Figure 4
Elevation of the post with solar panel

- 1) Tub
 2) Tub lip
 3) Ground level
 4) The post
 5) Tree bark
 6) Tree roots
 10) Solar panel

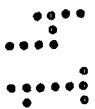


Figure 5
Elevation of the post the opposite side to the solar panel

- 1) Tub
 2) Tub lip
 3) Ground level
 4) The post
 5) Tree bark
 6) Tree roots



Figure 6
Aerial view of the post with neither of the vertical rails in position nor the solar panel

- 4) The post
- 5) Tree bark
- 11) Knot in the bark which is the water point for the post.
- 12) Aperture which houses the solar panel
- 13) Vertical tube which houses the vertical rail

Figure 7
Aerial view of the post with both vertical rails in position and the solar panel

- 4) The post
- 5) Tree bark
- 10) Solar panel
- 11) Knot in the bark which is the water point for the post
- 14) Vertical rail
- 15) Horizontal rail
- 16) Tunnel on the top of the horizontal rail in the middle, the top of the tunnel being perforated and runs the full length of the horizontal rail

Figure 7
Aerial view of the post with both vertical rails in position and the solar panel

The tunnel is moulded into the horizontal rail and is part and parcel of the rail, its purpose is for the laser to travel in.

The laser being position at the entrance to the tunnel with a censor operating from electrical energy supplied by the solar panels

- 17) Knot in the bark which is the water point for the rail section.
- 18) Knot in the bark which is unscrewed and a handle secured in enabling the solar panel to be lifted out.

Figure 8
Side elevation of the rail section

3) Ground level

5) Tree bark

14) Vertical rail

15) Horizontal rail



Figure 8
Side elevation of the rail section

19) Strengtheners, vertical strengtheners between the horizontal rails

Using the same terminology as previous the strengtheners are part and parcel of the rail section.

Seeing as the strengtheners would have been made of steel they are finished in black as are the brackets and nails in order to give them an authentic appearance



CLAIMS

As the B-A Fencing is made of a man-made material the paramount importance has been to have it as durable and long lasting as possible. The tubs 1 are extremely robust unlike wood which is at the mercy of the elements, literally rotting in the ground. The tubs 1 are made to withstand all they will encounter making them virtually indestructible.

With the assistance of the large lip 2 all around the top of the tubs 1 they are put in the ground with spirit level accuracy ensuring the posts 4 stand perfectly straight.

The solar panels 10 are recessed into the posts 4 as opposed to being on the outside and to coin a phrase 'in your face'. Apart from not looking environmentally friendly the other aspect is vulnerability to damage from all quarters.

This is made feasible by the new BenQ Solar Sun Fortes Panels achieving 320 watts of power from the same space that standard modules would normally achieve 250 watts.

This results in a yield that is 25% higher in the same amount of space.

A real concern for horse owners is a very common habit known as 'crib biting'. This is when horses bite wood. Two aspects of crib biting are firstly, the main culprit; boredom. A horse can be a victim of circumstances, ie being on box rest through injury or illness, secondly: horses copying. The stigma being this can lead to 'wind sucking'.

Wind sucking is the term used when horses bite wood and suck in air at the same time.

The most immediate thing relating to this is that it devalues the horse considerably making it virtually unsalable, a specially shaped collar made of aluminium can be fitted round the horses neck or alternatively it can have an operation, but neither can guarantee to be successful.

On the conventional post and rail fencing the deterrent against crib biting is creosote. This has to be done regularly to be effective, but the repercussions are it burns the horses' mouths.

The option is a thin wire carried just proud of the top of the fence resting on keepers nailed to the top of each post.

The power supplying the current through the wire is from car batteries. On the B-A Fencing the deterrent against crib biting is achieved using lasers and sensors operating from electrical energy supplied by the solar panels 10.

The top of the horizontal rail 15 is perfectly straight and level with a tunnel 6 moulded into the top of the rail.

The top of the tunnel 6 is perforated.

A laser runs along the full length of the horizontal rail 15 in the tunnel 6 and is positioned at the entrance to the tunnel 6 with the sensor.

The sensor is activated when a horse attempts to bite a horizontal rail 15, immediately releasing the laser resulting in deterring the horse from pursuing any further.

The sensor releases the laser for a matter of seconds, but in the event of the horse continuing to bite the horizontal rail 15, the sensor is programmed to release the laser again but with a stronger current.

With conventional fencing, only the top horizontal rail has a current, but all the horizontal rails 15 on the B-A Fencing have a current.

With conventional fencing the horse has to touch the wire, but on the B-A Fencing this is not the case.



Application No: GB1320891.3

Examiner: Mr Philip Lawrence

Claims searched: -

Date of search: 4 March 2014

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	-	US6453849 B1 (MOSBY), see Abstract and Figures noting a sensor activating an anti-cribbing device.
A	-	US4836504 A (AMCO), see Abstract and Figures noting electrified fence.
A	-	WO98/20729 A (GROVES), see whole document noting use of a thin metal wire carrying a current to prevent cribbing.
A	-	CN101787818 B (NANJING), see WPI Abstract Accession No. 2010-L01073 and Figures noting use of water ballast at bottom of post.
A	-	CN101831880 A (TIXING), see WPI Abstract Accession No. 2010-M93330 and Figures noting use of solar panels on fences.
A	-	KR101166217 B (LEE), see EPODOC English Abstract noting use of fake pine wood covering.
A	-	JPH11315648 A (SEKISUI), see WPI Abstract Accession No. 2000-058423 and Figures noting fake wood coverings.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

Worldwide search of patent documents classified in the following areas of the IPC

A01K; A01M; E04H

The following online and other databases have been used in the preparation of this search report



EPODOC, TXTE, WPI

International Classification:

Subclass	Subgroup	Valid From
None		