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3,295,833

PROTECTIVE ENCLOSURE

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2 Sheets-Sheet 1

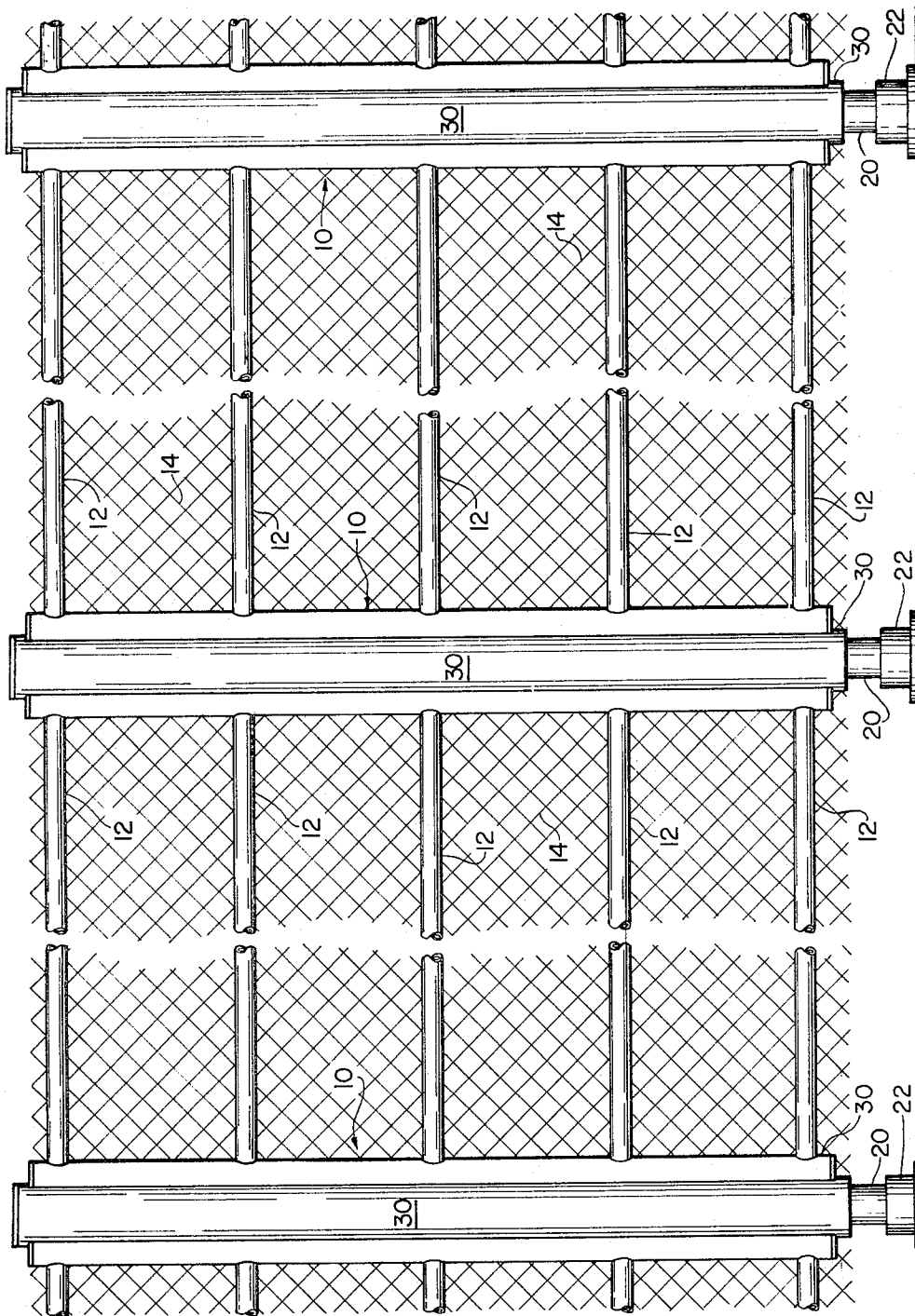


FIG. 1

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2 Sheets-Sheet 2

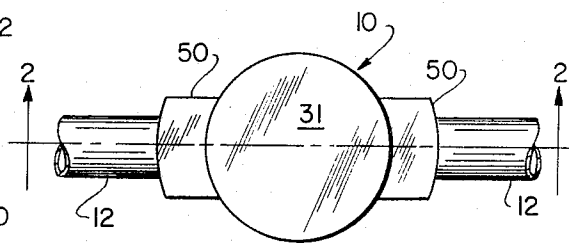
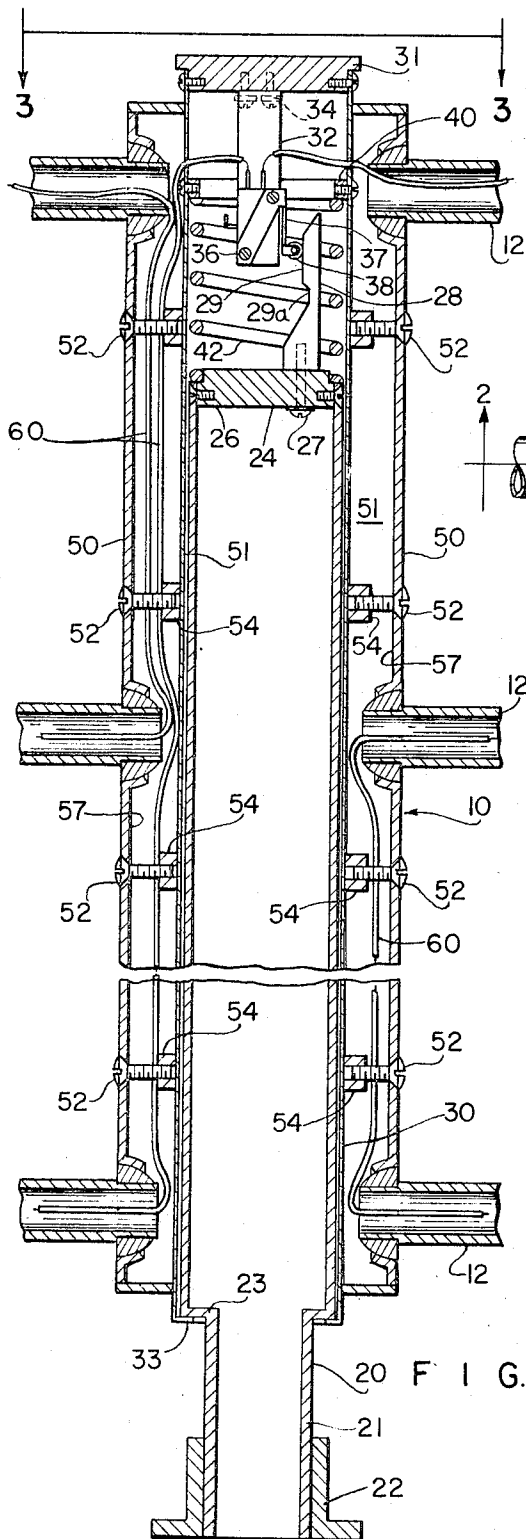


FIG. 3

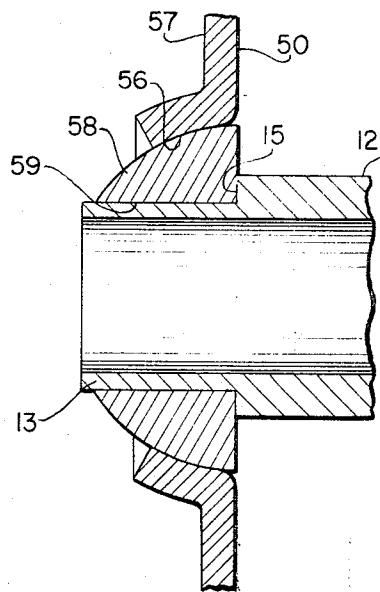


FIG. 4

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## PROTECTIVE ENCLOSURE

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3 Claims. (Cl. 256—21)

This invention relates to burglar alarms and more particularly to a signal producing protective enclosure for large open areas.

In the general field of burglar protection, areas which have proven to be particularly difficult to protect against burglarly have been large open storage areas such as motor pools or open warehousing facilities which are normally protected by fences. Various attempts have been made at providing protectives devices for these areas including such apparatus as radar devices and electrical capacitance devices. Some of these devices have proven successful and useful, however, their costs are quite high and since they are devices which require extreme care in servicing and tuning they are subject to being put out of service by various factors such as bad weather conditions. If tuned too finely they also may become highly subject to the transmittal of false alarms. The present invention overcomes many of these problems since it incorporates a burglar signaling device within the fence or enclosure itself and thus protects many of the electrical components from the elements. It further requires little or no servicing and lends itself to extensions or enlargements of the area covered without requiring extensive revision of the entire system. Other advantages of the invention will become apparent from the following description and accompanying drawings which describe and show for illustrative purposes only a preferred embodiment of the invention.

In the drawings:

FIG. 1 is a front elevational view of the novel protective enclosure.

FIG. 2 is an enlarged sectional elevation view of a support post of the protective enclosure as viewed along line 2—2 of FIG. 3.

FIG. 3 is an enlarged plan view of a support post as viewed from line 3—3 of FIG. 2.

FIG. 4 is an enlarged detail view of a joint between a rail and a support post.

Referring in greater particularity to the drawings, in which the like numbers refer to like parts, 10 generally indicates a support post for the novel enclosure. Extending horizontally from post to post is a plurality of rails 12. The rails 12 and posts 10 may together support a wire mesh fence 14. However, under certain conditions it may be considered adequate to protect an area without including a mesh such as 14.

Each post 10 (refer to FIG. 2) is constructed of a hollow stanchion 20 joined to a base 22. At the top of the stanchion 20 is a coverplate 24 which is held in place by screws 26. Extending upwardly from coverplate 24 is a finger 28 which has a cammed surface 29. This finger is fastened to the coverplate by means of screw 27.

A tube 30 extends over the stanchion 20 in a slidable relation thereto. Like the stanchion, the tube also has a coverplate designated as 31. The coverplate 31 has a bracket 32 fastened to its inner surface by means of screws 34. At the lower end of the bracket 32 is fastened a small switch 36 having an outwardly extending spring arm 37 with a roller 38 thereon. This roller which is biased outwardly by the spring arm 37 rides on the cammed surface 29 and thus releases the switch when the roller engages the detent portion 29a of the cammed surface 29.

Between the coverplates 24 and 31 a retainer ring 40 is

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fastened to the interior of tube 30. This retainer ring acts as an abutment for the end of a compression spring 42 whose other end rests on the coverplate 24.

To prevent the tube 30 from being lifted up too far on the stanchion 20 the bottom portion 21 of the stanchion is of a smaller diameter than the remainder of the stanchion thus forming a shoulder 23. The bottom of the tube is turned inwardly to form a flange 33 which engages the shoulder 23 upon upward movement of tube 30 and thus limits such movement.

Fastened to the sides of the tube 30 are elongated receptacles 50 which provide an enclosed passageway 51 from the lowermost rail 12 to the uppermost rail 12. The receptacles 50 are illustrated as being fastened at opposite sides of the tube 30 by means of screws 52 to bosses 54 joined to said tube. At corner posts, however, the receptacles may be at a right angle, or some other appropriate angle, to each other.

Each horizontal rail 12 extends into its terminal receptacle 50 in a manner which permits each rail to have angular and lateral movement to compensate for any downward movement of a tube 30 which may be caused by a load imposed on any of its adjacent rails. FIG. 4 illustrates a joint construction between a tube 30 and rail 12 which permits such angular and lateral movement of a rail. A partial hemispherical socket 56 is joined to the interior surface of the outer wall 57 of the receptacle 50. Within the socket 56 is a half of a ball-shaped insert 58 through which a longitudinal cylindrical passageway 59 extends. The rail 12 has a reduced elongated portion 13 at its end which extends through the passageway 59. To prevent the rail from entering the insert too far a shoulder 15 is formed between the reduced portion 13 and the full diameter of rail 13 to act as an abutment.

Extending through the rails 12 from post to post is an electrical conductor, illustrated here as a wire 60. This wire is shown as a continuous strand connecting each of the switches 36 in series and then continuously looping through the rails to an adjoining switch. The switch 36 is intended to "break" the circuit when roller 38 enters the detent 29a. Likewise, should the wire 60 be cut, a similar "break" will occur. As with most common burglar alarms such a "break" will initiate an alarm signal.

In its operational form the enclosure is constructed about a desired area by fastening the posts 10 to the ground at predetermined intervals. The rails 12 are then strung between the posts by inserting them into the receptacles 50. The wires 60 are then strung through the rails and receptacles and into the upper portion of tube 30 to be fastened to switch 36 before cover plate 31 is fastened into place.

The rails 12 are generally spaced apart a distance too small to permit a person to crawl between the rails or under the lower rail. As a result anyone seeking to climb over the enclosure will impose his weight on one of the rails. The load will be transmitted to the tube 30 and cause it to slip downwardly against the upward bias of the spring 42. As the tube moves downwardly carrying with it the switch 36 the wheel 38 of spring arm 37 rides on cammed surface 29 until it reaches the detent 29a. At this moment the spring arm 37 will move outwardly releasing the switch 36 to a "break" condition and thus initiating an alarm condition.

Should a potential burglar desire to cut his way through the fence rather than climb over it the wires 60 within the rails 12 will either be short circuited by the saw blade used in the cutting operation or will be cut in two along with the rail. Either event will cause a "break" in the circuit and thus initiate an alarm signal.

The wire mesh 14 which forms no part of the present invention is illustrated as a means to make more difficult

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any attempt to go through the fence. As has been previously stated, this mesh may be dispensed with.

It is to be understood that the above description and accompanying drawings are to be deemed primarily as illustrative of the preferred mode presently contemplated of carrying out the principles of the invention, and that the device described and illustrated may be modified or altered in its form, proportions, detail of construction and arrangement of parts without departing from the spirit and scope of the invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent is:

1. An electric protective enclosure comprising a plurality of vertical posts and a plurality of lateral rails connected to said posts,

(A) each of said posts comprising:

- (1) a base,
- (2) an upright stanchion joined to said base,
- (a) said stanchion being closed at its upper end and having

(I) an elongate element extending upwardly from said closed end, said element having

(A) a cammed surface with a detent therein,

(3) a tube over said stanchion covering a major portion of and slidably engaging the exterior of said stanchion,

(a) said tube having a cover at its upper end and further having

(I) a switch fixed to the interior of said cover within said tube and having

(A) yieldable actuating means for engaging said cammed surface

(II) spring retaining means fastened to the interior of said tube

(III) spring means interposed between said closed upper end of said stanchion for biasing said tube upwardly

(IV) means at the bottom of said tube for engaging a portion of said stanchion and for preventing said tube from moving upwardly past a predetermined point

(4) at least one elongate receptacle joined to the exterior surface of said tube, said receptacle having

- (a) one open side joined to said tube and
- (b) being closed at all its remaining portions

(B) a plurality of laterally oriented rails being connected to said receptacle, each rail comprising

- (1) an elongated hollow member
- (2) means for rotatably joining said member to said receptacle and for permitting axial motion of said member into and out of said receptacle,

(C) an electric current conducting wire extending through the interior of each rail and at least a portion of a receptacle connected to each rail and joining in series in an alarm circuit each said switch of each of said posts;

whereby, as at least one of said tubes is moved downwardly by a load imposed on a portion of said enclosure the switches in said at least one of said tubes will be actuated into a condition initiating an alarm by movement of its said yieldable actuating means over its corresponding engageable cammed surface and into the detent of said cammed surface.

2. An electric protective enclosure comprising a plurality of vertical posts and a plurality of lateral rails connected to said posts,

(A) each of said posts comprising:

- (1) an upright stanchion adapted to be joined to a supporting foundation
- (a) an elongate element at the upper end of

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said stanchion extending substantially vertically, said element having,

(I) a cammed surface with a detent therein

(2) a tube over said stanchion covering a major portion of and slidably engaging the exterior of said stanchion

(a) said tube being closed at its upper end and having

(I) a switch fixed within said tube at its upper end and having

(A) yieldable actuating means for engaging said cammed surface

(II) resilient means in said tube interposed between the upper end of said stanchion for biasing said tube upwardly,

(3) means on said stanchion and tube for preventing upward movement of said tube past a predetermined point,

(4) at least one elongated receptacle extending along a side of said tube and covering a portion of the outer surface of said tube, said receptacle having,

(a) one open side joined to said tube

(B) a plurality of laterally oriented rails being connected to said receptacle, each rail comprising:

- (1) an elongate hollow member
- (2) means for rotatably joining said member to said receptacle and for permitting axial motion of said member into and out of said receptacle,

(C) an electric current conducting wire extending through the interior of each rail and at least a portion of a receptacle and joining in series in an alarm circuit each said switch of each of said posts,

whereby as at least one of said tubes is moved downwardly by a load imposed on a portion of said enclosure the switch in said at least one of said tubes will be actuated into a condition initiating an alarm by movement of its said yieldable actuating means over its corresponding engageable cammed surface and into the detent of said cammed surface.

3. An electric protective enclosure comprising a plurality of vertical posts and a plurality of lateral rails connected to said posts,

(A) each of said posts comprising

- (1) two upright elongate members extending one within the other in telescoping relation
- (a) the outer of said members being positioned uppermost

(2) resilient means interposed between said two members for urging the outer member upwardly from the inner member,

(3) means on both said members for engaging each other and preventing upward movement of the outer member beyond a preselected point,

(4) housing means extending along at least one side of the outer member for providing a covered passageway from the lower to the upper portions of said outer member,

(B) a plurality of laterally oriented rails connected to said housing means and extending part-way into said housing means, each rail comprising:

- (1) an elongate hollow tube
- (2) means for rotatably joining said tube to said housing means and for permitting axial motion of said tube into and out of said housing means

(C) electric switch means within each of said posts for initiating a signal when predetermined movement downwardly of said outer member occurs with respect to said inner member,

(D) electric conducting means extending through said rails and at least a portion of said housing means for joining a switch in one post with another switch in another post,

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whereby, a load, exceeding a preselected value, imposed on at least one of said laterally oriented rails will cause said outer member to move downwardly and actuate said electric switch means and thus initiate an alarm signal.

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