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GB 0338420 A
DE 020317367 U
FR 000792088 A
EP 1030026 A
FR 000958454 A
US 4966217 A

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(54) Title of the Invention: **Access panel**
Abstract Title: **Access panel for covering an opening such as a garage inspection pit**

(57) The access panel 11 comprises a parallel array 12 of longitudinal members 14-18 laterally spaced in a planar arrangement and at least two lazy-tong units 20, 21 extending between the members and pivotally linked to each member. The distance between the outermost members 17, 18 defines the panel length, the arrangement of the members with the lazy-tong units allowing the panel length to be varied. A locking unit may be included to engage at least two members in the array to retain the panel at a predetermined length. The ends of at least one member of the array may be adapted for sliding on a support means.

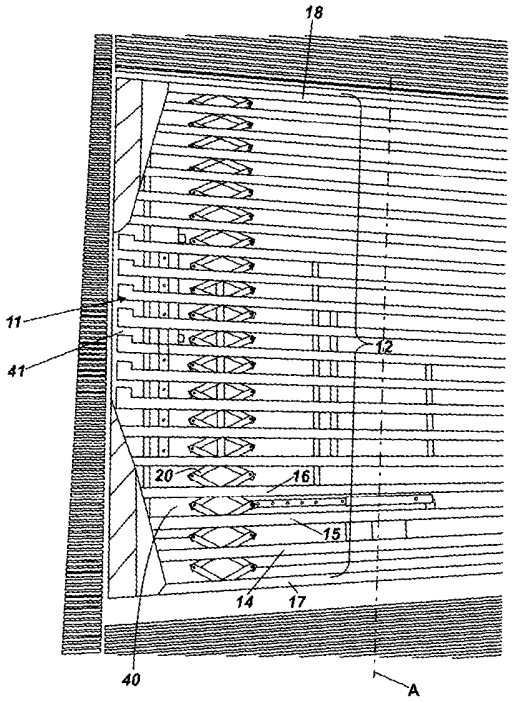

Fig. 2

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

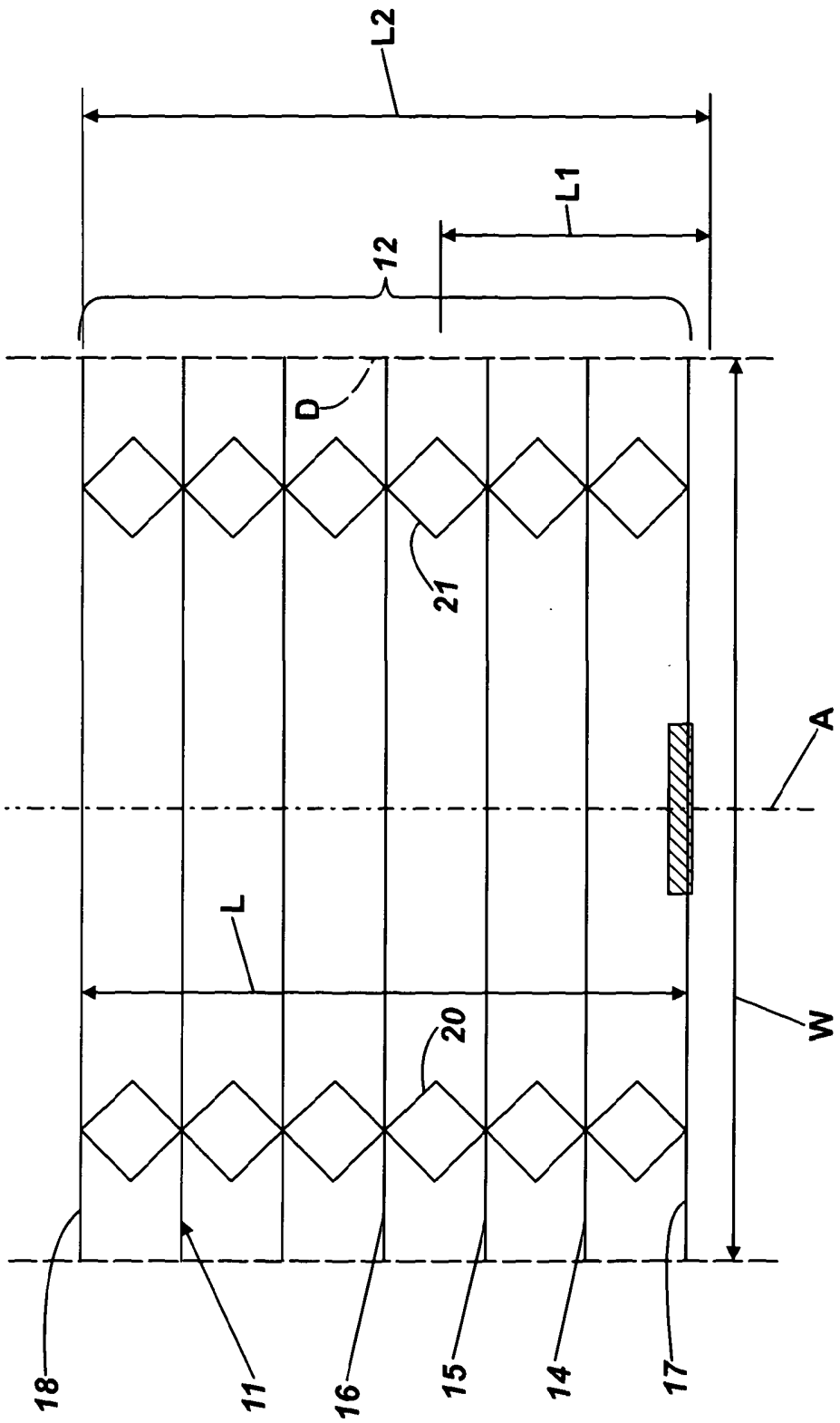

Fig. 1

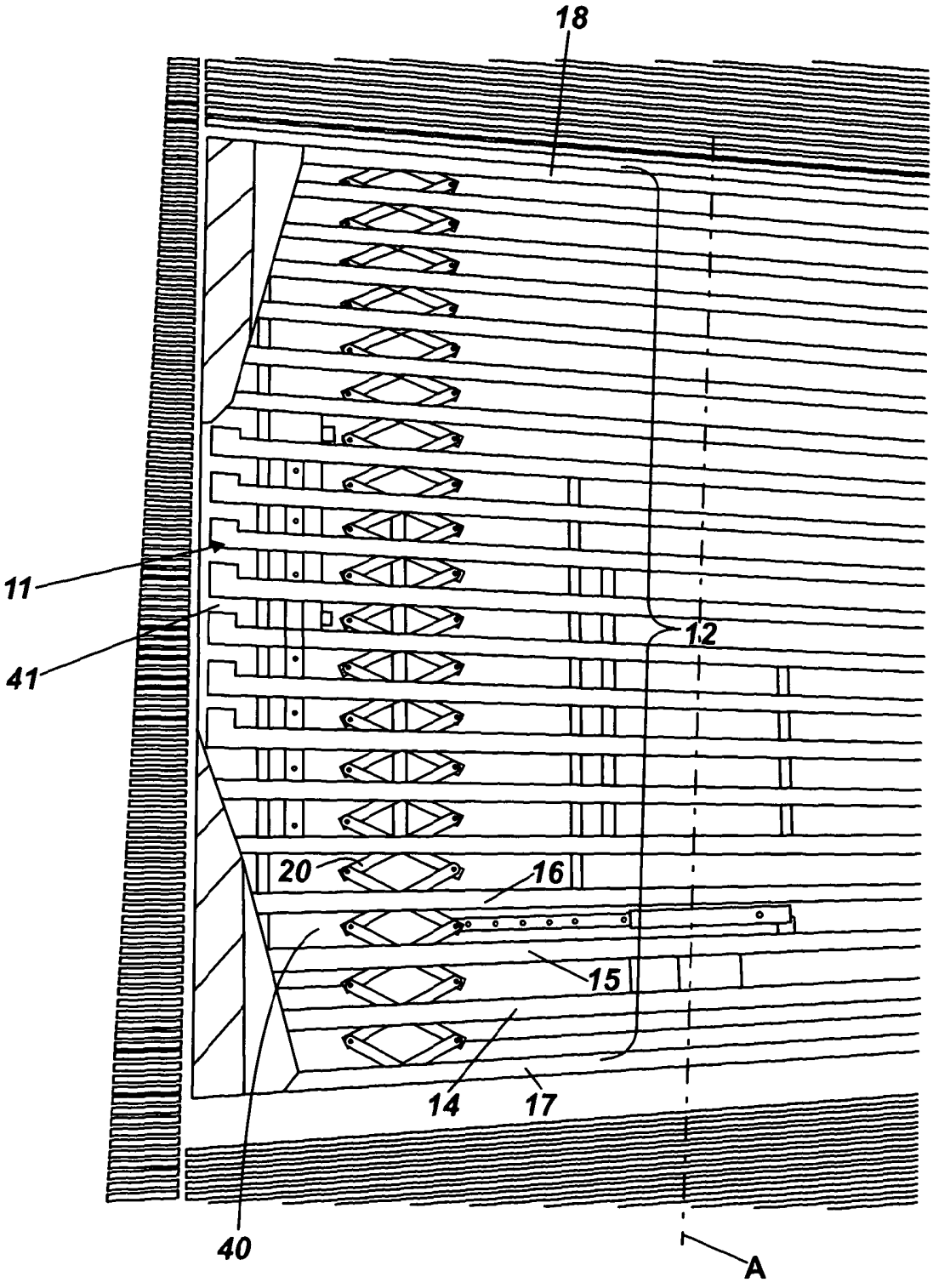

Fig. 2

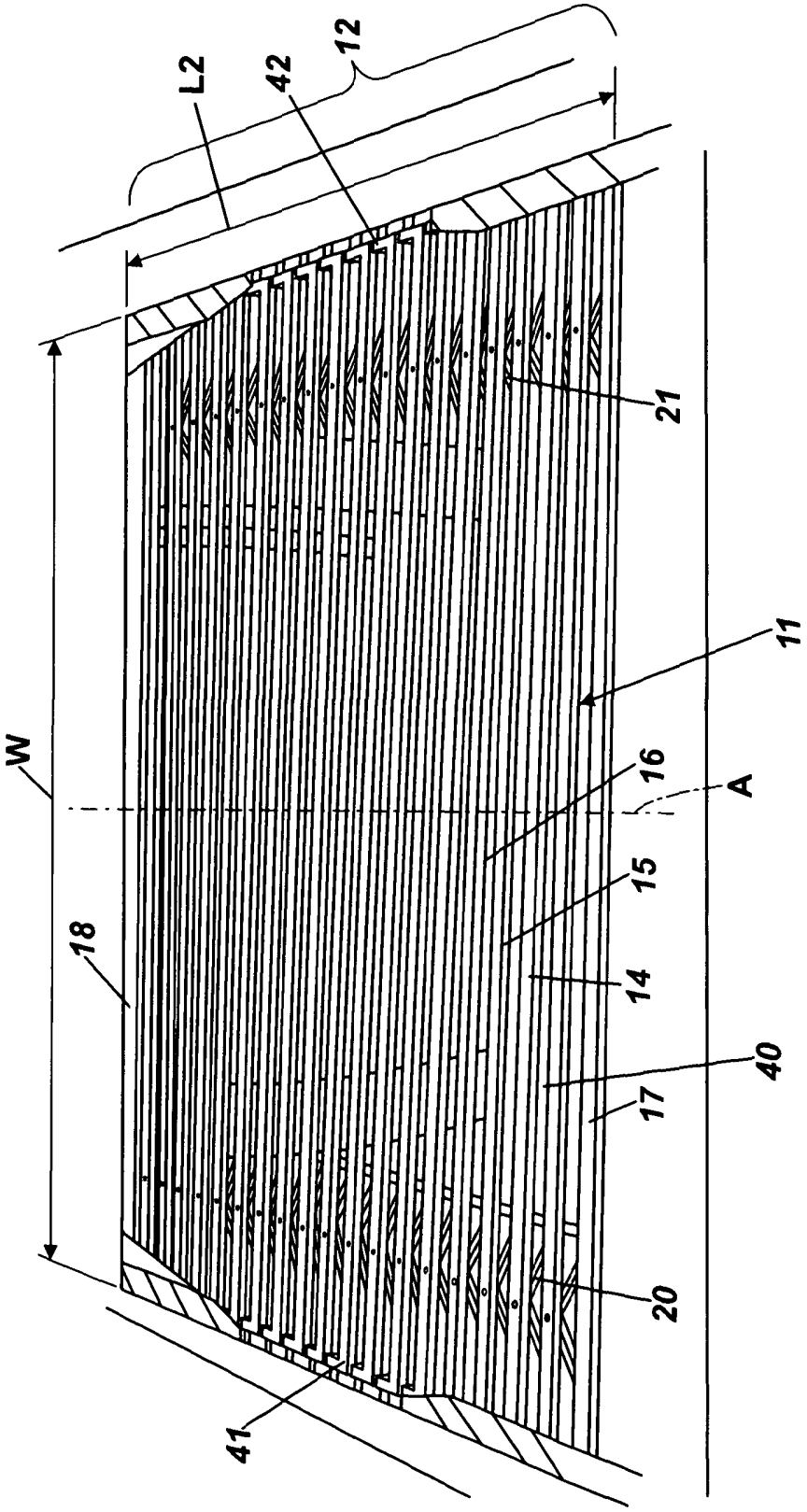

Fig. 3

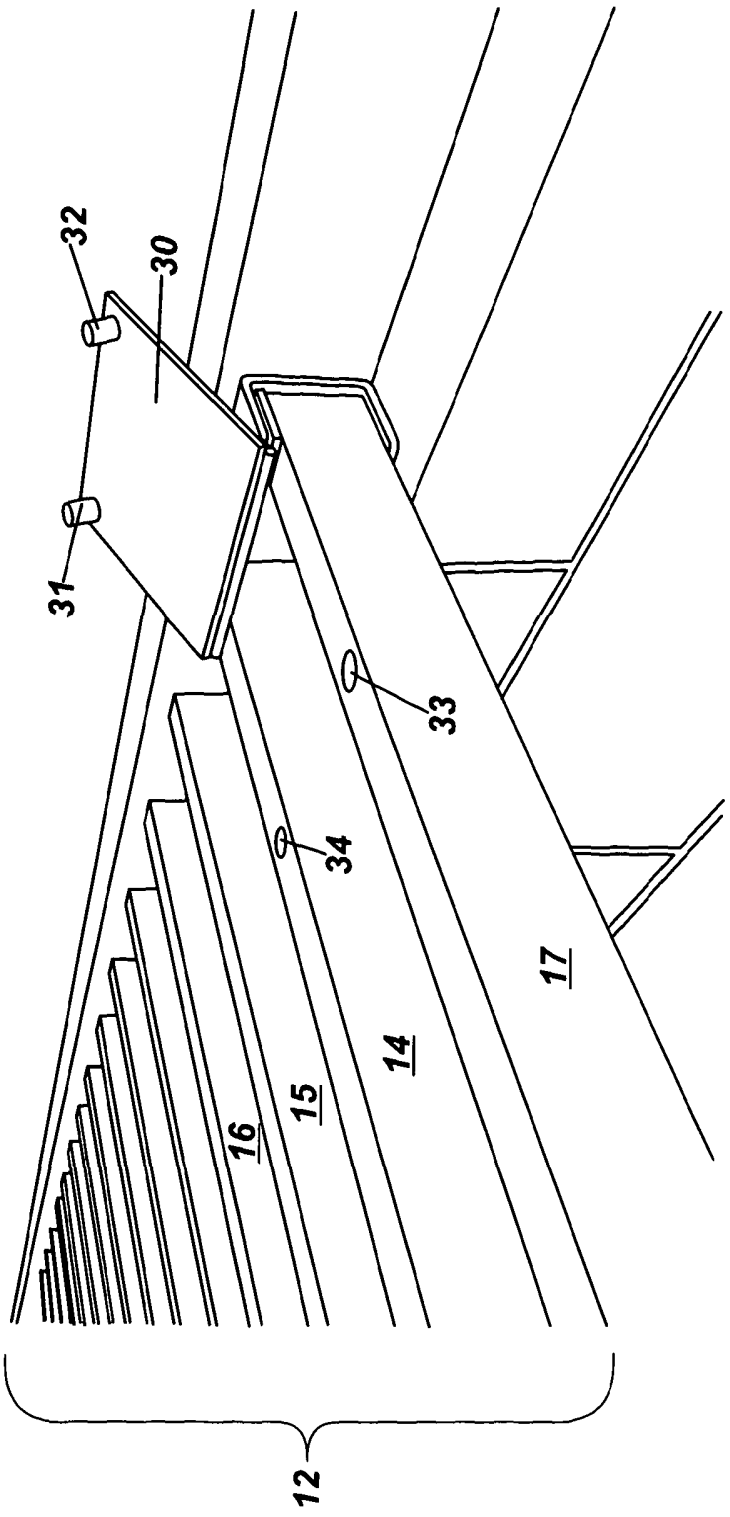

Fig. 4A

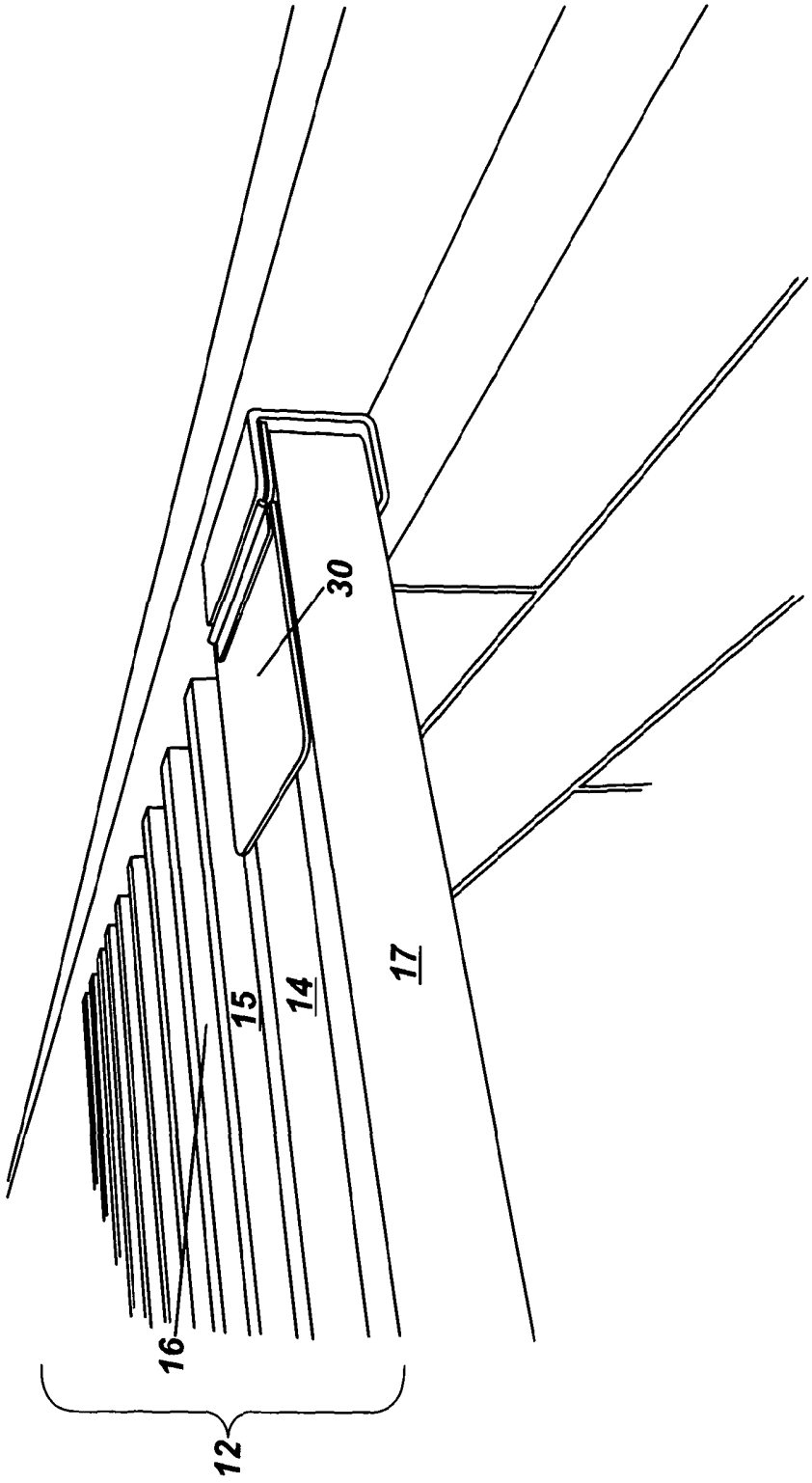

Fig. 4B

ACCESS PANEL

TECHNICAL FIELD

This invention relates to an access panel. It is particularly, but not exclusively, concerned with a safety device for use in connection with a floor opening through which an individual could inadvertently fall.

BACKGROUND ART

A number of industries make use of a work area in which wheeled units are worked on. Typically a garage or other workspace for car maintenance, repair or construction needs to be able to access a vehicle from any direction. In order to work on the underside of the vehicle there is a need for a pit over which the vehicle can be placed to enable an operative to enter the pit to access the underside of the vehicle. With a vehicle in place over a pit opening so as to fully cover the opening then inadvertent falling is prevented. However once the vehicle is removed from the pit opening the pit opening becomes a hazard until some form of barrier is put in place.

Various methods have been used to prevent inadvertent entry into such a pit. These include a vertical barrier extending around the pit periphery or baulks of timber inserted to lie on a rim about the pit opening so as to be flush with surrounding floor area. However these methods require action by somebody and take time to carry out. In addition if the person working in the pit on a vehicle subsequently climbs out and the vehicle is moved away from the pit the pit opening is left unguarded until a person arrives to rectify the situation. Whatever physical barrier is used can be supplemented by signs, lights or sounding means.

In our co-pending application PCT/GB2009/050460 there is described a retractable safety device for use in regulating entry to a hazard area from an access area comprising: a parallel array of members each member in the array having- a first end pivotally attached to a first side rail to which each member is pivotally attached by a first end of each array member; a second side member to which each member in the array is pivotally attached by a second end of each array member; the array and first and second side arrays being displaceable in a plane between a first, working, configuration in which the first and second side members are relatively wide apart; and a second, stowage, configuration where the first and second side members are relatively close; at least two slide arms, each slide arm being located on, and pivotally connected to, the second side member; the slide arms being spaced apart on the second side member; a slider mounted on each slide arm adapted to slide along the slide arm on which it is mounted, each slider including means whereby the slider can be secured to a region in or near the hazard area so as to permit the slide arm to be displaceable relative to the slider; and stop means to limit the extent of travel of the slide arm relative to the slider so as to define the second, stowage, configuration; the device providing that with the array in the first, working, configuration the array serves to obstruct passage from the access area into the hazard area; and with the array in the second, storage, configuration the array is withdrawn from obstructing passage from the access area into the hazard area. Hereafter a safety device of this type will be referred to a being 'of the type described'.

When a vehicle covers an entire pit opening then it serves as a complete barrier to inadvertent pit entry. However access to the pit for work on the vehicle is also prevented. In the event a vehicle covers only a part of the pit opening the exposed section of the opening remains a hazard albeit one of reduced size by comparison with that of the wholly uncovered pit. However access to the pit to work on the vehicle is readily available.

DISCLOSURE OF INVENTION

An access panel for use in conjunction with an opening; the access panel comprising:

a parallel array of members with a longitudinal axis; the lateral extent of the array corresponding to a lateral extent of the opening; first and second end members of the array serving to define the working length of the panel;

at least two pantograph units extending between the first and second end members; each member in the parallel array being pivotably linked to each pantograph unit; the combination of members and units providing for the panel to function as a planar structure and enabling the length of the panel to be varied between a first configuration wherein the panel has a minimum length measured between the first and second end members; a second configuration wherein the panel has a maximum length measured between the first and second end members or a length intermediate the minimum and maximum lengths.

According to a first preferred version of the present invention the access panel is provided with a locking unit which in a first setting engages at least two members in the array to retain the array at a predetermined length and in a second setting releases the array from the retention.

According to a second preferred version of the present invention or of the first preferred version thereof lateral ends of at least some of the members of the array are adapted for sliding on a support means to enable the panel to be readily varied in length by low frictional contact between the adapted ends and the support means.

DESCRIPTION OF DRAWINGS

An exemplary embodiment of the invention will now be described with reference to the accompanying drawings of an access panel of which:

Figure 1 is a diagrammatic plan view;

Figure 2 is a view from above of an installed access panel;

Figure 3 is a perspective view of the panel of Figure 2; and

Figures 4A and 4B show the panel of Figures 2 and 3 in a lockable configuration.

MODE FOR CARRYING OUT THE INVENTION

The figures variously show an access panel 11 made up of a parallel array 12 of members (typically members 14, 15, 16) with a longitudinal axis A. Lateral extent W of the array 12 corresponds to lateral extent of opening D. First end member 17of the array and second end member 18 between them define the length L of the panel 11 which length can be varied as will be described hereafter.

Pantograph unit 20, 21 extend between the first and second end members 17, 18. The pantograph 20 (pantograph 21 being identical in form and function) comprises a sequence of strips pivotably attached at the centres to a member of the 12 and at their end to the ends of adjacent strips so providing for the array to be altered in length while the members of the array are maintained parallel to one another.

Each member 14, 15, 16, 17, 18 etc. in the parallel array 12 is pivotably linked to each pantograph unit 20, 21 to provide for a combination of pivotably linked members and units resulting in the panel 11 functioning as a planar structure and enabling the length of the panel 11 to be varied longitudinally between:

a first configuration wherein the panel 11 can be maintained at a minimum length L1 measured between the first and second end members 17, 18; or

a second configuration wherein the panel can be maintained at a maximum length L2 measured between the first and second end members 17, 18; or

any intermediate length intermediate the minimum and maximum lengths.

Figure 4A and 4B show a panel equipped with a locking means in the form of a plate 30 which can be pivoted between an unlocked position (Figure 4A) in which pegs 31, 32 are disengaged from, respectively, holes 33, 34 in adjacent members of the array and a locked position (Figure 4B) in which the pegs 31, 32 engage the holes 33, 34. By locking two members in this way the array 12 cannot have its configuration changed so maintaining the panel 11 at its locked length.

As shown in Figure 2 and 3 the panel 11 is located over a pit 40 by being mounted by means of the extremities of the members in the array 12 in recesses 41, 42 in the pit periphery 43. The extremities of the members are provided with a low friction coating to enable the extremities to slide readily such as when the length of the array 12 is varied as outlined earlier or to enable the panel to move along recesses 41, 42.

The panel 11 allows a number of uses. In the event the pit 40 is partially covered by a vehicle by the retractable safety device the subject of our co-pending application PCT/GB2009/050460 then the uncovered section can be readily closed by means of the panel 11 with its length L set appropriately. The panel 11 is relatively light and easily handled and positioned so encouraging its use by an operative in contrast to conventional safety means.

INDUSTRIAL APPLICABILITY

The invention provides a safety device which can be readily set up and readily removed particularly, but not exclusively, for a pit for vehicle servicing. The device is readily mounted whether in an existing pit installation or in a new one.

CLAIMS

1 An access panel for use in conjunction with an opening; the access panel comprising:
a parallel array of members with a longitudinal axis; the lateral extent of the array corresponding to a lateral extent of the opening; first and second end members of the array defining the length of the panel;
at least two pantograph units extending between the first and second end members; each member in the parallel array being pivotably linked to each pantograph unit; the combination of members and units providing for the panel to function as a planar structure and enabling the length of the panel to be varied between a first configuration wherein the panel has a minimum length measured between the first and second end members; a second configuration wherein the panel has a maximum length measured between the first and second end members or a length intermediate the minimum and maximum lengths.

2 An access panel as claimed in Claim 1 with a locking unit which in a first setting engages at least two members in the array to retain the array at a predetermined length and in a second setting releases the array from the retention.

3 An access panel as claimed in any preceding claim wherein lateral ends of at least some of the members of the array are adapted for sliding on a support means to enable the panel to be readily varied in length by low frictional contact between the adapted ends and the support means.

4 An access panel as hereinbefore described with reference to the accompanying drawings.

Amendments to the claims have been filed as follows

CLAIMS

1 An access panel when used in conjunction with a longitudinal horizontal opening which has recesses (41, 42) incorporated in the sides of the longitudinal edges of the horizontal opening; the access panel (11) comprising:

a parallel array (12) of members (14, 15, 16) with a longitudinal axis parallel to the sides of the longitudinal edges; the lateral extent (W) of the array (12) corresponding to a lateral extent (D) of the opening and first (17) and second (18) end members of the array (12) defining a length (L) of the panel (12) the array being characterised by at least two pantograph units (20, 21) extending between the first (17) and second (18) end members; each member (14 – 16, etc) in the parallel array (12) being pivotably linked to each pantograph unit (20, 21); the combination of members (14, 15, 16 etc) and pantograph units (20, 21) providing for the panel (11) to function as a planar structure and enabling the length (L) of the panel (11) to be varied between:

a first configuration wherein the panel has a minimum length (L1) measured between the first (17) and second (18) end members;

a second configuration wherein the panel has a maximum length (L2) measured between the first (17) and second (18) end members or

an intermediate configuration having a length intermediate the minimum length (L1) and the maximum length (L2).

2 An access panel as hereinbefore described with reference to Figures 1 to 3 of the accompanying drawings.

Application No:	GB0914424.7	**Examiner:**	Colin Whitbread
Claims searched:	1-4	**Date of search:**	18 November 2009

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
X	1 and 2	FR958454 A (FRAISSANGE) See in particular page 2, lines 25 to 54; and Figure 1.
X	1 and 3	GB338420 A (ALFREDO) See in particular Figure 1.
X	1 and 3	FR792088 A (KIEBBE) See all Figures in particular.
X	1 and 3	EP1030026 A (MITO) See in particular Figures 3 and 4.
A	-	US4966217 A (DECHAMBEAU) See in particular Figures 1 and 2, noting extendable inspection pit cover supported by C-channel guide rails 12a-b.
A	-	DE20317367 U (SLIFT) See all Figures in particular, noting extendable inspection pit cover supported by a circulating chain.

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

E04G; E04H; E06B

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

ONLINE: EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
E04H	0005/06	01/01/2006
E06B	0009/06	01/01/2006