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(54) Scaffolding system

(57) The present invention relates to a barrier support element (2), for use in releasably securing a temporary guard rail (34) having at least an upper and a lower horizontal rail (38,36). The support element compris a body part (4), attachment means (6) for releasably connecting to a scaffold construction (30), support means (8) for supporting, in use, the lower horizontal rail (36) of the temporary guard rail and a coupling means (10), in use, for releasably securing the upper horizontal rail (38) of the temporary guard rail.

The invention also relates to an edge protection system comprising; a temporary guard rail (34) comprising at least an upper and a lower horizontal rail (38,36), and at least two barrier support elements (2) each comprising a body part (4), attachment means (6) for releasably connecting to an adjacent structure (30), first support means (8) for supporting the lower horizontal rail (36) of the temporary guard rail and a coupling means (10) for releasably securing the upper horizontal rail (38) of the temporary guard rail.

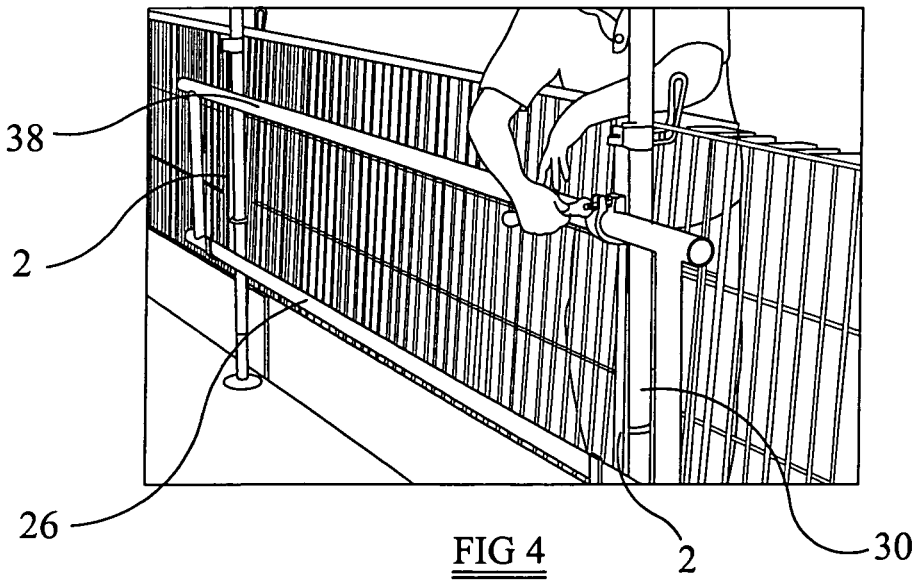

FIG 4

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Description

[0001] The present invention relates to an edge protection system for use with a scaffolding system enabling the use of a temporary guard rail.

[0002] Known scaffolding systems are generally of two kinds; system scaffolding systems comprising proprietary components and standard scaffolding systems comprising tubes and fittings. The second kind are generally considered more versatile as they may allow a fit of the constructed scaffolding system to an individual building.

[0003] Scaffolding systems are typically used alongside buildings or other structures whether in the construction or maintenance of such structures. A scaffolding system will comprise vertical members (also known as standards) to which are connected two sets of horizontal bars: ledger bars extending in use alongside the structure being built or maintained and transom bars extending towards, typically transverse to, the structure. The scaffold construction erected from the scaffolding system will also normally comprise brace bars extending diagonally to provide rigidity to the scaffold construction. In each working platform level within a scaffold construction a barrier needs to be fixed to the scaffold construction to prevent workers from falling from the scaffold construction while working on the adjacent structure. This barrier may typically comprise a steel mesh barrier and serves, in particular, to prevent workers from falling.

[0004] In the construction of building structures it is known to create a framework and subsequently to secure cladding panels, add levelling cleats and perform other tasks which require access to the outside of the building structure. Typically, the building structure to be worked on is located 300-500mm outside of the area enclosed by the mesh barrier. The steel mesh barrier will often serve to prevent access to the building structure and must be removed from that section of the scaffold construction adjacent the building structure where tasks which require access to the outside of the building structure are to be performed. This creates a problem in that the person performing such a task (in addition to those removing the barrier from that section) will need to be secured to the scaffolding by a lanyard to an anchor point to one side of the section from which the barrier has been/is to be removed to prevent that person from falling from the scaffold construction while working on the adjacent structure (or removing the barrier). This can impede the ability of the worker to perform the task efficiently.

[0005] In addition, the area in which that worker is performing the task will need to be zoned off to prevent others entering the area from which the barrier has been removed. This will also prevent access to other areas of the scaffold construction beyond that section where the barrier has been removed, thereby reducing the speed at which completion of the building structure can be effected.

[0006] It is an advantage of the present invention that it eliminates, or at least substantially reduces, these problems.

[0007] According to a first aspect of the present invention a barrier support element, for use in releasably securing a temporary guard rail having at least a upper and a lower horizontal rail, comprises a body part, attachment means for releasably connecting to a scaffold construction, support means for supporting, in use, the lower horizontal rail of the temporary guard rail and a coupling means, in use, for releasably securing the upper horizontal rail of the temporary guard rail.

[0008] According to a second aspect of the present invention, an edge protection system comprises a temporary guard rail comprising at least an upper and a lower horizontal rail, and at least two barrier support elements each comprising a body part, attachment means for releasably connecting to an adjacent structure, first support means for supporting the lower horizontal rail of the temporary guard rail and a coupling means for releasably securing the upper horizontal rail of the temporary guard rail.

[0009] Preferably, each of the barrier support elements further comprises second support means for supporting a mesh barrier.

[0010] Preferably, the attachment means comprises a strap.

[0011] The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 shows a side elevation of a barrier support element according to the present invention;
Figure 2 shows an edge protection system incorporating a barrier support element according to the present invention supporting a mesh barrier;
Figure 3 shows a view similar to Figure 2 illustrating a first step in the installation of a temporary guard rail;
Figure 4 shows a view similar to that of Figure 3 illustrating a further step in the installation of a temporary guard rail;
Figure 5 shows a view similar to that of Figure 4 illustrating the removal of a section of the mesh barrier; and
Figure 6 shows a view similar to that of Figure 4 illustrating the edge protection system with the mesh barrier removed and the temporary guard rail in position.

[0012] Referring first to Figure 1 there can be seen a barrier support element in accordance with the present invention. The barrier support element 2 comprises a main body part 4 having at an upper end attachment means 6 for releasably connecting the barrier support element 2 to an adjacent scaffold construction.

[0013] The barrier support element 2 further includes to a first side a first support means 8 for supporting, in use, a lower horizontal rail of a temporary guard rail and a coupling means 10, in use, for releasably securing the upper horizontal rail of the temporary guard rail. The body

part 4 may be formed in any convenient manner from any suitable material. In the illustrated embodiment the main body part 4 is formed from a strip of metal, such as steel. The main body part 4 is conveniently curved at a lower end to form the first support means 8 as an integral portion of the main body part 4.

[0014] The attachment means 6 may be formed in any suitable manner. In the illustrated embodiment, the attachment means comprises a steel strap 18 which may be secured in position in relation to a scaffold element by a lock bolt 20.

[0015] The barrier support element 2 additionally comprises, on a side opposite to the first side, a second support means 12 adapted to support, in use, a mesh barrier. The second support means 12 comprises a first upper loop 14 and a second lower loop 16. The second support means 12 may be formed in any suitable manner and may conveniently be fashioned from a metal rod.

[0016] The attachment means 6, the second support means 12 and the main body part 4 are permanently secured together by any suitable means. Conveniently, this part of the barrier support element may be coated, for example by powder coating.

[0017] The coupling means 10 may take any convenient form. In the illustrated embodiment a hinged coupler is shown. A first element of the coupler is permanently secured to the main body part 4 by any suitable means, such as for example by welding. A second element of the coupler is hingedly connected at a first end to a first end of the first element and may be releasably secured at a second end to the first element by a bolt itself hingedly connected at a first end to the second end of the first element.

[0018] Turning to Figures 2 to 6, an edge protection system utilising the present invention is shown. A barrier support element 2 can be seen located on a scaffold element 30. The barrier support element 2 can be attached in any suitable manner for example by placing the barrier support element 2 over the top of the scaffold element 30. The attachment means 6 are used to secure the barrier support element 2 in position on the scaffold element 30, for example in the illustrated embodiment by tightening the lock bolt 20.

[0019] A mesh barrier 32 can then added by hooking an upper bar of the mesh barrier over the first upper loop 14 of the barrier support element 2 and a middle bar of the mesh barrier over the second lower loop 16 of the barrier support element 2. An edge protection system can then be built up in this way between scaffolding elements.

[0020] The first stage in installing a temporary guard rail 34 is for the installer to position a lower horizontal rail 36 of the temporary guard rail 32 in the first support means 8 of adjacent barrier support elements (Figure 3).

[0021] The temporary guard rail 34 is then supported by the first support means 8 and may be pivoted by the installer such that the upper horizontal rail 38 of the temporary guard rail 34 is received in the coupling means 10 of the barrier support element 2. The coupling means 10 of each barrier support element 2 are then fastened to secure the temporary guard rail 32 in position to each barrier support element 2 (Figure 4).

[0022] The mesh barrier 32 adjacent the temporary guard rail 34 may then be removed by unhooking the mesh barrier 32 from the first and second loops 14,16 of the respective barrier support elements 2 (Figure 5).

[0023] An operator is now able to obtain access to an adjacent building structure (not shown) from an enclosed area (Figure 6). This temporary edge protection system has as an advantage that the operator need not be connected by a lanyard to an anchor point since the operator is still within an enclosed area. This temporary edge protection has as a further advantage that the operator has increased access to the area where the task is to be performed and that as a result the task is made easier to perform. A further advantage is provided in that, since the work area is now enclosed, access to other areas of the scaffold construction beyond that section where the mesh barrier has been removed is now possible, thereby increasing the speed at which completion of the building structure can be effected. A yet further advantage is provided in that more than one area of a particular elevation may replace the mesh barrier with the temporary guard rail thereby enabling the benefits of the invention to be provided at many areas simultaneously.

[0024] It will be understood that once the task to be performed has been completed, the mesh barrier 32 can be replaced and the temporary guard rail 34 removed by first releasing the coupling means 10 and then lifting the temporary guard rail 34 from the first support means 8 of adjacent barrier support elements.

Claims

1. A barrier support element, for use in releasably securing a temporary guard rail having at least an upper and a lower horizontal rail, comprising;
   a body part;
   attachment means for releasably connecting to a scaffold construction; support means for supporting, in use, the lower horizontal rail of the temporary guard rail; and
   a coupling means, in use, for releasably securing the upper horizontal rail of the temporary guard rail.

2. The barrier support element as claimed in claim 1, additionally comprising a second support means for supporting a mesh barrier

3. The barrier support element as claimed in claim 1 or 2, wherein the attachment means comprises a strap.

4. An edge protection system comprising;
   a temporary guard rail comprising at least an upper and a lower horizontal rail, and

at least two barrier support elements each comprising a body part, attachment means for releasably connecting to an adjacent structure, first support means for supporting the lower horizontal rail of the temporary guard rail and a coupling means for releasably securing the upper horizontal rail of the temporary guard rail.

5. The edge protection system of claim 4 wherein each of the barrier support elements further comprises second support means for supporting a mesh barrier.

6. The edge protection system of claim 4 or 5, wherein, the attachment means comprises a strap.

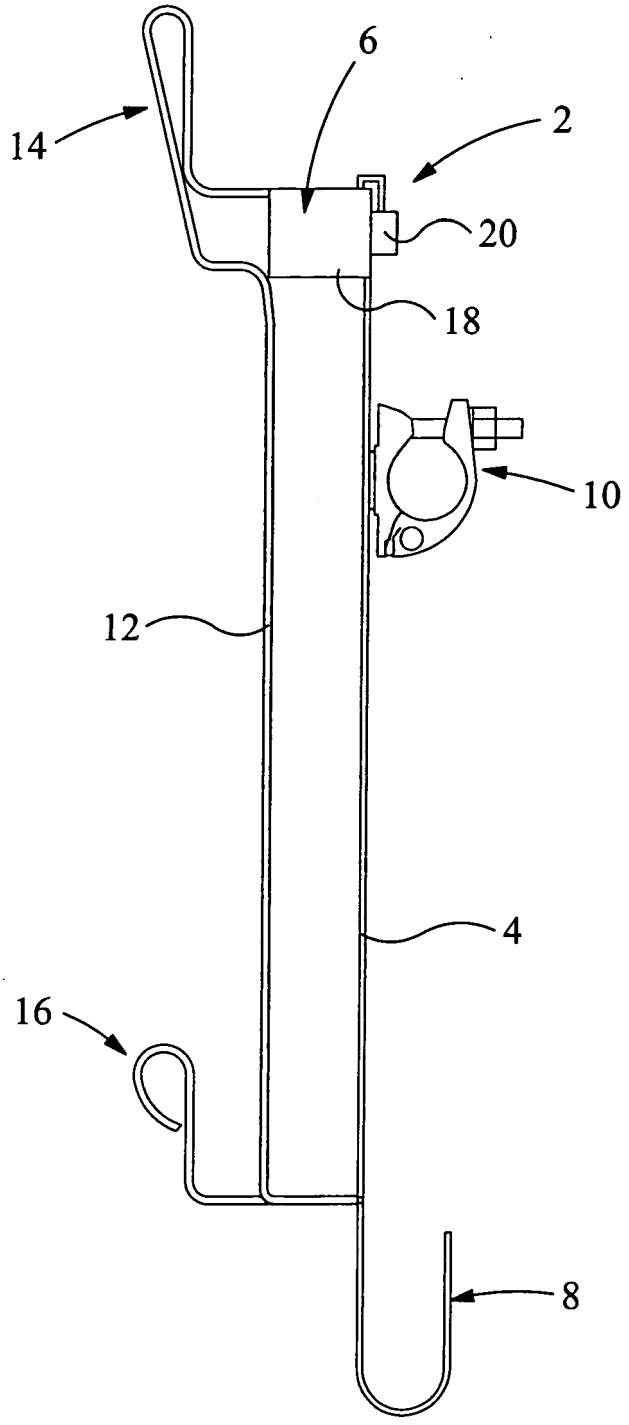

FIG 1

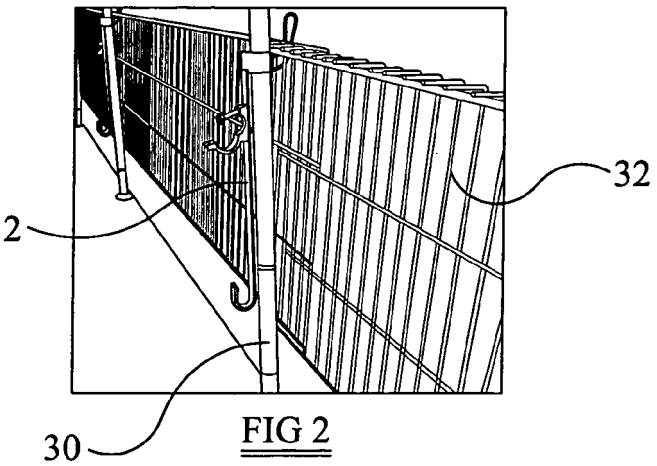

FIG 2

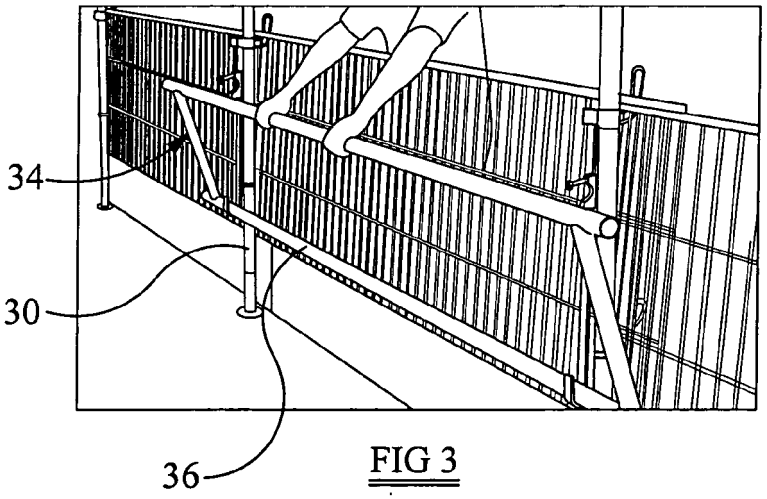

FIG 3

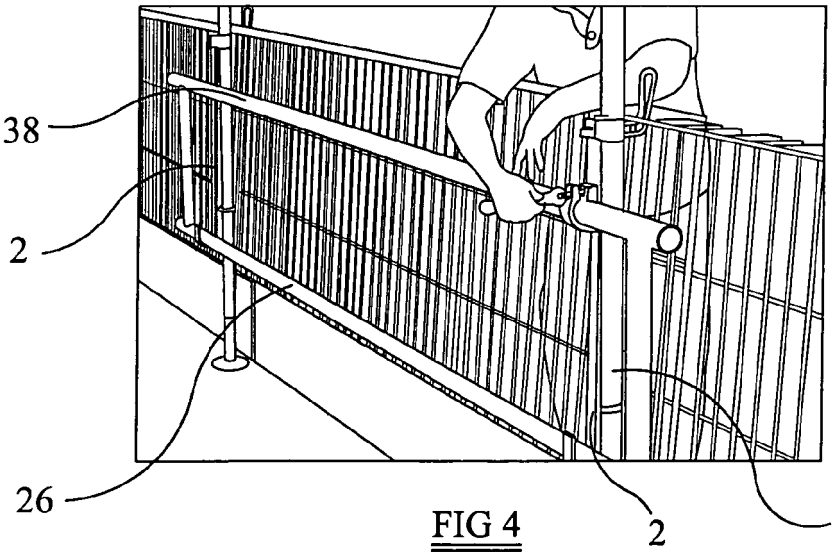

FIG 4

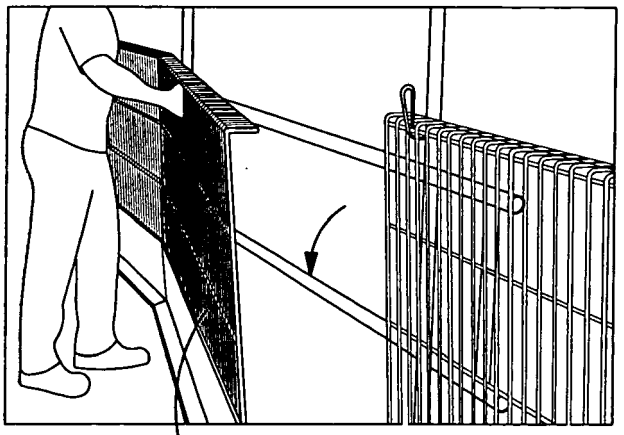

FIG 5

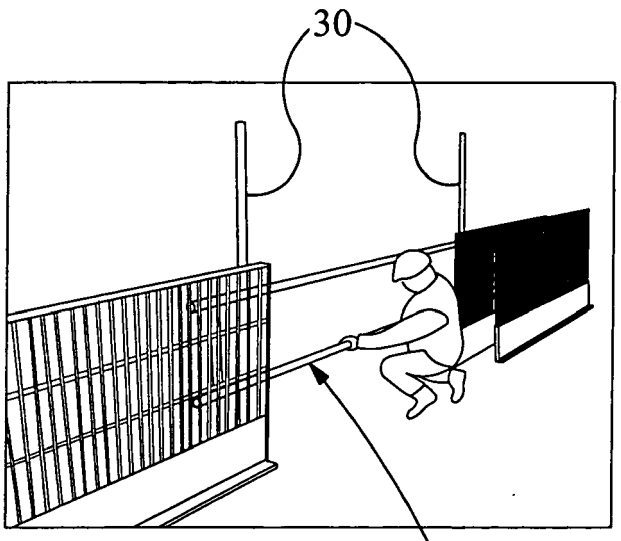

FIG 6