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## (54) A scaffold clamp for supporting a barrier post

(57) A scaffold clamp for supporting a barrier-post is disclosed. The clamp comprises a pair of clamping members (8,16) of which at least one is movable, and a mechanism operable to urge the at least one movable clamping member towards the other clamping member in a clamping manner. A support arrangement (10) is provided to engage and support the lower end of the barrier post in at least two discrete positions on the clamp

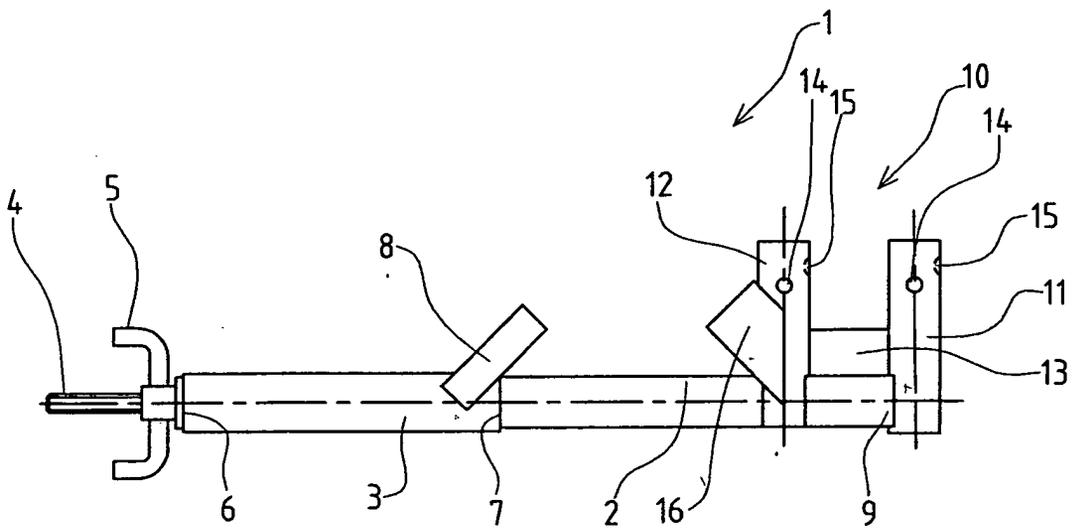


FIG 1

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## Description

**[0001]** **THE PRESENT INVENTION** relates to a scaffold clamp, and more particularly, relates to a scaffold clamp for supporting a barrier-post, the barrier-post being arranged to support a temporary safety barrier.

**[0002]** It is well known, in the construction industry, to provide temporary safety barriers around the perimeter of the floor of a multi-storey or high-rise building during its construction, in order to provide protection for construction workers working on those floors, at positions raised significantly above the ground. Typically, temporary safety barriers of this type comprise a plurality of wire mesh panels, which are each supported at both ends by a substantially vertical barrier-post.

**[0003]** It is also very well know to fabricate the floor structure of such buildings using reinforced concrete, and the concrete is usually poured into appropriate "moulds" defined by removable formwork. Because the formwork must be provided around the region in which the concrete is to be poured, it will be appreciated that the formwork must extend past the edge of the resulting concrete floor, in order properly to define the edge of the floor.

**[0004]** It is necessary, not only to provide temporary safety barriers for construction workers during the stages of erecting the formwork and pouring the concrete, but also to provide temporary safety barriers around the resulting concrete floor structure, after the formwork has been removed, and during subsequent stages of the building's construction.

**[0005]** It should therefore be appreciate that, if a temporary safety barrier is provided around the formwork to provide proper protection to construction workers during the erection of the formwork and pouring of the concrete, when the formwork is subsequently removed, leaving behind the concrete floor structure, the temporary safety barrier can be spaced significantly from the edge of the floor structure, leaving a dangerous gap.

**[0006]** It is an object of the present invention to provide an improved scaffold clamp for supporting a barrier-post.

**[0007]** According to the present invention, there is provided A scaffold clamp for supporting a barrier-post, the clamp comprising: a pair of clamping members, at least one of which is moveable; a mechanism operable to urge the at least one moveable clamping member towards the other said clamping member in a clamping manner; and a support arrangement configured to engage and support the lower end of a barrier-post in at least two discrete positions on the clamp.

**[0008]** Preferably, the support arrangement comprises a pair of spaced apart sockets, each socket being sized to receive the lower end of a barrier-post.

**[0009]** Advantageously, the support arrangement comprises a pair of spaced apart spigots, each spigot being sized to be received within the lower end of a barrier-post.

**[0010]** Conveniently, the scaffolding clamp has a barrier-support located between said two discrete positions, to support the lower edge of a safety-barrier carried by a barrier-post supported in one of said positions.

**[0011]** Preferably, said discrete positions are spaced from one another along an axis substantially parallel to or coincident with the direction of movement of the or each clamping member.

**[0012]** So that the invention may be more readily understood, and so that further features thereof may be appreciated, an embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which :-

FIGURE 1 is a side view of a scaffold clamp in accordance with the present invention, illustrating the clamp in a first, open, condition;

FIGURE 2 is a view corresponding generally to that of Figure 1, but illustrates the scaffold clamp clampingly engaged to a structural girder;

FIGURE 3 is a view corresponding generally to that of Figure 2, but illustrating the scaffold clamp supporting a barrier-post in a first position to allow erection of formwork; and

FIGURE 4 is a view corresponding generally to that of Figure 3, but illustrating the scaffold clamp supporting a barrier-post in a second, alternate, position to provide edge protection to a finished concrete floor.

**[0013]** Referring initially to Figure 1, there is illustrated a scaffold clamp in accordance with an embodiment of the present invention. Scaffold clamp 1 comprises an elongate longitudinal shaft 2, which preferably has a uniform, substantially square or rectangular cross-section. However, it is also possible for the shaft to have a circular section. One end of the longitudinal shaft 2 is received, as a close sliding fit, within a sleeve 3. The same end of the longitudinal shaft 2 carries a smaller diameter threaded bar 4, which extends completely through the sleeve 3.

**[0014]** A clamping handle 5 is threadedly engaged on the threaded bar 4 and is arranged to bear against the adjacent end 6 of the sleeve 3. Therefore, it will be appreciated that rotation of the clamping handle 5 on the threaded bar 4, in a direction appropriate to move the clamping handle 5 to the right as illustrated in Figure 1, is effective to urge the sleeve 3 over the longitudinal shaft 2 such that an increased length of the longitudinal shaft 2 is accommodated within the sleeve 3.

**[0015]** The opposite end 7 of the sleeve 3 carries an upwardly and forwardly-directed member 8.

**[0016]** At its end 9, opposite the end to which the threaded bar 4 is attached, the longitudinal shaft 2 carries a support arrangement 10 which, in the embodiment illustrated in Figure 1, comprises a pair of spaced-apart cylindrical sockets 11, 12. Both of the sockets 11 are oriented such that their respective longitudinal axes are

substantially perpendicular to the longitudinal axes of the shaft 2. The socket 11 is provided at the extreme end of the shaft 2, whilst the other socket 12 is spaced from the socket 11 and extends outwardly from the shaft 2 at a position spaced slightly from its extreme end 9. The two sockets 11, 12 are substantially parallel to one another and a support platform 13 is provided which extends between the two sockets 11,12 and which is secured to the longitudinal shaft 2 therebetween.

**[0017]** Each socket 11, 12 is provided with a pair of orthogonal through-bores 14,15 which extend transversely across each socket 11,12 to receive a locking pin therethrough.

**[0018]** The clamp 1 is provided with a second clamping member 16 which is secured to the inner of the two sockets 12 and which extend upwardly and rearwardly in a direction generally towards the first clamping member 8.

Figure 1 illustrates the clamp 1 in an initial, open condition.

Figure 2 illustrates the above-described clamp 1 in an operative position in which it is clampingly engaged to the lower flange 17 of a structural I-section girder 18. The girder 18 would typically be a structural girder of a partially-constructed building, and would be configured to support a concrete floor structure to be fabricated thereabove.

**[0019]** As can be seen from a simple comparison with Figure 2 of Figure 1, the clamping handle 5 has been rotated on the threaded bar 4 so as to drive the sleeve 3, and its associated clamping member 8 towards the clamping member 16 carried by the shaft 2, so that the two clamping members 8,16 clampingly engage the flange 17 of the girder 18.

**[0020]** Turning now to consider Figure 3, the scaffold clamp 1 is illustrated supporting a barrier-post 19 in an initial position appropriate for the barrier-post 19 to support a mesh safety barrier 20 at a position spaced sufficiently from the girder 18 to allow erection of formwork (illustrated schematically at 21) for use in fabrication of a concrete floor structure supported by the girder 18. It should be noted, in particular, that the lower end of the barrier-post 19 is slidingly received within the first socket 11 provided at the extreme end 9 of the longitudinal shaft 2. The mesh panel has a forwardly-angled top flange 22 which fits over the barrier-post 19, and a rearwardly-directed lower flange 23 which rests upon the support platform 13 extending between the two sockets 11, 12. It will therefore be seen that the support platform 13 supports the lowermost edge of the mesh barrier panel 20.

**[0021]** As illustrated in Figure 3, because the end socket 11 is spaced substantially from the structural girder 18, sufficient space is provided between the girder 18 and the mesh panel 20 to allow the formwork 21 to extend past the girder 18.

**[0022]** Figure 4 illustrates the scaffold clamp 1 during an alternate stage of its use, in which it engages and supports the barrier-post 19 in an alternate position, closer to the structural girder 18. In this position, the lower end of the barrier-post 19 is slidably engaged in the inner socket 12 which is located immediately adjacent the clamping member 16 and is hence located much closer to the girder 18 than the first socket 11. This support position for the barrier-post 19 is appropriate for use in supporting a barrier panel 20 after the concrete floor 24 has been constructed and the formwork 21 has been completely removed. It will be seen that, in this configuration, the lowermost edge of the barrier panel 20 rests on the concrete floor 24 itself.

**[0023]** It should therefore be appreciated that the above-described scaffold clamp 1 defines two discreet positions, each of which is spaced from the structural girder 18 to which the clamp 1 is secured by different distances.

**[0024]** In either of the positions illustrated in Figure 3 or 4, the barrier-post 19 can be securely retained within the respective sockets 11,12 by the insertion of a locking pin (not shown) through either or both of the bores 14, 15 in the socket, the locking pin passing through an aligned bore provided through the barrier-post 19.

**[0025]** Whilst the present invention has been described above with reference to a particular embodiment, it should be appreciated that certain modifications or alterations could be made to the scaffold clamp without departing from the scope of the present invention. For example, it is envisaged that, in alternative embodiments of the invention, the two support sockets 11, 12 could be replaced with a pair of upstanding support spigots (not illustrated) configured to be slidably received within the lower end of a tubular barrier-post.

**[0026]** In the present specification "comprises" means "includes or consists of' and "comprising " means "including or consisting of'.

**[0027]** The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

## Claims

1. A scaffold clamp for supporting a barrier-post, the clamp comprising: a pair of clamping members, at least one of which is moveable; a mechanism operable to urge the at least one moveable clamping member towards the other said clamping member in a clamping manner; and a support arrangement configured to engage and support the lower end of a barrier-post in at least two discrete positions on

the clamp.

2. A scaffold clamp according to claim 1, wherein the support arrangement comprises a pair of spaced apart sockets, each socket being sized to receive the lower end of a barrier-post.

3. A scaffold clamp according to claim 1, wherein the support arrangement comprises a pair of spaced apart spigots, each spigot being sized to be received within the lower end of a barrier-post.

4. A scaffold clamp according to any preceding claim, having a barrier-support located between said two discrete positions, to support the lower edge of a safety-barrier carried by a barrier-post supported in one of said positions.

5. A scaffold clamp according to any preceding claim, wherein said discrete positions are spaced from one another along an axis substantially parallel to or coincident with the direction of movement of the or each clamping member.

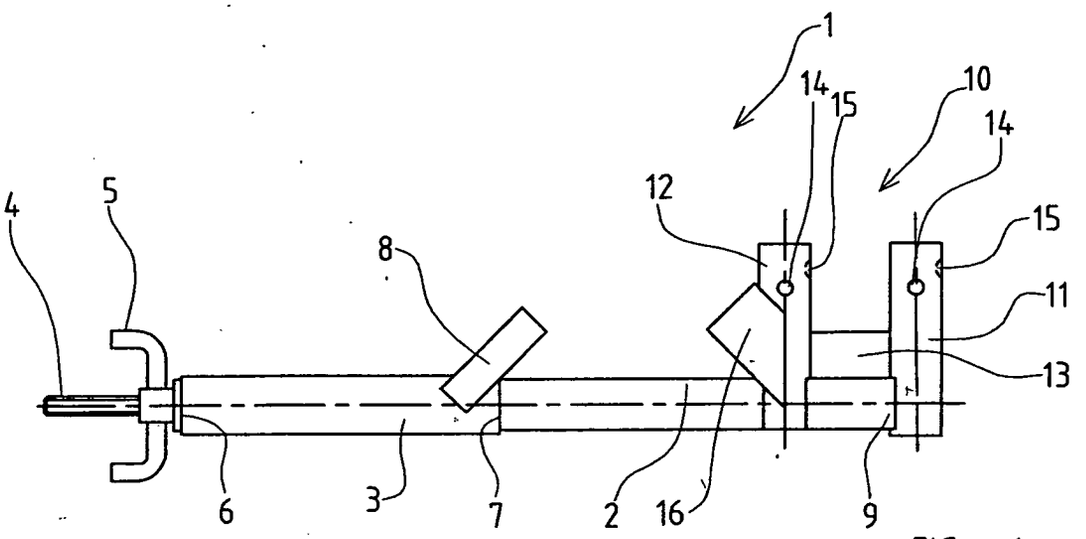



FIG 1

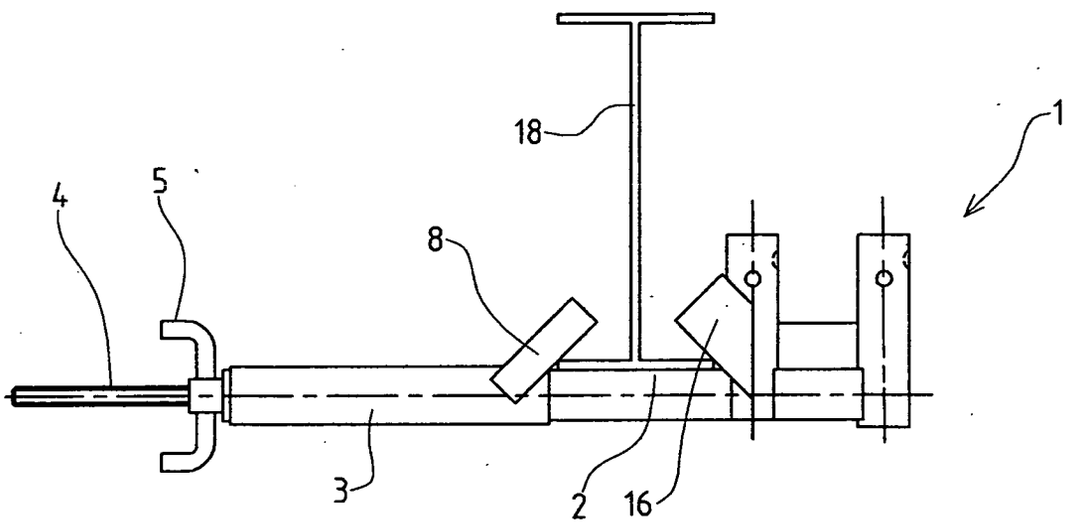



FIG 2

FIG 3

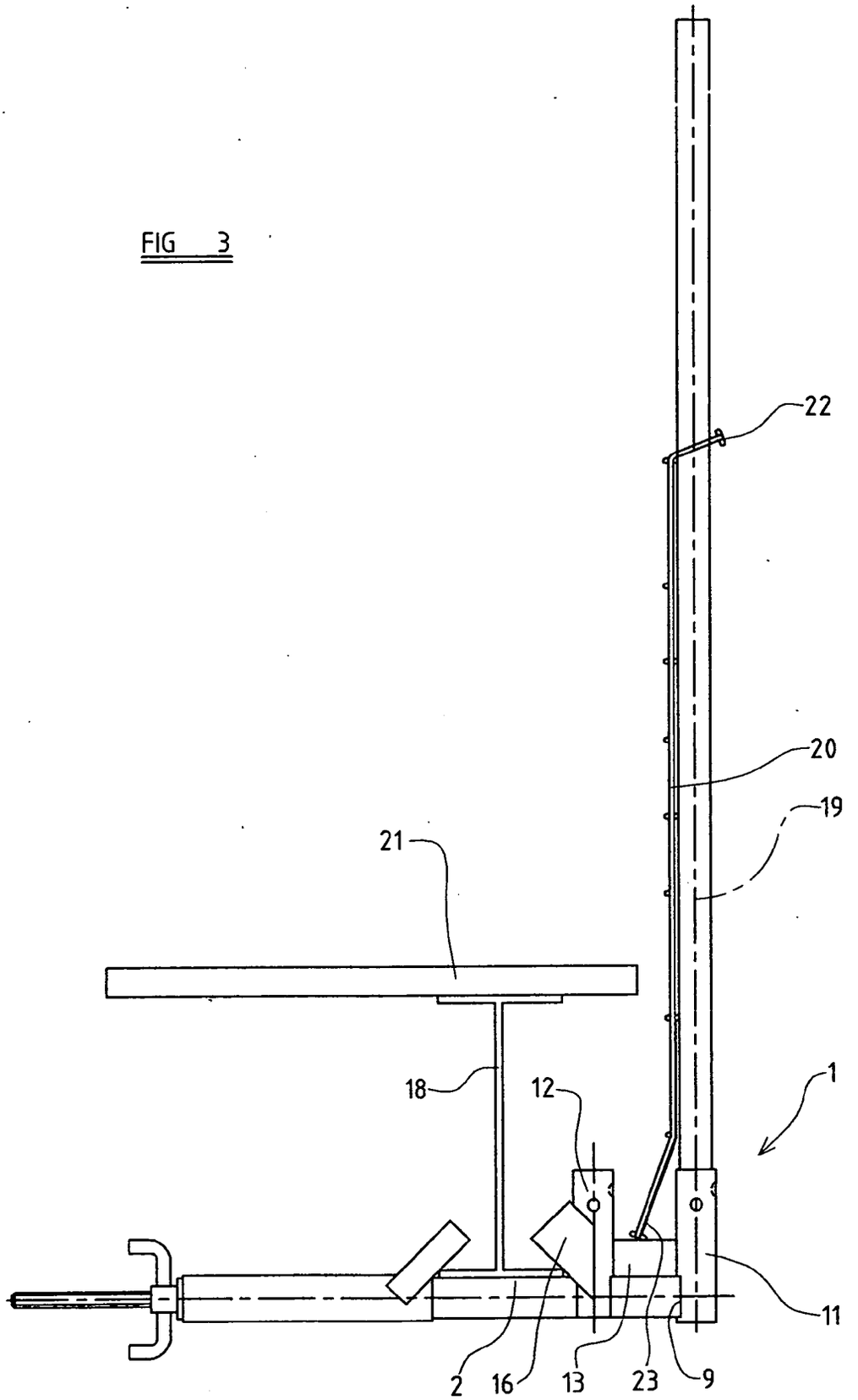
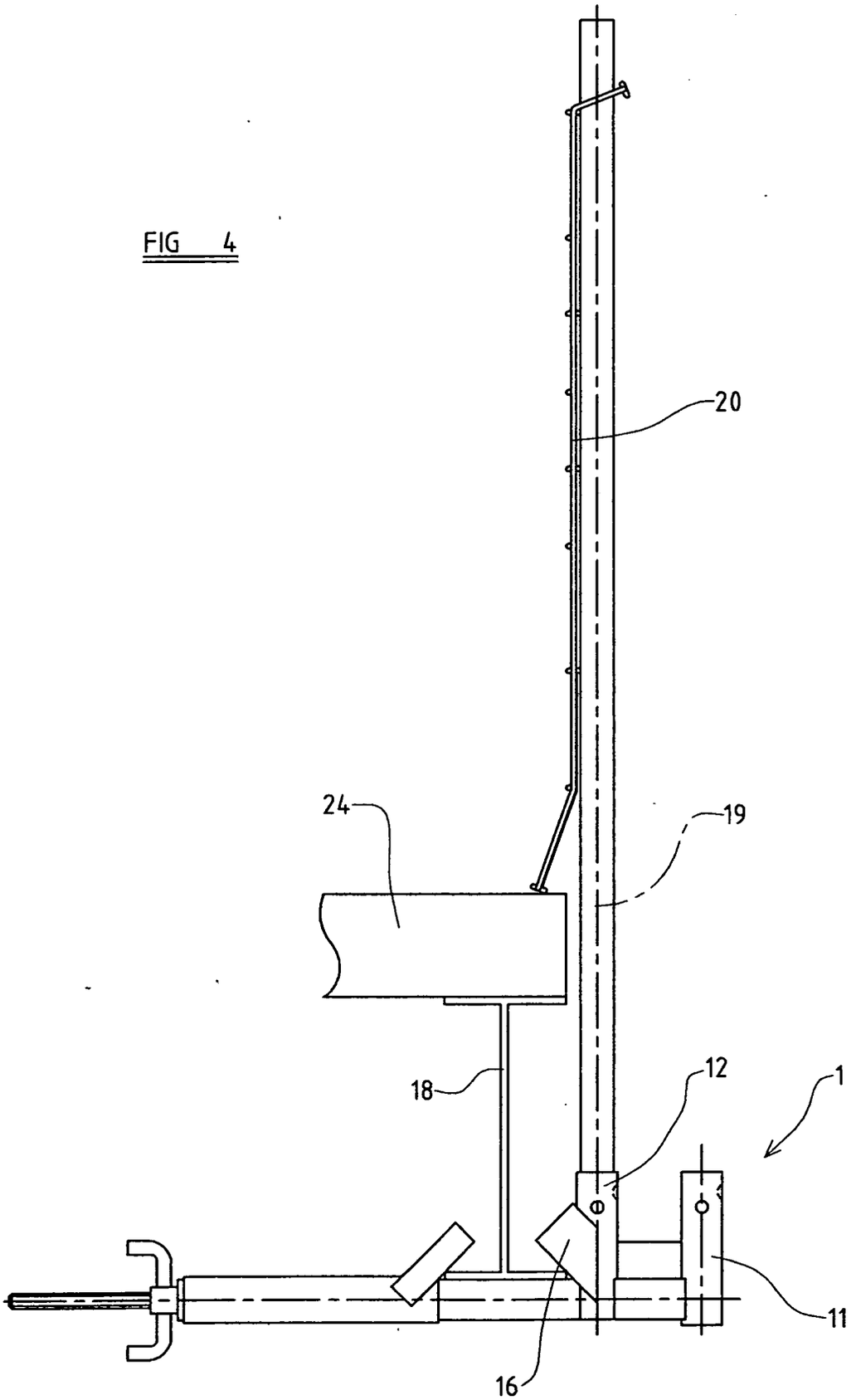


FIG 4



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# EUROPEAN SEARCH REPORT

Application Number
EP 04 02 4772

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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 10 February 2005 | Saretta, G |

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