

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 666 100 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

07.06.2006 Bulletin 2006/23

(51) Int Cl.:

A62B 1/02 (2006.01)

E06C 9/12 (2006.01)

(21) Application number: **05111544.2**

(22) Date of filing: **01.12.2005**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**

Designated Extension States:

AL BA HR MK YU

(30) Priority: **02.12.2004 DE 102004058188**

(71) Applicant: **IVECO MAGIRUS AG
D-89079 Ulm (DE)**

(72) Inventor: **KELLER, Paul
89601 Schelklingen (DE)**

(74) Representative: **Borsano, Corrado et al
Notarbartolo & Gervasi S.p.A.
Corso di Porta Vittoria, 9
20122 Milano (IT)**

(54) **Rescue cage**

(57) Rescue cage for rescue ladders or booms with an essentially rectangular base (10) and a circumferential railing (12), in which two doors (24, 26) with an assigned, lowering ladder are located in the two corner areas of the

front face, thus characterised in that only one ladder is provided for both doors (24, 26) and that this can be slid along between positions in front of the doors (24, 26).

EP 1 666 100 A2

Description

[0001] The invention concerns a rescue cage for rescue ladders or booms with an essentially rectangular base and a circumferential railing, in which two doors with an assigned, lowering ladder are located in the two corner areas of the front face.

[0002] Rescue cages of this type are known. They are, for example, located at the end of fire-brigade turntable ladders and serve to house fire-fighting personnel during fire-extinguishing, and also to rescue persons in upper areas of buildings.

[0003] There exist rescue cages with one door in the railing for setting down firemen in upper storeys of buildings and also for rescuing persons through windows or from balconies of buildings. Initially, a door of this type was situated in the centre front of the railing. It has been shown that the space conditions in front of a building e.g. relatively narrow streets, often do not allow the ladder to be positioned directly in front of a window or balcony railing. It is often only possible to position the ladder obliquely from the side in front of a window or balcony railing. As a consequence, this means that the rescue cage makes contact with the wall of the building or the balcony parapet with one of its front corners. In these cases, it is also known to provide the rescue cage with two doors arranged at the sides, in the front area of the cage, which can be used alternatively, according to the position of the rescue cage.

[0004] In the case of persons being taken from a balcony or of firemen being set down in a building via a balcony, many rescue cages are provided with a short, hinged ladder which permits climbing over the balcony parapet. For rescue cages with two doors, two short ladders of this kind would consequently have to be provided. This would, however, mean an additional increase in expenditure and increase the weight of the rescue cage.

[0005] The objective of the invention is, therefore, to provide a ladder for each of the doors of a two-door rescue cage, without unnecessarily increasing the cost of manufacture.

[0006] In order to achieve the objective, the rescue cage according to the invention is characterised in that only one ladder is provided for both doors and that this is displaceable between the positions in front of the doors.

[0007] The ladder can thus be deployed alternatively in front of both doors. Nevertheless, only one ladder is required.

[0008] Preferably, the upper end of the ladder runs on a track and this track at the same time forms the pivoting axis for the upper end of the ladder about which the ladder can be let down or folded up for safe-keeping. The term "upper end of the ladder" refers here to the upper end when in use. In the upright stowed position, however, the upper end forms the lower end of the (cage) face.

[0009] In so far as doors are provided which are at least partly formed round the front corners of the railing, the track can be bent round obliquely or curved at its

outer ends, so that the ladder can also be aligned in an oblique position with respect to a corner of the rescue cage.

[0010] When mention is made here of a front face of the rescue cage it refers to the face on the far side of the rescue ladder to which the cage is attached.

[0011] The base of the rescue cage, here described as only "essentially" rectangular, should by no means be rectangular in the strict geometric sense. In any case, the corners can be greatly rounded off. However, configurations have proven successful in which the width has been dimensioned somewhat larger than the depth, where consequently two or even three firemen can comfortably stand next to each other.

[0012] In the following, examples of preferred embodiments of the invention are explained in more detail using the appended drawing.

[0013] Fig. 1 is a perspective view of a rescue cage according to the invention, with upright stowed ladder.

Fig. 2 shows the rescue cage with ladder positioned in front of the right hand door - corresponding to the graphic representation.

Fig. 3 is a representation conforming to Fig. 2, but showing the ladder in front of the left hand door.

[0014] The rescue cage shown in Fig. 1 has a base with an essentially rectangular contour, denoted by 10. A base plate located on the substructure of the cage is not shown in Fig. 1. The essentially rectangular base is enclosed by a circumferential railing 12, comprising a rear railing section 14, a front railing section 16, as well as two side railing sections 18, 20. The railing consists essentially of joined metal rods with upper handrails and vertical struts. A more detailed description is omitted here as this, in principle, concerns a well-known design.

[0015] A coupling piece 22, used for mounting at the outer end of a rescue ladder or rescue boom (not shown here), can be seen through the rear railing section 14. Owing to the position the cage occupies with respect to the rescue ladder, the area of the rescue cage facing the rescue ladder is referred to as the rear area and the area opposite, also shown in front in Fig. 1, as the front area.

[0016] The front railing section 16 is of primary interest in the present context.

[0017] Two doors are located in this front railing section at the transition to the side railing sections 18, 20. These doors are required as, owing to frequently confined space conditions at the base of the rescue cage, a balcony or window can often only be approached with one corner of the front face, so that a victim can be taken from a building or rescuers set down only through the respective door situated at that corner. Both the doors 24, 26 lie either side of a central section 28 of the front railing section 16, behind which a control panel is situated, for example, on the inner side (not discernible here). From this the movement of the associated ladder (not shown) and thus also the rescue cage can be controlled. This central section of the railing section is covered on the outside by a panel 30 which stretches from the base 10 over the

whole height of the railing.

[0018] In the representation shown in Fig. 1, a short ladder with three rungs 34, 36, 38 and two side pieces 40, 42 at the lower ends of which wheels 44, 46 are attached, is located in front of panel 30. In Fig. 1, the wheels 44, 46 are located at the upper end of the side pieces 40, 42 as the ladder is in the upright stowed position, locked in front of the panel 30.

[0019] The side pieces 40, 42 are connected at the upper, or as in Fig. 1 lower, end by a transverse strut 48 from which 2 short swivel arms 50, 52 protrude. These swivel arms have, at their other ends, drilled holes (not denoted) in the direction transverse to the rescue cage which encompass a guide rod in such a way that the entire ladder can be pivoted about the guide rod and simultaneously slid along the guide rod longitudinally.

[0020] The guide rod runs at a slight distance in front of the lower area of the railing section 16 close to the base in the direction transverse to the rescue cage.

[0021] The guide rod has the function of a slide track on which the ladder can be displaced to the right or left (Fig. 1) after detachment from the central section. To this end, a locking device (not shown) which holds the ladder in the upright stowed position against panel 30, as shown in Fig. 1, has first to be unlocked.

[0022] Fig. 2 shows the ladder in position in front of the right hand door 26. In Fig. 2 the ladder is swivelled down around the guide rod and slid to the right until it reaches a suitable position in front of the right hand door.

[0023] In this position it is evident that three rungs 34, 36, 38 are available by means of which, for example, a balcony parapet can be mounted with the rescue cage alongside. The wheels 44, 46 at the lower ends of the side pieces 40, 42 guarantee that the ladder, when leaning against a balcony or the floor of a room, can follow the often unavoidable movements of the rescue cage.

[0024] The guide rod extends the entire length of the rescue cage from the right hand door to the left hand door. It is attached to the lower area of the cage in a manner not shown.

[0025] In Fig. 3 the ladder is located in front of the left hand door 24 of the rescue cage. Fig. 3 indicates that the guide rod does not necessarily have to extend along its entire length in front of the front face of the rescue cage. The left end of the guide rod is bent back in Fig. 3 so that the ladder, when slid into the end position, takes up an oblique position relative to the front face of the rescue cage, which can effectively be boarded and evacuated via the corner.

[0026] The central idea of the present invention is the use of only one ladder for both exit and entrance. The concept of relocatability of the ladder used here should therefore not be restricted to a linear displacement. Other kinds of controlled transposition of the ladder from one side to the other are also possible, for example by means of appropriate linkages or swivel mechanisms.

Claims

1. Rescue cage for rescue ladders or booms with an essentially rectangular base (10) and a circumferential railing (12), in which two doors (24, 26) with an assigned, lowering ladder are located in the two corner areas of the front face, thus **characterised in that** only one ladder is provided for both doors (24, 26) and that this can be slid along between positions in front of the doors (24, 26).
2. Rescue cage according to Claim 1, **characterised in that** the ladder can be slid along by means of a guide track running in the lower front area in front of the rescue cage.
3. Rescue cage according to Claim 2, **characterised in that** the guide track is a guide rod which simultaneously forms a swivel axis for the ladder.
4. Rescue cage according to Claim 3, **characterised in that** swivel arms (50, 52) are provided at the upper ends of the ladder at the outer ends of which cross-wise drilled holes are located which are traversed by the guide rod.
5. Rescue cage according to one of the Claims 1 to 4, **characterised in that** the ladder is hinged upwards in front of the front face of the rescue cage.
6. Rescue cage according to Claim 5, **characterised in that** a central section, in particular a central section (28) covered by a panel (30), is provided between the doors (24, 26) in the front railing section (16) and that the ladder is stowed upright against and locked in front of the central section (28).

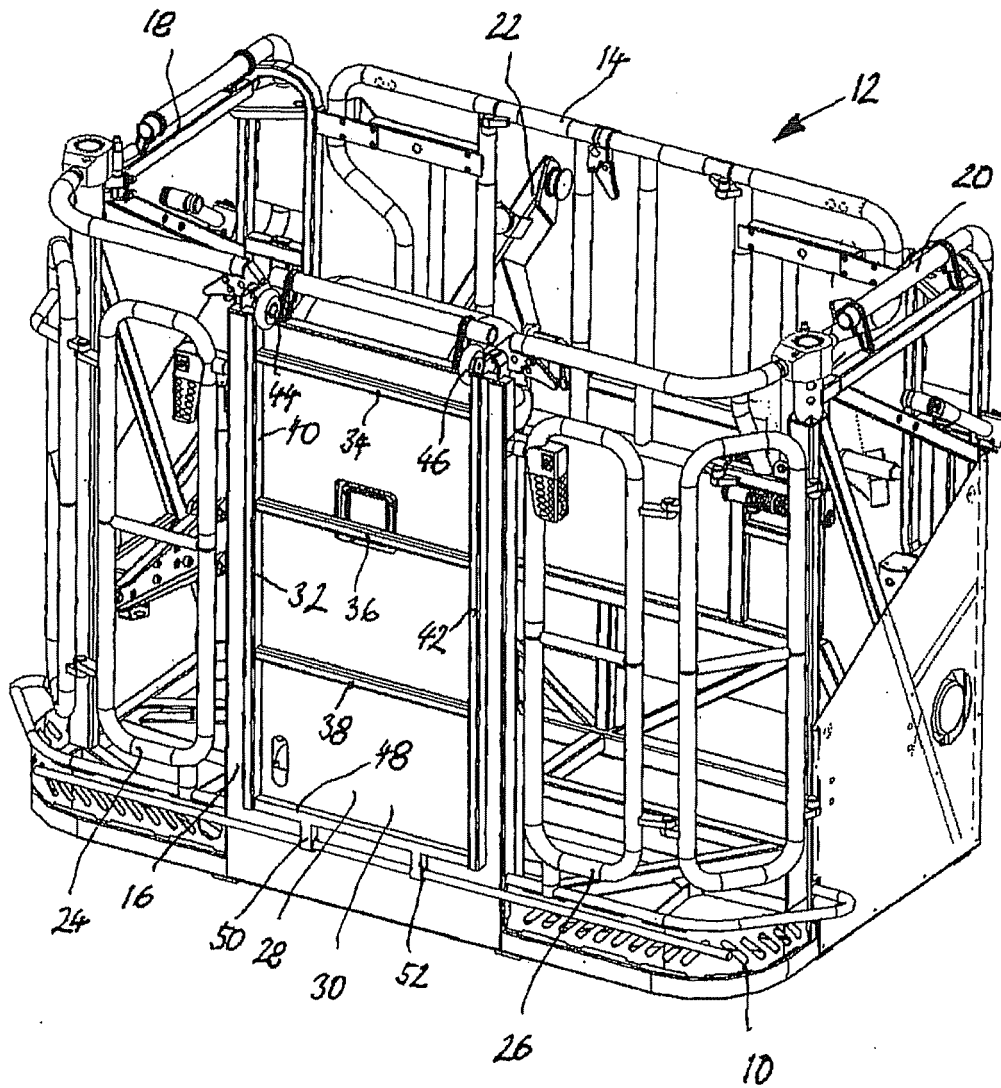
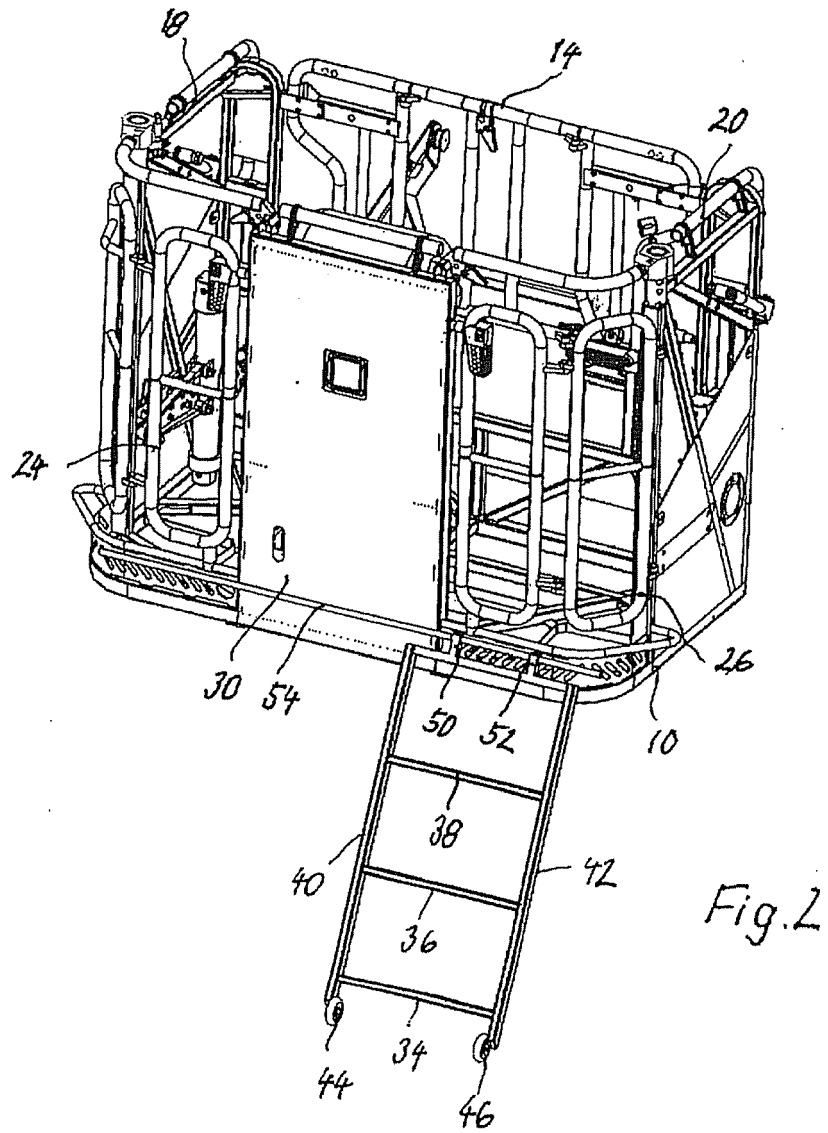


Fig. 1



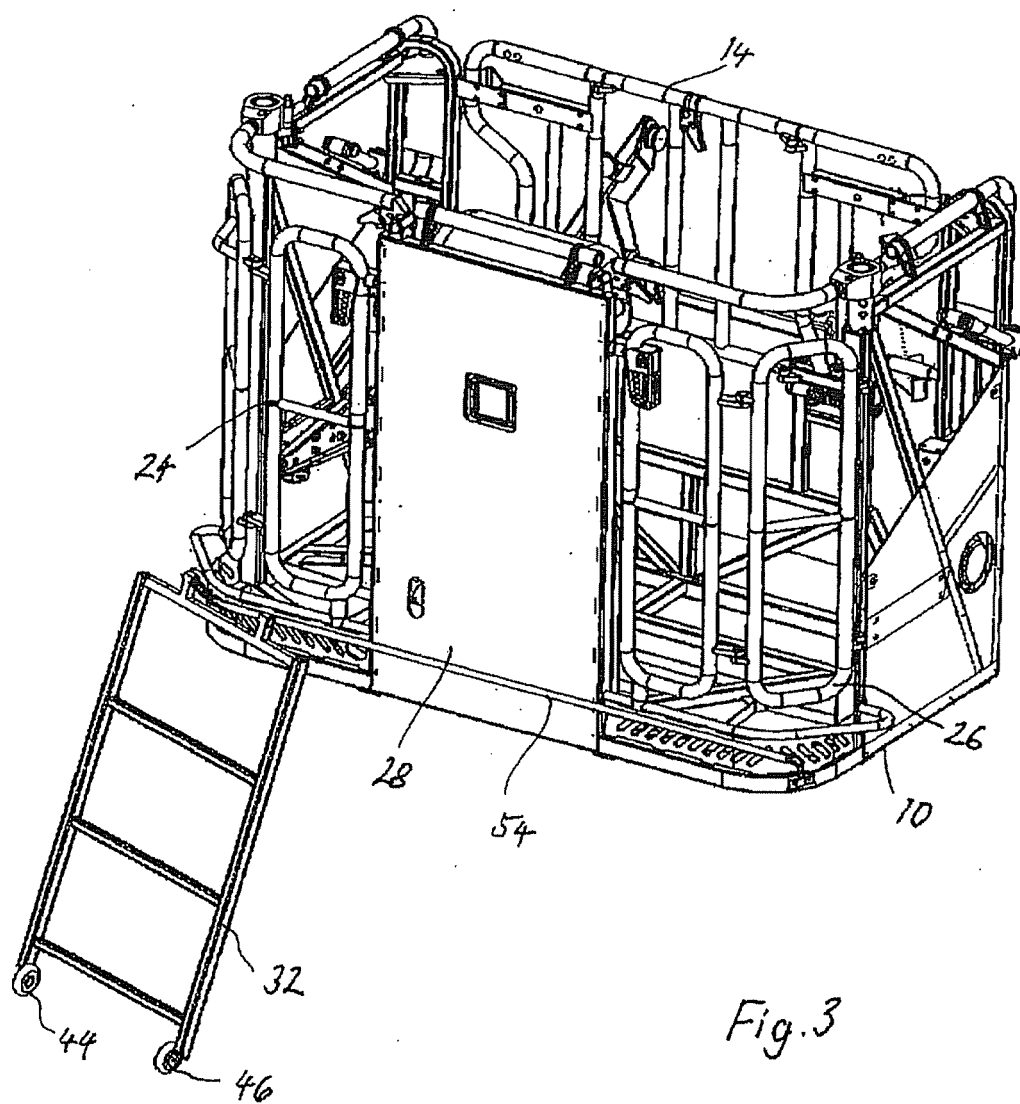


Fig. 3