(12) UK Patent Application (19) GB (11) 2 236 137 (13) A

(43) Date of A publication 27.03.1991

(21) Application No 8920234.5

(22) Date of filing 07.09.1989

(71) Applicant
Gregory Joseph Leigh
11 Kitson Road, Barnes, London, SW13 9HJ, United Kingdom

(72) Inventor
Gregory Joseph Leigh

(74) Agent and/or Address for Service
D Young & Co
10 Staple Inn, London WC1V 7RD, United Kingdom

(51) INT CL[5]
E04G 3/06

(52) UK CL (Edition K)
E1S SM

(56) Documents cited
GB 0873568 A **GB 0689964 A** **GB 0686007 A**
GB 0129818 A **US 3679026 A**

(58) Field of search
UK CL (Edition J) **E1S SM**
INT CL[4] **E04G**

(54) Scaffold cradle device

(57) A cradle device is supported from within a building by support 10 resting on the floor within the building, supporting cradle 12 outside the building by arms extending through an aperture, eg a window aperture, in the wall 16. Clamps 152, 162 may contact either face of the wall. In the embodiment shown support 10, is locked to cradle 12 by an intermediate member 14. Means is provided to latch the parts together. Two such devices passing through adjacent windows may support a cross beam on which one or more cradles may be suspended.

The device is particularly intended for working on the outer surfaces of windows for example for painting them, re-glazing them, or for cleaning.

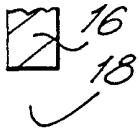
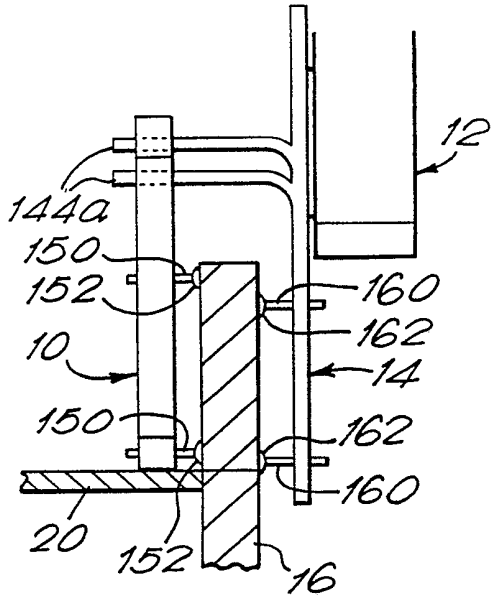


FIG.1.



GB 2 236 137 A

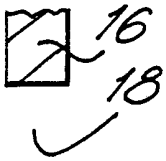


FIG. 1.

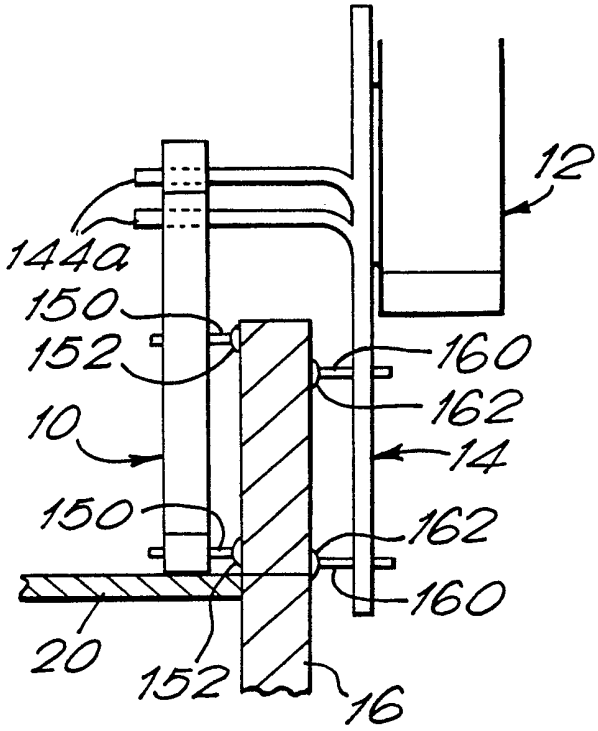


FIG. 2.

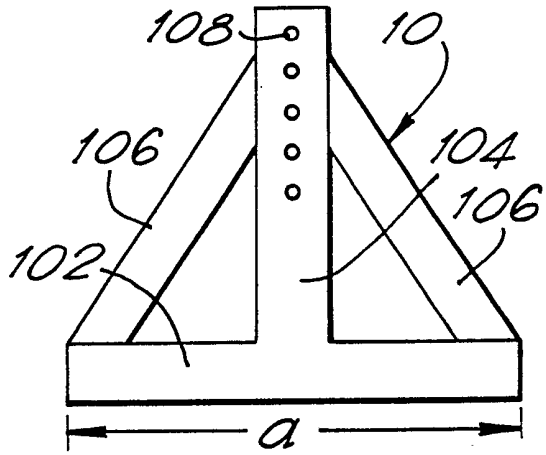
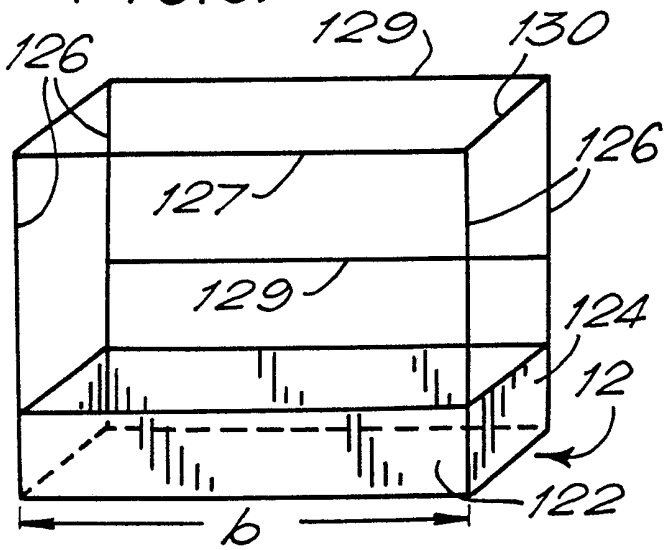


FIG. 3.



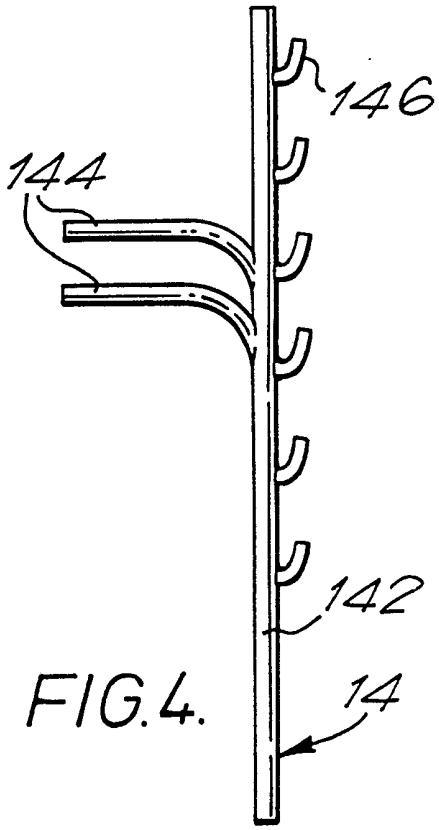


FIG. 4.

CRADLE DEVICE

This invention relates to a cradle device for use in working on the outside surface of a building. The invention is particularly, although not exclusively, intended for working on the outer surfaces of windows for example for painting them, re-glazing them, or for cleaning or maintenance.

It is known to suspend cradles from projecting beams located at roof level, and then to raise or lower these cradles so as to provide access to the exterior of windows or the like on upper floors of a building. It is also known to build scaffolding on the ground outside the building to provide access to the exterior surface of the building. However, to the best of Applicant's knowledge and belief, there existed, prior to the invention, no satisfactory way of working on the outside surface of a window and, optionally, the surrounding region of a building, in a manner which is at the same time inexpensive, safe and practical.

The present invention is based upon the concept of a cradle device which can be readily placed in relation to and removed from an existing wall of the building in the region of a window.

According to one aspect of the invention, there is provided a cradle device for working on the outside of the building, said device including a structure a part of which is intended to rest on the floor of a room in the building joined to a portion thereof which extends through an aperture in a wall of the room, the portion providing means whereby a cradle can be securely supported while located externally of the room, the structure having or being associated with clamping means whereby it can be firmly located in relation to that portion of the wall of the room which is below or in the region of the aperture.

According to another aspect of the invention there is provided a cradle device for the purpose of working safely on the outside of a building, said device including a structure having a first part which is intended to rest on the floor of a room in the building joined to a second part which extends through an opening in a wall of the room joined to a cradle or a means of supporting a cradle, the cradle being, or intended to be, located externally of the room.

In an embodiment of the invention, the structure is constructed as one integral whole. Alternatively it may be constructed of any number of separate parts that rigidly interlock, this latter construction allowing the configuration of the component parts of the structure to vary whilst achieving the main purpose of this invention, and also allowing the relative positioning and dimensions of the assembled parts to vary to suit different site conditions.

According to a preferred example of the invention, there is provided a cradle device for use in working on the outside surface of a building, the device including at least two parts the first part being a support having a base of substantial width and a post or equivalent member upstanding therefrom, and a second part being a cradle support and having means extending laterally of the room wall by which the cradle support can be securely connected to the post or equivalent member, there being clamping means whereby the said first and second parts can be clamped to the wall of the room in the region of an aperture in the wall. The aperture is preferably a window aperture.

In one embodiment of the invention, the cradle support may be made integral with a cradle.

The cradle support is usually a vertically-extending member such as a pole, which may be provided with attachment means such as hooks from which a cradle may be suspended. The hooks are preferably associated with retaining means which securely attach the cradle to one or more of the hooks. Such retaining means may be mounted on either the cradle or the vertically-extending member.

In this specification, the term cradle is intended to denote any support which can be suspended and can carry a workman together with such tools or painting or cleaning equipment that he may require to work on the building exterior.

The laterally extending means may take the form of two or more bars or rods, one below another, of adequate strength and rigidity and provided with interlock means whereby they can be securely attached to the post member.

It will be understood that the first part referred to is normally placed on the floor of an upstairs room adjacent to and generally parallel to an open window or other aperture in the room wall. The laterally extending means extend through the window space. The first part and the cradle support are preferably braced against, or effectively in clamping relationship with, the wall of the room below the window. For this purpose the first part and the cradle support may each be provided with adjustable clamping pads which extend, in use, towards a wall of the building whose exterior is to be treated.

The invention will be better understood from the following non-limiting description of an example thereof given with reference to the accompanying drawings in which:-

Figure 1 is a cross-section taken in a vertical plane across an example of a cradle device according to the invention;

Figure 2 is a front view of a support which forms part of the device;

Figure 3 is a diagrammatic perspective view of one example of a cradle forming part of a cradle device according to the invention; and

Figure 4 is a side view of one form of cradle support used in the present invention.

Referring firstly to Figure 1, the illustrated cradle device includes a support 10 and a cradle support 14. These cooperate to suspend a cradle 12. In Figure 1 the wall of the building is shown at 16 and the window space at 18. For simplicity of illustration, the parts of the window are

not shown. An internal floor 20 of the building is illustrated. The support 10 is placed on this floor 20 and includes a base 102 (Fig. 2), a post member 104, and angle struts 106 connecting the post member 104 to the base 102. The post member 104 has a series of regularly spaced holes 108 in an upper region. These holes 108 are intended for co-operation with the cradle support which will shortly be described.

Referring now to Figure 4, one form of cradle support is illustrated at 14. This comprises a vertical post or rod 142 from which extends two substantially horizontal rods or bars 144, these extending substantially at right angles to the length of the pole or post 142. The spacing between the two bars 144 is equal to the spacing between adjacent holes 108 in the support 10 referred to. Alternatively, it may be equal to an integral multiple of the hole spacing. The pole 142 is provided with a series of support hooks 146 each of which may be provided with a retaining means, not shown, whose purpose will shortly be described. Alternatively the retaining means may be on the cradle and arranged to cooperate with support hooks 146. The retaining means may take the form of a latch which holds a cross beam 129 within one of the hooks 146.

Referring now to Figure 3, one form of cradle usable in the present invention is formed by a base member 122, a side surround 124, and four upstanding corner members 126. The corner members are connected by a cross beam 127, two cross beams 129, and connectors 130. In use, the cross beams 129 are suspended by hooks 146 and clamped therein by the retaining means (not shown).

In use, the cradle device, which is intended for use as a "do it yourself" item, is brought into the room whose window is to be cleaned and the support member 10 is placed firmly on the floor 20 adjacent to and substantially parallel to the wall 16. Laterally extending adjustable means 150 with clamping pads 152, not shown in Figure 2, extend towards the wall 16. The cradle 12 is then suspended from the cradle support member 14 and securely clamped thereto by the retaining means referred

to. Then the cradle support 14 and the cradle 12 are passed through the window as a unit and the bars 144 aligned with and pushed into a selected two of the apertures 108. Any suitable fixing device such as a split pin or clip or bolt is then passed through each of the projecting ends 144a in order to securely attach the bars 144 to the support 10. As seen in Figure 1, but not shown in Figure 4, the cradle support 14 has laterally extending adjustable members 160 bearing clamping pads 162 which extend from the cradle support 14 towards the wall 16. These, in co-operation with similar members 150 and pads 152 permit the cradle support 14 to be securely mounted so that it can in turn securely support the cradle 12. The length "a" of the base 102 is preferably greater than the length "b" of the cradle 12.

Of course modifications may be made without departing from the invention. For example, means could be included on the cradle support 14 whereby the cradle 12 can be moved upwardly and downwardly or from side to side within safety limits in order to provide access to the region of the wall surrounding the window 18. Although the members 144 have been described as bars or rods they could equally well be tubes of adequate strength. In some circumstances, the support 10 could be a member of simple inverted T-shape, that is to say, the angled struts 106 could be in some circumstances dispensed with. While the cradle support 14 would normally have a height of approximately 1½ metres, (5 or 6 feet), cradle supports 14 of greater length could be employed so increasing the possible range of use of the device and the area of the building exterior to which access can be gained. While the cradle support 14 and cradle 12 have been described as separate items, which can be connected and disconnected, and while this is expected to be the most useful and practical form of the invention, for certain embodiments the cradle support 14 and cradle 12 could be made in one piece, or permanently attached together. Any suitable form of retaining means can be used to securely attach the cross beams 129 of the cradle to the hook portions 146 of the cradle support 14.

In an advantageous modification of the invention, not illustrated, access to the exterior of the building can be increased by utilizing two supports 10, one placed adjacent each of two separate windows on the same level, and each co-operating with a complementary cradle support 14. These cradle supports 14 may support an intervening cross bar or cross beam which in turn supports a cradle, there being a mechanism for shifting the cradle lengthwise of the cross beam. In this way, access could readily be gained to any part of the wall or window surface between the two windows at which the cradle supports 14 are located.

The apparatus described is particularly suitable for "do-it-yourself" use and provides for the first time a safe and practical D-I-Y manner of cleaning, painting or maintaining the outsides of windows of upper floor rooms.

While parts of a particular configuration have been particularly described and illustrated herein, it will be understood that parts of other shapes and sizes, of any suitable dimensions, and capable of being joined together at different locations so as to yield a device of variable dimensions, may be employed without departing from the invention.

CLAIMS

1. A cradle device for working on the outside of the building, said device including a structure a part of which is intended to rest on the floor of a room in the building joined to a portion thereof which extends through an aperture in a wall of the room, the portion providing means whereby a cradle can be securely supported while located externally of the room, the structure having or being associated with clamping means whereby it can be firmly located in relation to that portion of the wall of the room which is below or in the region of the aperture.

2. A cradle device according to claim 1 in which the structure includes at least a support having a base of substantial width and a post or equivalent member upstanding therefrom.

3. A cradle device according to claim 1 or 2 which includes a cradle support, the cradle support or the structure having laterally extending means by which they can be securely connected to each other.

4. A device according to claim 3 in which the cradle support is made integral with a cradle.

5. A device according to claim 2 in which the support having said base is made integral with the cradle and the cradle support.

6. A device according to claim 2, 3, 4 or 5 in which the cradle support is a vertically-extending member such as a pole, which is provided with attachment means such as hooks from which a cradle may be suspended.

7. A device according to claim 6 in which the laterally extending means may take the form of two or more bars or rods, one below another,

of adequate strength and rigidity and provided with interlock means whereby they can be securely attached to the post or equivalent member.

8. A device according to any preceding claim in which the said structure and the cradle support each have means whereby they can be braced against the wall of the room below the aperture.

9. A device according to claim 8 in which the structure and the cradle support each carry clamping pads.

10. A cradle device for the purpose of working safely on the outside of a building, said device including a structure having a first part which is intended to rest on the floor of a room in the building joined to a second part which extends through an opening in a wall of the room joined to a cradle or a means of supporting a cradle, the cradle being, or intended to be, located externally of the room.

11. A device accordig to claim 10 in which the structure has or is associated with clamping means which can be firmly located in relation to that portion of the wall of the room that is below and/or in the vicinity of the opening.

12. A device according to claim 10 or 11 in which the structure is constructed as one integral whole.

13. A device according to claim 10, 11 or 12 in which the structure is constructed of parts that interlock when assembled.

14. A device according to claims 12 or 13 wherein the structure is composed of a plurality of parts connected together by fastening means.

15. A device according to claim 10 or any claim dependent thereon in which the first part of the structure is of substantial width at its base.

16. A device according to any preceding claim in which the stability of the structure for its intended purpose is achieved by choice of any combination of the width at the base of the first part and the force applied by the clamping means.

17. A device according to any of claims 10-16 whereby clamping pads are carried by some or all of the clamping means.

18. A combination cradle device according to claim 1 or claim 10 which includes two structures each having a portion or part extending through one of two substantially horizontally-spaced apertures in a wall of a building, the two portions together supporting a cross beam having means by which one or more cradles can be suspended therefrom.

19. A device according to claim 10 or claim 11 in which the structure is constructed partly of integrally joined parts and partly of individual interlocking parts, the arrangement being such that the structure includes any combination of integrally joined and interlocking parts.

20. A cradle device substantially as herein described with reference to and as illustrated in the accompanying drawings.

Published 1991 at The Patent Office, State House, 66/71 High Holborn, London WC1R 4TP. Further copies may be obtained from Sales Branch, Unit 6, Nine Mile Point, Cwmfelinfach, Cross Keys, Newport, NP1 7HZ. Printed by Multiplex techniques ltd, St Mary Cray, Kent.