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(54) STABILISED PLATFORM FOR WINDOW CLEANING AND LIKE USES

NATIONAL REFERENCE
LIBRARY OF SCIENCE
AND INVENTION

(71) I, ERIC WILLIAM COX, an Australian citizen, of 2 McLachlan Avenue, Artarmon, New South Wales, Australia, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to workman's platforms of the type suspended from a structure, e.g. a building or tower in a manner enabling the platform to be raised and lowered.

Hitherto it has been common practice to incorporate in building exteriors vertical rails also called mullions, in which wheels on the platform engage thereby preventing undesired movement of the platform as might, for example, be caused by wind. Although a stabilized platform is obtained by this means, the rails and their precision fixing to a building increased the cost of the building considerably.

It is the object of this invention to provide a platform of the above type which does not require rails but which incorporates means which will achieve the desired degree of stability under all conditions. The platform of this invention is usable on all types of structures having substantially upright surfaces e.g., buildings, walls, chimneys, inclined roofs and skeletal towers.

The invention consists in a platform for suspension in working juxtaposition to a substantially upright surface said platform comprising a frame, a decking on the frame, attachment means on the frame whereby the platform is suspendable, and means co-operating with the upright surface, and air jet means discharging away from the upright surface, both on the frame, to maintain the frame in said working juxtaposition with said upright surface.

Two embodiments of the invention are

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described with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of one embodiment of the platform;

Figure 2 is a perspective view of a second embodiment of the platform;

Figure 3 is a sectional end view on line 3-3 of Figure 2 showing the platform in working juxtaposition to a wall.

The platform of Figure 1 comprises a skeletal frame having upper and lower front rails 1 and 2, upper intermediate and lower back rails 3, 4 and 5, upper and lower end rails 6 and 7 and short and long corner post 8 and 9. A decking 10 is fixed to the rails 2, 5 and 7. Inverted "U" shaped brackets having bases 11 and front and rear legs 12 and 13 are fixed to the frame. The front legs 12 are fixed to frame rails 1 and 2 and the rear legs 13 are fixed to frame rails 3, 4 and 5. A pair of lugs 14 are fixed to each bracket base 11 with holes 15 therethrough.

Platform suspending cables (not shown) are attachable to the lugs 14 in any suitable manner.

Fixed to the frame are two tubular casings 16 extending from the front of the platform to beyond the back thereof. Mounted in the casings are electric motors 17 carrying multi-bladed impellers 18. Mounting plates 19 are adjustably secured to the rails 7 of the frame. Wheels 20 on the plates 19 project beyond the front rail 2 of the platform.

Referring to Figure 2 it will be seen that the plates 19 and wheels 20 are replaced by bristle bordered panels 22. The bristles are deformable and combine with the panels 22 to form open front compartments from which air is drawn by the impellers 18.

From Figure 3 it will be seen that with the platform in working relationship with a wall 24 the compartment fronts are covered thereby and the flow of air to the impellers 18 is throttled.

The volume of air reaching the impellers is dependent upon the density of bristles and a condition of negative pressure within the compartments can be obtained. The compartments thus act as suction cups to supplement the air jets in holding the platform against the wall 24.

It is anticipated that in some working conditions with the compartment arrangement the space between the bristles may become choked with dust. To offset this the embodiment of Figure 2 can be fitted with the wheels 20 of the embodiment of Figure 1. By so doing a constant and regulatable gap between the bristles 23 and the wall 24 can be maintained with a resultant substantially constant degree of negative pressure being maintained within the compartments.

In place of the bristled panels, compartments may be formed by the use of Concertina units in which case the use of wheels 20 would be necessary.

With bristled panels or bellows it would be possible to shape the compartment from edges to accommodate profile features of a wall, e.g., a vertical decorative rib as used on some high rise buildings.

For building walls provided with regularly spaced projecting vertical abutments end jets on the platform can be used to supplement the jets directed outwardly from the wall. The end jets impinge on the abutments thereby maintaining the platform substantially central between a pair of abutments whilst the jets from the impellers 18 hold the platform against the wall.

It is envisaged that balancing jets can be directed onto the wall to act in the same way as the wheels 20. In this case the thrust of the jets acting towards the wall would be regulated so that there is a resultant thrust urging the platform against the wall with the balancing jets maintaining an air cushion between the platform and the wall.

WHAT I CLAIM IS:

1. A platform for suspension in working juxtaposition to a substantially upright surface, said platform comprising a frame,

a decking on the frame attachment means on the frame whereby the platform is suspendable, and means co-operating with the upright surface, and air jet means discharging away from the upright surface, both on the frame to maintain the frame in said working juxtaposition with said upright surface.

2. A platform as claimed in Claim 1 wherein the said surface co-operating means comprises wheels.

3. A platform as claimed in Claim 1 or Claim 2 wherein the surface co-operating means comprises one or more compartments from which air is withdrawn by said air jet means to create a negative pressure in said compartments.

4. A platform as claimed in Claim 1 wherein the surface co-operating means comprise air jets, directed towards the upright surface.

5. A platform as claimed in Claim 2, 3 or 4 wherein the jet means comprises an impeller housed in an open ended casing disposed laterally on the platform.

6. A platform as claimed in Claim 5 wherein the fan is driven by an electric motor.

7. A platform as claimed in any of the Claims 1 to 3 wherein said surface co-operating means is shaped to correspond with any profile features of said surface.

8. A platform as claimed in Claim 3 wherein said compartment has a deformable surface engaging border.

9. A platform as claimed in Claim 8 wherein the border is a band of bristles.

10. A platform as claimed in Claim 8 wherein the border is of concertina shape.

11. A work-platform substantially as described herein with reference to the accompanying drawings.

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