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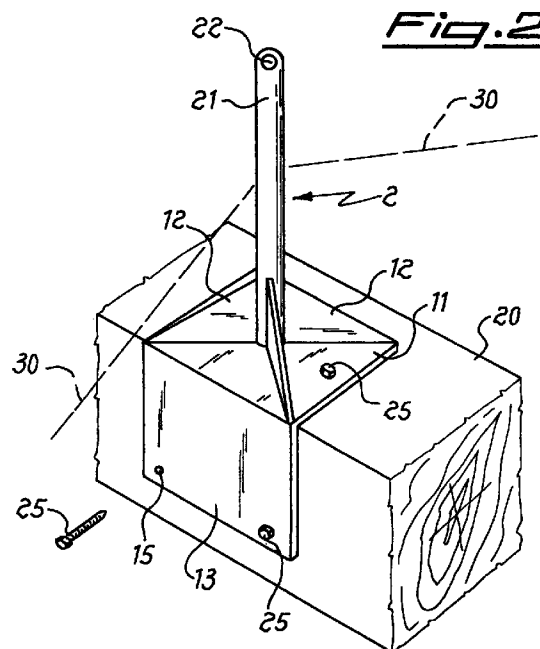
(71) Applicant:
Equipe Trivellato S.r.l.
28060 San Pietro Mosezzo (No) (IT)

(72) Inventor: **Trivellato, Dino**
28060 San Pietro Mosezzo (NO) (IT)

(74) Representative:
Marietti, Giuseppe
MARIETTI e GISLON S.r.l.
Via Larga, 16
20122 Milano (IT)

(54) Safety assembly for roofs or building roofings in general

(57) A safety assembly which can be installed on roofs or coverings of buildings in general, comprises at least an element consisting of one portion (1) for the fixing of the same element to the roof, a portion having at least one part (2) projecting above the surface of the roof, as well as means (22) for hooking up one or more accident-prevention devices.



EP 0 942 113 A2

Description

[0001] The present invention relates to a safety assembly of the type permanently installed on roofs or coverings of buildings in general. It is known that the operations of construction, inspection and/or maintenance of roofs is particularly dangerous and they are therefore subject to particularly restrictive regulations intended to safeguard the operators.

[0002] In general, it is known that a person working in conditions of precarious safety - above all in such conditions where they could have an accidental fall - should wear a harness connected to a safety rope by means of suitable devices, such as for instance an break-fall device that stops a rope running through it when the speed of the rope sliding through the same device exceeds a certain threshold, or a rope sliding device that allows the operator to control the speed of descent and to stop when necessary along the safety rope.

[0003] But it is not always possible to find an easily accessible anchorage installation in proximity to the site of operations that allows the safety rope or other known type of accident-prevention device to be hooked up in a stable and secure way. The lack of similar installations often leads not only to disregard for the legally imposed safety regulations but also for the most elementary safety precautions dictated by common sense.

[0004] The need is recognised therefore to propose a safety assembly that can be permanently installed on a roof and which could therefore be used not only during the phases of construction of the roof, but also during the subsequent inspection and/or maintenance operations by the operators.

[0005] Therefore, the object of the present invention is to propose a safety assembly for roofs or coverings of buildings in general which will furnish a particularly secure and reliable hook-up for ropes or other means of accident-prevention.

[0006] Another object of the present invention is to propose a safety assembly for roofs or coverings of buildings in general that furnishes an always easily accessible hook-up for ropes or other means of accident-prevention.

[0007] A further object of the present invention is to propose a safety assembly for roofs or coverings of buildings in general that could also be easily installed on existing roofs or coverings.

[0008] Such objects are achieved by the present invention, which relates to a safety assembly of the type suitable to be mounted on roofs or coverings of buildings in general, characterised by comprising at least one element consisting of a portion for the fixing of said element to said roof, a portion having at least one part projecting above the covering surface of said roof, as well as means for hooking up one or more accident-prevention devices.

[0009] According to a possible embodiment of the invention, the elements of the assembly are fixed to the

ridgepole - made of wood, for instance - of the roof by means of screws or similar fasteners.

[0010] According to another possible embodiment of the invention, the elements of the assembly are fixed to the roof slab by means of a pair of plates fastened to the opposite sides of the slab by threaded rods and corresponding nuts.

[0011] These different forms of embodiment allow the elements of the assembly to be installed on the most different type of coverings of existing buildings.

[0012] Sealing elements are preferably provided between each element of the safety assembly and the surface of the roof for the purpose of ensuring the impermeability of the underlying space to rain.

[0013] According to another aspect the invention, the safety assembly comprises two or more elements and at least one cable or rope connected between the respective means of hook-up, in such a way as to allow ample choice of the best position of hook-up and/or ample freedom of movement to the operators protected by the safety assembly.

[0014] Preferably, at least one of the elements of the assembly is arranged in proximity to an opening giving access to the surface of the roof, for instance a skylight or similar opening, in such a way as to allow immediate hook-up of a rope or of other means of accident-prevention before the operator climbs onto the upper surface of the roof.

[0015] The invention will now be described in more detail, for illustrating but not limiting purpose, by reference to the enclosed drawings, in which:

- Figures 1A and 1B are elevation and plan views of an element of the safety assembly according to a possible embodiment of the invention;
- Figure 2 is a perspective view of the element illustrated in Figures 1A and 1B fixed to the ridgepole of the load-bearing structure of a roof;
- Figures 3A and 3B are elevation and plan views of an element of the safety assembly according to another possible embodiment of the invention;
- Figure 4 is an elevation view of the element illustrated in Figures 3A and 3B fixed to a roof slab; and
- Figure 5 is a perspective view of a roof on which a safety assembly according to the invention is installed.

[0016] Figures 1A, 1B and 2 illustrate an element of a safety assembly according to a possible embodiment of the invention. The element shown here comprises an portion 1 that allows it to be fixed to the ridgepole 20, generally made of wood, of the load-bearing structure of a roof, and a portion 2, comprising for instance a perpendicular rod having circular section, that is provided with a part 21 projecting above the surface 30, the latter illustrated schematically in Figure 2 by means of broken lines.

[0017] At the extremity of the projecting part 21 is pro-

vided advantageously a eyelet 22, or a ring, integral with the projecting part 21 of the rod 2 to allow the permanent or temporary hook-up of a cable or of a safety rope, or the temporary hook-up of a snap hook to which accident-prevention devices are connected.

[0018] The fixing portion 1 comprises a substantially rectangular base plate 11, arranged perpendicularly to the axis of the rod 2. As a means of reinforcing the structure of the element, the plane fins 12 are provided connecting the rod 2 to the base plate 11. The fins 12 are arranged in planes perpendicular to the plate 11 along the diagonals of the same plate.

[0019] In the embodiment illustrated in Figures 1A, 1B and 2, the fixing portion 1 also comprises at least one side plate 13 integral with the base plate 11 and perpendicular to it. Both the base plate 11 and the side plate 13 are equipped with a plurality of through holes 15 that allow the element to be fixed to the ridgepole 20 by means of screws 25.

[0020] The fixing of the base plate 11 to the upper face of the ridgepole 20 and of the side plate 13 to at least one side face of the same beam by screws ensures a considerable mechanical resistance to the forces exerted on the element of the safety assembly.

[0021] Figures 3A, 3B and 4 illustrate an element of a safety assembly according to another embodiment of the invention, and in particular an element of the type suitable to be fixed to a roof slab 40 in concrete or similar. The details shared with the preceding embodiment are identified in these Figures by the same numerical reference.

[0022] As already illustrated in the preceding embodiment, the element of the safety assembly comprises a fixing portion 1 and a perpendicular rod 2 equipped with a eyelet 22 at the free end. The fixing portion 1 comprises in particular a base plate 11 and the plane fins 12 connecting the rod 2 to the base plate 11. The fins 12 are arranged in an identical way to the embodiment already described in Figures 1A, 1B and 2.

[0023] In the embodiment illustrated in Figures 3A, 3B and 4, the fixing portion 1 comprises a further backing plate 43, separate from the base plate 11, and connected to the latter by means of a pair of threaded rods 41 and their corresponding nuts 42. The threaded rods are inserted into through holes 44 in corresponding positions on the base plate 11 and on the backing plate 43.

[0024] As is evident from Figure 4, the threaded rods 41 and the nuts 42 are inserted through corresponding holes made in the roof slab 40 and are used as tension rods to tighten the contact between the base plate 11 and the external surface 45 of the roof slab 40 and the backing plate 43 and the inside surface 46 of the same roof slab, in such a way as to confer particular strength and stability to the fixing element of the safety assembly.

[0025] In both the embodiment described above, the elements of the assembly are preferably produced in a rigid material, for instance stainless steel or similar

material, in such a way as to give a particularly strong structure from the mechanical point of view and at the same time a good resistance to damage from atmospheric agents.

[0026] Figure 5 illustrates schematically a building 51, provided with a pitched rain shedding roof 50, on which a safety assembly is installed permanently according to a possible embodiment of the invention. The safety assembly comprises three elements 52 to which a cable 53 is fixed, in this case to eyelets 22 (Figures 1A and 3A). The cable 53 and/or the eyelets 22 allow the hook-up of known accident-prevention devices, for instance safety ropes or similar equipment.

[0027] According to an advantageous aspect of the invention, at least one of the elements 52 of the assembly is set close to an access door 54 to the surface of the roof 50, for instance a skylight or similar opening. This allows an operator to immediately hook up a safety device to the cable 53 or to the eyelet 22 of the nearest element 52, before climbing out onto the upper surface of the roof 50.

[0028] As shown in Figure 5, each element 52 of the safety assembly is preferably associated with means of sealing 55 located between each element and the surface of the roof 50 to guarantee the impermeability of the same roof to atmospheric precipitation.

Claims

1. Safety assembly of the type suitable to be installed on roofs or coverings of buildings in general, characterised by comprising at least one element consisting of a portion for the fixing of said element to said roof, a portion having at least one part projecting above the covering surface of said roof, as well as means for hooking up one or more accident-prevention devices.
2. A safety assembly according to Claim 1, characterised in that the second portion of said element comprises a substantially straight rod having circular section.
3. A safety assembly according to Claim 1 or 2, characterised in that said means for hooking up one or more safety devices comprise a ring or a eyelet integral with said second portion at the free end of the part projecting from the roofing surface.
4. A safety assembly according to any of the preceding Claims, characterised in that said first fixing portion comprises a base plate perpendicular to the axis of said rod.
5. A safety assembly according to Claim 4, characterised in that it comprises a plurality of plane reinforcement fins located in planes perpendicular to said base plate and connected to said base plate

and to said rod.

6. A safety assembly according to Claim 5, characterised in that said base plate is substantially rectangular, and that said fins are arranged along the diagonals of said plate. 5
7. A safety assembly according to any of the preceding Claims, characterised in that said fixing portion comprises at least one side plate integral with said base plate and perpendicular to it. 10
8. A safety assembly according to Claim 7, characterised in that said base plate and said at least one side plate are equipped with a plurality of through holes, and that said at least one element of the safety assembly is fixed by means of screws to the ridgepole of the roof. 15
9. A safety assembly according to any of Claims from 1 to 6, characterised in that said fixing portion comprises at least one backing plate separate from said base plate. 20
10. A safety assembly according to Claim 9, characterised in that said base plate and said at least one backing plate are equipped with through holes in reciprocally corresponding positions, and that said at least one element of the safety assembly is fixed to the slab of the roof by means of threaded rods and corresponding nuts to tighten the contact of said base plate to the external surface of the roof slab and of said backing plate to the inside surface of the roof slab. 25
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11. A safety assembly according to any of the preceding Claims, characterised in that it comprises sealing means between said at least one element of the assembly and the surface of the roof. 35
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12. A safety assembly according to any of the preceding Claims, characterised in that it comprises two or more of said assembly elements and at least one cable or rope connected to said means of hooking up. 45
13. A safety assembly according to any of the preceding Claims, characterised in that at least one of said elements of the assembly is arranged in proximity to an opening giving access to the surface of the roof. 50

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