STARTING PLATFORM FOR A ROOF SEAMING MACHINE

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ABSTRACT

The platform includes a machine support portion connected with a pair of spaced parallel side portions having a clamping end portion secured to the opposite ends thereof and in spanning relationship thereto. Means is provided for clamping the clamping end portion to an associated roof. The clamp means may take the form of a separate pair of locking pliers. The clamp means may also take the form of a cam operated clamp means for clamping the roof panels between a movable clamp member and a portion of a saddle block which supports the movable clamp portion. Operating means is provided for operating the clamp means in this latter arrangement.

17 Claims, 10 Drawing Figures
FIG. 8.

FIG. 9.

FIG. 10.

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BACKGROUND OF THE INVENTION

Roof seaming machines are presently employed for forming standing seams interconnecting adjacent roofing sheet panels. A particular problem arising with the use of such machines is properly starting the seaming machine. The present invention relates to a starting platform which is temporarily fixed to a roof of a building and is employed for assisting workmen in properly starting of a seaming machine of the type as shown, for example, in U.S. Pat. No. 3,120,828.

Such a starting platform must be a construction so as to be readily attached and removed with respect to associated roof sheet panels, and the platform must provide a sturdy and rugged construction which is adapted to support a roof seaming machine in place and properly position such machine to form a standing seam between adjacent roof sheet panels.

Another desirable feature of such a starting platform and a particular objective of the present invention is to provide a construction wherein all of the work involved in properly clamping and positioning the platform in place can be carried out at a point spaced a substantial distance from the edge of the roof, thereby eliminating the safety hazards which occur when workmen are required to perform such operations near the edge of the roof.

SUMMARY OF THE INVENTION

In the present invention, the starting platform includes a machine support portion in the form of a flat plate or the like which is adapted to support a roof seaming machine. A pair of spaced parallel side portions are connected with the machine support portion, and a clamping end portion is secured to the opposite ends of the side portion in spanning relationship thereto.

Clamp means is provided for clamping the clamping end portion of the platform to the associated roof sheet panels. In a first form of the invention, this clamp means comprises a pair of separate locking pliers which are adapted to cooperate with the clamping end portion to firmly secure the same in place.

In a further modified form of the invention, the clamp means includes a saddle block means which rests on the roof panels and which carries a movable clamp portion. This movable clamp portion is actuated by a cam operating means so as to cause the clamp means to tightly clamp the associated roof panels upon movement of the cam operating means.

The saddleblock means is operatively connected with a shaft which is rotatable with respect thereto, the opposite ends of said shaft being connected with the ends of the side portions of the platform.

The construction of the present invention is very rugged and is such that it can be readily clamped in operative position with respect to a roof and subsequently removed therefrom when so desired. The work required to position the platform and secure it in place may be carried out at a point spaced a substantial distance from the edge of the roof, thereby providing a substantial safety factor for workmen utilizing the device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top perspective view partly broken away, illustrating the starting platform of the present invention mounted in operative position relative to an associated roof;

FIG. 2 is a top view of the platform shown in FIG. 1;

FIG. 3 is a view on an enlarged scale taken substantially along line 3--3 of FIG. 2, looking in the direction of the arrows;

FIG. 4 is a sectional view on an enlarged scale taken substantially along line 4--4 of FIG. 2, looking in the direction of the arrows;

FIG. 5 is a top perspective view of a modified form of the invention;

FIG. 6 is a side view of the construction shown in FIG. 5.

FIG. 7 is an enlarged sectional view through a portion of the structure shown in FIGS. 5 and 6;

FIG. 8 is a sectional view similar to FIG. 7 illustrating still another form of the invention;

FIG. 9 is a top perspective view of a portion of the structure shown in FIG. 8; and

FIG. 10 is a top perspective view of a modification of FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings wherein like reference characters designate corresponding parts throughout the several views, FIG. 1 illustrates a typical arrangement of a building roof including an eave 10 and a parallel spaced purlin 12, a pair of roof sheet panels 14 and 16 being supported on members 10 and 12 and extending at substantially right angles thereto. Panels 14 and 16 are to be joined together along line 18 to form a standing seam therebetweeen in a well-known manner.

The starting platform includes a machine support portion 20 which, as seen most clearly in FIG. 4, includes a flat plate 21 for supporting a roof seaming machine, an upstanding flange 22 being formed at one end thereof to form an end wall of the starting platform, and a depending flange 24 being formed at the opposite edge thereof and being adapted to engage the edge of an associated roof to form a stop means when it is in abutting relationship with the edge of the roof.

A tab 30 extending perpendicularly to the plate 21 is of tapered configuration so as to fit within the space between panels 14 and 16 adjacent the seam thereof. Tab 30 includes a flange portion 32 at the lower end thereof extending substantially perpendicularly thereto and is suitably secured to machine support portion 20 as by welding or the like.

The various components of the starting platform are preferably formed of a material such as galvanized iron, the various portions all being rigidly interconnected with one another as by welding or the like.

A pair of side portions 36 and 38 comprise elongated angle members secured at one end thereof to the machine support portion 20. As seen most clearly in FIGS. 2 and 3, plates 40 and 42 are secured to the opposite ends of side portions 36 and 38, and a clamping end portion, indicated generally by reference numeral 44, is also secured to said opposite ends of the side portions as well as plates 40 and 42 and in spanning relationship thereto.

Clamping end portion 44 is a channel-shaped member including a first leg portion 46 which is of substantially greater height than a second leg portion 48, the two leg portions being interconnected by a bottom wall portion 50. A slot 52 is formed in clamping end portion 44 and is adapted to receive a portion of the upstanding flanges formed on the two roof panels.

As seen in FIG. 1, a conventional pair of locking pliers 56 is provided, this pair of locking pliers clampingly engage the upstanding flange portions on the roof panels and fitting within channel-shaped member 44 so as to securely lock the starting platform to the roof. It is apparent that the locking pliers can be easily applied and removed as desired so that the starting platform may be readily mounted and dismounted with respect to the roof.

Referring now to FIGS. 5 -- 7 inclusive, a modified form of the invention is illustrated. Components of this form of the invention corresponding to those previously described have been given the same reference numerals primed.

In this form of the invention, the side portions 36' and 38' are provided with hand rails 60 and 62 respectively, to facilitate handling of the platform. The opposite ends of side portions 36' and 38' are provided with upwardly extending end portions 64 and 66 which extend at an oblique angle thereto. As seen in FIG. 6, a roof seaming machine 70 is illustrated as being supported on the machine support portion when the platform is in clamped operative position.
A shaft 72 has the opposite ends thereof connected with upwardly extending end portions 64 and 66 of the side portions. As seen in FIG. 7, a bolt 74 is threaded into a suitable threaded hole provided in each end of the shaft and bears against a spacer member 76 whereby the ends of the shaft are held in place with respect to the associated side portions.

A saddle block 80 has a bore 82 therethrough which receives shaft 72, whereby the shaft and saddle block are interconnected with one another but are rotatable with respect to one another. The undersurface of the saddle block is of such a configuration as to substantially conform to the shape of the underlying panels and rest thereon, the saddle block including a first cut-out portion 84 for receiving the flanges formed on the adjacent panels, and including a second cut-out portion 86 for receiving a movable part of the clamp means.

The saddle block forms one part of the clamp means and includes a dimple 90 formed in the flat surface 91 formed thereon. The movable part of the clamp means includes a block 92 having a dimple 93 formed thereon adapted to cooperate with the dimple 90 formed in the saddle block to form a dimple in the associated flanges as well as the purlin clip 94 when the device is moved into clamping position. Block 92 is threaded with the threaded end of a plunger 95 having an enlarged head 96 on the outer end thereof. A spring 98 is disposed within a cavity 100 formed in the saddle block and engages head 96 for normally urging plunger 95 to the left as seen in FIG. 7.

A pair of spaced ears 104 extend outwardly from the saddle block and a pin 106 is supported between said ears and suitably held in operative position. A cam operating means 108 is rotatably supported by pin 106 and includes a manually engageable handle portion 110. The outer surface of cam 108 is eccentric with respect to the axis of pin 106, whereby it is apparent that when handle 110 is grasped and moved downwardly, cam 108 will cause plunger 95 to be moved inwardly to clamp the flanges formed on the roof panels as well as the purlin clip between block 92 and flat surface 91 of the saddle block. The platform can initially be placed in an upside down position at a point spaced from the edge of the roof as indicated in phantom lines in FIG. 5, and it is then rotated 180° into the solid line position. The platform is then slid toward the ridge of the roof so as to move tab 30' into the area under the unseamed corrugation. The tab prevents the weight of the seamer from distorting the corrugation at the starting point of the corrugation.

Referring now to FIGS. 8 and 9 of the drawings, a further modified form of the invention is illustrated wherein parts similar to those described in connection with FIG. 7 have been given the same reference numerals primed. In this form of the invention, the movable part of the clamp means includes a plunger 120 having an enlarged head 122 at the outer end thereof. A compression spring 124 is disposed within a counterbored cavity 126 formed in the saddle block and engages enlarged head 122 for normally urging plunger 120 to the left as seen in FIG. 8.

The operating means in this form of the invention as seen most clearly in FIG. 9 comprises a member 130 having a bore 132 formed therethrough for receiving shaft 72'. A longitudinally extending slot 134 is in communication with bored 132, and a radially extending threaded hole 136 is provided and is in communication with slot 134. A helical cam surface 138 is formed on one side of member 130.

As seen in FIG. 8, member 130 is mounted on shaft 72', a moon key 140 being disposed within slot 134 previously described, and fitting within a slot provided in shaft 72' for keying member 130 to the shaft. A suitable set screw may be threaded within the aforementioned hole 136 for retaining the key in operative position.

In this form of the invention, shaft 72' as well as member 130 are fixed to the side portions of the platform. As seen in FIG. 10, plate 21' is provided with an elongated slot 150 which receives a nut and bolt assembly 152 passing through a hole in flat portion 32' of tab 30', whereby the position of the tab can be adjusted longitudinally of the platform.

With this construction, the platform can be placed in an upside down position at a point spaced a substantial distance from the edge of the roof and the saddle block mounted in the position shown in FIG. 8, whereupon the platform can be rotated 180° to its intermediate adjacent position in FIG. 8. After the platform is swung through this arc, member 130 will be carried through an angle of 180°, whereby the cam surface 138 formed thereon will cause plunger 120 to be moved into clamping position so that the apparatus automatically clamps itself to the roof as it is swung into position. Operating means 130 is shown in an intermediate adjacent position in FIG. 8. After the platform is in clamped position, tab 30' can be adjusted by loosening nut and bolt assembly 152 and sliding the tab into the area under the unseamed corrugation, whereupon the nut and bolt assembly can again be tightened.

As this invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, the present embodiment is therefore illustrative and not restrictive, since the scope of the invention is defined by the appended claims rather than by the description preceding them, and all changes that fall within the metes and bounds of the claims or that form their functional as well as conjointly coexistent equivalents, are therefore intended to be embraced by those claims.

We claim:

1. A starting platform for supporting a roof seaming machine on a roof beyond the edge of the roof at the end of a seam to be formed between adjacent roof panels comprising, a platform means for supporting a roof seaming machine beyond the edge of a roof in a position to start a seam, a machine support port on one end of the platform, a pair of elongate, spaced apart side portions connected at one end with said machine support port and extending therefrom inwardly over the roof from the edge thereof and defining a space therebetween in which the seam to be formed is positioned, means on the opposite ends of said side portions for securing said platform on said roof with said machine support portion held beyond the edge of the roof to support a roof seaming machine thereon spaced outwardly from the edge of the roof at the end of the seam to be formed between adjacent roof panels, said roof seaming machine being movable from said machine support portion and along said seam to form said seam.

2. A device as defined in claim 1, wherein said side portions are disposed in substantially parallel relationship with one another.

3. A device as defined in claim 1, wherein said machine support portion includes a stop flange thereon for engaging the edges of associated roof panels.

4. A device as defined in claim 1, including a tab secured to said machine support portion and being adapted to fit in the space between roof panels adjacent said seam to be formed therebetween.

5. A device as defined in claim 1, wherein said securing means includes a channel-shaped member having a slot formed therein.

6. A starting platform as in claim 1, wherein said securing means comprises a clamp means.

7. A device as defined in claim 6, including saddle block means adapted to receive adjacent roof panels, said saddle block means comprising a portion of said clamp means, the remaining portion of the clamp means being movably supported by said saddle block means, and operating means for operating said clamp means.

8. A device as defined in claim 7, including a shaft extending between the opposite ends of said side portions, said shaft being interconnected with said saddle block means for rotation with respect thereto.

9. A device as defined in claim 7, wherein said saddle block means has an undersurface generally conforming to the shape of the adjacent associated panels and including a cut-out to receive flanges on the panels.

10. A device as defined in claim 7, wherein said operating means comprises a movable cam.
11. A device as defined in claim 10, including a handle operatively connected with said cam for permitting selective manual operation thereof.

12. A device as defined in claim 10, wherein said clamp means includes a spring pressed plunger, said operating means being adapted to move said plunger against the force of said spring.

13. A device as defined in claim 7, wherein said operating means includes a cam, a shaft extending between opposite ends of said side portions and being secured thereto, said cam being fixed to said shaft, the shaft being interconnected with said saddle block means for rotation relative thereto.

14. A device as defined in claim 13, wherein said cam has a helical cam surface formed thereon.

15. A device as defined in claim 4, wherein said tab is adjustably secured to said platform for adjustment with respect thereto.

16. A starting platform for supporting a roof seaming machine on a roof beyond the edge thereof in a position to start a seam between adjacent roof panels comprising, a platform means for supporting a roof seaming machine beyond the edge of a roof in a position to start a seam, a machine support portion at one end of the platform, and means operatively connected with said machine support portion for supporting said machine support portion and a roof seaming machine supported thereon beyond the edge of the roof and in operative position at the end of the seam to be formed between adjacent roof panels, said machine being movable from said machine support portion and along said seam to form said seam.

17. A starting platform as in claim 16, wherein the supporting means connected with the machine support portion comprises elongate means connected at one end to the machine support portion and extending away therefrom inwardly over the roof, clamping means on the other end of the elongate means to clamp the platform to the roof with the machine support portion beyond the edge of the roof at the end of the seam to be formed.

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