ABSTRACT: A device for supporting a screed at the proper elevation in a concrete form. The device has a convenient base which is attached to the lower surface of the form, and an upright support that is releasably engaged in the base. The upright member has a bracket adjustably and releasably supported therealong to receive the screed member therein.
SCREED HOLDING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention
A screed supporting device is an important piece of equipment in the cement working field. With current projects having large uninterrupted expanses of poured concrete, the edges of the form for such concrete are so widely spaced that they cannot be used as the screed or support for a screed stick. Thus, an intermediate supporting device that will hold the screeds or parallel rails for the masons to use to support their screed sticks and establish the upper level of the poured cement is an extremely important and time-saving device.

2. Prior Art of the Invention
The prior art has many such devices that will accomplish the supporting of the screed and the screed stick, however, in most instances they are extremely complex and therefore costly devices. In most cases, the prior art entails the use of a rather large base to be attached at the lower surface of the form. This then would involve leaving the large base member in the concrete, or upon withdrawing it leaving an extremely large hole or disturbance in the concrete that must in turn be leveled off. Also, most of the adjustment heretofore in the trade has been involved on the support column and is located below the level of concrete. Therefore, once the wet cement has been poured into the form the adjustment device is covered therewith, and further adjustment is virtually impossible.

Other devices known in the art achieve their adjustment of the screed supporting bracket on the support column by rotating the entire bracket and column relative to the base. This then, also leaves a threaded or other adjustable device located below the level of the wet cement making further adjustment virtually impossible. Thus, while the devices presently known in the art do in fact provide a support for a screed, they are of complex structure and often require the loss of a large support member within the poured cement. Others cause a great disturbance of a smooth surface of the cement when the elements of the support are withdrawn therefrom.

SUMMARY OF THE INVENTION

The invention as proposed provides a simplified mounting means which is attached to the lower surface of the form. The vertical column is releasably engaged within the mounting means and is a simplified structure that once mounted to the base needs no further relative movement therewith to perform its vertical support function. The bracket that is adjustable mounted on the vertical support and receives the screed therein, is maintained above the upper surface of the poured cement thereby causing little or no disturbance of the upper surface of the cement and providing easy adjustment thereof once the cement has been poured. The simplicity of the device assures easy reuse with minor cleaning without fear of destruction due to cement clogged parts.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of the subject screed supporting device.

FIG. 2 is a side elevation view of the screed supporting device of this invention mounted on concrete reinforcing rods.

FIG. 3 is a sectional view taken substantially along the line 3–3 of FIG. 2.

FIG. 4 is a perspective view of a base member for use in conjunction with concrete reinforcing rods.

FIG. 5 is a perspective view of a base member that is used where the cement is poured on grade.

FIG. 6 is a perspective view of a concrete member wherein the lower surface of the form is made of wood.

FIG. 7 is a side view partially in section showing the base member of FIG. 5 installed on grade.

FIG. 8 is a side view partially in section with the base member of FIG. 6 attached to a wooden form member.

FIG. 9 is a side view of the screed support in position with a screed stick or rodding member supported thereon.

FIG. 10 is a perspective view of a modified base member usable with a grout material.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, the subject supporting device is indicated generally at 10, with the base member indicated at 12, the upright support member at 14, and the screed cradle at 16. A screed, in the form of a wooden member such as a 2x4, is indicated generally at 18.

In FIGS. 1 through 4, is illustrated generally a support member 12 that is adapted for use where concrete reinforcing rods 20 are embedded in the cement that is to be poured within the form. The base member shown in these FIGS. is comprised of a nut 22 with at least four vertically extending wires 24 fixed in axial alignment with the threaded opening 26 therethrough. The base member is conveniently attached at the intersection of two reinforcing rods 20. The base member rests on the top rod with the four wires 24 being wrapped around and secured to the bottom rod. This then firmly anchors the nut 22 in proper alignment with the threaded opening 26 facing vertically upward.

The upright support member 14 is comprised of an elongated solid rod or tubular member 28 of sufficient height to extend well above the proposed upper surface of the cement to be poured. The member 28 is of a diameter such that a threaded end 30 thereof can be received within the threaded opening 26 of the support member. Since the support member is securely fastened to the reinforcing rods 20, the upright support member will be held in a position that is perpendicular to the plane of the upper surface of the poured cement. This upper surface of the cement is indicated by the broken line, C in FIG. 3.

The screed cradle 16 includes an angular shaped member with an upright leg 32 and a horizontally extending leg 34. The horizontally extending leg 34 has an aperture 36 extending therethrough. A tubular collar 38 with an inside diameter 40 of substantially the same size as the aperture 36, is attached to the top surface of the horizontally extending leg 34 in alignment with the aperture. The collar 38 is attached to the leg 34 in perpendicular relationship therewith, and is also parallel to the upright leg 32 and spaced therefrom a distance approximately the thickness of the screed 18. The tubular collar 38 has a nut 42 fixed to the circumference thereof with the threaded opening 44 therethrough axially aligned with an opening 46 through the wall of the tubular collar 38. A set screw 48 is received in the threaded opening 44 to advance through the opening 46 beyond the inside diameter of the tubular collar. The upright support member 14 is received through the aperture 36 in the leg 34 of the cradle and then through the tubular collar. Thus, the cradle is easily adjustable along the length of the upright member, with the set screw being tightened against the upright member to prevent relative movement between the cradle and the upright member when the cradle is in the desired position thereon. The upright leg 32 of the cradle has two apertures 50 therethrough so that a fastening member 52, such as a nail or screw, can be inserted therethrough to fix the screed 18 in the cradle. With the screed fixed within the cradle, the screed cannot move or float out of its position when the cement is poured into the form.

The device as illustrated in FIGS. 1 through 4 has been set forth as compatible with forms that utilize reinforcing rods 20 embedded in the cement that is poured. However, not all forms use concrete reinforcing rods, and therefore provision is made for other pouring operations. In FIGS. 5 and 7 is shown a base member that is utilized where the cement is poured directly on grade. The base member includes a flat plate 54 with a nut 56 identical to 22 above, fixed to the top surface thereof. Fixed to the bottom surface of plate 54 in general axial alignment with the threaded opening of the nut is a spiked member 58 adapted to be driven into the ground. Thus, this support member is similar to the one used in conjunction with reinforcing rods in that it is relatively simple and requires only that a threaded nut member be positioned in a vertically
upwardly extending position to receive the threaded ends 30 of the elongated tubular member 28 that forms the upright support member.

The base member shown in Figs. 6 and 8 is adapted for use where the concrete forms have a wooden bottom thereon, such as in the various floors of a building. This support member includes a nut 60, identical with the nuts 22 and 56 above, with a pair of braces 62, or other nail-type devices fixed in general axial alignment with the threaded opening therethrough. Thus, this base member can be nailed to the floor of the form with the threaded aperture therein facing vertically upward to receive the threaded end 30 of the upright support member.

Due to the simplicity of the structure of the device, as set forth hereinabove, the operation and use of the device is relatively simple and straightforward. Where it is desired to use a screed as a guide and means to level the surface of a poured cement structure, a suitable base member is chosen that is compatible with the type of form into which the cement is to be poured. For the purposes of this example, the base member 12 shown in Figs. 1 through 4 will be used herein. This base member 12 is fixed to the reinforcing rods 20 in a form along a pair of straight parallel lines. The wires 24 of the base member are wrapped tightly around the rods and secured thereto with the threaded aperture 26 of the base member facing vertically upward. The elongated tubular member 28 of each support device 10 is then inserted into the threaded aperture 26. With the tubular member 28 thus firmly mounted in a vertically upright position, the screed cradles 16 of each support device are slipped onto the tubular members 28 and fixed along the length thereof by means of the set screw 48 at the proper height. With the cradles thus affixed at the proper height along the upright members, the screed 18 can then be installed on the cradle between the upright leg 32 and the tubular collar 38 thereof. To ensure that the screed 18 remains in position during the pouring of the cement, and does not float thereof, a pair of fastening members 52 are inserted in the apertures 50 in each of the cradles and embedded in the screed 18. With a screed thus firmly supported at the proper height, the cement can then be poured into the form up to the desired height C. A screed stick or rodding member 64 can then be rested on an opposed pair of screeds 18 to smooth the upper surface C of the cement into the desired contour. When the contour has been finished, the set screw 48 is released and the cradle and screed are lifted thereof. The tubular member 28 is then rotated to release the threaded ends 30 thereof from the nut 22 on the base member. The tubular member 28 can then be withdrawn from the wet cement leaving only a small disturbance on the surface thereof that requires further contouring or leveling. The base member is of such simple and inexpensive design, that it can be left embedded in the cement at no great expense or without weakening the cement structure.

In the case of the base member 60 as shown in Figs. 6 and 8 it may be desirable to remove the base member 60 as well as the upright support member from the concrete. This is most desirable in construction where the wood decking will be stripped away after the concrete hardens. By twisting the upright member 28 in Fig. 6 in the proper direction and pulling upwardly thereon the brads 62 will be extracted from the wood decking. After the upright support and the base member 60 have been removed from the concrete the wet concrete will flow to fill the void and present a smooth lower surface after the wood decking is stripped away.

Another form of base member 66 shown in Fig. 10 may be provided with a plurality of angular prongs 65 and 70 which may be either driven into the bottom of the form, whether it be wood, dirt, gravel etc., or bent to lie entirely in the plane of the lower surface of the nut. In the latter case a pour rock grout may surround the base member 66 and encompass completely the prongs 65 and 70 to securely anchor the base member to the subgrade. This is especially useful when the subgrade is comprised of rock or hardened concrete. When using the pour rock grout the prong portions 70 may also extend upwardly from the plane of the lower surface of base member 66.

The relation of the surface of the concrete to be smoothed with respect to the screed cradle is dependent upon the type and size of the screed stick or rodding member. As shown in Fig. 3 the surface of the concrete is flush with the bottom of the cradle so that no depression will be left in the concrete by the cradle. Thus in this instance the screed stick must have a vertical dimension equal to the vertical dimension of the screed 18 plus the thickness of plate 34. This is usually difficult to achieve and if a 2x4 screed 18 is used, a 2x6 screed stick or rodding member 64 could be in the manner shown in Fig. 9. In this way it will be possible to trowel underneath the cradle 16 and screed 18. A 2x4 screed stick or rodding member could also be used in the manner shown in Fig. 9 but the lower plate 34 of the cradle 16 would cause a small depression in the surface of the concrete. This, however, could readily be removed by troweling after removal of the cradle.

As can be seen from the above examples, the subject support device provides a versatile screed support that adapts to all types of concrete forms. A device is also simple with no great amount of moving parts to become clogged with cement or be damaged so that repeated use is assured. Also, the adjustment means is above the surface of the cement to be poured, so that if for any reason further adjustment of the screed is required after the cement has been poured, it can be easily accomplished.

I claim:

1. In combination, a screed support device and a concrete form having reinforcing rods therein, comprising: a base member having a plurality of elongated wires secured thereto and a threaded central aperture, the elongated wires extending from at least two opposite sides of the base member and sufficiently ductile to permit the wires to be wrapped securely about the reinforcement rods located along the lower surface of the form to position the base member on the rods; an elongated support element having outside surface threads at one end thereof received by the threaded central aperture of the base member; a screed cradle including an L-shaped member having a relatively fixed rigid vertically extending leg; a tubular collar fixed perpendicularly to the horizontally extending leg parallel to the vertically extending leg and being positioned over the elongated support element; fastening means including set screw means extending through the tubular collar permitting a relative adjustment of the tubular collar and the elongated support element to the desired position the vertical leg and the tubular collar being in a spaced-apart relationship adapted to snugly receive a screed.

2. The combination of claim 1 where the base member is a nut having four extending elongated wires secured thereto.

3. The combination of claim 1 where the set screw means includes a nut fixed to the tubular collar and a bolt.

4. The combination of claim 1 further comprising screed securement means including aperture means in the vertical leg of the L-shaped member for securing additional fastening means.