WORK-SUPPORTING AND GUIDING DEVICE

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This invention relates to a work-supporting and guiding device. More particularly, this invention is concerned with a device for supporting and guiding a work piece and an improved method of installing large flat sheet-like structures.

In the installation of large sheet-like structures and especially plywood paneling and the like where it is attached to a ceiling or a vertical surface, it is difficult for one man to install because of the awkward nature of the panelling. For example, in the installation of sheets of plywood four feet by eight feet, it is necessary to have at least two men to handle each end of the sheet when it is to be installed as a ceiling. It has been proposed heretofore to provide a T-shaped support from several pieces of lumber to be placed beneath the sheet as a support during the nailing of the other end. However, this system suffers from the disadvantage that a large and unwieldy structure must be made before it can be used. Moreover, such a system is not suitable to be carried in a tool box or the pocket of a nail apron.

It is, therefore, an object of this invention to provide a small work-supporting and guiding device adapted to support a relatively large sheet-like structure against a ceiling or wall joist. Another object of this invention is to provide an improved method of supporting a sheet-like structure against a ceiling joist or other structural member adapted to be permanently held in sheet-like structure in place. Still another object of this invention is to provide a nail-like, work-supporting and guiding device which is small and easily transported from one job to another and which can be used to accurately adjust the distance between the work-supporting surface and the permanent structural member.

These and other objects of this invention which will become apparent when taken in connection with the following description and the accompanying drawing, through-out which like reference characters illustrate like parts and in which:

FIGURE 1 is a plan view of one embodiment of this invention.

FIGURE 2 is a cross-sectional view of the work-guiding and supporting device of this invention in position in a joist supporting a ceiling panel adjacent the underside side of said joist, and

FIGURES 3 and 4 are cross-sectional views of a particular embodiment of the device of the invention, the angle between the nail-like member and the supporting member being adjusted to accurately provide a space between the supporting member and the joist which is the thickness of the sheet-like structure to be installed.

The objects of this invention are accomplished, generally speaking, by providing in combination with a generally nail-like member having a generally L-shaped member extending therefrom one leg of the L-shaped member forming an angle of from about 30° to about 85° with said nail-like member, the other of said legs having a work-supporting surface. In operation, the nail-like member, which has a sharp point, is driven into a joist so that the work-supporting surface of the L-shaped member is a distance from the bottom of the joist to receive and hold the piece of ceiling paneling being installed. With the work-supporting and guiding device holding one end of the ceiling panel against the joist, the carpenter or do-it-yourselfer can then readily nail the opposite end permanently in position.

The invention can be better understood by reference to the accompanying drawing. FIGURE 1 is an embodiment of the work-supporting and guiding device 11 of this invention having a nail-like member 13 and an L-shaped member formed by leg portion 15 extending outward from the nail-like member 13 and leg portion 17 bent at approximately right angles to the first leg portion 15 to form a work-supporting surface 19. The work-supporting surface 19 advantageously has an angle of curvature which forms a foot portion 21. The foot portion 21 extends away from the nail-like member 13 to permit easy sliding of the sheet-like structure onto the work-supporting surface and adjacent to a ceiling joist.

FIGURE 2 illustrates the manner in which the nail-like member 13 is driven into a joist 25 permitting the work-supporting surface 19 to hold a sheet-like structure 27 in position. Thus, the work-supporting device 11 will support a sheet-like structure while the opposite end thereof (not shown) is being attached to a ceiling joist. By utilizing the device of this invention, a single workman may install sheets as large as six by twelve feet or even larger. The device of this invention can be advantageously used for the installation of any size paneling, however, it is particularly advantageous in the installation of sheet-like structures having dimensions of from about two by two to about six by twelve feet. The device according to the invention is particularly applicable to the installation of conventional sheets of four by eight feet plywood, sheet rock, building board, pressed wood, plastic or the like.

In accordance with a preferred embodiment of this invention the supporting device 11 is fabricated in such a manner that the distance between the work-supporting surface 19 and the bottom of the ceiling joist 25 when the device is in position will be a predetermined dimension, as long as the work-supporting device 11 is started into the joist 25 in the manner shown in FIGURE 3. That is, the work-supporting device 11 is started into the joist 25 with the work-supporting surface of leg portion 17 flush against the bottom side of the joint 25. After the device 11 is completely installed the work-supporting surface 19 is a predetermined distance from the bottom of the joist as shown in FIGURE 4. The distance between the joint 25 and the work-supporting surface 19 can be varied by altering the angle between the leg portion 15 and the nail-like member 13 in the manufacture of the device.

Of course, the size of the ceiling panel which can be accommodated will vary as the distance from the point where the first leg portion 15 extends from the nail-like member 13 to the point of the nail-like member. However, for any given length of the portion of the nail-like member 13 which enters the joist, the thickness of the ceiling panel which can be accommodated will vary as the cosine of the angle between the nail-like member 13 and the first leg portion 15. For example, a device of the invention wherein the portion of the nail-like member 13 to be driven into a ceiling joist is one inch in length, the angle between the nail-like portion 13 and the first leg portion 15 will be about 40° to accommodate a sheet-like structure having a thickness of about three-fourths inch.

An angle of about 60° is necessary to accommodate a structure having a thickness of about one-half inch.

The work-supporting and guiding device of the invention is most advantageously made of steel for reasons of economy and utility. It can be separately cast and welded together as desired. It is essential that the nail-like structure be prepared from some metal or metal alloy which will withstand the heavy use for which it is intended. The metal
should be a substantially nonmalleable metal such as steel and the like.

The use of the device of this invention is specific for the installation of sheet-like structures against a ceiling or wall joist but it may be employed for any other suitable purpose where it is desired to temporarily hold a work piece in place against another surface. A particular advantage of the invention is that the device can be made small enough to fit into the nail apron or other pocket of a workman so that it is immediately available for use and also so that it is not inconvenient to move from one job to another.

Although the invention has been described in considerable detail in the foregoing, it is to be understood that such detail is solely for the purpose of illustration and that many variations can be made by those skilled in the art without departing from the spirit and scope of the invention except as set forth in the claims.

What is claimed is:

1. An integral nail-like structure having a head, a point and an L-shaped work-supporting piece disposed with the lower part of said L-shaped piece open in the direction of the point of said nail and adapted to position and assemble a large flat sheet-like structure.

2. An integral work-supporting and guiding device which comprises a nail having a head, a point and attached thereto a first leg portion at an angle from the side of said nail within the range of about 30° to about 85°, a second leg portion adapted to position and assemble a large flat sheet-like structure and extending from said first leg portion at an angle of approximately 90° in the direction of the point of said nail, said first and second leg portion being approximately the same length.

3. An integral work-supporting and guiding device comprising a nail-like member, having a head and a point, an L-shaped member extending from the side of said nail-like member, said L-shaped member having a first leg portion connected to said nail-like member and a second leg portion extending from said first leg portion adapted to position and assemble a large flat sheet-like structure and in the plane of said nail-like member and in the direction of the point of said nail, said second leg portion including a work-supporting surface on the side adjacent said first leg portion and a foot portion extending away from the point of said nail-like member.

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