Oct. 7, 1969 G. W. MOD ETAL 3,470,666

BEAM CEILING SUSPENSION MEMBER AND SYSTEM

Filed Jan. 16, 1967

Fig. 1

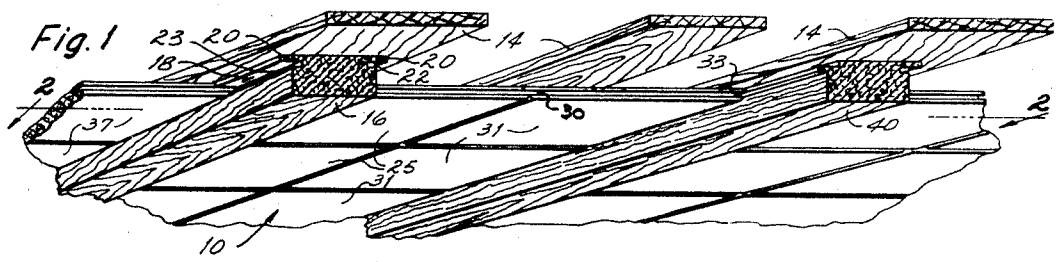


Fig. 2

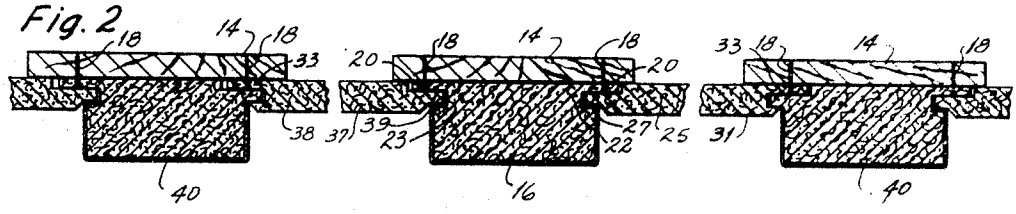


Fig. 3

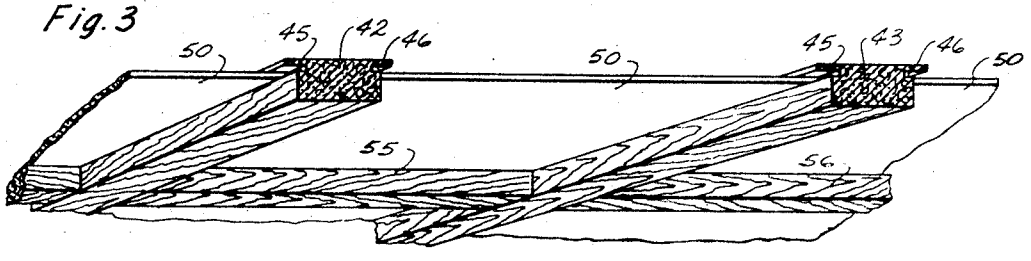


Fig. 4

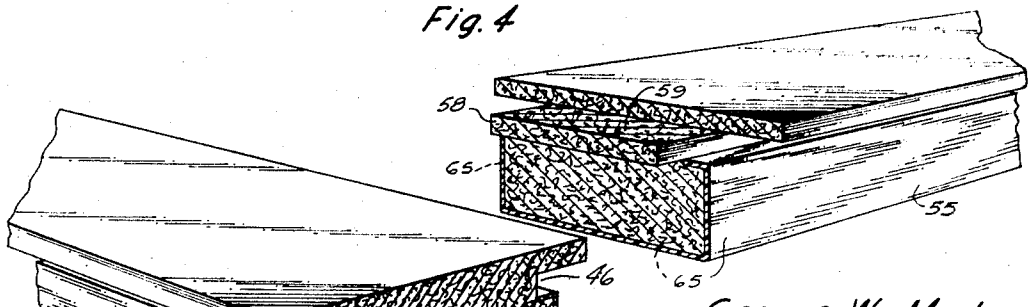


Fig. 5

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BEAM CEILING SUSPENSION MEMBER AND SYSTEM

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ABSTRACT OF THE DISCLOSURE

A beam of matted fibers is grooved along opposite, longitudinal edges to serve as a starting strip to support ceiling panels having tongue and grooved edges. The beam is provided with a thin decorative film.

BACKGROUND OF THE INVENTION

Field of the invention

This invention pertains to a ceiling suspension member and system, and more particularly to a ceiling suspension member which enables facile and economical installation of panel members in a particular decorative assembly.

Description of the prior art

In the building construction field, and more specifically, in the field of home improvement projects, rooms may be made more attractive and functional by the installation of preformed panels or tiles.

In general, the home improvement market has a need for a simple and inexpensive suspension member and means for installing ceiling panels or tile. The appearance of old and cracked ceilings can be greatly improved and their attractiveness enhanced by the installation of ceiling panels by the home owners themselves. Among the least complicated means for installing a ceiling is the direct nailing or stapling of ceiling panels to the flat overhead or to spaced furring strips.

The ceiling panels are generally rectangular and have two adjacent sides which are kerfed to form grooves having upper flanges coextensive with the back of the tile, extending outwardly beyond a bevelled recessed portion below the grooves. The other two adjacent sides have upper recessed areas and tongues of each panel are adapted to be received in the grooves of adjacent panels to fit tightly therein and support the tongued edges of the tiles. The extending flanged edges above the grooves are nailed or stapled directly to the overhead or to furring strips thereon.

For a more detailed description of a suitable type of ceiling panel or tile, reference may be had to the disclosure of U.S. Patent No. 2,341,645. In describing the manner of installing the ceiling tile, the patent clearly discloses that the center lines of the wall or ceiling are first formed and the odd dimensions from the edges are laid out so that the tile may be laid with the odd dimension size tile, that is, the tiles are so laid that the tiles are started from the edges of the wall or ceiling surface rather than started from the center of the room.

It should be realized that the specific shape of the grooves and flanges is not to be rigidly construed to be that of the reference patent. It is sufficient that they be complementally formed so that flanges are received in the grooves to form a secure fit. After the first row is installed, each subsequent row must be put up in order, progressing across the room until the opposite wall is reached. A border trim is installed to finish the ceiling.

One of the difficulties, especially for the amateur, is the problem of accurate measurements in cutting the first

row of panels or tiles so that the last row can be installed with an even border at each wall of the room. It is infrequent that any room will be an even multiple of the dimensions of the panels and so almost inevitably a certain amount of cutting of the border tiles will have to be done before the job is started. Any miscalculation can result in a totally ruined ceiling.

In modern decor, the use of a wood beam as an integral part of a ceiling has been popular in certain types of rooms. If these beams are fashioned from natural wood, cut and finished for interior application, they are very expensive. Certain substitutes such as veneered plywood or even hollow, thin sheet metal beams with laminated vinyl coverings simulating wood beams have been used. Such simulated metal beams do not form a part of the suspension system but merely are attached to the ceiling; generally, to the suspension members. Folded cardboard simulating wood beams have been tried, but they are generally too flimsy to supply a supportive function. In addition, the machinery used to fabricate the simulated wood beams from cardboard or sheet metal differs from that generally available in the ceiling panel manufacturing plant and requires an additional capital expenditure to fabricate.

It is, therefore, an object of the present invention to provide a novel suspension member and system which add a decorative appearance to a room.

It is yet another object of the present invention to provide a novel suspension member and system which simplifies the installation of a panel ceiling.

SUMMARY OF THE INVENTION

The present invention is directed to a novel suspension member which is used as a starter strip in the center of a ceiling and a ceiling system which allows rows of ceiling panels or tiles to be easily erected in serial rows in two directions from a centerline. The panels of the outermost two rows are cut to size before being secured in place. Since the required width of the outermost two rows can be easily measured, the installation is very simple and can be done with accuracy by an amateur. In contrast to this, the other method of starting at one wall and placing rows of panels until the other wall is reached, requires extreme care in the first measurements, or the entire ceiling will be unsymmertrical and unsightly.

In addition, the novel suspension member can easily be manufactured to simulate a wood beam for decorative effect.

BRIEF DESCRIPTION OF THE DRAWING

These and other objects and advantages of the invention will become more apparent from the following description taken in conjunction with the accompanying drawing in which like figures represent like elements and in which:

FIGURE 1 is a perspective view of a portion of a ceiling incorporating the suspension member of the invention;

FIGURE 2 is a cross-sectional view of a portion of the ceiling of FIGURE 1, taken along lines 2—2 thereof;

FIGURE 3 is a perspective view of a portion of a ceiling showing an alternative variation of the invention, and

FIGURES 4 and 5 are detailed perspective views of the novel suspension members of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to FIGURES 1 and 2, there is shown a portion of a ceiling **10** suspended from typical furring strips **14**. The forward or leading edge of the ceiling is shown with a row of panels removed to expose the furring strips **14**, although it will be understood that

the forward end would ordinarily rest against a wall of the room in which the ceiling is installed. Furring strips **14** are arranged in parallel relation and spaced at multiples equal to the width of a row of ceiling panels.

A center beam **16** forms a support for ceiling tiles or panels and is placed along a centerline of the room to which the ceiling is to be applied and secured to furring strip **14** by nails or staples **18** which are driven through the outwardly extending flanges **20** of beam **16**. Longitudinal grooves **22** and **23** are cut into the sides of beam **16** immediately below flanges **20**. As will be explained hereinafter, the thickness of flange **20** is equal to the depth of recess along adjacent edges of ceiling tiles. Sufficient nails or staples **18** are used to hold the center beam in place. Individual ceiling tiles **25** are inserted with their tongues **27** inserted in the longitudinal groove **22**. The opposite sides of tiles **25** have flanges **30** which are secured to furring strips **14**. A second row of ceiling tiles **31** is then placed in position with the tongues of the tile inserted in corresponding grooves of tiles **25**. As was the case with tiles **25**, the flanges **33** along the edges of tiles **31** opposite their tongues are secured to furring strips **14**.

To the other side of center beam **16** are placed a first and a second row of ceiling tiles **37** and **38** respectively. The tongues **39** of the tiles of row **37** are inserted in grooves **23** of center beam **16** while the flanges of the opposite edges are secured to furring strips **14** (not shown). The tongues of the tiles of row **38** are inserted in the grooves of the tiles of row **37** and their opposite flanged edges are in turn secured to furring strips **14**. For further holding strength, additional furring strips may be added at right angles to furring strips **14** and arranged to be spaced to receive flanges of the ceiling tiles.

With further reference to center starting beam **16**, a more decorative and attractive ceiling can be achieved, if the center beam is made to simulate a wood beam. The basic material of the wood beam is lignocellulose fiber formed into a mat on a fourdrinier or cylinder machine. It is well known to manufacture insulation board from bagasse, or other vegetable fiber, by first refining the vegetable matter to form fibers, then forming a mat by the deposition of a thin aqueous suspension of refined fibers on a board forming machine and subsequently dewatering the mat with final drying. The mat can, if desired be conveniently made in an extended sheet of about 1 inch in thickness. Various thicknesses of mat can be laminated with waterproof glue to form a mat of greater thickness. In the beam of the present invention, it has been found to be advantageous to form the beam and then cover it with a thin laminate of vinyl film. The beam may be grooved as at **22** or **23** by a rotary cutter. It is important, however, that the flanges **20** extend outwardly beyond the sides of beam **16** so as to provide an easy means of nailing the beam to an overhead support. The beam **16** may be of any convenient length to span the ceiling. Preferably a single length of beam should be used but, obviously, beams can be abutted longitudinally to simulate a single beam.

After the center beam **16** has been secured to an overhead along a centerline of the room by nails **18** through its flanges **20**, the ceiling panels **25** are placed in position with their flanges **27** inserted in grooves **22**. The cut back section of panel **25** mates with the flange **20** of beam **16** and forms a snug fit. The opposite side of panel **25** has a flange which is secured to the furring strip **14**. An additional row of ceiling panels **31** can be then put up to form a subsequent row of panels. If desired another simulated wood beam **40** may be used in place of another row of panels. This latter beam **40**, however, will not have grooves on both sides but in cross-section will have grooves and flanges corresponding to the cross-section of the ceiling panels. Additional rows of ceiling panels may be put up until the edge of the room is reached. It may be necessary to cut the edges

of the last row of panels to fit them in. However, a wall strip can be used in the conventional manner to trim the edge of the ceiling.

Similarly, the other half of the ceiling can be installed by placing a row of panels **37** (to the left of beam **16** as shown) with the flanges of panels **37** inserted in grooves **20** on the side of beam **16** opposite the grooves which received panels **25**. The other half of the ceiling is completed as above described by adding rows of additional panels as required.

An alternative type of ceiling is shown in FIGURE 3 wherein beams **42** and **43** are simulated wood beams similar to beam **16** shown in FIGURE 1. The beams **42** and **43** are grooved, as at **45** and **46** and are secured to the overhead at spaced intervals equal to the dimension of panels **50**. Panels **50** are not grooved and flanged in the manner of panels **25** but rather are flat platelike members the edge of which are inserted in the grooves of beams **45** and **46**. If desired, beams **55** and **56** may be placed at right angles to beams **42** and **43** and interlocked therewith.

For a more detailed view of the interlocking of beams **55** and **40**, reference may be had to FIGURES 4 and 5 which show clearly groove **46** of beam **42** and a flange **58** extending outwardly of beam **55**. Flange **58** is inserted into groove **46**. The area **59** of beam **55** above flange **58** is recessed to receive the flange above and beyond groove **46** of beam **42** to give a secure snug fit.

The faces **60** and **65** of beams **40**, **41** and **55** are covered with a plastic film which is grained to simulate wood. The film may be glued evenly over the surface after the fiberboard beam is cut. The film may be printed paper is desired. If desired, the beams may be coated with selected paint or other finishes to provide a wide variety of decorative choices.

It should be realized that while cross-sectional shape of the beam has been illustrated and described as rectangular, other cross-sectional configurations could be employed. For example, the outer corners of the beam could be rounded off rather than being rectangular or the entire exposed surface could be semi-circular, triangular or other geometrical shape.

Also, while the major emphasis has been placed on lignocellulose fibers as the preferred material, other materials such as plastic or metal could be used. However, it should be understood that since the beam is preferably used in more economical construction where lignocellulose ceiling tiles or panels are used, the manufacture of the ceiling beam from the same material can be easily and cheaply done by using the same basic equipment and machinery.

We claim:

1. A ceiling assembly fastened to the overhead comprising at least one simulated wood beam and a plurality of rows of rectangular ceiling tiles, the thickness of said beam being substantially greater than the thickness of said ceiling tiles so that in assembly said beam is more prominent with respect to said tiles,

each of said tiles having an exposed face and a first pair of adjacent edges having flanges extending outwardly beyond said exposed face of said tile, and having grooves below said flanges and a second pair of adjacent edges having outwardly extending tongues, and recessed areas above said tongues,

said beam comprising an elongated central body portion having sides, spanning a number of said tiles, and disposed parallel to said rows of tiles,

said beam further having flanges extending outwardly of said sides of said beam, said flanges being fastened to said overhead and being coplanar with said flanges of said tiles, and a pair of longitudinal grooves receiving said extending tongues of said tiles in abutting ones of said rows,

said extending flanges of tiles of rows not abutting said beam being fastened to said overhead and being

received in said recessed areas of tiles in one of said abutting rows.

2. A ceiling assembly as recited in claim **1** in which said beam has a thin decorative film laminated thereto.

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U.S. Cl. X.R.

52—461, 480, 496, 727