June 20, 1944. W. S. MILES ET AL 2,351,994

WALL STRUCTURE AND METHOD OF MAKING THE SAME

Filed April 15, 1942

Fig. 1.

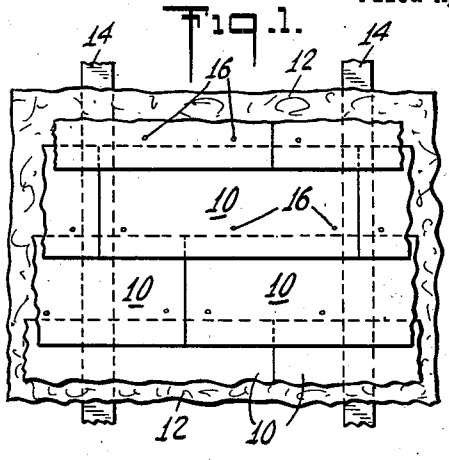


Fig. 2.

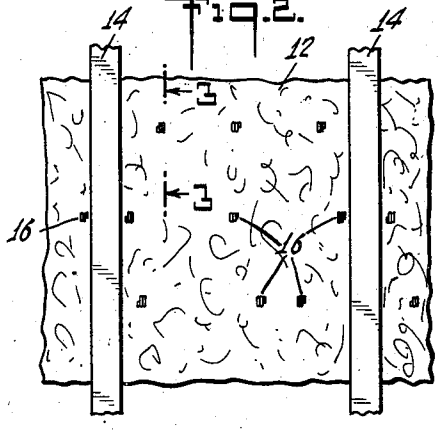


Fig. 3.

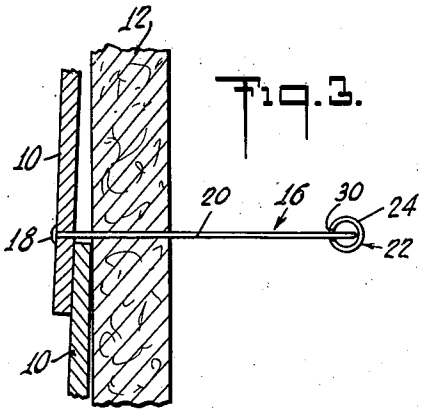


Fig. 4.

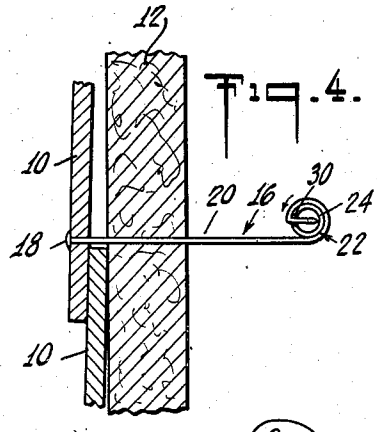


Fig. 5.

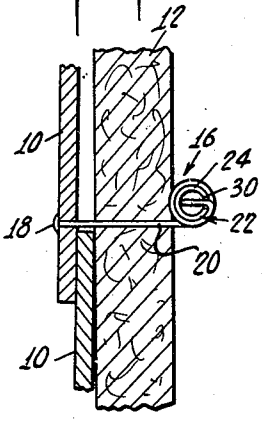


Fig. 6.

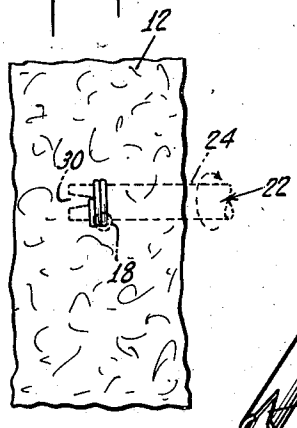
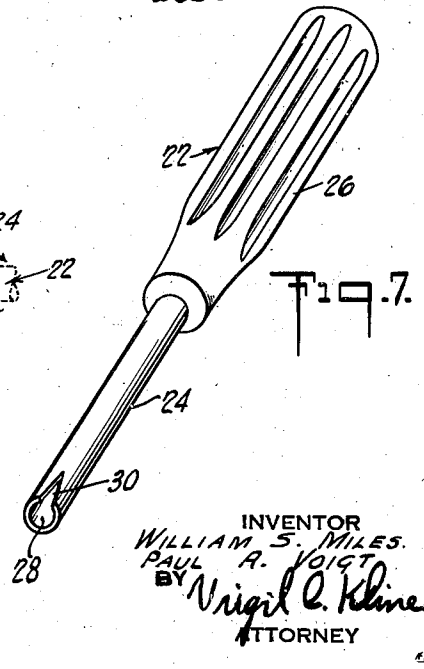


Fig. 7.



INVENTOR
WILLIAM S. MILES.
PAUL A. VOIGT.
BY Virgil Q. Kline
ATTORNEY

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WALL STRUCTURE AND METHOD OF MAKING THE SAME

William S. Miles, Hastings on Hudson, and Paul A. Voigt, Bellerose Manor, N. Y., assignors to Johns-Manville Corporation, New York, N. Y., a corporation of New York

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2 Claims. (Cl. 108—33)

The instant invention relates to improved methods of building construction and, in its more specific phase to a method of securing covering elements such as shingles and the like to a wall sheathing. The invention also relates to improved constructions made in accordance with the method. It will be understood that the terms "walls" and "partition" are used herein in a generic sense to denote both side walls and walls such as roofs, ceilings and the like.

An object of the instant invention is the provision of an improved method and construction permitting of the use of a sheathing which has relatively little ability to hold ordinary nails or other conventional fastening means, the invention having particular applicability where sheathing or board, such as fibreboard, plasterboard, gypsum board and the like, is used as a surface to receive shingles or other elements. Heretofore, where sheathing of this type has been employed, the shingles or the like have been secured by nails having extending shanks projecting to the rear of the sheathing and secured by retaining clips. A particular object of the instant invention is the provision of a method and construction wherein only a single fastening element is required, the need for securing clips and the like being entirely eliminated.

Another object of the invention is the provision of a construction of the type referred to in which the portions of the fastening elements projecting through the sheathing are so formed as to avoid any danger of injury to persons coming in contact with them. Also the construction is such that the projecting fastening elements do not detract from the appearance of the interior of the wall.

A still further object of the instant invention is the provision of a construction in which the fastening elements resiliently retain the shingles or other covering elements against the sheathing. Thus for example, where a building embodying the instant invention is subjected to shocks, vibration or the like, movement of the shingles or other covering elements is permitted to some extent relatively to the wall without, however, any permanent loosening of the shingle-securing means or decrease in the weatherproofness of the wall.

Our invention will be more fully understood and further objects and advantages thereof will become apparent when reference is made to the more detailed description thereof which is to follow and to the accompanying drawing in which:

Fig. 1 is a partial elevational view of a wall construction embodying the invention;

Fig. 2 is a rear view of Fig. 1;

Fig. 3 is a sectional view on an enlarged scale taken on the line 3—3 of Fig. 2 and illustrating one step in the method of the invention;

Fig. 4 is a view similar to Fig. 3 illustrating a further step in the instant method;

Fig. 5 is a view similar to Fig. 3 illustrating a final step in the method of the invention;

Fig. 6 is a detail view on an enlarged scale; and

Fig. 7 is a perspective view of a tool to be employed in the method.

Referring now to the drawing and particularly to Figs. 1 and 2 there is shown a wall structure, which, for the purpose of illustration, comprises an exterior vertical wall. However, as will be understood, the invention is equally applicable to roof walls and to interior walls of various types as well as to other portions of a building structure. A wall has been selected merely as an exemplary embodiment of the invention. The wall includes shingles 10 of any suitable type, for example, asbestos-cement shingles, laid over sheathing 12, which, in turn, is carried by suitable studding 14.

Sheathing 12 preferably comprises a material such as fibreboard, plasterboard, gypsum board or the like, which, although readily adapted to receive fastening means such as conventional nails, does not have sufficient nail-holding properties to permanently retain them. The shingles are laid in courses in the conventional manner, and, in accordance with the instant invention, are secured to the sheathing by pins or nails 16, later to be more specifically described, which are driven through suitably preformed openings in the shingles and through the sheathing until their heads 18 are drawn snugly against the exterior faces of the shingles.

In accordance with the invention, each of the pins or nails 16 includes an elongated slender wire-like shank 20 formed of a material such as brass, steel or the like, as conventionally employed in pins for various purposes. Such pins may be bent or distorted but due to the somewhat springy character of the material will resiliently resist the distorting force. The diameters of the shanks may approach those of ordinary shingle nails such, for example, as those used for securing asbestos-cement shingles, but are preferably somewhat smaller.

In accordance with the method of the instant invention, when the nails or pins have been driven through the shingles and sheathing in the

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conventional manner, a tool is employed, such as shown at 22 in Fig. 7, to distort the shanks in such a manner as to prevent withdrawal of the pins 16. The tool 22 comprises a shaft 24 and handle 26. The end of the shaft is preferably provided with a central recess or aperture 28. Formed in the wall of the shaft and leading into the central recess is a notch or slot 30 of a width to receive the shank 20 of fastener 16. In operation, the tool is placed on an extending shank, as indicated in Fig. 3, with the shaft 24 at substantially right angles to the shank and with the end of the shank inserted in notch 30 and extending into recess 28. The handle of the tool is then rotated in substantially the normal manner of operating a screw driver and the shank rolled up around the shaft 24 of the tool, as illustrated in Fig. 4, until the coil thus formed is in engagement with the rear of the sheathing 12. (See Figs. 5 and 6.) An extra twist is given to the tool to bring the coil into tight engagement with the rear of the sheathing and to draw the head of the fastener firmly against the shingles and the shingle and the sheathing into tight engagement with each other. Suitably, the coil becomes somewhat embedded in the rear of the sheathing, as illustrated in Fig. 5. The turning force on the tool is then relaxed and the tool withdrawn.

Upon relaxation of the turning or twisting force on the tool, the coils, due to the springiness of the material of which they are composed, tend to unwind to some extent. Any such unwinding of the coils enlarges their diameters with the result that the holding action is increased. In the event of vibration of the wall or the like, movements of the shingles or other covering elements relatively to the sheathing is permitted against the resistance of the coils.

The construction of the instant invention has particular applicability where no interior finish is to be employed. As will be noted from an examination of Figs. 5 and 6, the free end of the pin does not project beyond the coils, and hence, is not in position to cause injury to persons or objects coming into contact with the wall surface. The type of tool shown in Fig. 7 is of particular advantage in insuring such an arrangement inasmuch as the length of the end portion of the pin is limited by its extension into recess 28. A further advantage of the construction is that the coiled portions of the pins are not unsightly and do not detract appreciably from the appearance of the wall.

Having thus described our invention in rather full detail, it will be understood that these details need not be strictly adhered to but that various changes and modifications will suggest themselves to one skilled in the art, all falling within the scope of the invention as defined by the subjoined claims.

What we claim is:

1. A method of securing covering elements to sheathing or the like, said method comprising driving a headed fastener having an elongated wire-like shank through said covering element and sheathing, with the shank extending a substantial distance beyond the rear face of said sheathing, placing the end of said extending shank in an end notch formed in one wall of a hollow cylindrical shaft of a tool, rotating said tool with said end confined within said hollow cylindrical shaft to wind the shank in the form of a cylindrical coil around said shaft until the turns thereof press against the rear face of said sheathing, and removing said tool.

2. A wall structure comprising a sheathing, a wall covering element mounted thereon, and means securing said wall covering element to said sheathing, said means comprising an elongated wire-like pin of springy metal penetrating said covering element and sheathing, a head on one end of said pin lying against the face of said covering element, and a shank projecting through the covering element and sheathing and wound into a cylindrical coil with the edge of the coil resiliently pressed against the rear face of the sheathing, said coil terminating in a straight bar with the end thereof lying within the space defined by the circumferential plane of said coil.

WILLIAM S. MILES.
PAUL A. VOIGT.

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