Aug. 25, 1942. W. S. MILES ET AL 2,293,743

METHOD OF WALL CONSTRUCTION

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Fig. 1.

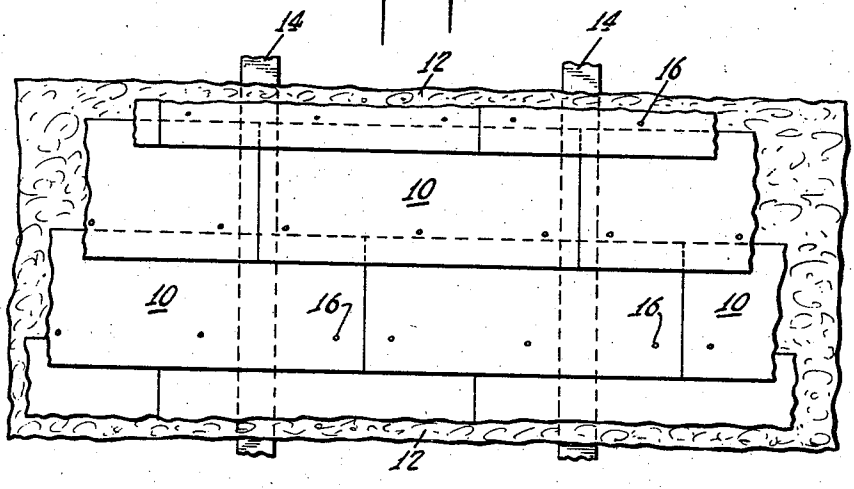


Fig. 2.

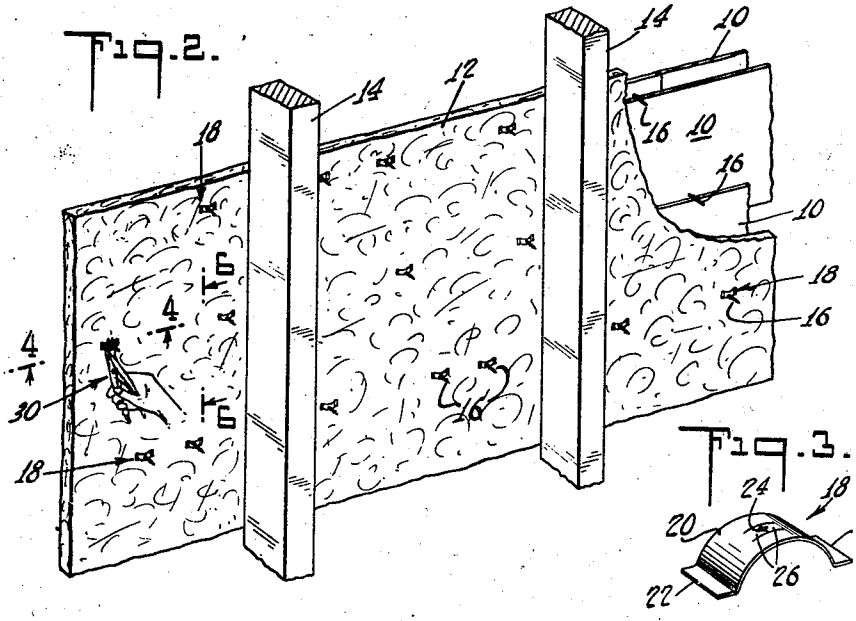


Fig. 3.

Fig. 4.

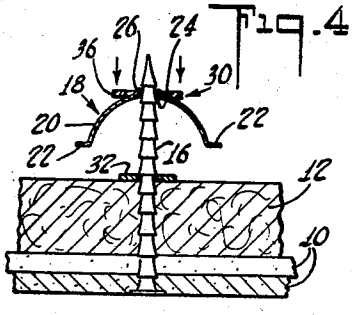
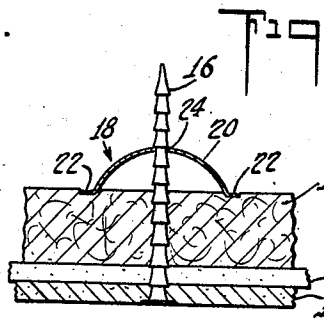


Fig. 5.



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Fig. 6.

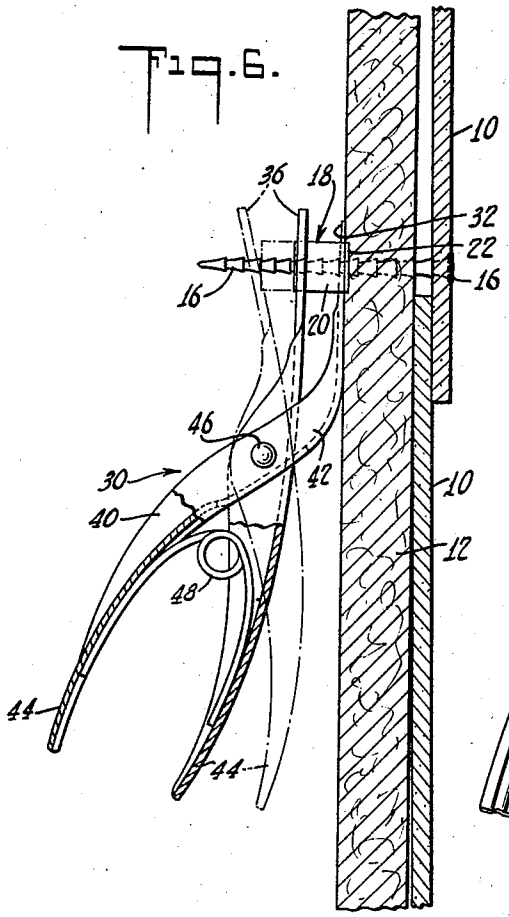


Fig. 7.

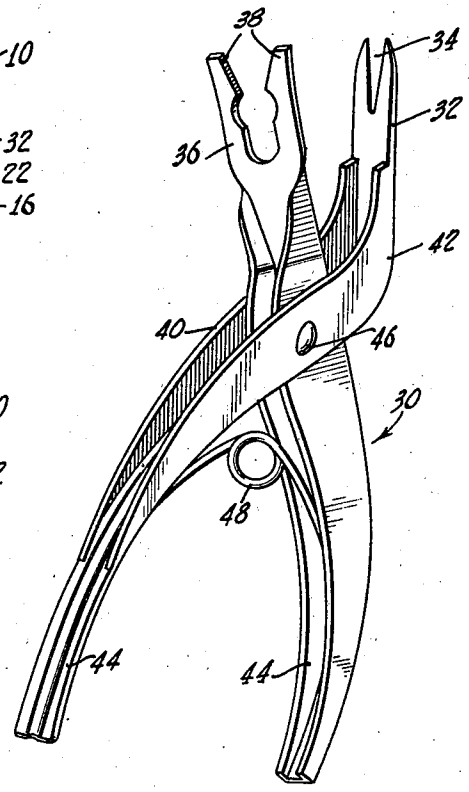
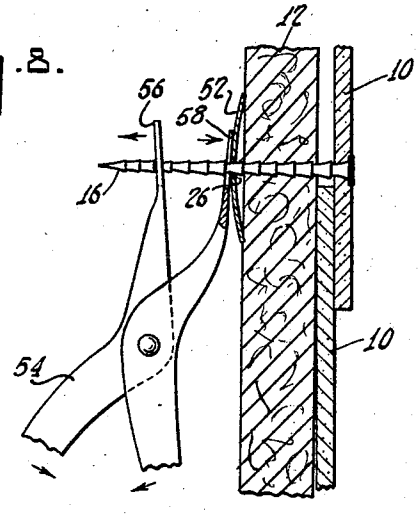


Fig. 8.



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METHOD OF WALL CONSTRUCTION

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Application November 26, 1940, Serial No. 367,198

9 Claims. (Cl. 20—4)

Our present invention relates to building constructions, and more particularly, to an improved method of erecting a relatively low-cost building wall or partition. It will be understood that the terms "wall" and partition" are employed herein in a generic sense to denote side walls and walls such as roofs, ceilings, and the like.

An object of the instant invention is the provision of an improved method of erecting a wall or partition structure comprising a sheathing layer applied to studs, rafters, or the like, and a covering of facing elements, such as shingles or siding strips in the case of an exterior wall, or panels or the like in the case of an interior wall. A principal object is the provision of such method which will permit the use of a sheathing material which has low nail-holding properties, that is, which, per se, will not permanently hold the nails driven into it for securing the facing elements, for example, a sheathing material such as fibre board, plaster board, or the like.

Another object of the invention is the provision of a method of erecting a wall structure including a fibre board or like sheathing in which shingles or other facing elements may be laid in the usual manner, and the nails or other fastening means secured against withdrawal in a rapid, simple operation which in no way interferes with or interrupts the continued laying of the shingles.

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 drawings, in which:

Fig. 1 is a face elevational view, with parts broken away, of a portion of a wall constructed in accordance with the instant method;

Fig. 2 is a perspective view of the rear of the wall shown in Fig. 1;

Fig. 3 is a perspective view of a fastening element for use in the instant invention;

Fig. 4 is a sectional view on an enlarged scale taken on the line 4—4 of Fig. 2 and illustrating one stage of the operation of the invention;

Fig. 5 is a view similar to Fig. 4, illustrating a further stage in the operation;

Fig. 6 is a sectional view on an enlarged scale taken on the line 6—6 of Fig. 2;

Fig. 7 is a perspective view of a fastener applying device of the instant invention; and

Fig. 8 is a view similar to Fig. 6, illustrating a modification of the invention.

Referring now to the drawings, and particularly to Figs. 1 and 2, there is shown a wall structure which, for the purposes 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. The wall includes shingles 10 of any suitable kind, for example, asbestos-cement shingles, laid over sheathing 12, which has been secured to studding 14. The studding may be the usual wooden members, or, if desired, steel channels may be employed, provided with wooden strips to which the sheathing is nailed. Alternatively, clips may be employed for securing the sheathing to the studding.

In accordance with the invention, sheathing 12 comprises a material such as fibre board, plaster board, or the like, which, though readily adapted to receive the shingle securing nails, does not have sufficient nail-holding properties to permanently retain them. In the present method, the sheathing 12 is secured to the studs, as previously stated, by clips, nails, or the like, and shingles 10 are laid in the same manner as over a wooden sheathing. That is, the shingles are laid in courses in the conventional way and secured by a plurality of headed nails 16 driven through the shingles, preformed perforations being provided when hard materials such as asbestos-cement shingles are used, and into the sheathing therebehind. Nails 16 are preferably of the barbed shank type now conventionally used for asbestos-cement shingles. However, any suitable type of barbed fastener may be used, for example, threaded members such as bolts or screws, the threads constituting the barbs required for a purpose later explained. The term "barbed fastener" is employed herein in a sense to include all such devices.

Coincidentally with, or subsequently to, the application of the shingles, the shingle securing nails are permanently fixed against withdrawal from the sheathing by an operation comprising the assembly of a nut or clip 18 (see particularly Fig. 3) with protruding shanks of nails 16 and the forcing of the nut into engagement with the rear of the sheathing with simultaneous application of a pulling force on the nail to draw its head into tight engagement with the shingle 10 and the shingle and sheathing into tight engagement with each other. In the preferred embodiment, nut 18 comprises a spring steel member including a bowed central portion 20 and flanges 22 for engagement with the sheathing. Centrally of the bowed portion 20, nut 18 is cut

as shown at 24 to provide an aperture for the reception of the nail shank and spring tongues 26 for interlocking engagement behind the barbs of the barbed fastener.

The application of the nuts 18 and the drawing of the nail heads tightly against the shingles are performed in a single operation, through the use of a device 30, the operation of which is illustrated in detail in Figs. 4–7, inclusive. Tool 30 includes a jaw 32 comprising a claw 34 defined by inclined side walls (see Fig. 4) to grip the shank of a nail 16 beneath a barb thereon to hold the same firmly against withdrawal movement. Tool 30 also includes a forked jaw 36 including extending tines 38. The tines are preferably shaped as illustrated particularly in Fig. 7 to permit force to be applied on the nut adjacent the nail shank, while allowing sufficient clearance to prevent interference with the operation of tongues 26. Jaws 32 and 36 are carried by members 40 and 42, respectively, which terminate in grips 44 to permit the handling thereof in the manner of a conventional pair of pliers. Members 40 and 42 are pivoted on each other as by pintle 46, and suitably a spring 48 may be provided to return the jaws after closing of the same to an open position.

In the operation of device 30, after one of the nuts or clips 18 has been slipped over a nail 16 projecting through the rear of the sheathing, claw 34 is inserted on the nail adjacent the sheathing until a firm grip on the barbed shank of the nail is obtained (see Figs. 4 and 6). The grips 44 of the tool are then pressed toward each other, with the result that upper jaw 36 moves into contact with nut 18, and upon continued movement nut 18 is forced downwardly until its flanges 22 are pressed against the sheathing under the spring action of the bowed portion of the nut and tongues 26 are engaged beneath a barb to retain the nut in this position. As will be readily understood, during this operation not only is the nut 18 forced against the sheathing as previously described, but also, the nail is drawn through the sheathing and shingle as far as its head will permit. The operation is continued until each protruding nail shank is provided with its nut or clip 18.

Although, as has been pointed out above, nails or other fasteners with barbed shanks are preferred as a more positive holding action on the nail is thus obtained, nails with smooth shanks may also be employed. In this case the claw 34 is jammed into contact with the nail shank to secure a firm grip thereon. When the nut 18 is applied the tongues bite into the nail shank and secure the nut against removal.

Referring to Fig. 8, a modification of the invention is shown. In this instance a nut 18, or simply a flat or preferably slightly bowed piece of sheet metal 52, may be employed to secure the nail. Member 52, however, has slots to define tongues 26, similarly as in the case of the nut 18. Nut 18 or member 52, as the case may be, is first applied over the extending shank of the nail 16 and a device 54 employed, including jaws similar to those of the device 30, but reversed in position and so pivoted that movement of the grips toward each other separates the jaws. Thus, jaw 56 includes a claw of the type of the claw 34 of jaw 32 of the device 30, and jaw 58 comprises a forked member similarly as jaw 36 of the device 30. In the operation of tool 54, claw 56 is firmly engaged with a nail to hold it against withdrawal, and jaw 58 is moved downwardly to press nut 52 against the sheathing with its tongues 26 interlocking beneath a barb of the nail 16.

In both of the nut applying tools illustrated the jaws are supported by lever members pivoted on each other as this construction has been found most practical. However, it will be understood that other mechanical means may be employed for supporting the jaws for movement in the manner described without departing from the scope of the invention.

Having thus described our invention in rather full detail, it will be understood by those skilled in the art that these details need not be strictly adhered to, but that various changes and modifications will suggest themselves without departing from the scope of our invention as defined by the subjoined claims.

What we claim is:

1. A method of erecting a wall comprising applying sheathing having low nail-holding properties to spaced supporting members, laying facing elements on the sheathing, driving a headed fastener through the elements and sheathing to extend a substantial distance therebeyond, applying force to the extending shank of the fastener to draw said elements into tight engagement with said sheathing, and simultaneously forcing a locking member against said sheathing and into interlocking engagement with said shank.

2. A method of erecting a partition comprising applying sheathing having low nail-holding properties to spaced supporting members, laying facing elements on the sheathing, driving headed fasteners including barbed shanks through the elements and sheathing to extend a substantial distance therebeyond, placing on each of said shanks a locking member including locking lips for cooperation with the barbs of said shank, and substantially simultaneously drawing the head of said fastener and the element into firm engagement, and forcing the locking member against the back of said partition with the locking lips engaging said barbs.

3. A method of erecting a partition comprising applying sheathing having low nail-holding properties to spaced supporting members, laying facing elements on the sheathing, driving headed fasteners through the elements and sheathing to extend a substantial distance therebeyond, placing on each of the shanks of said fasteners a locking member, including locking lips for cooperation with said shank, gripping said extending shank to prevent withdrawing movement thereof, and simultaneously forcing said locking member into engagement with said partition with the locking lips engaging said shank.

4. A method of erecting a partition comprising applying sheathing having low nail-holding properties to spaced supporting members, laying facing elements on the sheathing, driving a headed fastener including a barbed shank through the elements and sheathing to extend a substantial distance therebeyond, placing on said shank a bowed spring locking member, including locking lips for cooperation with the barbs of said shank, gripping said extending shank adjacent said partition to prevent withdrawing movement thereof, and simultaneously forcing said locking member into engagement with said partition with the locking lips engaging said barbs.

5. A method of erecting a partition comprising applying sheathing having low nail-holding

properties to spaced supporting members, laying facing elements on the sheathing, driving a headed fastener including a barbed shank through the elements and sheathing to extend a substantial distance therebeyond, placing on said shank a bowed spring locking member, including locking lips for cooperation with the barbs of said shank, gripping said extending shank at a point remote from said partition to prevent withdrawing movement thereof, and simultaneously forcing said locking member into engagement with said partition with the locking lips engaging said barbs.

6. A method of erecting a partition comprising applying sheathing having low nail-holding properties to spaced supporting members, laying facing elements on the sheathing, driving a headed fastener including a barbed shank through the elements and sheathing to extend a substantial distance therebeyond, placing on said shank a locking member including locking lips for cooperation with the barbs of said shank, inserting a claw of a locking member applying means in gripping engagement with said extending shank, placing a forked jaw of said means against said locking member, and manipulating said jaws to simultaneously draw the head of said fastener into firm engagement with said element and to force said locking member against said partition.

7. A method of erecting a wall comprising applying fibre board sheathing to spaced supporting members, laying relatively rigid facing elements on the sheathing, driving a nail including a barbed shank through the element and sheathing to extend a substantial distance therebeyond, placing on said shank a bowed spring locking member including locking lips for cooperation with the barbs of said shank, inserting a claw of a locking member applying means in gripping engagement with said extending shank, placing a forked jaw of said means against said locking member, and manipulating said jaw and claw to simultaneously draw the head of said nail into firm engagement with said element and to force said locking member against said wall.

8. A method of erecting a wall comprising laying facing elements on a sheathing having low nail-holding properties, driving a headed fastener through the elements and sheathing to extend a substantial distance therebeyond, applying force to the extending shank of the fastener to draw said elements into tight engagement with said sheathing, and simultaneously forcing a locking member against said sheathing and into interlocking engagement with said shank.

9. A method of erecting a partition comprising laying facing elements on a sheathing having low nail-holding properties, driving a headed fastener including a barbed shank through the elements and sheathing to extend a substantial distance therebeyond, placing on said shank a bowed spring locking member, including locking lips for cooperation with the barbs of said shank, gripping said extending shank at a point remote from said partition to prevent withdrawing movement thereof, and simultaneously forcing said locking member into engagement with said partition with the locking lips engaging said barbs.

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