Nov. 30, 1943. O. E. GIBSON 2,335,565

BUILDING CONSTRUCTION AND CLIP THEREFOR

Filed May 29, 1941

Fig. 1

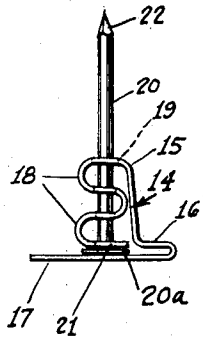


Fig. 2

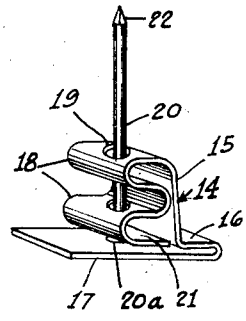


Fig. 3

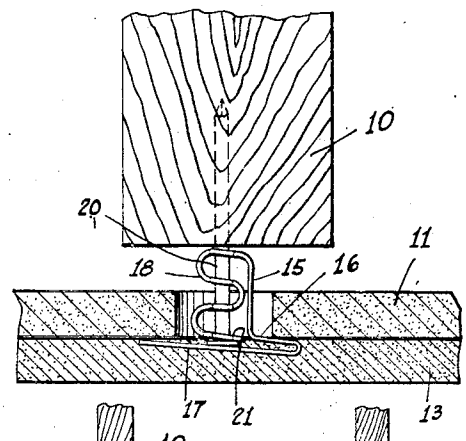


Fig. 4

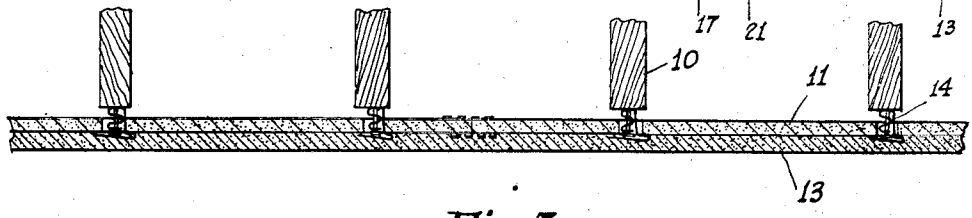


Fig. 5

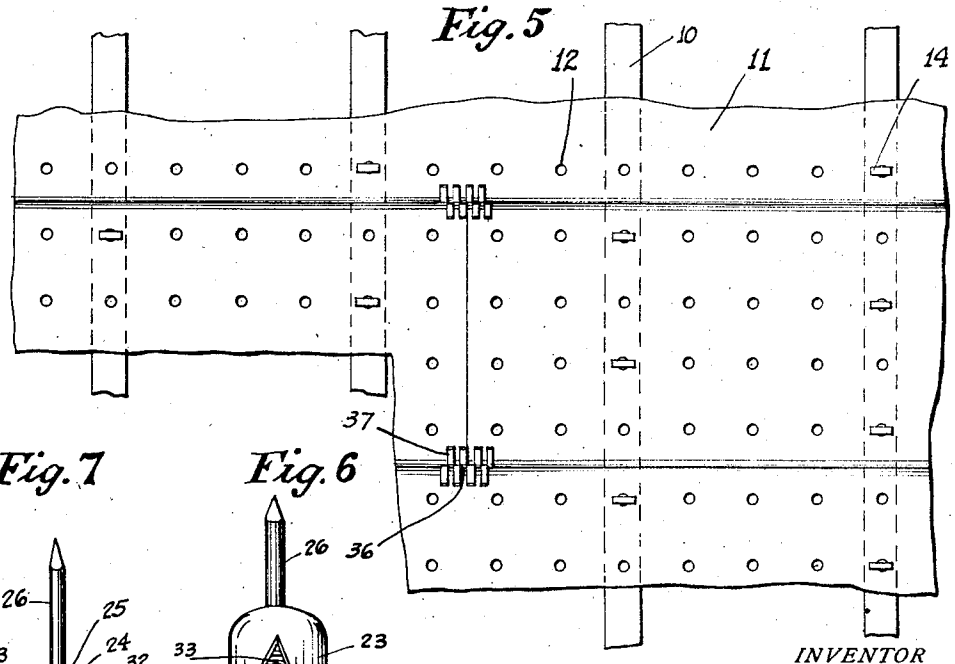


Fig. 7

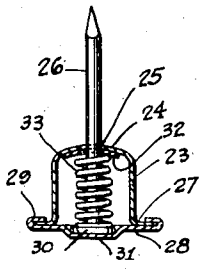


Fig. 6

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asbestosclaims.law/library/21971/1

Patented Nov. 30, 1943 2,335,565

UNITED STATES PATENT OFFICE

2,335,565

BUILDING CONSTRUCTION AND CLIP THEREFOR

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Application May 29, 1941, Serial No. 395,746

16 Claims. (Cl. 72—118)

This invention relates to building construction, and more particularly to walls including ceilings or similar structures wherein studs, joists, or other suitable means are used to support wall facings, such, for instance, as plasterboard and plaster.

Perforated plasterboards, commonly composed of a gypsum composition core and paper cover sheets, have been used extensively as a plaster base in the construction of walls and ceilings of buildings. It has been customary to so arrange the boards relative to the supporting framework that the ends of the boards lie in edge abutting relation over the stud or joist, being secured thereto by nails. In some cases the boards are attached to the studs or joists by resilient clips so as to provide a floating wall surface which resists the transmission of sound through the wall and at the same time assists in preventing cracks in the plaster by allowing the studs or joists to warp without causing undue strains in the plaster coating.

In the present invention, the preformed perforations in plasterboards may conveniently be used to receive a special resilient nailing clip or fastener for attaching the boards to the supports. When such a clip is used, it is preferable, although not essential, that the joints of the plasterboards should be located between the studs or joists. This arrangement is advantageous in avoiding waste due to cutting of boards. Also it enables the use of the nailing clips of this invention with certain standard perforated boards without additional perforations and without change in the standardized arrangement of the perforations.

An object of this invention, therefore, is to provide a building construction in which a resilient nailing clip engages in a preformed perforation in a plasterboard to resiliently attach the board to a building framework.

Certain standardized plasterboard is commonly made 16 inches wide and 48 inches long and is provided with rows of rather large perforations, each perforation being usually about ¾ inch in diameter. The perforations are so distributed over the board that, when the board is applied to studs, joists, or other supports having standard spacing between centers, with the abutting end edges of adjacent boards overlapping a support, the intermediate studs will be between adjacent rows of perforations. The spacing between rows of perforations is a multiple of the standard spacing of supports. Therefore, in the present invention the boards may be applied so that the abutting end joints may be positioned between the supports and a row of perforations will be positioned over each support.

It is, therefore, an object of this invention to provide a wall structure and resilient nailing clips therefor in which the clips may be used in combination with standard perforated board to provide a resiliently mounted plaster base. Also the clips may be used for resiliently supporting any type of wallboard having perforations of sufficient size and positioned as required to enable the clips to be nailed into a suitable support.

It is also an object to provide a resilient nail clip for perforated plasterboard in which the clip is self-aligning with the plasterboard irrespective of angular driving of the nail portion of the clip.

A further advantage of the present invention is that the clip may be driven in the same manner as ordinary nails and no tools are required other than the usual workman's hammer. It is unnecessary to learn any new technique in building the wall structure or in applying the fasteners.

Another object of the invention is to provide a resilient clip particularly adapted for board attachment by engagement in a board perforation.

A further object of the invention is to prevent the sagging of ceiling plasterboards between joists under the weight of the plaster; also to improve building constructions and clips in other respects hereinafter specified and claimed.

Another object is the provision of a nailing clip of the character described which is cheap to manufacture, easy to apply, and will not easily get out of order.

In the drawing:

Fig. 1 is a side elevation of one embodiment of the resilient board attaching clip or fastener.

Fig. 2 is a perspective view of the embodiment shown in Fig. 1.

Fig. 3 is a full size detail sectional elevation illustrating a portion of a ceiling construction incorporating the invention.

Fig. 4 is a view similar to Fig. 3, but on a smaller scale, and illustrates perforated boards applied to a plurality of studs or joists with the abutting end joint of the boards between the supports.

Fig. 5 is a bottom view of the ceiling shown in Fig. 4 before the plaster is applied.

Fig. 6 is a perspective view of another embodiment of the nailing clip.

Fig. 7 is an axial sectional view through the embodiment shown in Fig. 6.

Referring to the drawing in detail, the wall or ceiling construction may consist of supports such as joists, studs, or the like, 10, secured at their ends to the framework of the building in the usual manner and extending in spaced, parallel relation. Plasterboards 11 of any suitable material, such as a gypsum core faced with paper cover sheets, are provided with a plurality of spaced holes or apertures 12 for the purpose of improving the bond of a layer of plaster 13 sub-

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sequently applied to the exposed faces of the boards.

An important feature of the invention comprises an improved resilient nailing clip for attaching the boards 11 to the joists 10. This clip 14 is designed for insertion through one of the holes 12 and comprises a strap having a body portion 15 substantially perpendicular to the plane of the board 11. A portion of the strap forms a U-shaped flange 16 extending substantially at right angles to the body 15 with the end of the strap reversely extended to provide a board supporting flange 17 substantially longer than the diameter of a perforation 12 but narrower in width than the diameter of the perforation. Thus if the hole 12 has a diameter of ¾", the flange 17 may conveniently be 1¼" long and ½" wide. The other end of the strap is formed into a plurality of corrugations or zigzag spaced folds 18, and comparatively large aligned holes 19 are formed in the folds 18. A nail 20 extends through the holes 19 and is positioned so that the head 20a of the nail is engaged between the free end 21 of the corrugated portion and the flange 17. Thus, by inserting the clip 14 into a board perforation 12 adjacent a joist 10 and driving on the flange 17 with a hammer, the nail can be driven into said joist, thus resiliently supporting the boards 11 on the joists 10. The folds 18 provide a spring between the nail head and the joist when the clip is applied as shown in Fig. 3.

The holes 19 in the clip are of progressively increasing diameter toward the point 22 of the nail so as to permit free angular movement of the nail in the holes 19 and automatic alignment of the body of the clip with the board. The flange 17, being somewhat narrower than the diameter of hole 12, permits some plaster keys to flow into the hole 12 under trowel pressure, without however interfering with the resilience or the proper alignment of the clip. The flange 17 retains the nail in the clip and prevents plaster from interfering with the proper functioning of the device.

The embodiment shown in Figs. 6 and 7 comprises a cup-like pressed metal shell 23 having a concave end wall 24 with an axial hole 25 therein substantially larger than a nail shank 26 which extends therethrough. The opposite end of the shell 23 is formed to provide an outwardly extending annular flange 27, and a closure or cap 28 is crimped over this flange as shown at 29. The head 30 of the nail seats in a depression 31 formed in the cap 28. A convex washer 32 on the nail bears against the concave end wall 24 of the shell and a compression spring 33 is confined between the washer 32 and the head of the nail so that the weight of the board and plaster are resiliently supported on the spring when the clip is applied in the manner previously described. The large hole 19 permits automatic alignment of the clip with the board when the nail is angularly driven.

In the ceiling structure shown in Figs. 4 and 5, the boards 11 are preferably arranged with the abutting ends thereof between the joists or studs 10. The free ends of the boards are connected together by sheet metal clips 36 having outstanding fingers 37 forming opposed channels for the reception of the edges of the boards. These clips 36 maintain the ends of the boards in the same plane under trowel pressure when the plaster 13 is applied to the exposed face of the boards.

The nailing clips of this invention are especially advantageous in the construction of ceilings as they prevent sagging of the boards between joists under the weight of the plaster. The clips also resiliently attach the boards to the building framework so that the ceiling has a high degree of sound insulating properties. The resilient clips also serve to prevent cracks from forming in the plaster 13 as the joists or studs 10 can warp or twist under changing atmospheric conditions without distorting the ceiling surface.

It will be apparent that the clips of this invention may conveniently be used to support any type of plasterboard and perforations may be preformed as desired or the workman can perforate the board on the job in any manner and in any required location on the board.

It is intended, of course, that the invention should not be limited to the specific embodiment or embodiments disclosed herein, since modifications may be made, and it is contemplated, therefore, by the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

Having thus described this invention, what is claimed and desired to be secured by Letters Patent is:

1. A nailing clip for resiliently supporting perforated plasterboard on a joist or the like, comprising a nail, a head on said nail angularly movable in any direction away from a position at right angles to the nail, said head having a portion adapted to freely enter a perforation in said board while said nail is being driven and a portion adapted to overlie the outer edges of said perforation, and resilient means tending to prevent relative movement of said nail and head.

2. A nailing clip for securing perforated plasterboard to a joist or the like, comprising a member adapted to be inserted in and extend through a perforation while the clip is being driven into a support and with a portion engaging against the face of the board, a nail axially mounted for longitudinal movement in said member, a portion of said member overlying the head of said nail and said board adjacent the perforation, and a spring between said nail and said member and resiliently tending to prevent relative movement therebetween.

3. A nailing clip for securing perforated plasterboard to a support comprising a building nail, means adapted to overlie a perforation and engage the adjacent outer edges thereof and having means associated therewith adapted to extend into said perforation while said nail is being driven through said perforation and into a stud, and a spring between said last means and the head of said nail and adapted to retain said nail head between said spring and said overlying means.

4. A nailing clip for securing perforated plasterboard to a support comprising a board supporting element having a portion loosely embracing the shank of a nail remote from the head and of a diameter to pass through the usual plaster keying perforation while said nail is being driven through said perforation and into a stud, a part of said portion overlapping the head of said nail and adapted to engage the outer surface of a board when the clip is inserted in a perforation, and a spring between said shank embracing portion and the head of said nail.

5. A nailing clip for securing a perforated plasterboard to a support comprising a resilient

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metal strap of a narrower width than the diameter of a perforation, one end of said strap being formed into a plurality of corrugations and having aligned holes therethrough to receive a nail, said strap being reversely bent to overlap the free end of the corrugated portion and the edges of a perforation, and a nail in said aligned holes with the head retained between said corrugations and said overlapping portion.

6. A nailing clip for securing a perforated plasterboard to a support comprising a resilient metal strap of a narrower width than the diameter of a perforation, one end of said strap being formed into a plurality of corrugations and having aligned holes therethrough to receive a nail, said strap being reversely bent to overlap the free end of the corrugated portion and the edges of a perforation, and a nail in said aligned holes with the head retained between said corrugations and said overlapping portion, the size of said aligned holes being related to retain the head of the nail in substantially fixed relationship while permitting angular movement of the shank.

7. A nailing clip for securing a perforated plasterboard to a support comprising a resilient metal strap of a narrower width than the diameter of a perforation, said strap having a substantially flat portion adapted to lie over a perforation and against the face of the board, and a portion adapted to extend into said perforation, said last portion being arranged to resiliently support a building nail so that it may be driven into a support.

8. In a ceiling construction, a wooden building frame, a building board adjacent said frame, said board having an aperture, a nail driven into said frame through said board aperture, a resilient clip associated with said nail and engaging the face of said board adjacent the periphery of said aperture and resiliently supporting said board on said nail, said clip comprising a zigzag folded resilient section engaging the shank of said nail, and a flange covering the head of said nail and engaging said board adjacent said aperture, and a layer of plaster on said board and covering said aperture and flange.

9. In a clip for use in building constructions, a nail having a shank and a head, a zigzag folded resilient section engaging the shank of said nail, said section having a flange bearing on the inside face of said nail head, and a flange covering the outside face of said nail head so that said nail head is confined between said flanges.

10. In a clip for use in building constructions, a nail having a shank and a head, a shell-like element permanently mounted on said nail and enclosing said head and a portion of said shank, a cap on said shell element outside said nail head and adapted to overlie the outer surface of a plasterboard when said nail is driven through a plasterboard perforation and into a stud, and a compression spring around said shank within said shell element and tending to hold said nail head against said cap.

11. A nailing clip of the character described comprising a hollow shell adapted to freely pass through a perforation in a building board while said clip is being driven therethrough and into a stud, said shell having a flange at its outer end adapted to overlap the edges of said perforation on the other side of said board, a nail having its head enclosed in said shell and its shank extending through the inner end thereof, and a spring between said inner end and said nail head.

12. In a ceiling construction the combination with joists or the like, spaced a multiple of the length of standard plasterboard, and standard perforated plasterboard overlapping a plurality of said joists with the abutting end edges of said boards between joists, and held in alignment by clips and with perforations in said boards overlying said joist, of nailing clips driven into said joists through said perforations, said clips comprising a building nail, a member on said nail and overlapping the face of said board, a portion extending through said perforation, and a spring between said portion and the head of said nail so that said board is supported on said nail.

13. In a building construction, a wooden building frame, a building board adjacent said frame, said board having an aperture, a nail extending through said board aperture and into said frame, a resilient clip element on said nail, a head portion of said clip element overlapping the head of said nail and engaging the outer surface of said board adjacent the edge of said aperture, a portion of said clip element disposed around the shank of said nail and constructed to pass freely through said board aperture while the nail is being driven, and a resilient portion of said clip element acting against said nail tending to prevent relative movement of said nail and clip element so that said nail and clip element resiliently support said board.

14. A nailing clip for resiliently supporting perforated plasterboard on a joist or the like, comprising a nail and a tiltable board-engaging member on said nail, said board-engaging member having a portion adapted to freely enter a perforation in said board while said nail is being driven, and a portion adapted to overlie the outer edges of said perforation, and resilient means tending to prevent relative movement of said nail and clip member.

15. A nailing clip for resiliently supporting perforated plasterboard on a joist or the like, comprising a nail and a tiltable board-engaging member on said nail, said board-engaging member having a portion adapted to freely enter a perforation in said board while said nail is being driven, and a portion adapted to overlie the outer edges of said perforation and having an extent to cover the major portion of the area of said perforation, and resilient means tending to prevent relative movement of said nail and clip member.

16. A nailing clip for securing perforated plasterboard to a support, comprising a building nail having a shank and a head, a cover member overlying the head of said nail but adapted to extend over and engage the adjacent outer edges of a perforation in the board into which said nail may be inserted, a compression spring member having one portion bearing on the inner surface of the head of the nail, a tension member between said cover member and said spring to transmit resilient tension from the nail and spring to the cover member to hold the plasterboard yieldingly in place.

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