April 7, 1942. L. W. BENZ 2,278,822

FURRING FOR MOUNTING WALLBOARDS

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Fig. 1.

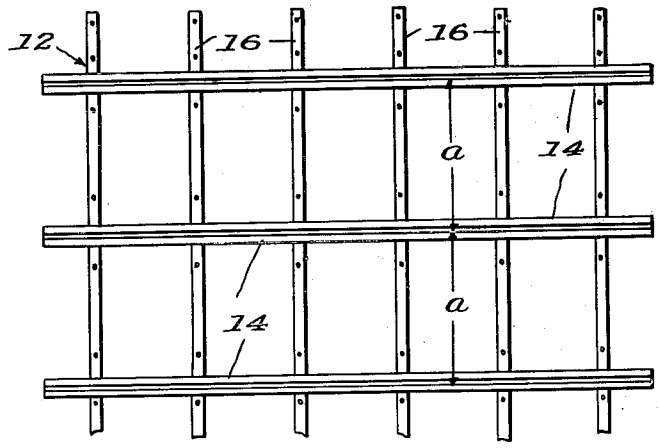


Fig. 4.

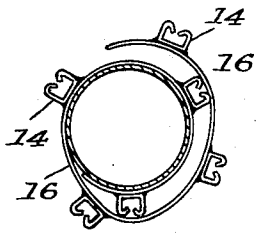


Fig. 2.

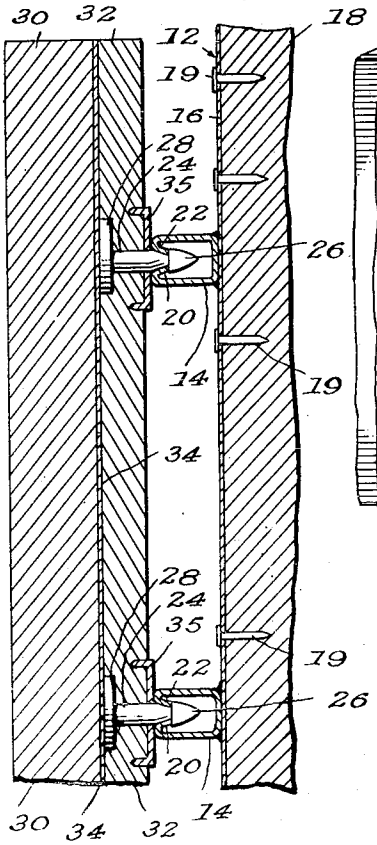
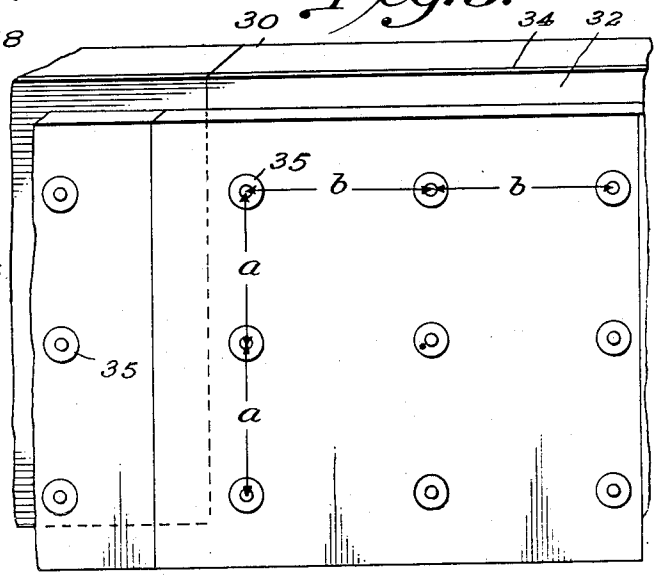


Fig. 3.



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Fig. 5.

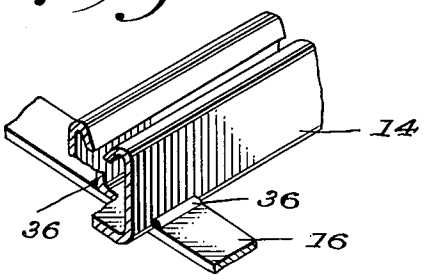


Fig. 6.

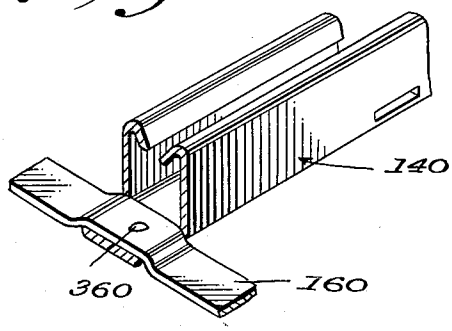


Fig. 7.

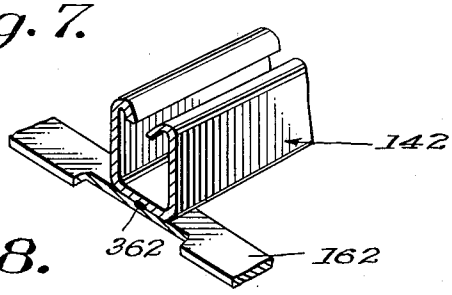


Fig. 8.

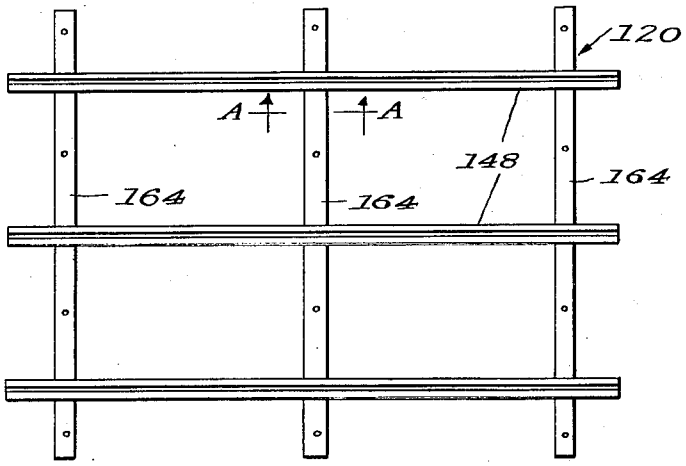


Fig. 9.

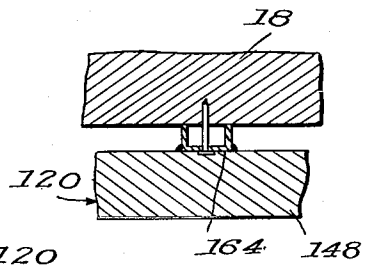
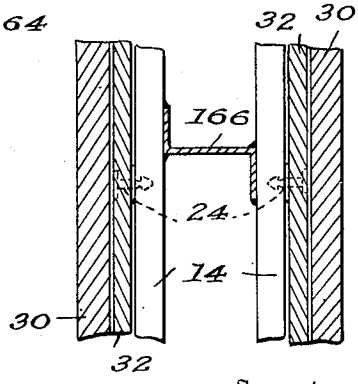


Fig. 10.



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UNITED STATES PATENT OFFICE

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FURRING FOR MOUNTING WALLBOARD

Leonhardt W. Benz, Mobile, Ala.

Application December 18, 1939, Serial No. 309,884

6 Claims. (Cl. 72—118)

This invention relates to furring for mounting wall board of all kinds to the wall or ceiling of a building construction, and particularly to a curtain or panel means which is secured to the wall or ceiling and provided with fastening means to receive complemental elements mounted on the inner face of the wall board.

Where the walls and ceilings of buildings, such as theaters, are to be covered with low density wall board to improve their acoustic properties, it has been the practice to fasten separate furring strips on the wall or ceiling to match the joints of the wall boards. This procedure is tedious, expensive and slow. Moreover, the use of wood furring of inferior quality frequently results in irregular and improper spacing. If the boards are fastened to the wood furring strips with wire finishing nails or small flat head nails, the nail heads are exposed to view in an objectionable manner. It will be appreciated that when the wall or acoustic board expands or contracts and is subjected to variations in relative humidity, such boards have a marked, inherent tendency to break or pull through the nail head.

Therefore, it is to the general problem outlined above that this invention is primarily directed. Essentially, the object of this invention is to provide a predetermined or fabricated furring curtain or panel having securing means with definite relative locations of points for fastening architectural panels of various types, and more especially those of low densities, to walls, ceilings and like surfaces for acoustic, insulative, or architectural purposes.

Hitherto, the reputation of the manufacturer of wall panel boards has been in the hands of the person who applies his product. By providing panels having fastening means secured thereto at definitely spaced points and applying such panels to furring means, which is likewise definite and predetermined as to the spacing of the fastening elements adapted to cooperate with those on the panel, a uniformity of control which insures adequate and proper mounting of panel boards is attained.

The invention is intended to provide panel securing means which will allow lateral expansion and contraction of the panel board, and thus prevent warping, while at the same time holding the panel board securely in position with respect to the building construction.

Great simplification and ease of installation are provided by the prefabricated furring curtain or furring panel. It is a related and specific object to provide a wall board panel with an adhesively secured reinforcing sheet on its underface, the reinforcing sheet only being penetrated by snap fastening elements, the spacing of which is predetermined by the minimum standards for proper mounting. It will be obvious that the fastening elements on the reinforcing sheet and the complemental fastening means of the furring curtain are made to correspond.

To meet different conditions of installation and manufacture, alternative forms of furring curtain are provided. The strips of snap fastening elements may be maintained in parallel relationship with the desired spacing by means of flat, flexible strips secured thereto, in which event the furring curtain may be rolled for shipping or convenient handling. In some cases, a frame panel of the same size as the panel board to be mounted thereon is preferable, and in this event the spacing members which hold the strips of snap fastening elements in parallelism may be rigid structural members, such as small, flat channels or angles, or other conventional sections.

An efficient form of partition wall is obtainable by securing the strips of fastening elements to opposite faces of the spacing members to provide a double faced wall section.

Other features of improvement are to be recognized in the useful combination of furring curtain, snap fastening elements and mounted wall board.

Further novel features of improvement which contribute to the ease of manufacture and assembly and uniformity in results will be apparent and readily understood from reading the following detailed description of several illustrative forms of the invention in connection with the accompanying drawings, in which

Fig. 1 represents a front elevation of a section of furring;

Fig. 2 is a vertical section to an enlarged scale of the furring securing means and panel board;

Fig. 3 is an elevation of the inner face of a wall board unit adapted for mounting on the furring;

Fig. 4 is a cross-section of the furring of Fig. 1, as rolled for shipping or handling.

Fig. 5 is a detailed view partly in section showing the manner of assembling the furring curtain of Fig. 1;

Fig. 6 similarly represents in section an alternative manner of fabricating the furring curtain;

Fig. 7 likewise shows a still further manner of fabricating the furring curtain by spot welding;

Fig. 8 shows in front elevation a modified form of furring;

Fig. 9 is a section taken on the line A—A of Fig. 8 showing the manner of attaching the furring; and

Fig. 10 indicates in horizontal cross-section an adaptation of the furring of this invention to a partition wall construction.

As seen in Fig. 1 of the drawings, 12 indicates a furring curtain of indeterminate length which comprises a series of parallel spaced snap fastening strips 14 and a suitable number of transversely extending spacing means in the form of flat, flexible strips 16, preferably of metal.

The sectional view of the furring curtain 12 in Fig. 2 includes a portion 18 of studding or similar element of building construction to which the strips 16 are fastened by any suitable means, such as nails 19, 19. From this figure, it will be perceived that the parallel strips 14 of snap fastening elements each comprises a continuous channel having resilient inturned edges or flanges 20 and 22 which engage and retain a complemental snap fastening element 24 by means of its head 26, in the manner illustrated.

Note is now to be taken that the opposite ends of the snap fastening means or elements 24 have respective flat heads 28 which are retained between the under or inner face of a wall board panel 30 and a reinforcing sheet 32 which is secured by an adhesive layer 34 to the inner face of said wall board panel 30. A pronged washer 35 encircles each fastening element so as to provide firm abutment for the adjacent portion of strips 14. The wall board panel 30, which is shown illustratively, is one of low density and low strength particularly useful for its acoustic properties, and the reinforcing sheet may be any commercial paneling material of higher density and strength, such as masonite, Celotex, etc. For the adhesive 34, those which are asphaltic in nature may be employed, or a good casein glue may be used.

It will be seen further that the snap fastening strips 14 are adapted to space the panels from the wall or ceiling and to permit lateral sliding movement of the complemental fastening means 24 to accommodate expansion and contraction. In many instances it will be found desirable to attach the wall board panel 30 and reinforcing sheet 32 so as to produce a lap in two directions as shown in Fig. 3.

A comparison of Figs. 1 and 3 will show that the vertical spacing *a*, *a* of the rows of snap fastening elements 24 corresponds to the center spacing *a*, *a* of the parallel and complemental strips 14 of the furring curtain 12. The horizontal spacing *b*, *b* is predetermined in the manufacture and assembly of the reinforcing sheet 32 and the series of fastening elements 24 which pass therethrough.

In Fig. 5, the channel-like fastening strips 14 and the spacing members 16, both being of suitable materials, are joined together by a pair of welds 36, 36 at the time of fabricating the curtain 12.

Alternatively, and as shown in Fig. 6, the channel in the like fastening strip, which is designated 140, may have a flexible spacer member 160 passed through its sides and joined to its bottom by a rivet 360.

Fig. 7 indicates a further manner of fabricating the furring curtain by providing a similar snap fastening channel 142 and spot welding it centrally of its bottom, as at 362 to a flexible, metal spacer member or spacing strip 162.

A further form of furring is illustrated in Fig. 8 and comprises, generally, a furring panel 120 which may have the outline and extent of a wall board panel such as 34 previously described. In this instance, a plurality of spaced parallel fastening strips 148 are maintained in the desired relationship by relatively rigid spacing members 164 which are appropriately secured thereto.

Fig. 9 serves to show the flat channel nature of the members 164, which may be also turned on edge for conveniently varying the spacing with respect to the building construction adjacent thereto. The manner of securing the strips 148 and members 164 together is nearly the same as that which has been described previously in detail in connection with the Fig. 2 embodiment.

In use, the flexible curtain 12 or the panel frame 120 will be suitably secured to the wall or ceiling so as to dispose the outwardly engageable snap fastening elements in the same plane and the panel boards 34 snapped thereon in sections and slid along the parallel strips 14 or 140 into the desired position. When the curtain form of indeterminate length 12 is used, it may be unrolled and mounted as a continuous furring from ceiling to floor or wherever else it is to be used. The use of the panel form of furring 120 will require the separate mounting of as many furring panels as there are to be wall board panels, and these will, of course, be mounted adjacent to each other over the area to be covered.

There is a widely felt need for a wall partition which can be erected quickly with a minimum of muss and expense, and yet will be sufficiently rigid and soundproof for this purpose. The novel combination of opposed fastening strips with a rigid form of spacer member which is illustrated by Fig. 10 may be utilized advantageously in such instances. A standard section 166 of modified Z shape is shown illustratively in the horizontal and fragmentary section of a partition construction. A pair of snap fastening strips 14, 14 are appropriately secured, as by welding, with their backs opposed to the parallel legs of the Z-section spacer member 166. The spacer members will ordinarily correspond in length to the desired partition height. To the fastening side of each strip 14 there is secured by means of the complemental fasteners 24, which have been described previously, a surfacing unit comprising a wall board panel 30 and a reinforcing sheet 32. Conventional means adapted to the purpose will be used for securing the partition wall thus formed to the ceiling and floor.

Obviously, the possible arrangements and utilization of the furring of this invention are numerous, and, for that reason, those which have been specifically disclosed must be considered as merely illustrative.

Where the terms "panel," "panel member" and "architectural panel" have been used with reference to the panel boards, it is to be distinctly understood that they include any suitable sheet material commonly employed for the purposes indicated. It may be stated that the present invention is peculiarly adapted to the mounting of acoustic panel boards which require reinforcing and concealment of the fastening elements for the purpose of preventing condensation, and in order to avoid structural impairment. Those skilled in this art will appreciate the broader aspects of the novel furring and panel board securing means which this invention comprehends, and that those means are independent of any special form of complemental fastening combination or wall board material.

In a co-pending application filed August 16, 1938, in the name of the present applicant, Ser. No. 225,206, there are disclosed and claimed the broad aspects of the panel securing means. The instant application is directed to a novel furring arrangement adapted for use with the securing means of the earlier application and to the likewise novel combination of furring, panel board, and panel securing means.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a prefabricated furring for mounting architectural panels, a plurality of spacer members adapted to be secured to a wall, ceiling or the like, and a plurality of parallel spaced fastening elements extending transversely of the spacer members and secured thereto, said fastening elements being in the form of continuous outwardly facing channel sections having flexible, inturned flanges for receiving a headed fastener.

2. A unitary partition wall construction comprising opposed sets of parallel and continuous strips of snap fastening elements arranged with the fastening elements facing outwardly, spacing means common to the opposed sets of strips of snap fastening elements and joined thereto so as to maintain the parallel relationship, and a wall board panel having fastening elements complemental to the elements of the parallel strips secured to each opposed set of strips thereby.

3. A partition wall construction comprising opposed sets of parallel and continuous strips of snap fastening elements, the backs of said strips being adjacent, and their snap fastening elements being oppositely facing; relatively rigid spacer members integrally secured to the opposed sets of strips to maintain them in parallelism; and a wall board panel unit mounted on each opposed set of strips, said wall board panel unit being provided with fastening elements complemental to those of the strips and by means of which said units are mounted.

4. A prefabricated furring for architectural panels or the like comprising spaced, parallel snap fastening strips, and spacer members extending transversely of the snap fastening strips and attached thereto for maintaining their spaced relation, said strips being formed and arranged to provide continuous outwardly facing snap fastening engaging means to which an architectural panel or the like having on its inner surface snap fastening elements complemental to the snap fastening engaging means of the furring may be joined and thereafter slid along.

5. A prefabricated furring curtain of an indeterminate length comprising uniformly spaced, parallel snap fastening strips, and readily flexible spacing strips secured to the snap fastening strips and extending transversely thereof so as to maintain their parallel relation while permitting the curtain to be rolled, said snap fastening strips being formed and arranged to provide continuous outwardly facing parts of a snap fastening engaging means adapted for final positioning in the same plane, and to which an architectural panel or the like carrying similarly spaced complemental snap fastening engaging means may be joined and thereafter slid along.

6. A prefabricated furring panel frame for architectural panels or the like comprising spaced, parallel snap fastening strips and relatively rigid spacer members extending transversely of the snap fastening strips and attached thereto for maintaining their spaced relation, said strips being formed and arranged to provide continuous outwardly facing snap fastening engaging means to which an architectural panel or the like having on its inner surface snap fastening engaging means complemental to those of the furring may be joined and thereafter slid along.

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