Feb. 2, 1943. C. C. DROEGER 2,309,695

STRUCTURAL MATERIAL FOR SOUNDPROOFING

Filed Jan. 27, 1941

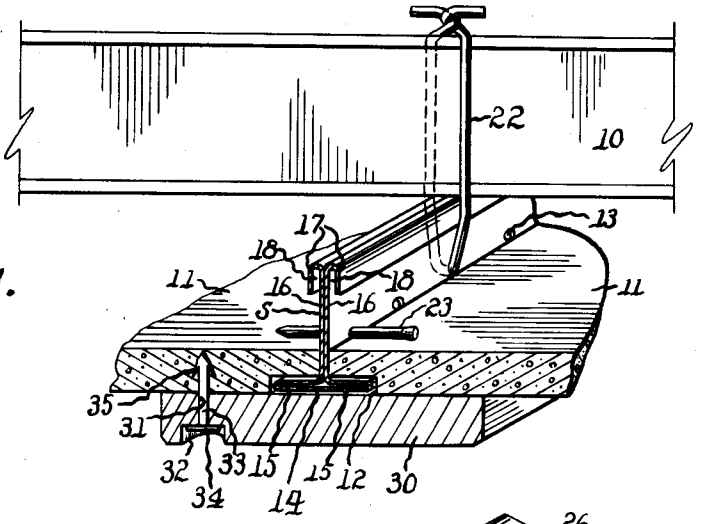


Fig. 1.

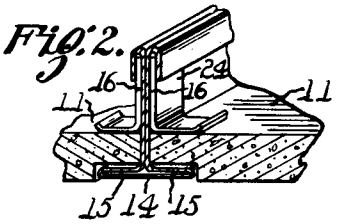


Fig. 2.

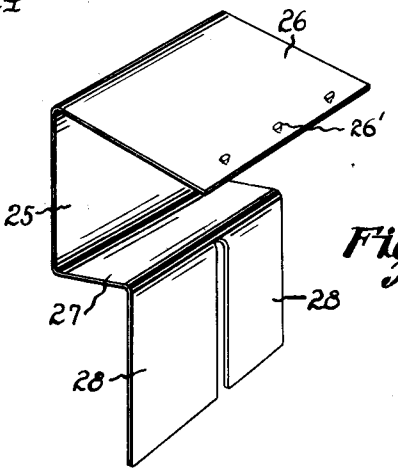


Fig. 4.

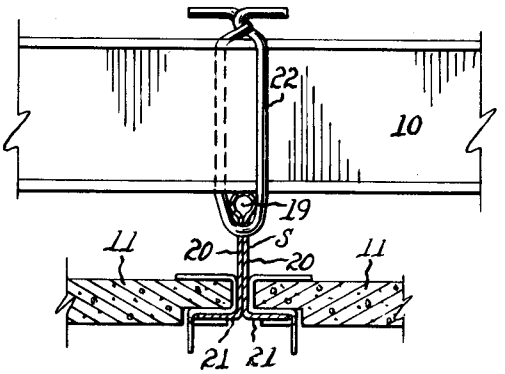


Fig. 3.

INVENTOR.
Carl C. Droeger,
BY
ATTORNEYS

Patented Feb. 2, 1943 2,309,695

UNITED STATES PATENT OFFICE

2,309,695

STRUCTURAL MATERIAL FOR SOUNDPROOFING

Carl C. Droeger, Greenfield, Ind.

Application January 27, 1941, Serial No. 376,112

3 Claims. (Cl. 72—118)

The object of my invention is to provide inexpensive, simple, and efficient means to be utilized in the erection of sound proofing elements in building structures whereby the cost of the erection may be reduced.

The accompanying drawing illustrates my invention.

Fig. 1 is a sectional perspective of one form of my improvements;

Fig. 2 a sectional perspective of another form;

Fig. 3 a vertical section of another form; and

Fig. 4 an enlarged perspective of the face engaging clip shown in Fig. 3.

In the drawing 10 indicates a structural joist, beam, girder, or studding, to which the ceiling or wall structure, to be described, is applied. 11—11 indicate sheets of plaster board or wall board, the parallel edges of which, at one surface, are rabbeted as indicated at 12. S indicates comparatively light sheet metal stringers generally T-shaped in cross section with the web perforated, as indicated at 13, at spaced intervals. In Figs. 1 and 2 this stringer comprises a medial head-forming portion 14 over which are folded, in opposite directions, portions 15—15 from which rise the web-forming portions 16—16, the free edges of which are oppositely and downwardly turned at 17—17 to form downwardly open pockets 18—18.

In Fig. 3 the T-shaped stringer is doubled upon itself medially to form an eye 19, and parallel web-forming portions 20—20, the free edges 21—21 of which are oppositely and downwardly extended in the same plane to form the head of the T.

The stringers are applied to the joists or studding 10 by tie wires 22 passed through some of the perforations 13 and twisted around and upon the joists or studding.

In Fig. 1 the boards 11 are held firmly upon the T-head of the stringer by means of nails or pins 23.

In Fig. 2 the boards 11 are held firmly upon the T-head of the stringer by means of L-shaped struts 24, the end of one arm of which is tucked into pocket 18 and the other arm of which overlies the back face of the board, the tucked in arm of the structure being of such length that, when in position, the other arm is forced firmly against the rear face of the board.

In Fig. 3 the board 11 is held in place by means of the clip shown in Fig. 4. This clip comprises a medial portion 25 to overlie the edge of board 11; a spring tongue 26 to overlie the rear face of the board 11; a medial portion 27 to lie in the bottom of the rabbet 12 and rest upon the rear face of one arm of the stringer; and a pair of free ends 28—28. In use, a multiplicity of these clips are applied to the opposed edges of a board 11 and said board inserted between a pair of stringers S to rest upon the heads thereof as indicated in Fig. 3. The spring tongue 26 is sprung slightly to permit association with the board 11 so that said board will be held firmly in place and, after placement of the board with its clip, as described above, the operator grasps one of the tongues 28 with a pair of pliers and thereby holding the clip firmly upon the T-head of the stringer is able to bend the associate tongue 28 to firmly overlie the T-head of the stringer. When this operation has been completed, the other tongue 28 may be similarly bent to overlie the T-head of the stringer.

The rabbets 12 are of such depth that, when boards 11 are placed as illustrated, the exposed faces of the boards 11 will be in or slightly beyond the plane of the exposed face of the T-head of the stringer in Fig. 1, or, similarly, in or slightly beyond the plane of the exposed faces of the overbent tongues 28.

After the boards 11 have been thus placed, strips or blocks of sound-proofing material 30, various forms of which are in common use, may be readily applied to the exposed faces of boards 11. This sound-proofing material is generally provided with perforations 31 counterbored at their outer ends as indicated at 32, to permit fastening devices, such as nails or screws, to be readily driven therethrough into the boards 11. Various forms of fastening devices have heretofore been provided for this purpose, but I prefer the fastening device shown in Fig. 1. This device comprises a shank 33, a head 34 adapted to be received in the counterbore 32, and a pair of barbs 35 rooted in the shank 33 closely adjacent the point of the shank. These barbs 35 are readily formed by inwardly and forwardly slicing the shank 33 and are preferably relatively very thin so that their tips may have a slight springiness so that when the shank is driven into the board 11 the tips of the barbs yield inwardly slightly. Any tendency of movement of the barbed shank outwardly permits the tips of the barbs to spring outwardly and thus retain the barbed shank firmly against undesirable displacement.

To complete the job, counterbores 32 are usually filled with a plastic material.

It will be understood, of course, that the term "sound proofing material" is intended to include

sound absorbing or sound deadening materials and that, instead of preformed materials of that kind, any suitable plastic, such as plaster, etc., may be applied to the boards 11. The boards 11 are held firmly in place with their exposed faces in the same plane and their rabbet faces firmly against the T heads of the stringers, thereby preventing air circulation between adjacent edges of the boards.

Tongue 26 may be provided, on its under surface, with teats 26' which will sink into the back surface of the board 11 and prevent slippage.

I claim as my invention:

1. A building structure comprising a T-shaped stringer, wall boards having rabbeted edges resting upon said stringer with the head of the stringer lying in said rabbets, and fastening elements passing through the web of the stringer and engaging the rear faces of said boards.

2. A building structure comprising a T-shaped stringer, wall boards having rabbeted edges resting upon said stringer with the head of the stringer lying in said rabbets, and L-shaped struts interposed between the stringer and rear faces of the boards with one arm of said struts parallel with the web of the stringer.

3. A building structure comprising a T-shaped stringer, wall boards having rabbeted edges resting upon said stringer with the head of the stringer lying in said rabbets, and a fastening clip embracing the rabbeted edge of the board and provided with a pair of tongues originally projecting beyond the exposed face of the wall board and bent in succession to overlie a portion of the head of the stringer.

CARL C. DROEGER.