604914

FORM 1

REGULATION 9

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

APPLICATION FOR A STANDARD PATENT

I, CAROLD PICHETTE, of 163 de l'Eglise Street, Chateau Richer, Province of Quebec G0A 1N0, Canada, hereby apply for the grant of a Standard Patent for an invention entitled:-

"INSULATING BATTS SAG-PREVENTING WALL FRAME STUD"

which is described in the accompanying Complete Specification.

Details of basic application:-

Number: 541-362-1

Country: Canada

Date: 6th July, 1987

APPLICATION ACCEPTED AND AMENDMENTS ALLOWED 8.10.90

My address for service is:

SHELSTON WATERS
55 Clarence Street
SYDNEY, N.S.W. 2000.

DATED this 7th Day of June, 1988

CAROLD PICHETTE

by Leon K. Allen.

Fellow Institute of Patent Attorneys of Australia
of SHELSTON WATERS

To: The Commissioner of Patents
WODEN A.C.T. 2606

File: 21A

Fee: $210.00

08/06/88 5000207

NVENTION—One or More Persons)

FORM 8—REGULATION 12 (2)

COMMONWEALTH OF AUSTRALIA

PATENTS ACT, 1952-1969

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT

FEE STAMPS

In support of the Convention Application for a patent for an invention entitled:

(a) Here insert Title of Invention. (a) "INSULATING BATTS SAG-PREVENTING WALL FRAME STUD"

(b) Here insert (in full) name(s) of Applicant(s). I/~~We~~ (b) Carold PICHETTE

(c) Here insert (in full) Address(es) of Applicant(s). of (c) 163 de l'Eglise Street, Chateau Richer, Province of Quebec GOA 1N0, Canada

do solemnly and sincerely declare as follows:

1. I am/~~We are~~ the Applicant(s) for the Patent.

2. The basic Application(s) as defined by section 141 of the Act was/~~were~~ made in (d) CANADA on the 6th day of July, 19 87

on the day of 19

(d) Here insert Basic Country or Countries followed by date or dates of Basic Application(s)

(e) Here insert Full Name(s) of Applicant(s) in Basic Country. by (e) CAROLD PICHETTE

3. I am/~~We are~~ the actual Inventor(s) of the invention referred to in the basic Application ~~(or, where a person other than the Inventor is the Applicant).~~

(f) Here insert Full Name(s) and Address(es) of actual Inventor(s) if other than Applicant(s). 3. (f)

of

is/are

the actual Inventor(s) ~~of~~ the invention and the facts upon which I am/we are entitled to make ~~the~~ Application are as follows:

~~I am/We are the Assignee(s) of the said Inventor(s).~~

4. The basic Application(s) referred to in paragraph 2 of this Declaration was/~~were~~ the first Application(s) made in a Convention country in respect of the invention, the subject of the Application.

DECLARED at Chateau Richer, Canada,

this 15th day of July 19 88.

(g) Signature(s) of Applicant's). (g) Carold Pichette

To THE COMMISSIONER OF PATENTS.

SHELSTON WATERS
PATENT ATTORNEYS
55 CLARENCE STREET, SYDNEY
AUSTRALIA

19 JUL 1988

SW20

(12) PATENT ABRIDGMENT (11) Document No. AU-B-17488/88
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(54) Title
INSULATING BATTS SAG-PREVENTING WALL FRAME STUD

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(56) Prior Art Documents
US 3196499
US 4512130

(57) Claim

1. A structural, sheet metal elongated member adapted to be used as a component of a wall frame defining a cavity for receiving glass-fibre insulating batts, said member of U-shape cross-section defining a web and two legs interconnected by said web, said member used as an upright stud and said stud having longitudinally-spaced struck-out portions made in said web, each struck-out portion defining an elongated prong having a free tip and free longitudinal edges and an inner end integrally-connected to said web at a bending line, said prong bendable between an inoperative position co-planar with said web and an operative position in which the plane of said prong is at least substantially normal to said web, wherein the width of said legs is at least equal to one fourth that of said web, and wherein, in the operative position of said prong, the plane thereof is oblique relative to the longitudinal axis of said member, and, in its plane, said prong is inclined towards one of said legs, at least one of said longitudinal edges of said prong being inclined relative to the plane of said web.

COMMONWEALTH OF AUSTRALIA 604914

FORM 10

PATENTS ACT 1952

COMPLETE SPECIFICATION

FOR OFFICE USE:

Class Int.Class

Application Number:
Lodged:

Complete Specification Lodged:
Accepted:
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This [illegible] the amendments [illegible] for printing

Priority:

Related Art:

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Address for Service: SHELSTON WATERS, 55 Clarence Street, Sydney

Complete Specification for the Invention entitled:

"INSULATING BATTS SAG-PREVENTING WALL FRAME STUD"

The following statement is a full description of this invention, including the best method of performing it known to me:-

FIELD OF THE INVENTION

This invention relates to wall frame constructions for buildings and, more particularly, to wall frame studs provided with novel means to support and retain insulating fiber batts between the studs.

BACKGROUND OF THE INVENTION

In the construction industry, it is nowadays a conventional operation to add insulating materials to the inner walls of a room, ceiling, crawl space, basement or exterior wall of a building. Such insulating materials may be installed for their sound-proof features: this is often the case in rooms of high-class, high-rise commercial buildings, for privacy of communications between the occupants. Alternately, or concurrently, such insulating materials may be installed for their thermal shielding features: this insulation is necessary in all the exterior walls of buildings located in cold countries and also in hot countries where cooling is desired.

Such insulating materials are mounted between the vertical studs making the wall frame. Batts of flexible glassfibers are often used. Such batts are compressible and formed of easily separable layers. Previously such batts were adhered to one or two paper sheets which served as a means to secure the batts in place. However, paper covering is now discontinued for fire prevention.

It is well known that, if not secured in place, batts of glassfibers tend with time to sag or drop from their original position in the cavity of the wall in which they are embedded; this is increasingly so with increasingly thicker batts.

There are many reasons why flexible insulating batts drop in their wall cavity. Some of the most common reasons are due to job conditions during construction, vibration, moisture and water absorbed due to natural atmospheric conditions and job hazards, use of inadequate support members, and many other on-the-job conditions where friction-fit products cannot perform as required.

Of course, insulation sagging means unacceptable loss of thermal or sound insulation in the exposed areas.

Attempts have been made in the art to tackle this problem. Generally, such improvements include either glueing the batts to a backing surface or securing metal strips transversely and in vertically-spaced-apart fashion as add-on elements to the wall frame, the strips being provided with sharpened prong members adapted to engage into the insulating batts, in order to more securely hold the batts in position.

Glueing or installation of add-on transverse strips require additional labour and inspection. Also, the strips were found to improperly retain the batts.

OBJECTS OF THE INVENTION

The gist of the present invention is to provide improved means for supporting and retaining flexible insulating batts into building wall constructions.

A corollary object of the invention is that the insulating batts support and retaining features of the invention are very long lasting and most effective.

Other objects of the invention are that the above-mentioned means are economical in manufacturing costs, sturdy in construction, and that it is easier and safer to install.

SUMMARY OF THE INVENTION

In accordance with the objects of the invention, there are disclosed vertical studs for supporting and retaining insulating batts in a wall structure.

More particularly, there is disclosed a structural, sheet metal elongated member adapted to be used as a component of a wall frame defining a cavity for receiving glass-fibre insulating batts of the type having easily-separable layers, said member of U-shape cross-section defining a web and two legs interconnecting said web and of a width at least one-quarter that of said web, said member used as an upright stud, said stud having longitudinally-spaced struck-out portions made in said web, each defining an elongated prong having a free tip and free

longitudinal edges and an inner end integrally-connected to said web at a bending line, said prong bendable between an inoperative position co-planar with said web and an operative position generally normal to said web to engage and retain a batt, said prong when in operative position the plane thereof is oblique relative to the longitudinal axis of said member, and in its plane said prong is inclined towards one of said legs, and at least one of its longitudinal edges being inclined relative to the plane of said web.

Preferably, the longitudinal axis of said prong is oblique to the longitudinal axis of said member when said prong is in inoperative position. Profitably, said bending line is oblique to the longitudinal axis of said member, Advantageously, only one of said longitudinal edges of each prong is provided with spaced barbs directed towards said bending line, said one longitudinal edge being uppermost when said prong is in operative position. Preferably, there is provided a reinforcing rib longitudinally extending in said prong. Said prongs are preferably arranged in pairs and extend in opposite directions from said web when in operative position, to thereby impale said batts on opposite sides of said stud.

Alternately, there is disclosed a wall structure comprising, in combination, at least three upright spaced substantially parallel studs, a horizontal ceiling joist extending transversely and over the top ends of said studs and interconnecting the same, said studs made of sheet metal, each stud of U-shape cross-section defining a web and two legs interconnecting said web, and of a width at least one-quarter that of said web, the webs of the studs disposed in parallel planes substantially normal to the general plane of the wall structure, wall panels fixed to the legs of said studs on at least one side of said studs, glass-fiber insulation batts filling the space between the studs, said batts extending on opposite faces of the web of at least one of said studs, said batts formed of easily-separable layers of glass-fibers disposed in the general plane of said wall panels, the web of each stud

formed with partially struck-out elongated prongs each having a free tip, free longitudinal edges and an inner end integrally connected to said web by a bending line, each prong bendable about said bending line between an inoperative position co-planar with said web, and an operative position in which the plane of said prong is generally normal to said web, each prong, when in operative position, being transversely downwardly inclined towards said wall panels and at least one longitudinal edge of said prongs being inclined relative to the plane of said web, whereby said prongs impale said batts across at least some of said separable layers, and a portion of said batts overlying said prongs tends to be displaced by said transversely-inclined prongs toward said wall panels.

The longitudinal axis of each prong is preferably oblique to the longitudinal axis of said member when said prong is in inoperative position; and wherein only one of said longitudinal edges of each prong is provided with spaced barbs directed towards said bending line, said one longitudinal edge being uppermost when said prong is in operative position. Advantageously, the prongs are arranged in pairs along said studs and the prongs of each pair extend in opposite directions from said web, when in operative position and impale said batts on opposite sides of a stud. Profitably, the bending line of each prong is oblique to the longitudinal axis of said stud and also to the longitudinal axis of said prong. Preferably, there is provided a sheet metal, horizontal beam extending across said studs and of substantially cross-sectionally U-shape to define a base wall and side walls to form a channel and also at least one out-turned flange about the longitudinal edge of one side wall, said flange abutting against and fixedly secured to a leg of said studs, said flange provided with longitudinally spaced elongated prongs, each prong having a free tip, free longitudinal edges and integrally connected to said flange by a bending line, said prong bendable about said bending line between an inoperative position coplanar with said flange and an operative position transverse to

said flange and directed away from said base wall, the longitudinal axis of said prong being generally parallel to the longitudinal axis of said flange when said prong is in inoperative position, said bending line inclined relative to said prong longitudinal axis in a direction towards said tip, said prong, when in operative position, impaling and anchoring a registering insulating batt and upwardly directed within said batt, the upper one of its longitudinal edges provided with a barb directed towards said bending line.

Preferably, there is provided in a wall structure including spaced upright, parallel studs, a horizontal ceiling joist extending transversely across the top ends of said studs and interconnecting the same, and glass fiber insulation batts filling the space between the studs, anchor plates for securing the top of said batts to said ceiling joist, each anchor plate made of sheet metal and having a pair of elongated prongs, each having a free tip, free longitudinal edges and integrally connected to said plate at a bending line, the bending lines of the two prongs mutually converging, each prong having barbs directed towards said bending line, said barbs protruding only from the longitudinal edges of the two prongs which face each other, said prongs bendable about their respective bending lines between an inoperative position coplanar with said anchor plate and an operative position transverse to said anchor plate to be inserted into said batts, said anchor plates adapted to be secured to said ceiling joist with said prongs below the latter.

Preferably, there is provided an anchor plate for retaining a pair of flexible fiber-insulating batts forming a butt joint, said anchor plate adapted to be applied against said batts across said joint for maintaining said batts against relative movement; said anchor plate made of sheet metal and having two pairs of elongated prongs, each having a free tip, free longitudinal edges and integrally connected to said plate at a bending line, the bending lines of each pair of prongs mutually converging, each prong having barbs along its longitudinal edge

which is closer to the other prong of the pair, the other longitudinal edge of each prong being devoid of barbs, said prongs bendable about their respective bending lines for relative movement of the prongs between a first inoperative position, coplanar with said anchor plate, and a second operative position, transverse to said anchor plate to be inserted into said batts with the prongs of one pair into one batt, and the prongs of the other pair into the other batt.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a fragmentary perspective view of a wall structure, constructed in accordance with the teachings of the invention, and with the prongs in extended operative position ready for impaling insulating batts to be supported and retained against sagging within the wall.

Figure 2 is a longitudinal fragmentary section of a stud and of the transverse beam of figure 1, at an enlarged scale.

Figure 3 is the view of figure 2 but for an alternate embodiment of a transverse beam.

Figure 4 is a fragmentary view of interconnected stud and ceiling joist, the stud in elevation and the joist in cross-section, and with the stud prongs in inoperative position;

Figure 5 is a partial longitudinal section of a stud and ceiling joist with the stud prongs in extended operative position.

Figure 6 is a bottom plan view of a ceiling joist and associated studs in cross-section, including insulating batts shown herein supported by the stud prongs in their extended operative position.

Figure 7 is a partial elevation of a stud with the prongs in operative position and also showing in cross-section a wall panel fixed to a side leg of the stud.

Figure 8 is an elevation of an anchoring plate with the prongs in bent, operative position;

Figure 9 is a section taken along line 9-9 of figure 8 and with the prongs inserted into two insulating batts at their butt

joint;

Figure 10 is an elevation of a modified anchoring plate for securing the top of a batt to a ceiling joist;

and

Figure 11 is a cross-section of a ceiling joist with the anchoring plate of figure 10 secured thereto.

DETAILED DESCRIPTION OF THE INVENTION

The wall metal frame 10 of a building, fragmentarily shown in figure 1, conventionally consists inter alia of a plurality of upright studs 12, arranged in spaced parallel relation. Ceiling joists 14 are provided to interconnect the top ends of a number of vertical posts 12, and also transverse beams 16, and/or 16′ may interconnect the side edges of intermediate sections of the studs 12. Floor joists (not shown) are also provided, similar to ceiling joists 14; floor joists receive the bottom ends of studs 12. Dry wall panels W (figure 7) are secured to one or both sides of wall frame 10 to complete a wall. Each element 12, 14, 16, 16′ is made of sheet metal and is substantially cross-sectionally U-shaped, to form channels. Stud 12 is only slightly smaller than joist 14, so as to engage into the channel of the latter. Studs 12 are of conventional cross-sectional shape defining a web 18 and two side legs 20 each provided with a narrow inturned flange 22. The width of each leg 20 is at least one quarter the width of web 18.

Each beam 16, 16′ is formed by a base wall 24 and two side walls 26. The two side walls 26 of each transverse beam 16 each defines an outturned flange 28. In beam 16′ only one outturned flange 28 is provided. Beams 16′ are used for sound-proofing purposes, their side wall 26 opposite flange 28 being perforated.

When beams 16 or 16′ are not used, dry wall panels W, normally plaster boards (figure 7), are directly fixed to side legs 20 of studs 12. If beams 16 or 16′ are used, wall panels W are fixed to the base wall 24 of such beams.

Studs 12 and ceiling joists 14 are adapted to be

engaged by conventional insulating batts B, which fill the space between studs 12 and between the dry wall panels W. Batts B are rectangular and made of glass-fibers with the fibers generally oriented in the main plane of the batt and forming easily separable layers.

The side walls 30 of ceiling joist 14 are connected by screws 32 to both legs 20 of studs 12, while the outturned flange 28 of each transverse channel member 16 or 16' are connected by screws 34 to a corresponding one of the legs 28 of each stud 12. Conventionally, the threaded body of screws 32, 34, which extend on the side of the channels of studs 12, impale the insulating batts B, engaged therein; but this is not sufficient to prevent sagging of the batts B.

According to the specific features of the invention, sheet metal members 12, 16, 16' (which are conventional per se) include partially struck-out prongs spaced longitudinally thereof.

As shown in figure 1, pairs of prongs 36, 38 are arranged at spaced intervals along the web 18 of studs 12. The prongs of each pair are spaced and parallel and point upwardly. Each prong 36, 38 is partially struck out from the web 18 so as to leave an aperture 40, each prong being integrally connected to the web 18 along a bending line 42.

Until use, the prongs 36, 38 are left coplanar with web 18, to prevent bodily injuries during handling of the studs 12. However, when studs 12 are installed, prongs 36, 38 of each pair are selectively bent about their bending line 42, in opposite directions, to an operative position generally orthogonal to web 18, the top prongs 36 preferably extending away from side legs 20, the bottom prongs 38 extending between side legs 20 (figure 5). In such a position, the two prongs 36, 38 can impale a pair of opposite insulating batts B, which are installed between studs 12, abutting the web 18 thereof (fig. 6).

As clearly shown, not only is the longitudinal axis of each elongated prong 36, 38 inclined with respect to the long

axis of the stud 12, but also the bending line 42 is inclined with respect to said stud longitudinal axis and also to said prong longitudinal axis. Therefore, when the prongs are bent to their operative position, they not only extend through several layers of the glass fibers of the batt, but also the plane of the prongs is inclined to the vertical. Their upper longitudinal edge only is provided with a plurality of inwardly-directed barbs 44, and they have a tapered tip 46. It has been found that with this arrangement, anchoring of the glass fiber batts B is very efficient and that prong insertion into the batt is very easy. The batts have simply to be pushed against the prongs. Upon release, the batt tends to slide down along the transversely-inclined prong 36 or 38 until it abuts against a side leg 20 of stud 12 or against a wall panel W fixed to the side leg or to beam 16 or 16'. Each prong 36, 38 is preferably provided with a longitudinal reinforcing rib 48.

As shown in figures 1 and 3, prongs 54 are struck out from each outturned flange 28 of transverse beam 16 at spaced intervals along the beam. It defines an aperture 52, which corresponds to the shape of a single prong 54. Prong 54 is substantially rectangular, with a short bevelled tip 56 and a barb 58 on its edge opposite to the registering side wall 26 of beam 16. The inner edge of prong 54 is integral with flange 28, and constitutes a bending line 55 about which the prong can be bent from a first position, wherein it is coplanar with flange 28, to a second position extending outwardly from flange 28 and inclined by about 30 degrees from an axis orthogonal to flange 28 on the outer side of the plane passing through the registering side wall 26 and parallel to base wall 24, and also adapted to impale batts B. As shown in figure 2, the two prongs 54 are upwardly inclined, whereby the sagging batts will tend to slide down along the prong and abut flange 28. In the transverse beams (figure 3), which have only one longitudinal outturned flange 28, there is only a single series of upwardly inclined prongs 54. The longitudinal axis of prong 54 is parallel to the longitudinal

axis of flange 28 because flange 28 is narrow, but its bending line 55 is upwardly inclined towards tip 56 relative to the longitudinal axis of prong 54.

In figures 8 and 9, an anchoring plate is shown with a modified arrangement of the prongs. These prongs 76, 78 are struck out from a quadrangular plate 80 to form a corresponding aperture 82, 82', respectively.

Their bending line 86 is normal to their longitudinal axis. Each prong has barbs 88 along only one longitudinal edge. The barbs 88 of the pair of prongs 76 face one another and prongs 76 diverge from each other from their bending line 86. The same applies to the pair of prongs 78.

Once prongs 76, 78 are bent to their operative position (fig. 8), plate 80 is applied against two batts B across their butt joint C, with the prongs inserted within the batts. The plate 80 can be applied in any orientation; in all cases, those prongs, with their barbs 88 uppermost, transversely, downwardly diverge, so as to exert a slight tension in the batt under the weight of the upper batt. Thus, the butt joint C is sealed and also the two batts are maintained co-planar.

Plate 80 may have holes 90 at the four corners, the two topmost holes of which are used to fix by screws the plate to the side wall 30 of ceiling joist 14, in the manner shown in figure 11, so as to retain the batts within said joist. For the latter use, a plate 80a (fig. 10) can be used, which has only one pair of prongs 78a corresponding to prongs 78 of figure 8, and which is fixed to side wall 30 of ceiling joist 14 (fig. 11) as by metal screws 92 extending through holes 90. Obviously, anchor plates 80 or 80a can be fixed to a wood ceiling joist instead of to the sheet metal joist 14. Prongs 78a have a longitudinal reinforcing rib 94. Prongs 76 and 78 could be similarly reinforced.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A structural, sheet metal elongated member adapted to be used as a component of a wall frame defining a cavity for receiving glass-fibre insulating batts, said member of U-shape cross-section defining a web and two legs interconnected by said web, said member used as an upright stud and said stud having longitudinally-spaced struck-out portions made in said web, each struck-out portion defining an elongated prong having a free tip and free longitudinal edges and an inner end integrally-connected to said web at a bending line, said prong bendable between an inoperative position co-planar with said web and an operative position in which the plane of said prong is at least substantially normal to said web, wherein the width of said legs is at least equal to one fourth that of said web, and wherein, in the operative position of said prong, the plane thereof is oblique relative to the longitudinal axis of said member, and, in its plane, said prong is inclined towards one of said legs, at least one of said longitudinal edges of said prong being inclined relative to the plane of said web.

2. A structural member as in claim 1, wherein the longitudinal axis of said prong is oblique relative to the longitudinal axis of said member when said prong is in inoperative position.

3. A structural member as defined in claim 2, wherein said bending line is oblique relative to the longitudinal axis of said member.

4. A structural member as defined in claims 1,2 or 3, wherein only one of said longitudinal edges of each prong is provided with barbs spaced from each other and oriented towards said bending line, said one longitudinal edge being the one oriented toward said web.

5. A structural member as defined in either of claims 1 to 4, wherein each prong includes a longitudinal reinforcing rib.

6. A structural member as defined in either one of claims 1 to 5,
wherein said prongs are arranged in pairs and extend in opposite directions from said web when in operative position, to thereby impale said insulating batts on opposite sides of said stud.

7. A wall structure comprising, in combination, at least three upright, parallel, substantially spaced studs, a horizontal ceiling joist extending transversely and over the top ends of said studs and interconnecting the same, said studs made from sheet metal, each stud of U-shape cross-section defining a web and two legs interconnected by said web, the webs of the studs disposed in parallel planes substantially normal to the general plane of the wall structure, wall panels fixed to the legs of said studs on at least one side of said studs, glass-fiber insulation batts made from easily separable layers filling the space between said studs, said insulating batts extending on opposite faces of the web of at least one of said studs.

Wherein said studs are made from the structural member specified in any of claims 1 to 6, wherein said prongs of said members impale said insulating batts through at least some of said separable layers, and a portion of said insulating batts overlying said prongs has a tendancy to be displaced by said transversely-inclined prongs toward said wall panels.

8. A wall structure as defined in claim 7,
further including a sheet metal, horizontal beam extending transversely said studs and of substantially cross-sectionally U-shape to define a base wall and side walls to form a channel and also at least one out-turned flange about the longitudinal edge of one side wall, said flange abutting against and fixedly secured to a leg of said studs, said flange provided with longitudinally spaced elongated prongs, each prong having a free

tip, free longitudinal edges and integrally connected to said flange by a bending line, said prong bendable about said bending line between an inoperative position coplanar to said flange and an operative position transverse to said flange and oriented away from said base wall, the longitudinal axis of said prong being generally parallel to the longitudinal axis of said flange when said prong is in inoperative position, said bending line inclined relative to said prong longitudinal axis in a direction towards said tip, said prong, when in operative position, impaling and anchoring a registering insulating batt and upwardly directed within said insulating batt, the upper one of its longitudinal edges provided with a barb directed towards said bending line.

9. A wall structure as defined in claims 7 or 8, further including spaced upright, parallel studs, a horizontal ceiling joist extending transversely across the top ends of said studs and interconnecting the same, and glass fibre insulation batts filling the space between the studs; wherein anchor plates are further provided to secure the top of said insulating batts to said ceiling joist, each anchor plate made from sheet metal and having a pair of elongated prongs, each having a free tip, free longitudinal edges and integrally connected to said plate at a bending line, the bending lines of the two prongs converging toward each other, each prong having barbs directed towards said bending line, said barbs protruding only from the longitudinal edges of the two prongs which face each other, said prongs bendable about their respective bending lines between an inoperative ~~opposition~~ position coplanar to said anchor plate and an operative position transverse to said anchor plate to be inserted into said insulating batts, said anchor plates adapted to be secured to said ceiling joist with said prongs below the latter.

10. A structural sheet metal elongated member adapted to be used as a component of a wall frame defining a cavity for receiving glass-fibre insulating batts of the type

having easily separable layers, said member being substantially as herein described with reference to Figures 1 and 2 or Figure 3 or Figures 4 to 9 or Figure 11 of the accompanying drawings.

11. A wall structure substantially as herein described with reference to Figures 1, 2 and 4 to 9 or Figures 1, 2 and 4 to 9 as modified by Figure 3 or by Figure 10 of the accompanying drawings.

12. An anchor plate for retaining a pair of flexible fibre insulating batts forming a butt joint, said anchor plate being substantially as herein described with reference to Figures 1, 2, 8 and 9 or Figure 10 of the accompanying drawings.

DATED this 21st day of September, 1990

CAROLD PICHETTE

Attorney: WILLIAM S. LLOYD

Fellow Institute of Patent Attorneys of Australia

of SHELSTON WATERS

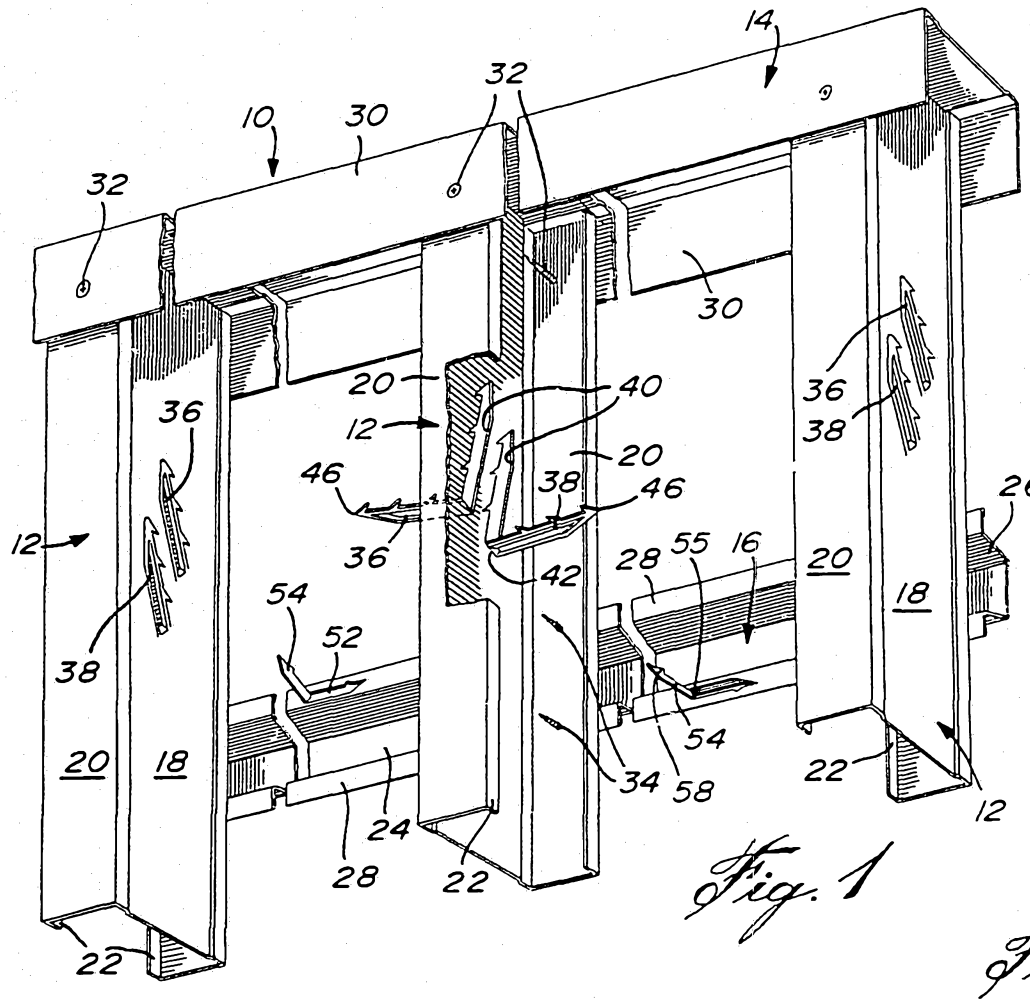

Fig. 1

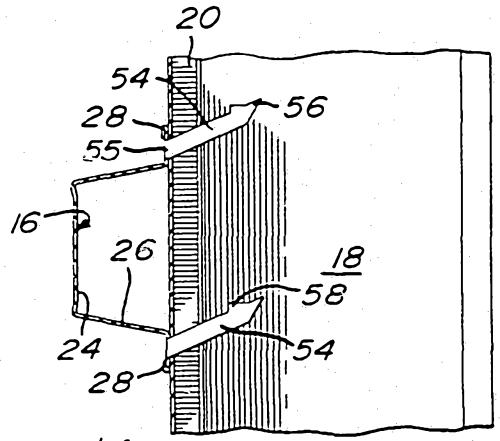

Fig. 2

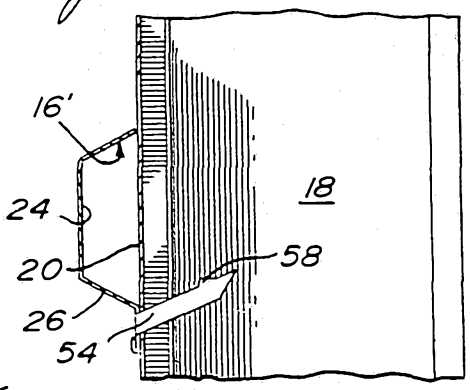

Fig. 3

17 488/88

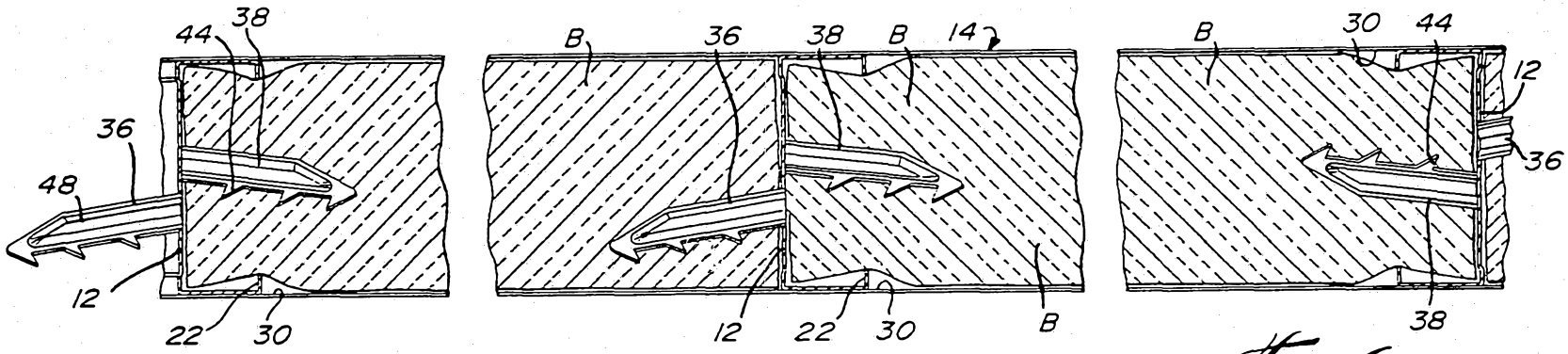

Fig. 6

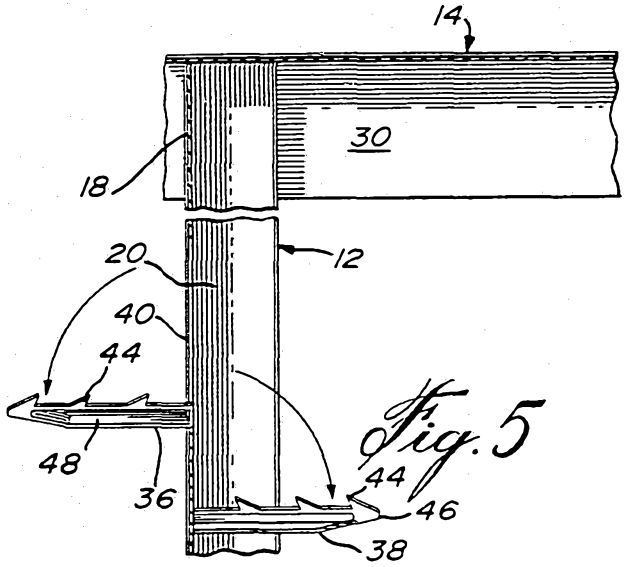

Fig. 5

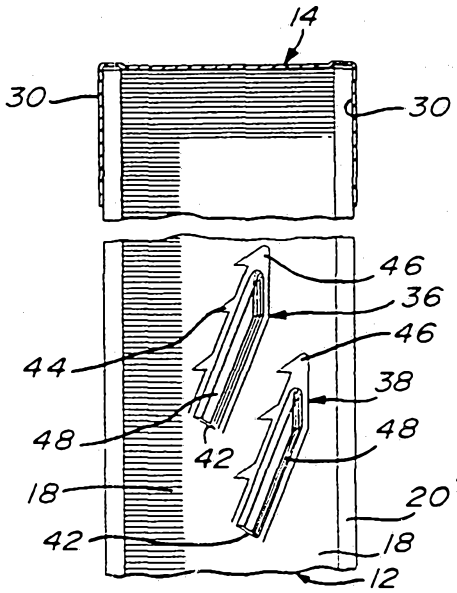

Fig. 4

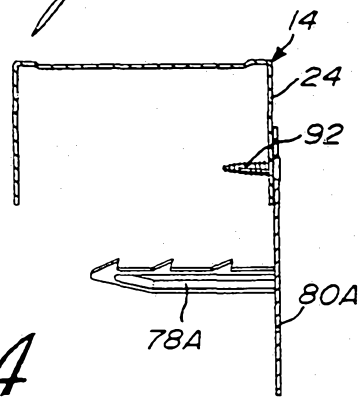

Fig. 11

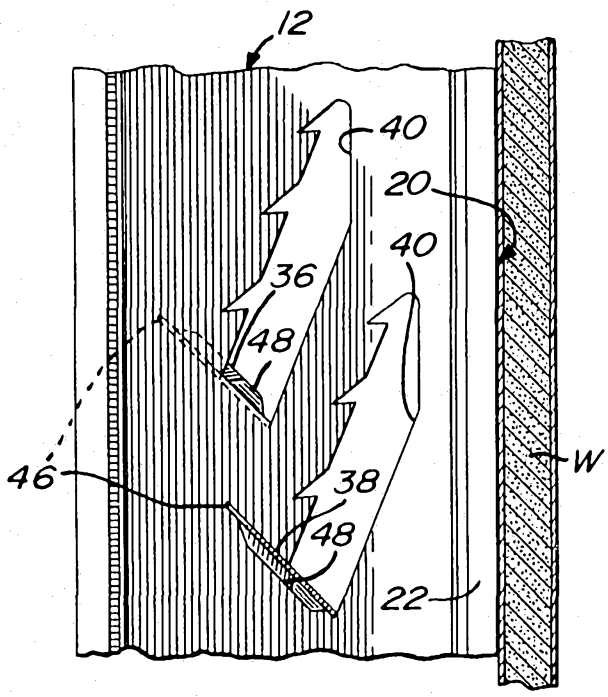

Fig. 7

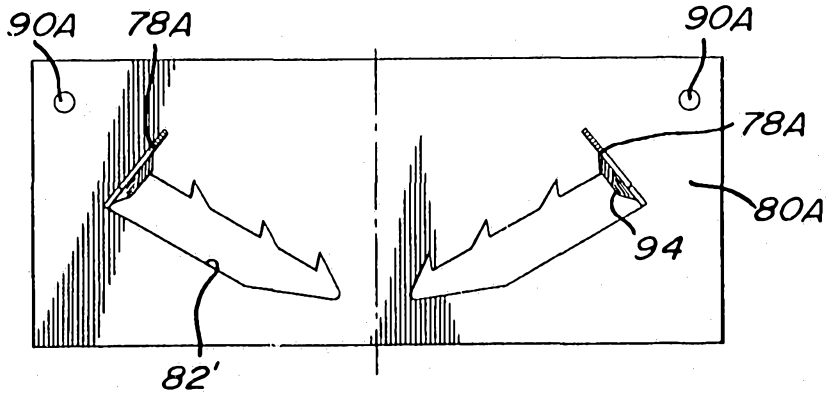

Fig. 10

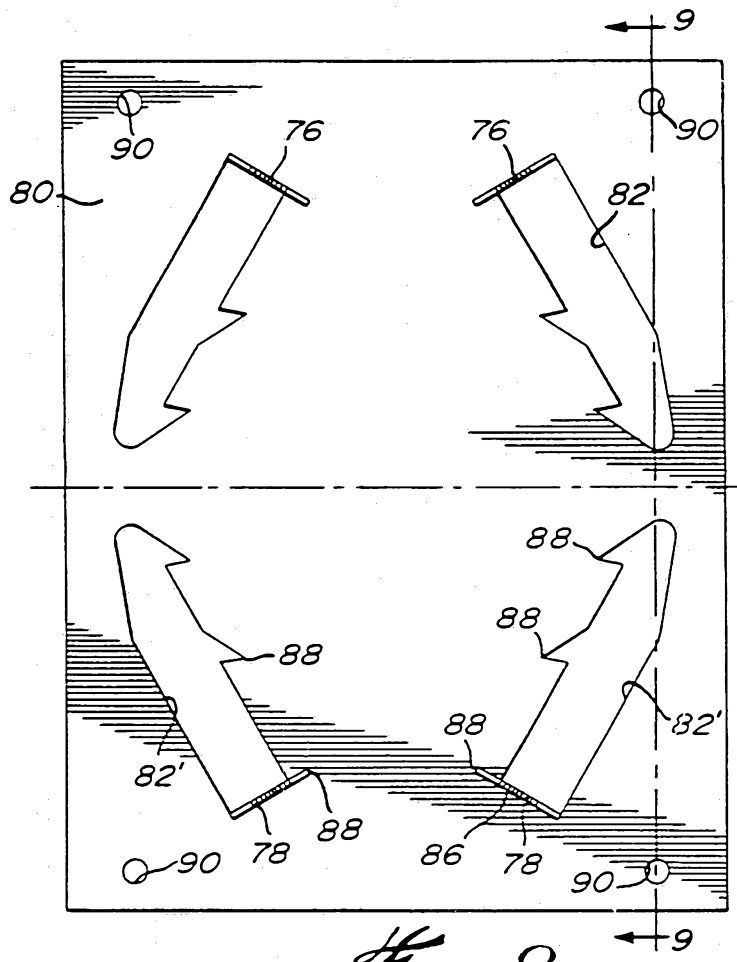

Fig. 8

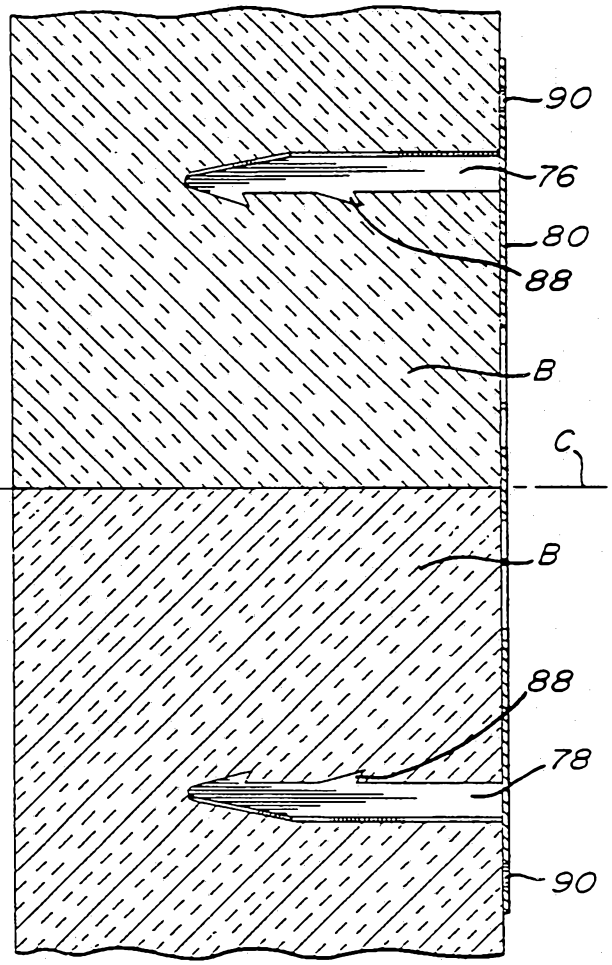

Fig. 9