Nov. 20, 1945. B. E. BALDUF 2,389,573

BUILDING STRUCTURE

Filed Oct. 27, 1941 5 Sheets-Sheet 1

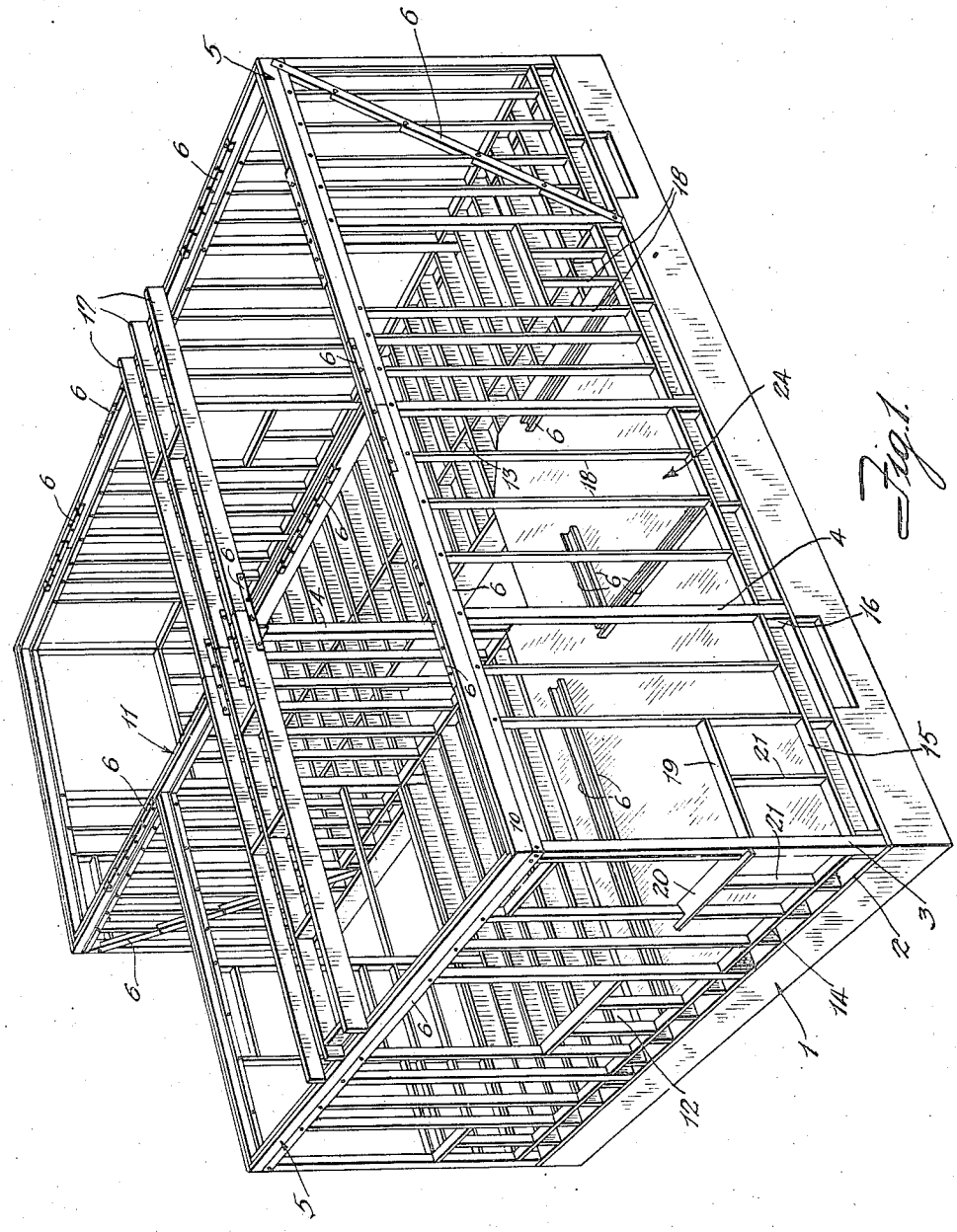


Fig. 1.

Inventor:
Bruno E. Balduf.
By Thiess, Olsen & Mecklenburger.
Attys.

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/1

Nov. 20, 1945. B. E. BALDUF 2,389,573

BUILDING STRUCTURE

Filed Oct. 27, 1941 5 Sheets-Sheet 2

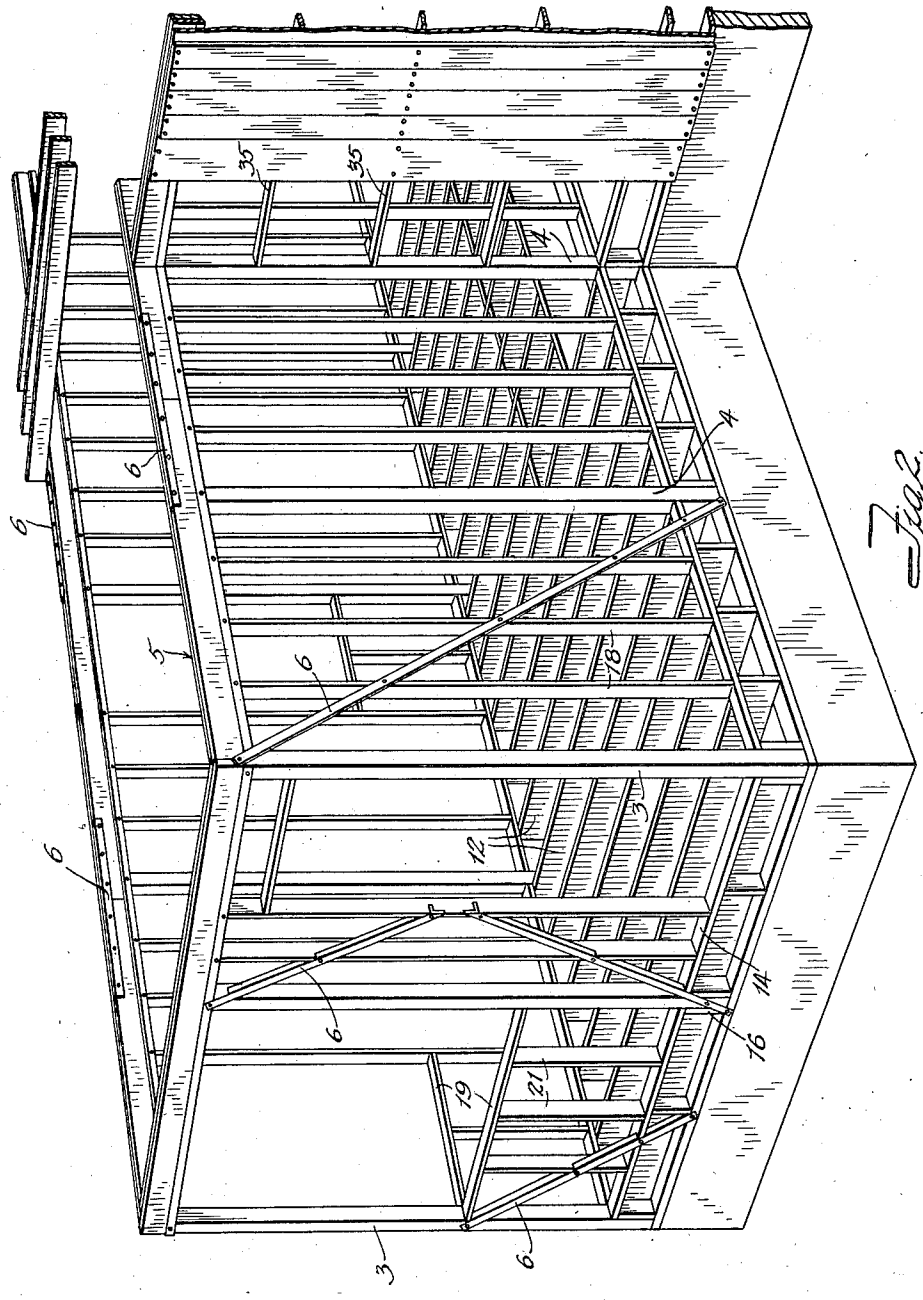


Fig. 2.

Inventor:
Bruno E. Balduf.
By. Thiess, Olsen & Mecklenburger.
Attys.

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/2

Nov. 20, 1945. B. E. BALDUF 2,389,573

BUILDING STRUCTURE

Filed Oct. 27, 1941 5 Sheets-Sheet 3

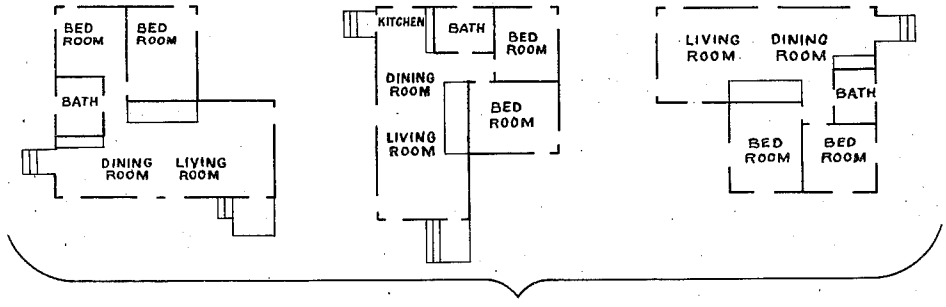


Fig. 3.

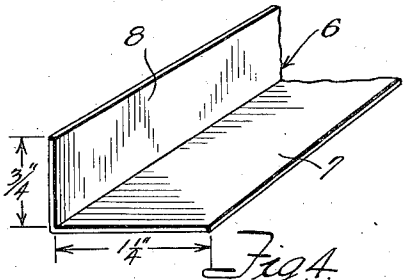


Fig. 4.

Fig. 5.

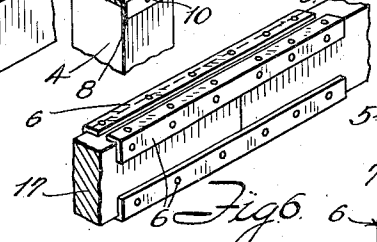


Fig. 6.

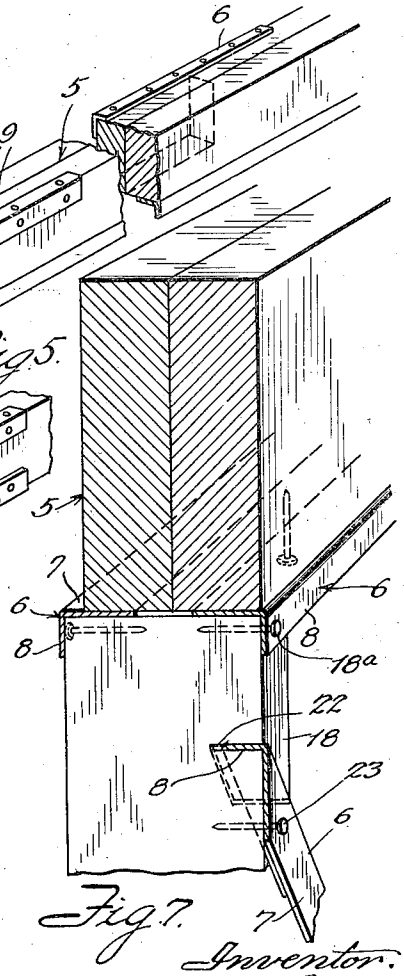


Fig. 7.

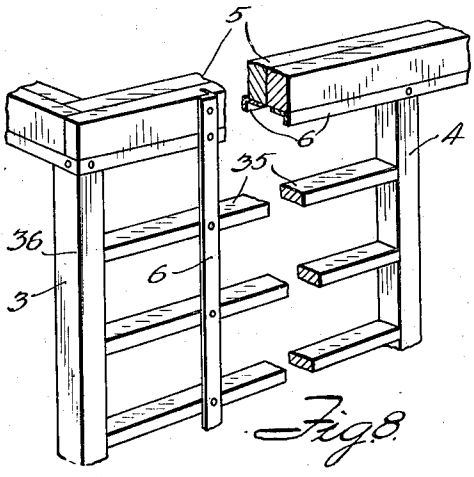


Fig. 8.

Inventor.
Bruno E. Balduf.
By: Thiess, Olson & Mecklenburger
Attys.

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/3

Nov. 20, 1945. B. E. BALDUF 2,389,573

BUILDING STRUCTURE

Filed Oct. 27, 1941 5 Sheets-Sheet 4

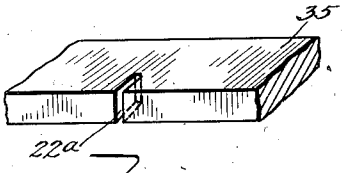


Fig. 9.

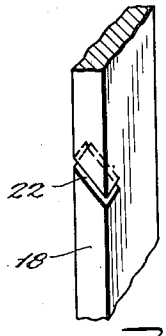


Fig. 10

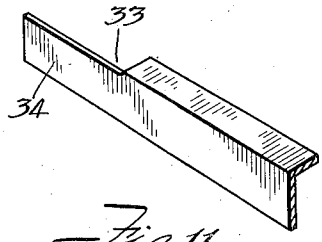


Fig. 11.

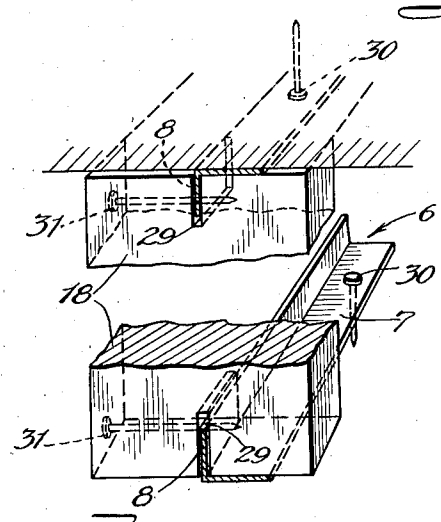


Fig. 12.

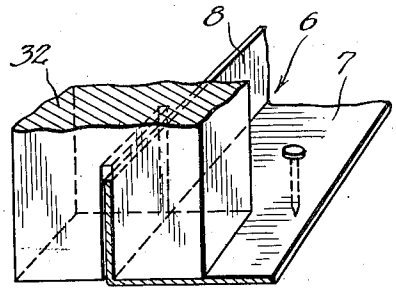


Fig. 13.

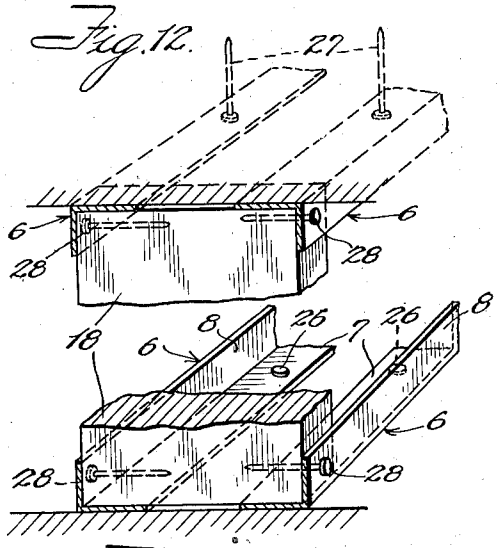


Fig. 14.

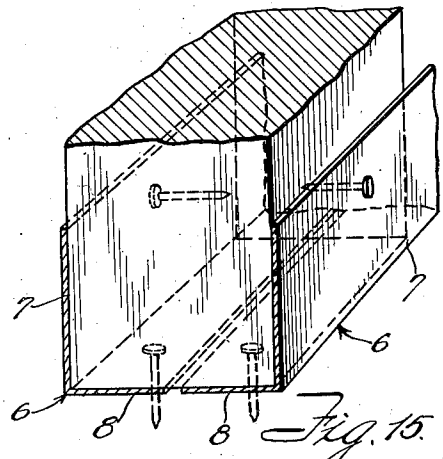


Fig. 15.

Inventor:
Bruno E. Balduf.
By: Theiss, Olsen & Mecklenburg.
Attys.

Nov. 20, 1945. B. E. BALDUF 2,389,573

BUILDING STRUCTURE

Filed Oct. 27, 1941 5 Sheets-Sheet 5

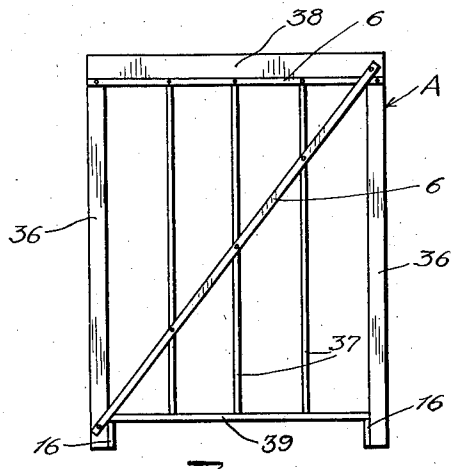


Fig. 16.

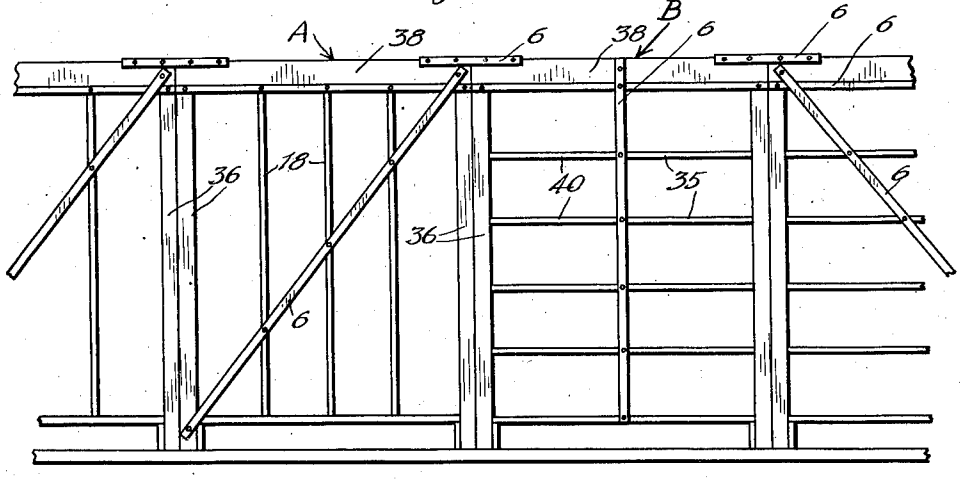


Fig. 17.

Inventor:
Bruno E. Balduf.
By: Thiess, Olsen & Mecklenburger.
Attys.

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/5

Patented Nov. 20, 1945 2,389,573

UNITED STATES PATENT OFFICE

2,389,573

BUILDING STRUCTURE

Bruno E. Balduf, Chicago, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Application October 27, 1941, Serial No. 416,641

8 Claims. (Cl. 20—4)

This invention relates to building structures, and more particularly to a building structure including, in various combinations and relationships, a new and novel bracing, reinforcing, and securing element, which element is easily adaptable to effectively function in accordance with the particular requirements of the part or parts of the structure with which it is associated. For convenience throughout this specification, the bracing or reinforcing member will be termed a utility angle.

Various attempts have been made to produce small, low cost houses which will provide a maximum amount of conveniently arranged living space with a minimum cost for construction. Heretofore these efforts have not been particularly successful because of the lack of flexibility in the arrangement of living space and the fact that any change from a single standardized structure involved considerable expense. It has, therefore, been impossible to provide low cost small houses in quantities without a monotonous similarity of design of both the exterior and interior.

It is an object of the present invention to provide means for building small, low cost houses in which, if desired, a single standardized foundation plan and standardized frame or so-called chassis may be used and wherein the chassis is adaptable for various exterior coverings and finishes and different roof plans and different interior arrangements while retaining a standardized, although flexible, method of construction. Various arrangements, in so far as locations and dimensions of doors and windows are concerned, may be obtained without sacrificing standardization, which latter is accomplished by the use of a basic modular system in which the modular dimension bears a predetermined fixed relationship to the dimensions of standard manufactured products. The method for which the present invention is adapted enables the quantity production of low cost houses of an indefinite number of exterior designs and interior arrangements without materially changing the basic frame structure or the foundation design.

It is an important object of the invention to provide a so-called utility angle which may be cut by the workman into suitable lengths and used in various relationships with other elements of the structure for reinforcing or bracing of the frame elements or for the construction of various types of partitions, which partitions may be positioned in any desired manner to produce the interior arrangement desired without interfering with the basic modular standardization and without materially increasing the cost of the building.

Another object is the provision of a so-called utility angle capable of convenient use as a substitute for fishplates and the like for connecting abutting timbers, or the angle may be used for supporting studding of various types and sizes in various ways in accordance with the particular requirements of the frame structure. Also, the utility angles may be used for bracing, trussing, and the like by merely cutting saw kerfs angular or otherwise in the studding or frame members and inserting one flange of the utility angle therein and securing the other flange to the studding or the like.

It is also an object to provide a utility angle which may easily be adapted for use in the manner described and will be of a minimum thickness so that, when a flange thereof is applied against the face of a studding or the like frame member, it will not interfere with or distort any covering which may be applied thereover. The use of a modular layout system adapted to the dimensions of standardized material, and the use of a utility angle of the character described enables interchangeability of the various elements and of their relationships to provide great flexibility to meet various requirements without adding to the cost of the building structure.

A further object of the invention is to provide a utility angle strip adaptable for various uses and in various combinations, which strip may be manufactured in any predetermined lengths in quantity production. The utility angle strips are preferably made of thin malleable metal and may easily be cut into desired lengths by the workman using ordinary tin snips and may readily be pierced by ordinary building nails driven in the usual manner.

Further objects will be apparent from the specification and the appended claims.

In the drawings:

Fig. 1 is a perspective view of a standardized frame on a standardized foundation with a portion of the flooring laid and utility angles positioned to receive partition studding there between.

Fig. 2 is a fragmentary perspective view of a portion of a frame similar to that shown in Fig. 1 and particularly illustrates the use of the utility angle in various positions for bracing and reinforcing the frame structure.

Fig. 3 illustrates one of the basic floor plans variously positioned with respect to the front and showing different window and door arrangements in the same floor plan whereby adjacent houses

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/6

may have different exterior appearances and different roof arrangements.

Fig. 4 is a fragmentary perspective view of a strip of the utility angle used for bracing and other reinforcement.

Fig. 5 is a perspective view of a portion of the outside plate of the frame and illustrates one use of the utility angle for reinforcement of the joints of the plate.

Fig. 6 is a perspective view of the ends of two abutting joists and illustrates the use of the utility angles as substitutes for fishplates and to provide tension members adapted to prevent separation of the ends of the joists.

Fig. 7 is a perspective view partially in section through one of the plates of the frame and illustrates the use of the utility angles for supporting the upper ends of the studding and for bracing the studding.

Fig. 8 is a fragmentary perspective view of a portion of the frame and illustrates the method of using the utility angles for bracing and otherwise supporting horizontal studding, runners, or purlins.

Fig. 9 illustrates a portion of one of the horizontal runners provided with a saw kerf to receive the utility angle brace.

Fig. 10 illustrates a vertical studding with an angular saw kerf therein to receive one of the utility angles.

Fig. 11 is a fragmentary perspective view of the end of one of the utility braces cut away to provide clearance for a corner post or other element to which the utility angle may be secured.

Fig. 12 is a perspective view illustrating the method of using a single utility angle at each end of the partition studding for supporting the usual partition.

Fig. 13 is a perspective view somewhat similar to that of Fig. 12, but illustrates the use of a single utility angle for supporting very narrow partitions.

Fig. 14 is a perspective view also similar to Fig. 12, but illustrates the manner of using a plurality of utility angles to support either wide or narrow partition studding.

Fig. 15 is a perspective view somewhat similar to Fig. 14, but illustrates another method of using the utility angles for supporting the usual 2'' x 4'' studding flatwise between the angles in order to provide a thin partition.

Fig. 16 is a side elevation of a stud section wall unit or panel.

Fig. 17 is a side elevation of an assembled wall frame made up of stud panels similar to that shown in Fig. 16.

The embodiment illustrated comprises a foundation 1 which may be of any suitable inexpensive standardized type conforming to standardized floor plans, such, for instance, as shown in Fig. 3. A standardized frame or so-called chassis is supported on this foundation and is constructed in accordance with the standardized modular system previously referred to.

The frame comprises a sill 2 preferably made of 2'' x 6'' timber and having vertical corner posts 3 and intermediate posts 4 supported thereon and toenailed thereto in the usual manner, or the posts may be fastened to the plate by means of utility angles applied in a manner similar to one of the methods shown in Figs. 12 to 15. Plates 5 are mounted on the upper ends of the posts 3 and 4. These plates are preferably 2'' x 6'' timbers secured together in side by side relationship, as shown in Figs. 5 and 7, and are preferably in standard lengths to correspond with the modular system used. On those portions of the structure where the length of the plate exceeds the standard length, they are preferably secured together in overlapping joint relationship to provide a linear dimension which is a suitable multiple of the basic modular dimension.

The utility angle may be used to provide tension members for securing the butt joints together and to obviate the necessity for the use of fishplates or the like. The method of using the utility angle in this relationship is illustrated in Figs. 5 and 6.

Fig. 4 is a full size fragmentary perspective view of one of the angle strips, which strip is indicated as a whole by the reference character 6, and suitable dimensions are shown on this view, although it will be apparent that the dimensions may be varied somewhat in accordance with requirements. However, it is intended that this strip should be standardized in linear dimensions, thickness, and material characteristics to provide an inexpensive utility angle which may easily be cut with ordinary hand tin shears and may be applied by the workman to the structure in various relationships in a minimum of time and without requiring any high degree of skill.

The utility angles 6 may be made in any suitable lengths and are preferably furnished by the manufacturer in bundles of standard maximum lengths and in short lengths for reinforcing, and may be cut by the workman to adapt desired lengths for the requirements of the particular job. The angle strip is made of very thin malleable metal such, for instance, as sheet iron or the like, and is preferably approximately .032'' thick. 22 gauge has been found to be satisfactory. The strip is provided with a wide flange 7 and a narrow flange 8 at a right angle thereto. For ordinary construction, where 2'' x 4'' or 1'' 4'' studs are used, the wide flange is preferably about 1¼'' wide and the narrow flange may be ¾'' wide. These dimensions, as well as the thickness, may, of course, vary somewhat. However, it is desirable that the wide flange dimension be somewhat less than one-half of the width of a 2'' x 4'' studding and the narrow flange dimension be somewhat less than one-half the thickness of a 2'' x 4'' studding. This enables the convenient application of the utility angle in various relationships, such, for instance, as illustrated in the drawings.

One of the assembled plates is illustrated in Fig. 5, and the utility angles 6 may be secured over the joints, as shown, by means of nails 9. Elongated utility angles 6 may extend the entire length of the plates and be secured to the bottom thereof with one of the flanges, preferably the short flange, depending therefrom, as shown in detail in Fig. 7. These utility angles are nailed to the under side of the plate and so positioned that the depending flanges 8 are spaced substantially the width of the 4'' x 4'' posts 3 and 4 and of any 2'' x 4'' or 4'' x 4'' studding which may be used. The upper ends of the corner posts 3 and intermediate posts 4 may be secured between the depending flanges 8 by means of nails 10 (Fig. 5). The utility angles secured to the plate 5, as shown in Figs. 5 and 7, also provide a channel to receive the upper ends of studding in a manner to be described later.

Intermediate plates 11 (Fig. 1) may be constructed in the same manner as the plates 5

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/7

and arranged to receive partition studding in the same manner. Joists 12 are supported on the sills 2 in the usual well known manner and are provided with solid bridging or strutting 13 therebetween to secure extreme rigidity and to prevent excessive moving of individual joists, thereby decreasing the hazard of plaster cracks in the associated walls. Sole plates or runners 14 are cut to the required length and inserted between the posts, and rest on the ends of the joists 12 to provide studding supports and baseboard nailing strips as required in the usual construction. Sole plates 15 on the sides parallel with the joists may be supported on suitable blocks 16, whereby the sole plate is retained at the required height. These sole plates are preferably 2" x 4" timbers. The blocks 16 are set up with the grain vertical to prevent the sole plates moving with the shrinkage of the joists and thereby causing plaster cracks.

Ceiling joists 17 may be supported on the plates, and any suitable roof or even a second story may be applied to the structure, as desired. For purposes of illustration, only three of the ceiling joists 17 have been illustrated. They are joined by utility angles to prevent spreading of the building.

The corner posts 3 and intermediate posts 4 are uniformly spaced in accordance with the modular dimension used, and studs 18 are vertically positioned on the sole plates 14 and 15 with the upper ends thereof inserted between the depending flanges of the utility angles 6, which latter, as previously stated are secured to the plates. A single utility angle may be used for this purpose if desired. The upper ends of the studding are secured between the flanges 8 by means of nails 18a, as shown in Fig. 7. Headers 19 or window frames 20 may be provided for window openings and short studding 21 may be used as required.

It will be apparent that door and window openings may be positioned as desired, and considerable variation in design may be obtained without changing the general standardization of the structure. As previously stated, the utility angle strips may be used for bracing, trussing, and the like, by merely cutting a series of saw kerfs, angular or otherwise, in the studding or frame members, as required, and inserting one flange of the utility angle therein and securing the other flanges to the studding or like by means of the usual building nails.

Heretofore it has been necessary to angularly notch the studding to the thickness of a 1" x 4" wooden strip or the like, which latter was set into these notches and nailed to the studding in order to provide an angular brace or truss member. Another method has been to cut 2" x 4" strips with angular ends which were inserted between the studding and nailed thereto to provide bracing. These methods are expensive and require considerable time and effort and skill on the part of the workman and also require the use of a considerable amount of lumber. They are also unsatisfactory due to shrinkage of the lumber.

In the present invention the utility angle functions to meet all requirements by merely cutting a series of single saw kerfs in the material of the frame and inserting the flange of the angle therein. The angle strips may be cut to any desired length and may be positioned in any required location and at any angle. The method of mounting a utility angle is illustrated in detail in Fig. 7, in which view an angular saw kerf 22 is shown in one of the studs 18, which studs may be either 2" x 4" or 1" x 4", and the narrow flange 8 of the utility angle 6 is inserted in the saw kerf and the wide flange 7 is nailed to each stud by means of ordinary building nails 23 as shown. If desired, an angular saw kerf may also be cut in the plate and in the sill or in any one of the posts, so that the angle strip may extend therein and be secured throughout its entire length. As previously stated, the material from which the utility angle is made is very thin, preferably about .032" thick, although in the drawings it is necessarily shown somewhat thicker for purposes of illustration. This extremely thin material lies snugly against the frame members, and therefore any type of wall covering may be applied thereto and nailed to the frame members without distorting the covering. The material of the utility angle is sufficiently malleable so that it may easily be pierced with ordinary building nails driven in the usual manner.

Fig. 1 shows the general construction of the frame or chassis and illustrates one of the utility angles 6 used as a brace in connection with vertical partition studding 25 in the same manner as in Fig. 7. Fig. 1 also illustrates the use of the utility angle in connection with the plates for supporting the upper ends of the studding. Also a partially laid floor 24 is shown with the ends of the joists tied together with utility angles and may be of any standardized type. A plurality of the utility angles 6 are illustrated secured to the floor in a position to receive the lower ends of partition studding therebetween. The method of building these partitions is illustrated in Fig. 14. When 2" x 4" or 1" x 4" studs 18 are used, the wide flanges 7 of the utility angles are secured to the floor by means of nails 26, and in a similar manner the wide flanges 7 of an opposed pair of utility angles 6 are secured to the ceiling by means of nails 27. The utility angles are so spaced that the ends of the studding may be inserted between the narrow flanges and the studding secured in position by means of the nails 28. This provides a very rigid and inexpensive partition, and any desired width of partition studding may be used, although ordinary 2 x 4's or 1 x 4's are preferable. This construction also prevents cracking of ceiling plaster caused by shrinkage in the wooden sole and top plates ordinarily used in partitions. The shrinkage transversely of the grain is considerable, depending somewhat on the thickness and width of the members.

If desired, a single utility strip may be used at each end of the partition studding, as illustrated in Fig. 12. In this embodiment each end of the studding 18 is provided with a saw kerf 29 and the wide flanges of the single utility strips are secured to the floor and ceiling, respectively, by means of nails 30. The bottom end of the studding may then be placed on the lower strip with the narrow flange 8 in the saw kerf, as shown, and the studding then straightened up so that the corresponding flange 8 of the ceiling strip enters the upper saw kerf. The flanges and co-operating saw kerfs retain the studding against lateral movement and, if desired, nails 31 may be driven through the flanges as illustrated to retain the studding in vertical position.

It is sometimes desirable to make very thin partitions, and in such cases studding 32 of very narrow width, such as illustrated in Fig. 13,

Published by AsbestosClaims.Law
asbestosclaims.law/library/21983/8

may be used. These may be mounted in the same manner as the studding described in connection with Fig. 12, and it will be apparent that, even though the wide flange 7 of the utility angle strip extends outwardly beyond the edge of the studding, it is of sufficiently thin material that it does not interfere with any floor covering which may be laid thereon.

It is sometimes desirable to build partitions with 2'' x 4'' studding set edgewise as illustrated in Fig. 15. This also provides a very thin partition, and for this purpose the narrow flanges 8 of the utility strips are slightly less than one-half the width of a 2 x 4 so that they will not overlap when used in the manner illustrated. In this construction, the narrow flanges 8 are secured to the floor by means of nails in the manner previously described, with the wide flanges upstanding so that the studding may be positioned therebetween and the flanges may be nailed to the studding as shown.

Fig. 2 illustrates a portion of the frame in which the utility strips are used in various relationships. It will be apparent from this view that the frame or chassis may be rigidly braced in any manner desired merely by cutting saw kerfs angularly or otherwise in any of the timbers of the structure and inserting one flange of the strip and nailing the other flange thereto. The saw kerfs may extend across all of the timbers over which the strip extends or, when desired, one of the flanges may be cut away as shown at 33 (Fig. 11) so as to provide an overhanging portion 34 which may be nailed to any part of the structure. The extreme thinness and malleability of the strip enables it to be easily cut to conform to any requirements.

Fig. 10 illustrates an angular saw kerf in a vertical frame member and Fig. 9 illustrates a vertical cut in a horizontal frame member so that a flange of the strip may be inserted therein. In some cases it is desirable to use horizontal purlins instead of vertical studding. This is illustrated in Fig. 8. This construction is for the purpose of allowing the ready application of certain types of exterior wall coverings, such, for instance, as vertically positioned siding (Fig. 2) or strip shingles or the like. In this construction, horizontal purlins 35 are mounted with their ends secured to the posts 3 and 4. The bracing or trussing may be accomplished by cutting vertical saw kerfs in the horizontal timbers in the manner shown in Fig. 9 and securing one of the utility angles thereto with its flange extending into the saw kerfs.

It is sometimes desirable to construct the side walls with easily mountable and demountable sections or so-called frame panels, such, for instance, as the panels A and B illustrated in Figs. 16 and 17. The panels may each consist of a wall section corresponding in dimensions to multiples of the modular building unit, each section being of the required height and of a width corresponding to the spacing of the posts 4. A single panel unit such as illustrated in Fig. 16 may comprise side studs 36 and intermediate studs 37, the latter being supported between a top plate 38 and a sole plate 39, all of these elements being secured together by nailing in the usual manner. The plate 38 may be provided with utility angles 6 applied to the underside thereof in the same manner as illustrated in Fig. 5 to receive the upper ends of the studs. The sole plate 39 is spaced from the lower end of the side studs 36 sufficiently to enable the ends of the floor joists to extend thereunder, and blocks such as the blocks 16 previously described are secured to the sides of the studding 36 in a position to assist in supporting the sole plate 39.

Aligned saw kerfs may be cut in the timbers, and an angularly positioned utility angle 6 may be secured to the panel in the manner illustrated or in any suitable position to provide the required rigidity of the panel. The panel A is shown with vertical studs and panel B may be constructed in the same manner except that spaced horizontal purlins 40 may be used so that vertical siding or strip shingles or the like may be secured thereto in the manner previously described. The panel B may be provided with a vertical utility angle 6 which may be applied in the same manner as previously described or in any other relationship to secure the timbers together and provide the desired rigidity of the panel. These panels are all preferably of uniform size and, when assembled on a foundation wall plate as illustrated, the two adjacent side studding 36 may be secured together to thereby form the equivalent of one of the posts 4. Utility angles 6 may be secured to the plates 38 to tie the plates together as shown in Fig. 17. By means of this construction, the side wall panels may be made in quantity production and the desired number may easily and quickly be assembled into a complete wall structure.

It is intended, of course, that the invention should not be limited to the specific embodiment or embodiments disclosed or to the exact details of construction shown as obvious modifications within the scope of the invention are contemplated, which modifications will occur to persons skilled in the art.

I claim:

1. In combination with a plurality of studs as set up to form a rigid building frame having plates secured across the ends of said studs, said studs and plates having aligned angular saw kerfs therein, a right-angle utility strip of metal having one flange in said saw kerfs and the other flange against the face of said frame and rigidly secured to said studs and plates, said utility strip being sufficiently thin and malleable to enable ordinary building nails to be easily driven therethrough and sufficiently thin to enable facing material to be secured to said studs over said strip without appreciable distortion of said facing material thereby.

2. In combination with a plurality of studs as set up to form a rigid building frame and having plates across the ends thereof to support said studs, said studs and plates having aligned angular saw kerfs therein, a utility angle strip of metal having one flange in said saw kerfs and the other flange secured to the faces of said studs and plates to form a rigid angular brace, said metal angle strip being malleable to enable ordinary building nails to be easily driven therethrough, and the flanges of said angle strip being sufficiently thin to enable facing material to be applied to said studs over said angle strip without appreciable distortion of said facing material.

3. In combination with a plurality of studs as set up to form a rigid building frame and having plates across the ends thereof to support said studs, said studs and plates having aligned angular saw kerfs therein, an elongated utility angle strip of imperforate malleable metal having a wide flange and a materially narrower flange, said narrow flange being inserted in said saw kerfs with said wide flange nailed snugly against the faces of said studs and plates, said metal angle strip being sufficiently thin and malleable

to enable ordinary building nails to be easily driven therethrough and the flanges of said angle strip being sufficiently thin to enable facing material to be applied to said studs over said angle strip without appreciable distortion of said facing material.

4. In a partition structure, a pair of elongated right-angle utility strips of metal, said strips being secured to a support with their included angles facing each other and their outstanding flanges spaced substantially the width of said studding, partition studding between said flanges thereby exposing said flanges exteriorly of the partition structure, and nails driven through said outstanding flanges to secure said studding thereto, the material of said strips being sufficiently thin and malleable to enable ordinary building nails to be easily driven therethrough and to enable facing material to be secured to said studding over said flanges without appreciable distortion of said facing material.

5. In a building construction for small, low cost houses, the combination of wooden frame members having aligned saw kerfs therein, and ordinary wall facing applied thereto, with a utility building element for bracing, trussing, and securing said wooden frame members comprising an elongated right-angle iron having a flange disposed in said kerfs and having the essential characteristics of light weight, thinness, malleability, and tensile strength so that it may easily be pierced and nailed to the said wooden frame members in any of said bracing, trussing, or securing relationships in the usual manner of driving ordinary building nails, and so that either flange may easily be inserted in saw kerfs cut in said frame members with the usual carpenter's saw or the like, the material of said utility building element being sufficiently thin and malleable to be easily cut with ordinary hand tin shears and to avoid distortion of said ordinary wall facing applied to said frame members over the flange of said utility building element that is interposed between said frame members and said wall facing.

6. The combination with a rigid building wall panel of predetermined modular dimensions and having side posts, a top plate, and a sole plate assembled to form a panel frame, and intermediate vertical studs extending between said top plate and said sole plate, the elements of said panel having angular aligned saw kerfs in the faces thereof, of a utility angle having one flange inserted in said saw kerfs and the other flange secured flat against the surface of said elements and secured thereto to secure rigidly said elements together, said utility strip being sufficiently thin and malleable to enable ordinary building nails to be easily driven therethrough and sufficiently thin to enable facing material to be secured to said studs over said strip without appreciable distortion of said facing material thereby.

7. The combination with a building wall panel of predetermined modular dimensions and having side posts, a top plate and a sole plate assembled to form a panel frame, and similar utility angles each having one flange secured to the undersurface of said top plate with the other flanges depending in spaced relation to receive the posts and studding therebetween with the depending flanges secured to the outer surfaces of said posts and studs.

8. The combination with a building wall panel of predetermined modular dimensions comprising side posts, a top plate and a sole plate assembled to form a panel frame, and intermediate horizontal purlins extending between said posts and secured thereto, the horizontal elements of said panel having aligned saw kerfs in the faces thereof, of a utility angle for imparting rigidity to said panel having one flange inserted in said saw kerfs and the other flange secured flat against the surface of said elements and secured thereto to rigidly secure said elements together, the flanges of said utility angle being sufficiently thin and malleable to enable ordinary building nails to be easily driven therethrough and sufficiently thin to enable facing material to be secured to said panel over said flanges flat against the surface of said elements without appreciable distortion of said facing material.

BRUNO E. BALDUF.