June 30, 1936. S. A. CLEM 2,046,246

WOOD BUILDING CONSTRUCTION

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Fig. 1.

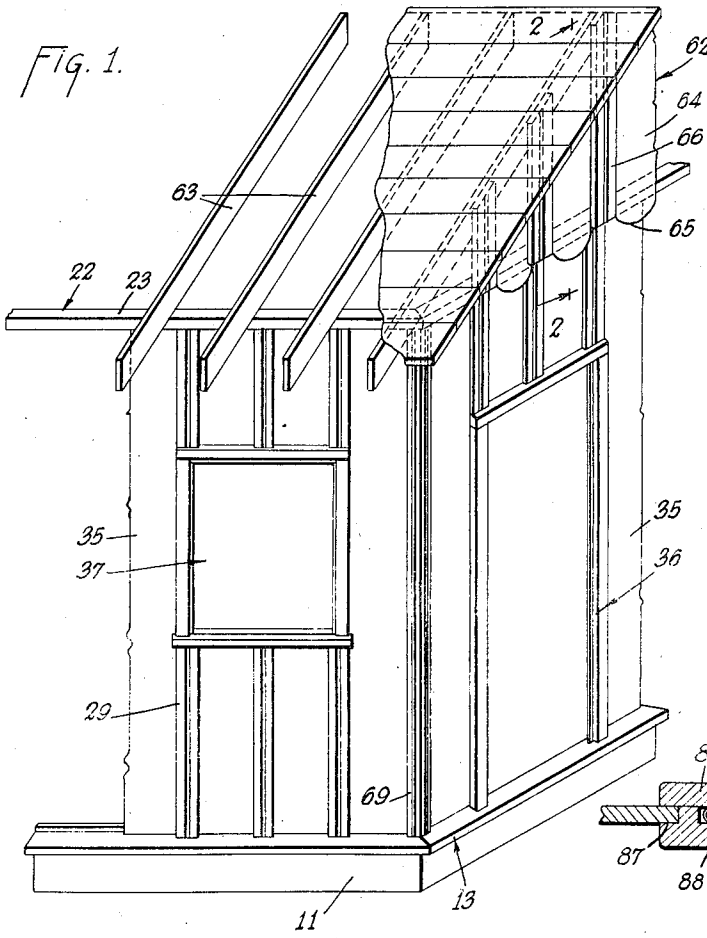


Fig. 2.

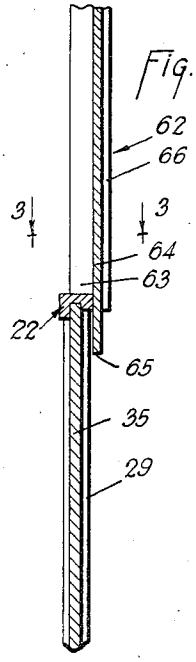


Fig. 13.

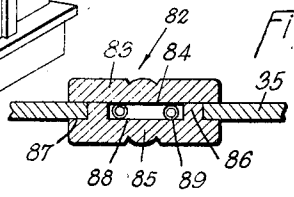


Fig. 3.

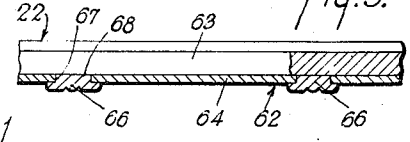


Fig. 10.

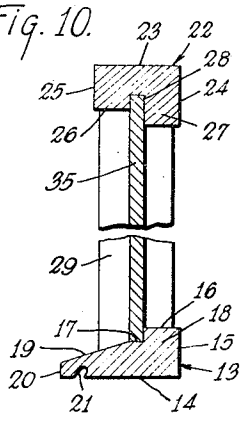
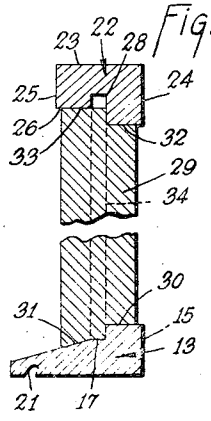


Fig. 11.



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Fig. 4.

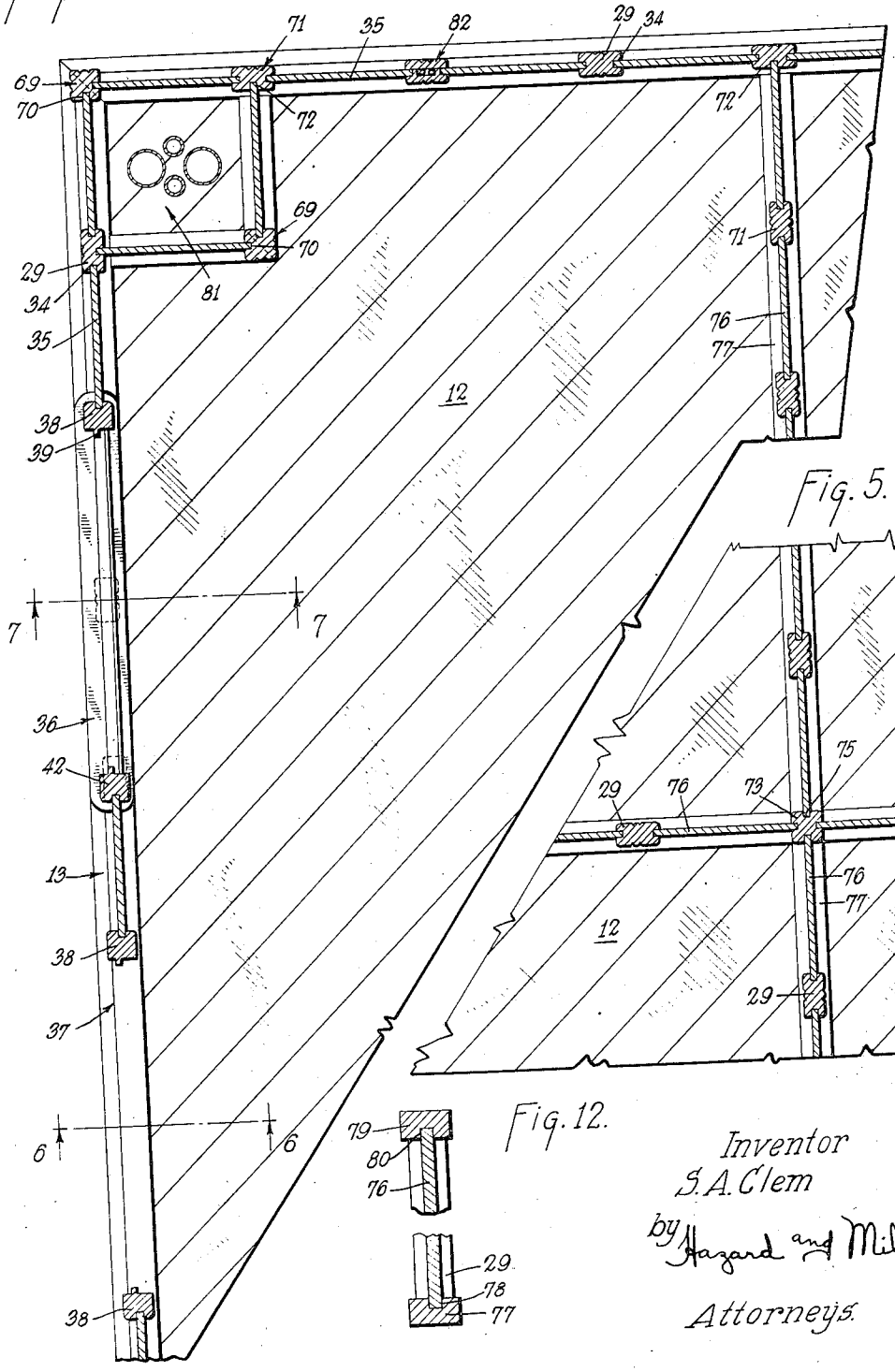


Fig. 5.

Fig. 12.

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Fig. 6.

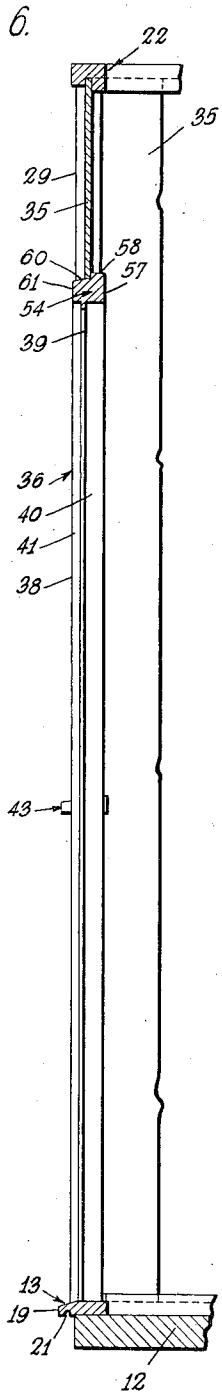


Fig. 7.

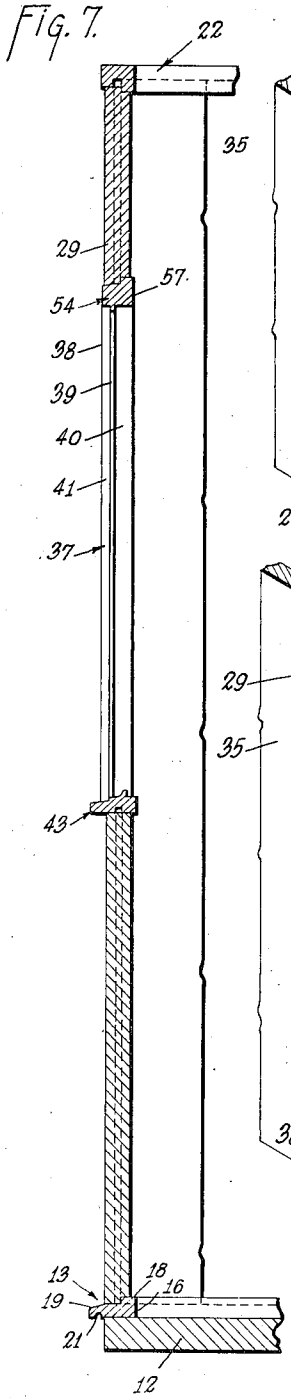
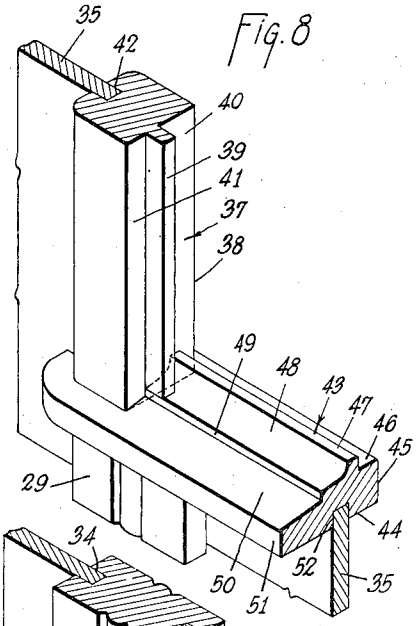


Fig. 8



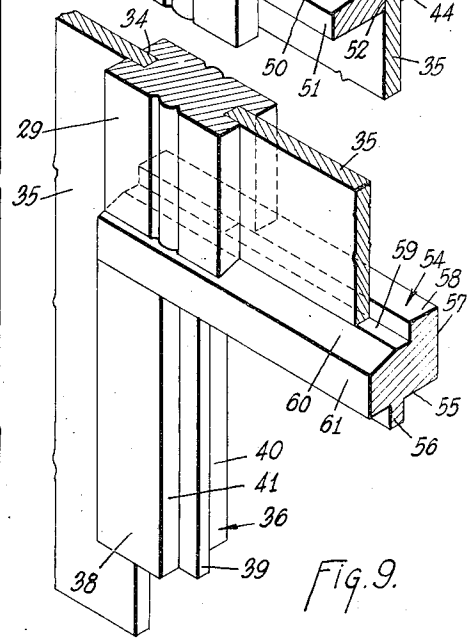


Fig. 9.

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UNITED STATES PATENT OFFICE

2,046,246

WOOD BUILDING CONSTRUCTION

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Application August 16, 1934, Serial No. 740,124

8 Claims. (Cl. 20—2)

My invention relates to a simplified construction of wood building in which the various component elements such as a sill, a top plate or head timber, studs and boards are especially cut, grooved, etc. in order that they may be readily fitted together on the work in constructing the building. The framings for the doors and windows are also of especially run wood designed to work in with the stud and board construction to give a neat finish to the building. The building is preferably thus constructed with the boards fitting in vertical grooves in the studs and thus forming walls and partitions a single board in thickness.

Among various features of my invention a main object is to construct a building of the above type of elements and also for gable buildings, forming these of boards with false studs that are only rabbeted on their inside corners to interfit with the boards of the gable, these being nailed, or otherwise secured, respectively, to a roof rafter and to an end plate of the building at the top of the studs.

Various details of my construction involve an outside sill construction having a rabbet on the top with an upwardly extending shoulder on the inside and a sloping top surface for the outside portion. On this sill the lower ends of the studs rest and also the lower ends of the boards, the studs being notched at the bottom to conform to the shape of the bead.

Another object and feature of my invention as it relates to the top plates is forming these of rectangular timbers and in outside walls having a rabbet on the outside and a downwardly projecting shoulder on the inside, and further the rabbet is provided with a longitudinal vertical groove. The upper ends of the studs are notched to fit the contour of the plate and thus the inside shoulder of the plate prevents any opening or slit forming due to lengthwise shrinkage of the studs.

Another feature of my invention as it relates to the studs is forming these with vertical grooves so that the boards forming the main panels for the walls may fit in these grooves. At the sill these boards rest on their lower edge at the rabbet of the sills and engage in the groove in the under surface of the top plates.

Other features of my invention relate to the construction of the door and window frames. In these the door jambs and the stiles of the windows are substantially the same, having a vertical bead formed on the side adjacent the opening, and a vertical groove on the opposite side. The vertical groove engages the marginal edges of adjacent boards and the bead forms a stop for doors, window sash, or the frames of window or door screens. The lintels for the doors and windows rest respectively on the door jambs and window stiles. These are provided on their under surface with downwardly projecting beads, and on their upper sides, each has a horizontal rabbet with an upwardly projecting shoulder on the inside and a slope on the outside for insuring proper drainage. The studs which extend above the lintels are notched to conform to the upper surface of these and the boards rest at their lower edge on the horizontal rabbet. The sills of the windows are made with a horizontal groove on the bottom to engage the upper edges of the vertical boards. The upper surface has a molding with a shoulder and a sloping surface on the outside at the top.

Other detail features involve forming corner posts with two, three or four vertical grooves on adjacent faces to accommodate the vertical boards of outside walls and inside partitions.

Further detailed features relate to the construction of special wiring studs formed in two vertical parts with a hollow space in the center for running electric wire conduits.

My invention is illustrated in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of a corner of a building incorporating the principles of the present invention.

Fig. 2 is a partial vertical section somewhat enlarged as if taken on the line 2—2 of Fig. 1 through a gable end.

Fig. 3 is a horizontal section on the line 3—3 of Fig. 2 through a portion of the gable.

Fig. 4 is a horizontal section through a portion of a building incorporating the principles of the present invention, and illustrating part of the outside wall and inside partition construction.

Fig. 5 is a horizontal section showing intersecting partition walls constructed in accordance with the principles of the present invention.

Fig. 6 is a vertical section through a door opening as if taken on the line 6—6 of Fig. 4 with the direction of view as indicated by the arrows.

Fig. 7 is a vertical section through a window opening as if taken on the line 7—7 of Fig. 4 with the direction of view as indicated by the arrows.

Fig. 8 is a perspective detail of part of a window opening to illustrate the sill and one of the stiles.

Fig. 9 is a perspective detail of part of a window or door opening to show a lintel and a door jamb or a window stile.

Fig. 10 is a detail vertical section to show an outside sill, a top plate and a board interfitting therewith.

Fig. 11 is a vertical section of an outside wall to show an outside sill, a top plate and a vertical section through a stud.

Fig. 12 is a vertical section through an inside partition on a reduced scale.

Fig. 13 is a horizontal section through a wiring stud.

In constructing my invention I may utilize any suitable foundation such as floor joists 11 on which is built a floor 12 which may be a rough or a finished floor. The outside sills 13 (note Figs. 10 and 11) are flat on their lower sides 14 and each has an inside vertical side 15, a top surface 16, a horizontal rabbet 17 leaving a shoulder 18 on the inside, a sloping top surface 19, a vertical outside edge 20 and drip groove 21 on the bottom.

Each of the outside top plates 22 has a flat surface 23 on the top, vertical edges 24 and 25, a rabbet 26 cut on the outside portion leaving an inside shoulder 27, and a groove 28 cut in the rabbeted under surface 26.

The vertical outside studs 29 are preferably notched at the bottom as indicated at 30 to fit on the shoulder 18 and the rabbet 17 of this sill and have a sloping cut 31 bearing on the sloping top surface 19 of the sill. They are also notched as indicated at 32 at the top to bear against the shoulder 27 of the top plate, the upper end 33 bearing on the rabbeted surface 26 of the top plate. Thus, if the studs should shrink longitudinally, there would be no opening or slit formed even though the ends of the studs no longer engage the under side of the top plates. The studs are formed on their opposite edges with longitudinal grooves 34 in which the marginal edges of the boards 35 are fitted. The lower ends of these boards rest on the rabbet 17 of the outside floor sills and extend upwardly into the groove 28 of the top plates. (Note Figs. 4, 9 and 10.)

The outside door frames 36 and the window frames 37 employ door jambs and window stiles 38, respectively. Each of these is formed with a bead 39 on the side facing the opening. This is positioned to leave a relatively wide rabbet 40 on the inside and 41 on the outside, the inside rabbet being for the purpose of accommodating the door or the window sash, as the case might be, and the outside rabbet to accommodate a screen frame. A vertical groove 42 is formed on the side opposite the bead 39 to accommodate the edge of boards 35. The lower ends of these door jambs or window stiles may be notched to conform to the upper surface of the floor sills; and the upwardly projecting parts of the window sills (hereunder detailed) may be cut off to simplify the cutting of the lower end of the window stiles.

The window sills 43 are flat on their lower surfaces 44 (note Fig. 8), and each may have a vertical inside edge 45 and an angular rabbet 46 with an upwardly projecting bead 47 at the top. This bead is coved as indicated at 48 and has a front edge 49. The outside portion 50 of the top of the sill is sloped and the outside edge is finished with a vertical surface 51. As above described, where the window stile fits on the sill, the bead and cove of the sill may be cut off and the outside of the bead 39 of the stile aligned with the vertical edge 49. The under side of the sill is grooved at 52 and the upper edge of vertical boards below the sill fit into this groove. The lintel 54 of the window or door frames has a flat undersurface 55 with a bead 56, this being formed by making an inside and outside rabbet. The lintel preferably extends to the outside of the door jambs and window stiles as indicated in Figs. 1 and 9, the end portion of the bead 56 being removed to give a flat joint. The lintel has a vertical inside surface 57, a shoulder 58 formed by making a rabbet 59 on one side of the shoulder. Outside of this rabbet there is a sloping surface 60 and a vertical outside surface 61. The studs which extend above the lintel are notched to fit on the shoulder 58 and have a sloping cut to engage the sloping surface 60. The lower edges of the boards resting on the lintel fit in the rabbet 59 against the outer face of the shoulder 58.

A gable construction 62 (note Figs. 1 and 2) is formed by using roof rafters 63 and vertical boards 64. These boards pass downwardly below the front of the associated top plate and may have an ornamental lower end 65. Between the boards there are false studs 66. These are thicker than the boards and have rabbeted corners 67 on both inside edges. Thus the inside surface 68 of these false studs fits against the outside vertical surface of the top plates and the edges of the boards forming the gable fit into the rabbets on the edges of these false studs.

In forming corner posts 69 (note Figs. 1 and 4), these have vertical grooves 70 on their two adjacent sides. Similar corner posts may be used for inside partition corners. Where it is desired to run partitions from the outside studs there may be special outside partition studs 71 each of which, in addition to the grooves on the lateral edges has a vertical groove 72 on the inside face. Interior partition posts 73 (note Fig. 5) may have four grooves 75 on all the vertical edges. The partitions 76 may be built up of studs similar to those of the outside wall studs and boards between these studs. However, for interior partitions, it is preferable to use sills 77 as illustrated in Fig. 12 which may be rectangular in contour with a longitudinal groove 78 on the upper surface.

The partition top plate 79 may also be rectangular in cross section with a groove 80 on the bottom surface. Thus, if desired, the sills and the top plates for interior partitions may be the same. The studs and corner posts for interior partitions are cut square on their ends and fitted between the sills and top plates. The boards for interior partitions have their ends fitting in the grooves 78 and 80 in the sills and the top plates, respectively.

It is obvious that outside walls having any number of studs, boards, door and window openings may be made as above described. Also, any number of inside partitions may be provided by using similar constructions, except that the windows would not ordinarily be necessary. For making inside door frames the interior sills may be cut, if these are on a rough floor, to conform to the finished floor, or they may be omitted entirely at the door openings. A convenient manner of constructing an enclosure for pipes or the like, is indicated at 81 (Fig. 4), this being constructed by using corner posts and partition studs. It is obvious that cupboards of various sizes may be made in a similar manner.

The special wiring studs 82 (note Figs. 4 and 13) are formed with a half stud member 83 which has a flat inside surface 84, and a complementary half stud section 85, which is cut to leave two beads 86 and two marginal rabbets 87 with a cut out section 88 in between, and in this cut out section may be run electric conduits 89, or the like. These are preferably of the same outside dimensions as the studs 29. The rabbets 87 on the marginal edges of the section 83 and the inside flat surface 84 of the half section 83, form vertical grooves to engage the edges of the vertical boards. It is obvious that these wiring studs may be incorporated in any place desired either in the outside wall, the inside walls or various enclosures.

From the above description it will be seen that with a comparatively small number of different shapes of structural members, a building having a pleasing appearance, together with adequate strength, may be constructed. The various joints have a close and snug fit, and as wood is a good non-conductor of heat, the buildings can be made both cool in hot weather and warm in cold weather.

It is obvious that the various structural elements may be ornamented in any desired manner, for instance, ornamental moldings may be cut in the studs. The sharp corners of various elements such as the outside vertical edges of the door jambs and window stiles may be curved and, the sharp horizontal edges of the sills and top plates may also be rounded. If desired, the studs, corner posts, etc. may be rounded at their corner edges.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined in the appended claims.

I claim:

1. In a building construction, the combination of a sill, a top plate, a plurality of vertical studs having grooves on their opposite edges, the studs being fastened to the sill and the top plate, and a plurality of vertical boards having their side edges engaged in the grooves of the studs, and a means on the sill and also on the top plate to engage the ends of the boards, the means engaging the boards at the sill comprising the sill being formed with a horizontal rabbet with a shoulder at one side and a downward slope on the other side of the rabbet and the lower ends of the boards resting on the said rabbet, one side of the boards at their lower ends engaging the side of the shoulder.

2. In a building construction, the combination of a horizontal sill having a horizontal rabbet, a shoulder at one side and a downward slope on the other side of the rabbet, a top plate having a horizontal under surface, a plurality of vertical studs each having vertical grooves on its opposite edges, each stud being notched at the shoulder of the sill, the upper end of each stud engaging the under surface of the top plate, and vertical boards having their marginal edges engaged in the grooves of the studs and their lower ends resting on the rabbet of the sill, one side at the lower end of each of said boards engaging one side of the shoulder of the sill.

3. In a building construction as claimed in claim 2, the top plate having a rabbeted portion on the bottom with a shoulder on the side opposite said horizontal surface, the upper ends of the studs being notched at the said shoulder.

4. In a building construction as claimed in claim 2, the top plate being rabbeted on the bottom and having a downwardly projecting shoulder and a horizontal groove extending inwardly from the rabbet, the upper ends of the studs being notched to engage the rabbet and the said shoulder, and the upper ends of the boards extending into the said groove.

5. In a building construction, a wall having a top plate, a plurality of false studs each rabbeted at its vertical edges, the back of each false stud being secured to the vertical edge of the top plate and forming therewith two vertical grooves, and a vertical board between each false stud having its marginal edges fitted in the said grooves.

6. In a building construction, a gable wall comprising in combination, a sloping roof rafter, a horizontal top plate, the rafter and the top plate each having a vertical surface in the same vertical plane, a plurality of vertical false studs each having a pair of rabbets on its opposite inside edges, the inside surface of each false stud engaging the vertical surface of the top plate, and a vertical board having its marginal edges fitted in the rabbet on adjacent false studs, the back of the boards and the back of the false studs being in alignment.

7. In a building construction, a sill having a horizontal rabbet, a vertical shoulder on one side of the rabbet and a horizontal top surface extending from the shoulder, a sloping surface on the other side of the rabbet, studs having a sloping cut at their lower ends to engage the slope of the sill, a horizontal cut to engage the rabbet, and a right angular notch to engage the shoulder and the horizontal top surface of the sill and wall boards secured to the studs.

8. In a building construction, a top plate having a rabbet at one side, a horizontal groove extending upwardly from the rabbet and a shoulder on the opposite side of the groove, the top plate having horizontal lower surfaces, studs having a notch in their upper ends to engage the shoulder and the horizontal lower surfaces of the top plate, and wall boards secured to the studs having their upper ends extending into the groove at the top plate.

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