Sept. 29, 1942. H. GUNNISON 2,297,056

BUILDING STRUCTURE AND WALL

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Fig. 1

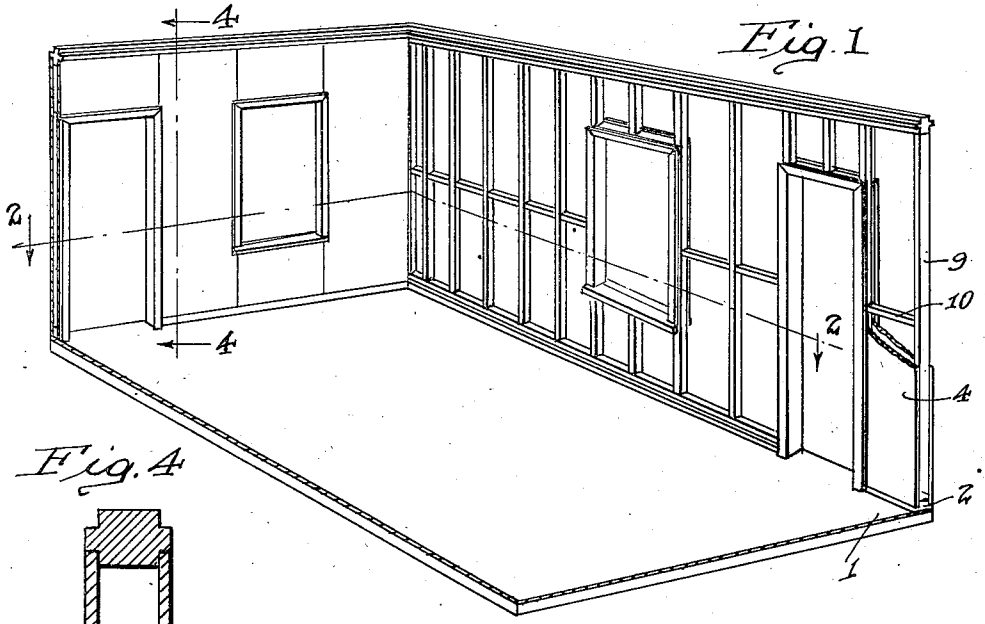


Fig. 4

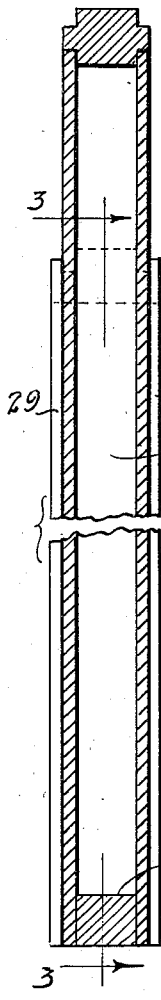


Fig. 3

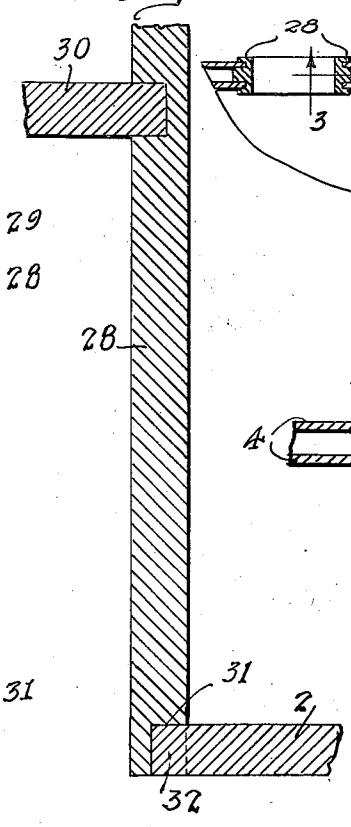


Fig. 2

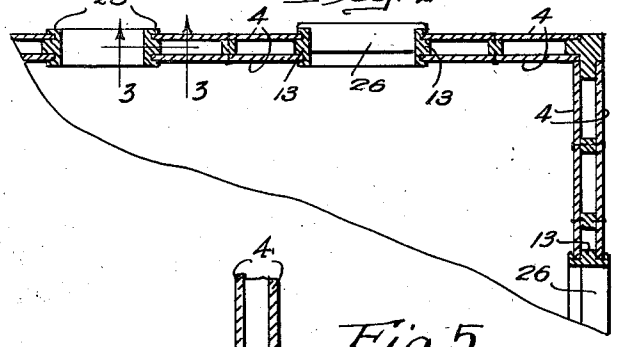
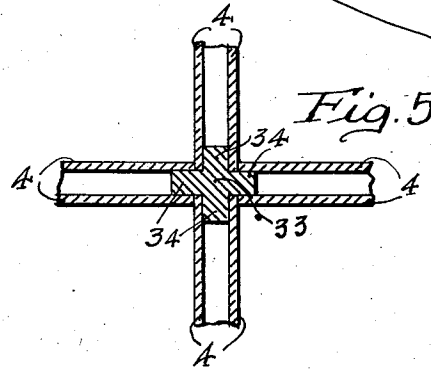


Fig. 5



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Fig. 6

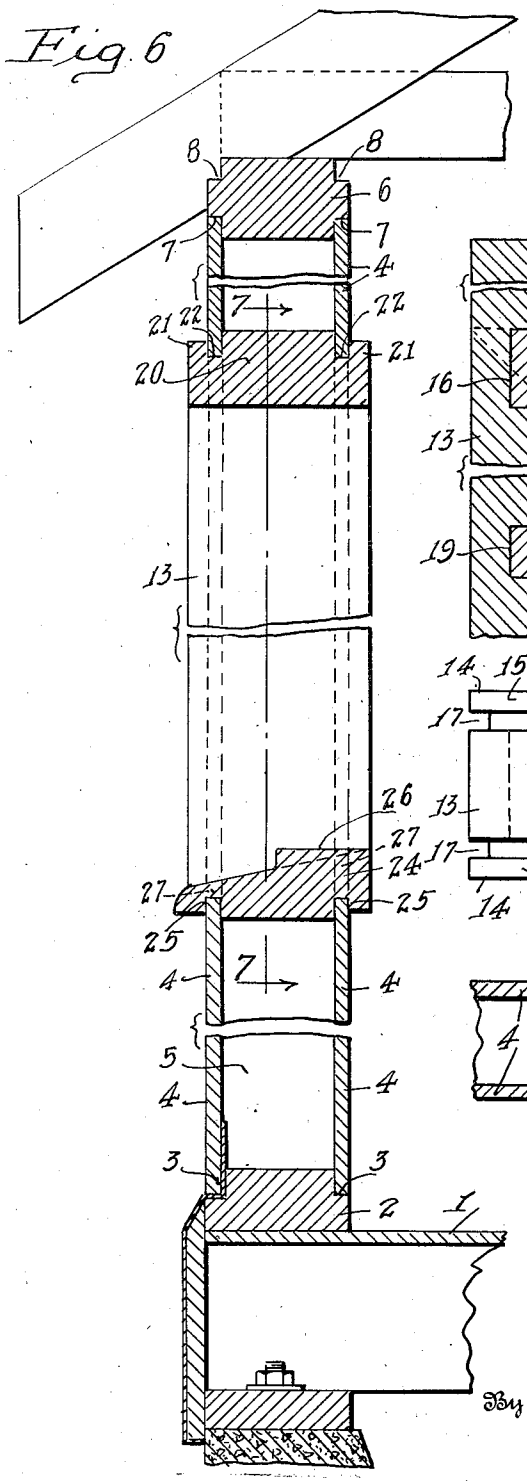


Fig. 7

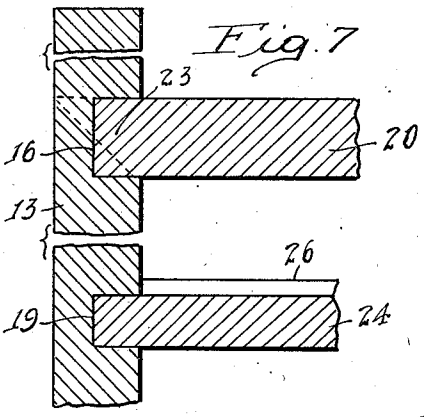


Fig. 8

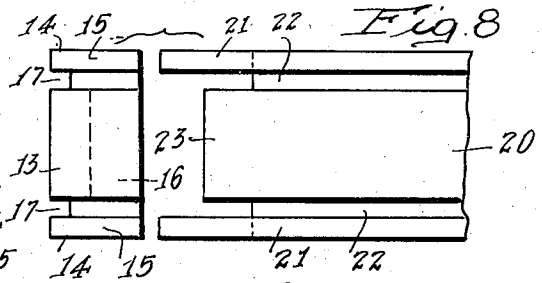
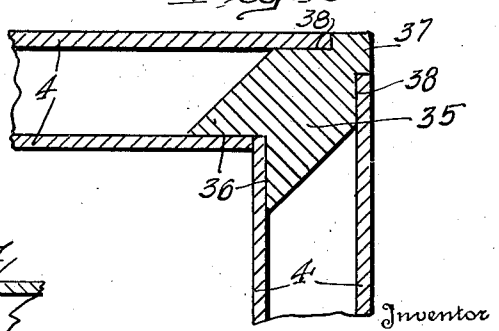


Fig. 13



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Fig. 9

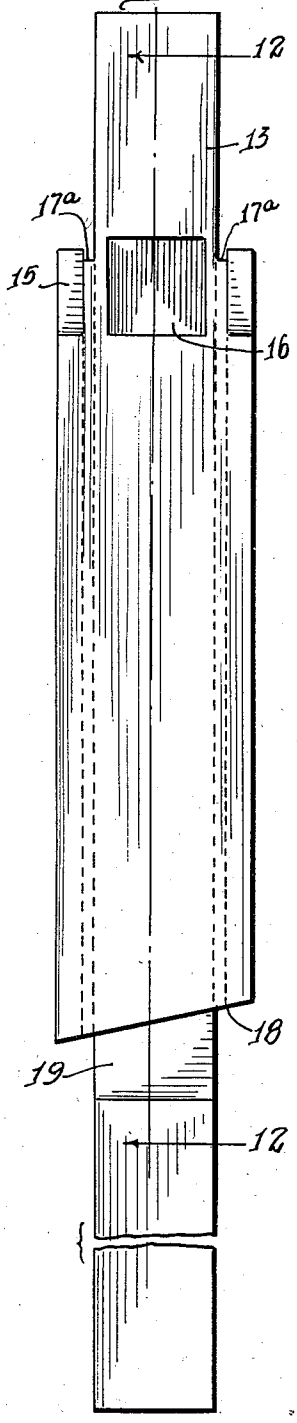


Fig. 10

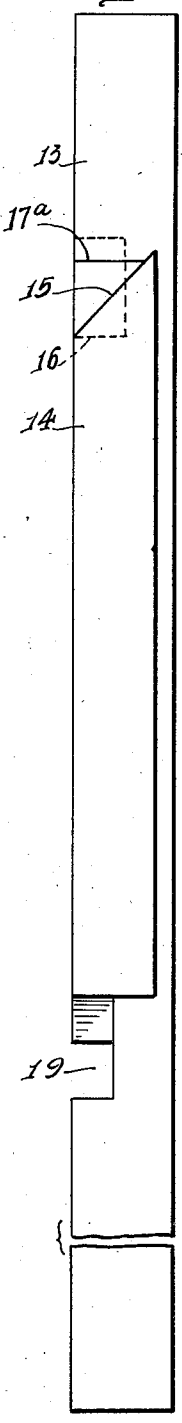


Fig. 11

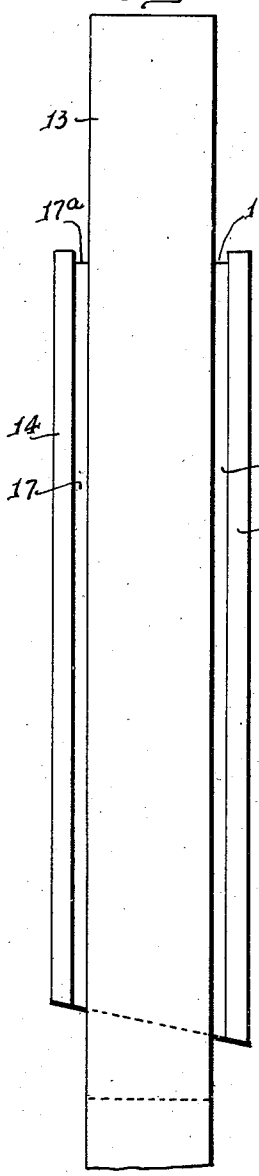
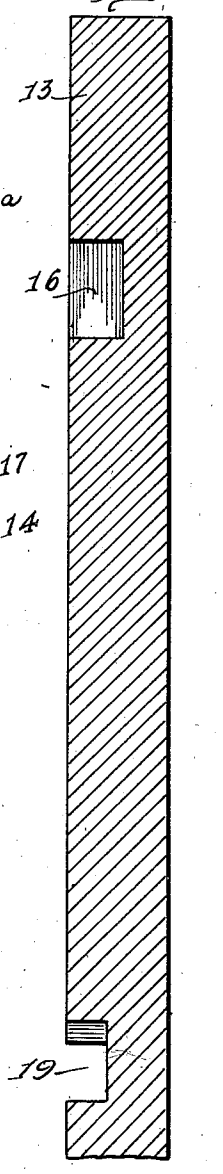


Fig. 12



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Patented Sept. 29, 1942 2,297,056

UNITED STATES PATENT OFFICE

2,297,056

BUILDING STRUCTURE AND WALL

Hugh Gunnison, Altadena, Calif.

Application February 14, 1939, Serial No. 256,305

8 Claims. (Cl. 20—4)

This invention relates to building structures and walls thereof, and refers particularly to building structures and walls constructed of prefabricated members.

It is a general object of the present invention to provide a building structure or wall thereof which can be largely merely assembled in the erection of a structure or wall from prefabricated elements which are cut to proper dimensions in a factory or mill at a distance from the point of assembly.

A large portion of the cost of constructing buildings and walls in accordance with past plans is the cost of specially forming and shaping different building elements at the site of the building. The present invention provides means by which the cost of constructing buildings may be materially altered through the design of a structure, the individual components of which may be completed at a manufacturing plant or mill where this work may be done in a quantity and with machinery set in place, thereby materially reducing the cost of the separate members, and leaving for construction at the building site substantially only the work of fitting together and assembling the elements.

It is a further object of the present invention to provide a building or wall faced generally with plywood facings and containing interfitting bottom rails or plates and top rails or plates together with reinforcing studs, all of which may be prefabricated and merely assembled together.

Various plans have heretofore been suggested for factory fabrication of elements of a building or building wall, but in general such plans have proved unsatisfactory in that they have not adequately provided means by which the desired wall openings, such as window openings and door openings, may be incorporated at the various positions required in different buildings.

The present invention, therefore, has for its further object to provide a building or wall structure therefor which incorporates prefabricated elements, designed to enable the assembly of window or door openings with the desired jambs and casing therefor formed as component parts of prefabricated members.

A further object of the present invention is to provide a form of building wall or structure in which the various prefabricated members, including the plywood facings, are all adapted to be integrated together in the finished or composite building wall to provide a united load-sustaining wall of exceptional strength when considered in connection with the amount of building materials incorporated therein.

Various further objects and advantages of the present invention will be understood from a description of a preferred form or forms of buildings and wall structures therefor embodying the invention, and for this purpose I have hereinafter described the preferred form or example of the invention in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of a wall structure and a portion of a building with the plywood facing members removed from one portion thereof.

Figure 2 is a fragmentary horizontal section on the line 2—2 of Figure 1.

Figure 3 is a fragmentary vertical section on the line 3—3 of Figures 2 and 4 showing the structure of the door opening with the facing panels removed.

Figure 4 is an enlarged vertical section on the line 4—4 of Figure 1 in front of the stud which forms the door jamb and casing.

Figure 5 is a fragmentary horizontal section of a wall structure as used in an interior corner.

Figure 6 is a vertical section of the wall through one of the window openings.

Figure 7 is a fragmentary section on the line 7—7 of Figure 6 with the facing panels removed.

Figure 8 is a detail of the head jamb of a window.

Figure 9 is an enlarged elevation of the head jamb for the window.

Figure 10 is an elevation at right angles to Figure 9.

Figure 11 is a rear view of the jamb shown in Figure 11.

Figure 12 is a section on the line 12—12 of Figure 9.

Figure 13 is a fragmentary plan section of a corner post.

Referring to the drawings, the building may be constructed of any suitable flooring or foundation 1. The building wall is shown as comprising the bottom rail 2, which is provided with recesses 3 at its upper corners for forming bearing faces to receive the lower end of facing members 4. The facing members 4 are preferably formed of plywood and are of a width so that when set in the recesses 3 of the bottom rail their outer faces are flush with the faces of the bottom rail 2. Between the facing members 4 the wall structure is thus provided with the space 5, which may be used to house any desired fixtures for the building. There is also provided

a top rail 6, which in the case of a building of a single story in height may be similar in form to the bottom rail 2 turned over to have its recesses 7 at the bottom corners, or where additional stories are to be constructed the top rail 6 has its upper corners 8 also recessed for the purpose of receiving the ends of the facings 4. Between the top and bottom rails and of a width to correspond to the distance between the facings 4 are provided vertical studs 9 and cross members 10 of any usual or desired form of construction.

Now, referring more particularly to Figures 9 to 12, inclusive, where a window opening is to occur in a building wall, I provide a specially prefabricated stud 13, which stud has preformed thereon as an integral part thereof portions designed for forming the vertical jamb and casements of the desired window opening. For this purpose, the stud 13 is indicated as having the casing forming projections 14 at its sides, the upper ends of which may be mitered, as indicated at 15. Adjacent the upper end of the casing forming projection of the stud 13, the stud is provided with a socket 16, which is intended to perform a part of the means forming an interlocking engagement with the head jamb of the window. At the rear of the door jamb there are provided grooves 17 of a width to receive the edges of the facings 4, so that no special cutting of the plywood facings extending along the sides of the windows is necessary. The studs 13 are further provided at their upper ends at each side with shoulders 17^a at a height slightly lower than the uppermost portion of the casement portions 14, which shoulders 17^a are intended to serve as bearings for supporting the plywood facings 4 which are to be mounted above the windows, whereby the weight of such facings may be properly imposed upon the studs 13. The lower end of the casing forming projections 14 of the stud 13 are cut at a taper, as indicated at 18, and the body of the stud 13 is there provided with a tapered cross-cut opening 19, the purpose of which is to receive the sill of the window.

Referring particularly to Figures 6, 7, and 8 of the drawings, I provide specially prefabricated head jambs 20 for such window openings, such head jambs 20 having projections 21 which are adapted to form the head casements of the windows, and are mitered to interfit with the mitered faces of the projections 14 of the studs 13 which form the vertical jambs of the window opening. Between the projections 21 and the body of the head jambs 20 on their upper faces the head jambs are provided with grooves 22 intended to receive the lower edges of the facing members 4 which form the wall above the opening, the base of the grooves 22 being subtsantially in line in the assembled position with the shoulders 17^a of the studs 13. The ends of the head jambs are provided with the tongues 23 adapted to interfit with the socket 16 in such position as to bring the casing portions 21 against the complementary portions 14 of the stud.

The bottom sill 24 is indicated as comprising a tapered member having grooves 25 at its lower end for receiving the upper edges of the facing members 4 and with the raised portion 26 between the stud portions. The ends of the sills 24 are provided with the vertical grooves 27, so that when the sills are set in the sockets 19 of the studs 13 and the vertical grooves 27 of the bottom sills will register with the vertical grooves 17 of the studs 13 so that the edges of the facings 4 may extend under the bottom sills 24.

Now, referring particularly to Figures 3 and 4 of the drawings, the door openings are constructed in a manner somewhat similar to the window openings, and for this purpose there are provided prefabricated studs 28 at each side of the door openings, such prefabricated studs having projections 29 for forming the casement of the door, and at the upper end of such casements the studs 28 are shaped similarly to the upper ends of the studs 13 so as to form interlocking connections with head jambs 30 for the doors, which head jambs are similar in construction to the head jambs 20 of the window openings. The casement forming projections 29 of the studs 28 extend to the floor in case of the door openings, and at their lower ends the studs are provided with sockets 31 to receive tongues 32 projecting from the bottom rails 2.

Now, referring to Figure 5 of the drawings, I have indicated a form of post or stud 33 which may be used in a building wall constructed in accordance with the principles of the present invention where the interior corner exists, in which case the stud 33 has four tongues 34 adapted to fit between the plywood facings 4 of the walls.

Referring to Figure 13 of the drawings, I have indicated a preferred construction of a corner post or stud 35 which is preferably set diagonally of the corner and provided with a V-shaped surface 36 for receiving the inner facing members 4 and with a pointed end 37 grooved as indicated at 38 to receive the ends of the outer facing members and to continue the wall face to the corner.

While the particular form of building and building wall herein described is well adapted to carry out the objects of the present invention, it is to be understood that the invention is capable of considerable modifications, particularly in that the modifications may be made in the means used for interlocking or connecting the various studs with the jambs and casements of the windows and door openings, which can be provided with interlocking connections of a great variety of form. The present invention is not limited to the particular form herein described for the purpose of illustrating the same, but it includes all such changes and modifications as come within the scope of the appended claims.

I claim:

1. A wall structure comprising bottom and top rail members, facing members for the wall interfitting with said rail members to provide flush surfaces therewith, studs between said rail members, the studs contiguous to wall openings being shaped to provide the vertical jambs and casements for said openings and provided with facing supporting bearing surfaces at their upper ends, and head jamb members for said openings having casing providing portions adapted to interfit with said latter stud members.

2. A stud for a wall structure having projections formed to provide casement portions for a wall opening, vertical grooves between the body of the said stud and said projections adapted to interfit with wall facings, and bearing surfaces at the upper end of said projections adapted to provide vertical support for wall facing members, the stud being provided with means adapted to form interfitting connections with head jambs.

3. A stud for a wall structure having a body portion adapted to form the jamb of a wall opening and having lateral enlargements shaped to form portions for said wall openings, vertical

grooves between said body portion and said enlargements to permit the interfitting of wall facings, and horizontally formed bearing surfaces at the upper end of said enlargements of said stud members adapted for support of desired wall facings.

4. A wall structure including wall facing members and studs, the studs having laterally extended portions forming vertical casement portions, vertical grooves provided between the body of the studs and said vertical casement portions, certain of said facing members interfitting with said grooves, horizontal bearing faces at the upper ends of said casement portions, and certain of said facing members contacting said bearing faces and vertically supported thereby.

5. A wall structure including wall facing members and studs, the studs having laterally extended portions forming vertical casement portions and having vertical facing member fitting grooves, horizontally disposed projections of said studs forming bearings for facing members, and a horizontal jamb having interlocking fit with said studs and having projections formed to provide casement portions and having grooves adapted to align with said horizontal bearings.

6. A wall structure including wall facing members and studs, the studs having laterally extended portions forming vertical casement portions and having vertical facing member fitting grooves, horizontally disposed projections of said studs forming bearings for facing members, a horizontal jamb having interlocking fit with said studs and having projections formed to provide casement portions and having grooves adapted to align with said horizontal bearings, and rails interengaging with said wall facing members.

7. A wall structure comprising studs and plyboard facings, studs adjacent openings having projections integral therewith providing casements for said openings, said studs having the upper end of such casements bearing faces for ply-wood facings positioned thereabove, and horizontal jambs for said openings having integrally formed thereon casement portions and having interlocking engagement with such studs.

8. A wall structure including wall facing members, bottom and top rails having interfitting connections with said facing members, studs extending between said bottom and top rails and enclosed by and bearing against the inner surfaces of said facing members, the studs adjacent the wall openings having casement forming projections overlapping the edges of adjacent wall facings and provided with bearing surfaces for a wall facing disposed above said casement forming projections and having sockets for receiving jamb members.

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