

Feb. 19, 1929.

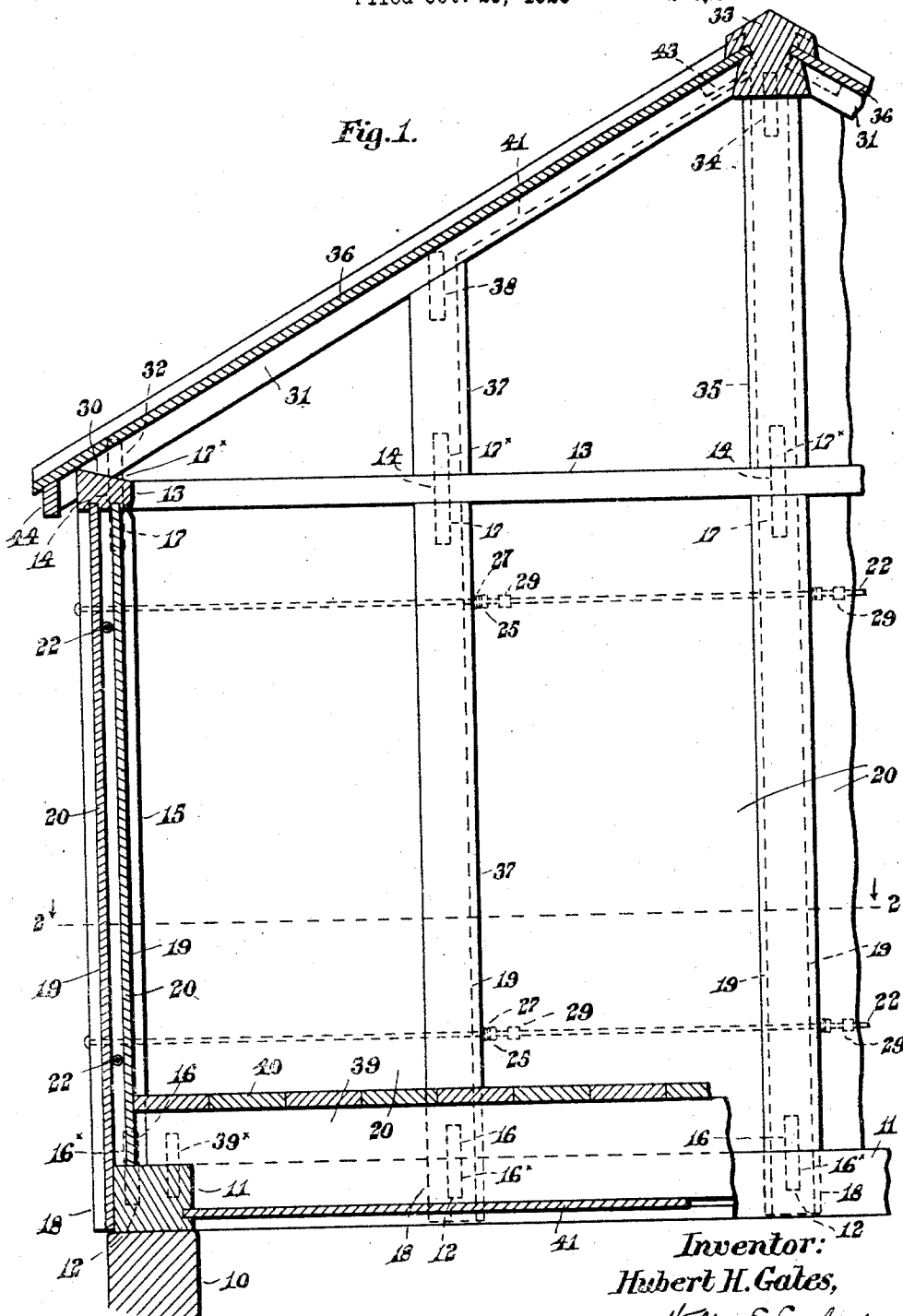
1,702,340

H. H. GATES

BUILDING CONSTRUCTION

Filed Oct. 23, 1926

2 Sheets-Sheet 1



Inventor:
Hubert H. Gates,
by Walter E. Lombard,
Atty.

Feb. 19, 1929.

1,702,340

H. H. GATES

BUILDING CONSTRUCTION

Filed Oct. 23, 1926

2 Sheets-Sheet 2

Fig. 3.

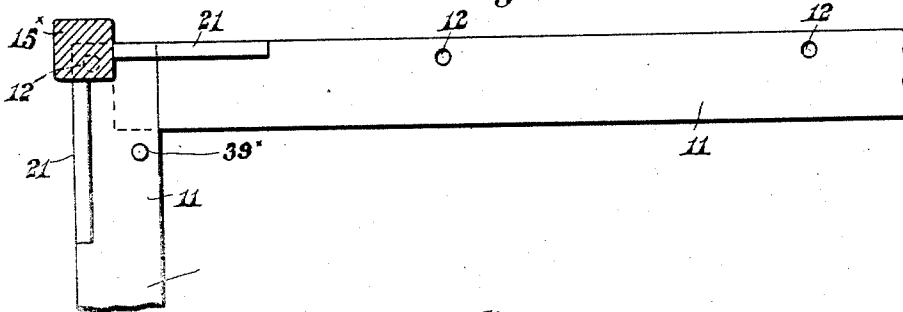


Fig. 4.

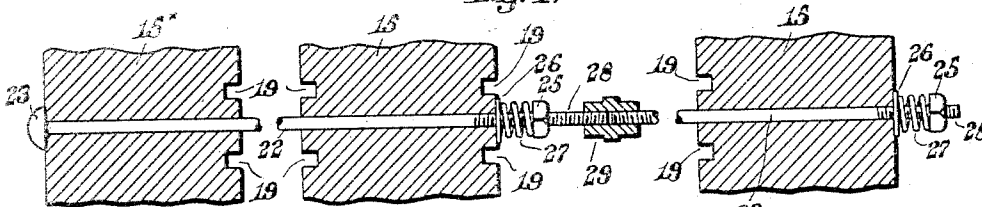


Fig. 2.

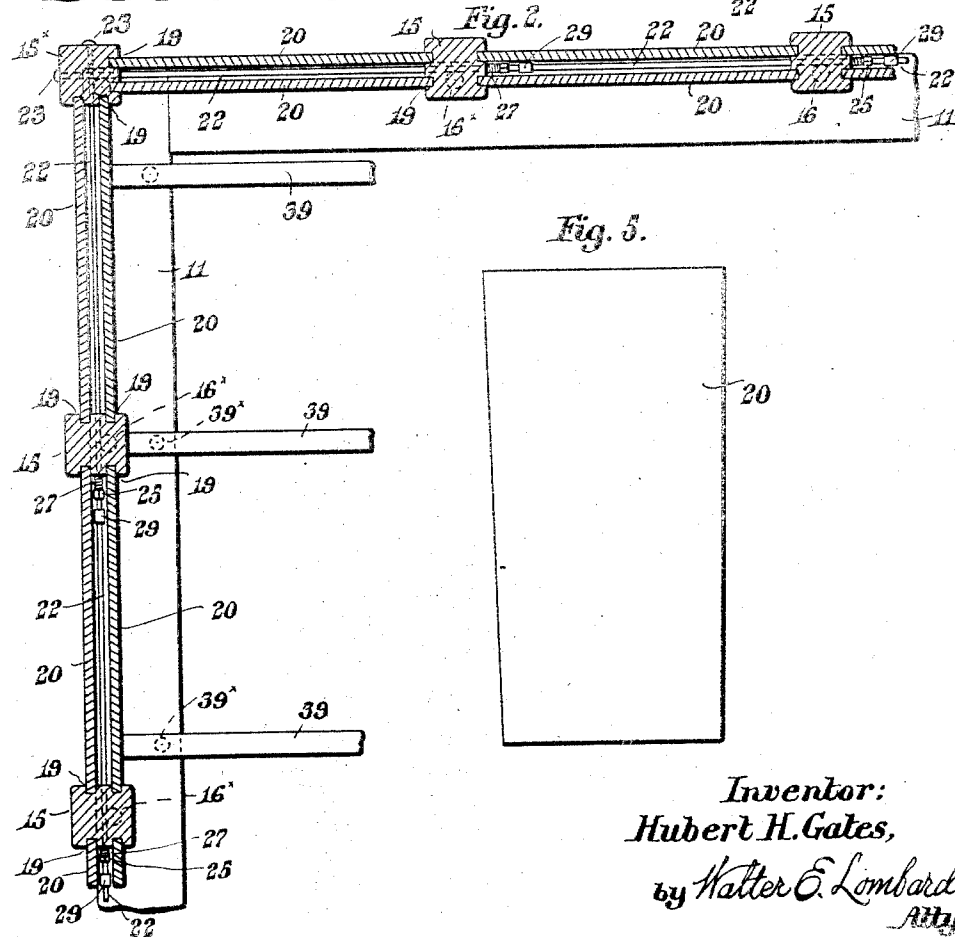
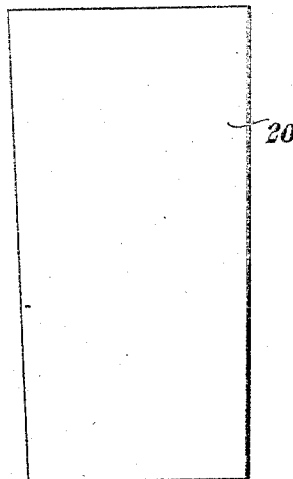


Fig. 5.



Inventor:
Hubert H. Gates,
by Walter E. Lombard,
Att'y.

UNITED STATES PATENT OFFICE.

HUBERT H. GATES, OF FRANKLIN, MASSACHUSETTS.

BUILDING CONSTRUCTION.

Application filed October 23, 1926. Serial No. 143,602.

This invention relates to the construction of building and has for its object the production of a building, the various elements of which may be quickly assembled without the use of nails or equivalents therefor.

This object is attained by the mechanism illustrated in the accompanying drawings.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described except as required by the scope of the appended claims.

Of the drawings

Figure 1 represents a vertical section of a portion of a building embodying the principles of the present invention.

Figure 2 represents a horizontal section of the same on line 2, 2, on Fig. 1.

Figure 3 represents a plan of a corner of the sills of the building showing a corner post in section.

Figure 4 represents an enlarged section showing the means for connecting the various studs and preventing separation thereof, and

Figure 5 represents an elevation of one of the sheets or plates interposed between the studs.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings 10 is a foundation wall upon which rests a sill 11.

Each sill 11 has a plurality of holes or sockets 12 in the upper face thereof, these holes or sockets being spaced apart any required distance.

When the holes 12 are bored in the sill 11, a top plate 13 is placed upon the sill 11 and the holes 14 in the top plate and the holes or sockets 12 in the sill 11 are bored at the same time.

As a consequence of the simultaneous boring of the holes 14 and 12, the holes 14 must be spaced apart the same distance that the holes 12 are separated from each other.

The studs 15 between the sill 11 and top plate 13 have holes 16, 17 bored into their opposite ends into which are inserted the

dowels 16* extending into the holes or sockets 12 in the sill 11 and the dowels 17* extending through the holes 14 of the top plate 13 and beyond the upper face thereof.

Each stud 15 is provided with a downward extension 18 on its outer end, which extension projects across the outer face of the sill 11.

Each stud 15 has one or more grooves 19 formed in two walls thereof, the inner walls of said grooves being inclined with the upper ends of said grooves deeper than the lower ends.

In these grooves 19 are inserted sheets 20 of material such as sheetrock, these sheets or plates 20 being inserted from the top before the top plate 13 is positioned on the stud 15.

The corner studs 15 have braces 21 extending therefrom to the sills 11.

Preferably in the construction of the side walls two parallel sheets or plates 20 are used as indicated in the drawing, but in the construction of certain buildings, such as garages, the inner sheet or plate 20 may be omitted, and in such cases only one groove 19 is formed in the side wall of a stud.

Between the sheets 20 a plurality of tie rods 22 extend, these rods being in sections, as shown in the drawing, the end section having a head 23 bearing against the outer face of a corner post or stud 15*, this section of rod 22 extending through the next stud 15 and having a nut 25 threaded thereto between which and a washer 26 bearing on the face of the stud 13 is a spring 27.

On the threaded end of 28 of the rod section is a coupling member 29 which connects the first section of the rod 22 with the second section thereof, while the successive sections are connected in a similar manner for the entire length or width of the building being erected.

The upper face of the side top plate 13 is inclined downwardly and inwardly and its upper end fits into a notch 30 in the under side of a rafter 31, the lower end of which is provided with a socket 32 into which extends the projecting end of the dowel 17*.

The upper ends of the rafters 31 extend into notches in the opposite sides of the ridge pole 33 which has in its under side a socket to receive the projecting end of a dowel 34 extending upwardly from the upper end of the center stud 35 at each end of the building.

Between the rafters 31 are disposed the

roof plates 36, the opposite ends of which are disposed in grooves in said rafters 31.

Between the outer ends of the end rafters 31 and the inner ends thereof, these end rafters are supported by additional studs 37 having dowels 38 extending upwardly into sockets in the under sides thereof.

The lower ends of the studs 37 are dowelled to the end sills 11 in the same manner that the studs 15 are dowelled to the side sills 11.

The girders 39 are notched at their ends and fit over the side sills 11 with the ends thereof abutting the inner sheets or plates 20 and connected to said sills by dowels 39*.

The floor planks 40 are secured to these girders 39 and said girders have grooves in their sides near the lower edges thereof to receive two of the opposite edges of the sheets or plates 41, the other edges being disposed in grooves in the side sills 11.

The sheets or plates 20 may be of any desired width so that the studs 15 may be spaced apart at equal distances which is an advantage over the construction of sectional buildings in which the sides are composed of a plurality of units of equal width.

The lower ends of the plates or sheets 20 cover the outer faces of the sills 11 and their upper ends are disposed in grooves in the under face of the top plate 13 in the case of side walls, the plates 20 of the end walls extending into grooves 42 in the under face of the rafters 31.

By this means the sills are protected from rain and snow as no opportunity is afforded for the rain or snow to come in contact with the sills.

Owing to the wedge shape of the plates 20, the edges of these plates may be forced against the bottoms of the grooves 19 by forcing the plates downwardly.

It will be seen that all the corner posts 15* are tied together by means of the tie rods 22, thereby providing very rigid walls with an air space between the parallel plates 20 which tends to shut out the cold and heat.

All the various elements may be painted or otherwise surfaced before installation so that when assembled in a building said building is immediately ready for use.

The upper ends of the rafters 31 are provided with dowels 43 which extend into sockets in the sides of the ridge pole 33 and the lower ends are connected together by a strip 44 preferably nailed thereto.

It will be seen, therefore, that the entire building can be quickly assembled without tools and with the use of very few nails, the latter being used only to secure the floor planks to the girders, the strip 44 to the ends of the rafters, and the opposite ends of the braces 21 to the posts and sills 11.

It is believed that the operation and many advantages of the invention will be understood readily without further description.

Having thus described my invention, I claim:

1. A building provided with side sills and top plates having correspondingly spaced bored holes therein and adapted to be positioned with said holes alined in pairs, said holes being bored prior to the erection of the building; and a plurality of vertical studs between said sills and plates having dowels at their opposite ends extending into said holes.

2. A building provided with side sills and top plates having correspondingly spaced bored holes therein and adapted to be positioned with said holes alined in pairs, said holes being bored prior to the erection of the building; a plurality of vertical studs between said sills and plates having dowels extending from their opposite ends and fitted into said previously bored holes, the holes in said top plates extending through the same and the upper dowels extending through the plate holes and above the same; and rafters having sockets in the under face thereof to receive the projecting ends of the upper dowels.

3. A building provided with side sills and top plates having correspondingly spaced bored holes therein and adapted to be positioned with said holes alined in pairs, said holes being bored prior to the erection of the building; and a plurality of vertical studs between said sills and plates having dowels extending from their opposite ends and fitted into said previously bored holes, each stud having formed on its lower end a face contacting with a sill to prevent the rotation of the stud about the axis of said dowels.

4. A building provided with side sills and top plates; a plurality of vertical studs interposed between said sills and plates and having grooves in the sides thereof with inclined inner walls; and sheets of material interposed between said studs with their opposite edges in said grooves, said sheets being wider at the top with their opposite edges abutting the inclined inner walls of said grooves.

5. A building provided with side sills and top plates having correspondingly spaced bored holes therein and adapted to be positioned with said holes alined in pairs, said holes being bored prior to the erection of the building; a plurality of vertical studs interposed between said sills and plates and having grooves extending lengthwise of the side walls thereof; sheets of material between said studs with their edges disposed in said grooves; and means between said sills and plates and parallel thereto connected to said studs and preventing portions thereof intermediate their ends from spreading apart.

6. A building provided with side sills and top plates; a plurality of vertical studs interposed between said sills and plates and

having grooves in the side faces thereof with inclined inner walls; and sheets of material interposed between said studs with their opposite edges abutting the inclined inner walls of said grooves, said sheets being wider at the top with their lower ends extending over the outer face of said sills.

7. A building provided with side sills and top plates having correspondingly spaced bored holes therein and adapted to be positioned with said holes alined in pairs, said holes being bored prior to the erection of the building; a plurality of vertical studs interposed between said sills and plates; dowels extending from the opposite ends of said studs into said holes, the upper dowels extending through and above said plates; and a rafter in the same plane with each stud having a previously bored socket to receive the projecting end of an upper dowel, said rafter having a V-shaped notch in its

under face to receive a corner of one of said top plates.

8. A building provided with side sills and top plates having correspondingly spaced bored holes therein and adapted to be positioned with said holes alined in pairs, said holes being bored prior to the erection of the building; a plurality of vertical studs interposed between said sills and plates and having grooves in the side faces thereof; dowels extending from the opposite ends of said studs into said previously bored holes, the upper dowels extending through and above said plates; and a rafter in the same plane with each stud having a previously bored socket to receive the projecting end of an upper dowel.

Signed by me at 746 Old South Bldg., Boston, Mass., this 19th day of October, 1926.

HUBERT H. GATES.