Feb. 19, 1946. C. B. K. VAN NORMAN 2,395,162

PREFABRICATED BUILDING CONSTRUCTION

Filed April 8, 1944 2 Sheets-Sheet 1

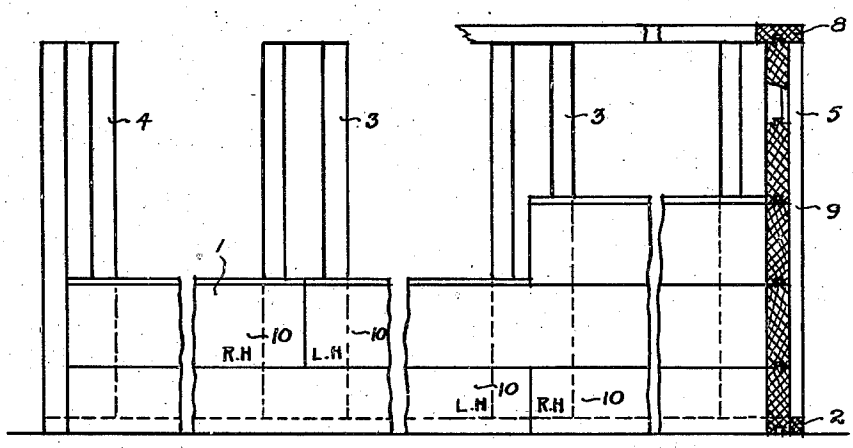


Fig. 1.

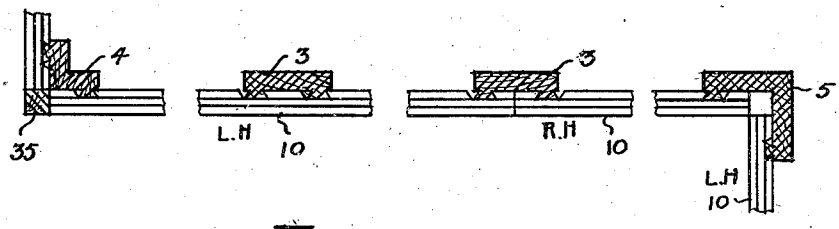


Fig. 2.

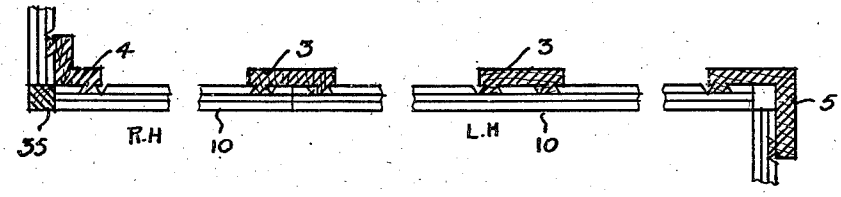


Fig. 3.

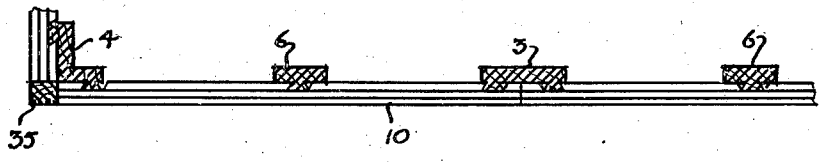


Fig. 4.

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PREFABRICATED BUILDING CONSTRUCTION

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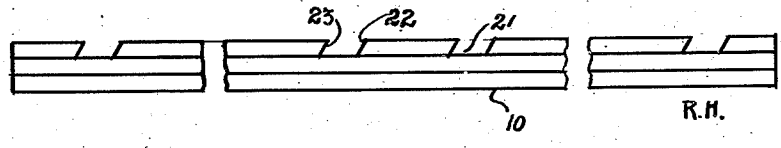


Fig. 5.

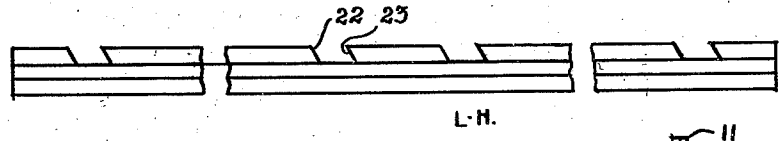


Fig. 6.

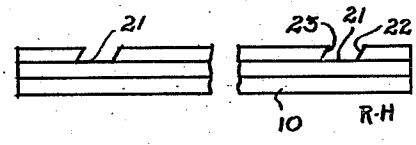


Fig. 7.

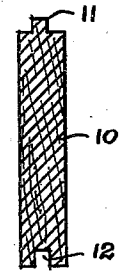


Fig. 13.

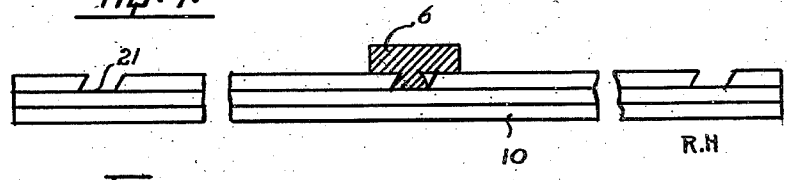


Fig. 8.

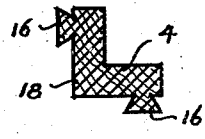


Fig. 9.

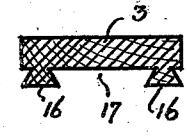


Fig. 10.

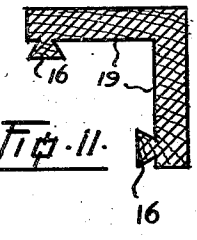


Fig. 11.

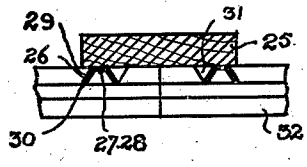


Fig. 12.

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UNITED STATES PATENT OFFICE

2,395,162

PREFABRICATED BUILDING CONSTRUCTION

Charles Burwell Kerrins Van Norman, Vancouver, British Columbia, Canada

Application April 8, 1944, Serial No. 530,126

8 Claims. (Cl. 20—4)

My invention relates to improvements in prefabricated building construction which is particularly adapted for use in walls for houses and other frame buildings.

The objects of the invention are to provide means whereby material can be prefabricated to predetermined dimensions and be rapidly and accurately erected with but little nailing and by simply laying each successive piece of material in juxtaposition with the one previously placed; to provide a construction in which the placing of one piece of material in position locks the adjacent piece in place in the general structure, and to provide a construction which while primarily designed for manufacture from wood may be made of wood and metal, or any other material such as plastics or the like. Further objects are to provide a structure where horizontal boards may be cut to standard lengths, such as even feet, 10, 12, 14 and the like and said pieces being butted together end to end and secured to single upright members without nailing or other fastening, also to provide means whereby boards and studs each having complementary dovetail and groove can be assembled and locked by moving the board to present the grooves toward the dovetails in side by side relation instead of having to slide the grooves downwardly onto the dovetails.

Referring to the drawings.

Fig. 1 is an elevational view of the invention under construction.

Fig. 2 is a plan view of the wall showing the boards used in alternate rows of the construction.

Fig. 3 is a plan view of the wall showing the boards used between the alternate rows above mentioned.

Fig. 4 is a plan view showing the use of a single dovetail stud intermediate the ends of a board.

Fig. 5 is a detail plan view of a long right hand board.

Fig. 6 is a detail plan view of a long left hand board.

Fig. 7 is a detail plan view of a short right hand board.

Fig. 8 is a detail plan view of a board cut for use with single dovetailed intermediate studs.

Figs. 9, 10 and 11 are respectively, plan views of internal angle, wall, and external angle studs.

Fig. 12 is a plan view of a stud having a metal strip dovetail element and its complementary boards.

Fig. 13 is a sectional view of one of the boards.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates a wall made up of sills 2, studs 3, 4 and 5 and plates 8 which form a frame 9. The frame 9 is covered on its outer side with horizontally arranged boards 10 which are preferably provided with a tongue 11 on its upper edge and a groove 12 on its lower edge.

The studs vary in form according to the position they are to assume in the wall, those designed by the numeral 3 are mounted intermediate the ends of the sill and plate 8 and will be hereinafter referred to as wall studs. The studs marked 4 are designed to fit at intersecting ends of sill and plate at an internal angle of room. The studs 5 fit at intersecting ends of sill and plate and form an external angle to the inner face of the wall. The inner face of the wall studs 3 is provided with two spaced parallel dovetails 16 extending vertically throughout their length, as shown in Figure 10. The inner faces of the stud 4 are each provided with a single dovetail 16 and the inner faces of the external angle stud 5 are also provided with dovetails 16.

In each of the above studs the dovetails are disposed substantially at the side edges of said studs to define a space which is bridged by the boards 10. The space between the dovetails of the wall studs 3 is indicated by the numeral 17, that between the dovetail and intersection of inner face angles of the corner stud 4 by the numeral 18 and that between similar components of the corner stud 5 by the numeral 19.

The boards 10 are transversely grooved on their rear faces as at 21 and as shown in Figures 5 to 8 inclusive. The grooves are formed with parallel sides 22 and 23, the sides 22 are adapted to contact one side of a dovetail 16 of any of the studs and the intersection of the base of the groove and the inner edge of the side 23 is adapted to engage the intersection only of the face and one side of the above mentioned dovetail. It will be obvious that since the width of the grooves for their entire depth is equal to the face of the dovetails that any board can be applied to its studs if the complementary dovetails and grooves are brought into register and the board moved horizontally in a direction coinciding with the sides 22 of the grooves of said board. The plate 8 is grooved on its underside to accommodate the tongue 11 of the last board 10 put into place.

In the modification shown in Figure 12, the stud is indicated by the numeral 25. This stud is of simple rectangular cross section as in ordinary building construction, but it is fitted with one or more dovetails 26 in the form of a shallow metal channels 27 having a base 28 and a pair of opposed flaring side members 29, which are

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adapted to enter into a sawn groove **30** and a V-groove **31** respectively formed in the tongued and grooved board **32** secured to the face of said stud.

In erecting a wall such as is shown in Figures 1, 2 and 3, the sill **2** is first laid in position and the first row of boards **10** secured thereto, see Figure 1, where a long left hand board is first placed at the left of the wall and next to it a short right hand board is placed. The completion of the first layer locates the studs **4**, **3** and **5** which are then placed with their respective dovetails in the grooves of the boards and the studs are secured to the sill by appropriate means. The second row of boards is then laid, starting from the right by placing a long left hand board, the finishing board of the row being a short right hand board. This procedure is continued until all boards are in place when corner fillets **35** are secured in place, thus locking all boards against removal by horizontal movement only, since every board is locked to each stud that it contacts with at least one side **23** of all its grooves **21**. When the boards **10** are in place the wall plate **8** is fastened down onto the studs, thus completing the wall.

It should be noted that in applying boards to the wall any row which has more than one board in its length should be made up of at least one right hand and one left hand, as by this means when the corner boards are in place no board can be removed without lifting at least one board in each row upwardly to the height of its abutting board or out of end contact with other structural parts. Since it is impossible to remove any board from its position in a wall without first lifting one board in a row the height of the board, it will be readily seen that it is not necessary to tongue and groove the boards except for the purpose of weather proofing.

It will be obvious that wall studs with a single dovetail only as shown in Figure 4, can be used in any place where no abutting ends of two adjacent boards are adapted to bear.

What I claim as my invention is:

1. Prefabricated means for wall building which comprises studs adapted for attachment to base and upper members and boards adapted for engagement with the studs, some of said studs having a pair of dovetails along one side and said boards having transverse U-shaped grooves upon one of their faces, each of said grooves having one side only of an angle such as to make a face to face contact with one side of a dovetail when said board is placed in juxtaposition with a stud.

2. Prefabricated means for wall building which comprises studs adapted for attachment to base and upper members and boards adapted for engagement with the studs, some of said studs having a pair of dovetails extending along one side, and said boards having a plurality of pairs of transverse U-shaped grooves upon one of their faces, each of said grooves having one side only of an angle such as to make a face to face contact with one side of a dovetail when said board is placed in juxtaposition with a stud.

3. Prefabricated means for wall building which comprises studs adapted for attachment to base and upper members and boards adapted for engagement with the studs, some of said studs having a pair of dovetails along one side and some of said studs having only one dovetail, said boards having transverse U-shaped grooves upon one of their faces, each of said grooves having one side only of an angle such as to make face to face contact with one side of a dovetail when said board is placed in juxtaposition with a stud.

4. Prefabricated means for wall building which comprises studs adapted for attachment to a base and upper members, and boards adapted for engagement with the studs, each of said studs having a dovetail along one side and said boards having transverse grooves on one face, said grooves having a base and parallel sides, one only of which is of an angle such as to make a face to face contact with one side of a dovetail when said board is placed in juxtaposition with a stud.

5. A wall comprising a plurality of vertically disposed studs each having a dovetail extending along one side, a plurality of rows of boards initially affixed to the studs by its dovetail, said boards being transversely grooved to engage one only of the sides of each dovetail to enable the placing of each board into juxtaposition upon its studs by a horizontal movement of said board towards its studs.

6. A wall comprising a plurality of vertically disposed studs each having a dovetail extending along one side, a plurality of rows of boards initially affixed to the studs by its dovetail, said boards being transversely grooved to engage one only of the sides of each dovetail to enable the placing of each board into juxtaposition upon its studs by a horizontal movement of said board toward its studs and a vertical member abutting the end of the rows of boards adapted to lock each row of boards against removal horizontally from said studs.

7. A wall comprising a plurality of studs, some having a pair of dovetails extending along one side and a plurality of rows of boards, each board having horizontally parallel sided grooves complementary to said dovetails, the abutting ends of adjacent boards of a row being engaged by the dovetails of a single stud.

8. A wall comprising a row of boards each having U-shaped transverse grooves, each of said grooves having sides respectively at an acute and an obtuse angle from the base of the groove, a plurality of spaced studs each having a face member adapted to enter a groove of a board as said board is advanced horizontally towards the studs and to lock the board against movement in one direction across the face of the studs, each of said boards being set with its grooves and the face members in juxtaposition and being locked against any horizontal removal from its studs by the securing of a member at an end of the boards previously placed.

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