Feb. 18, 1930. W. C. MISS 1,747,313

THERMAL BUILDING

Filed Jan. 15, 1926 2 Sheets-Sheet 1

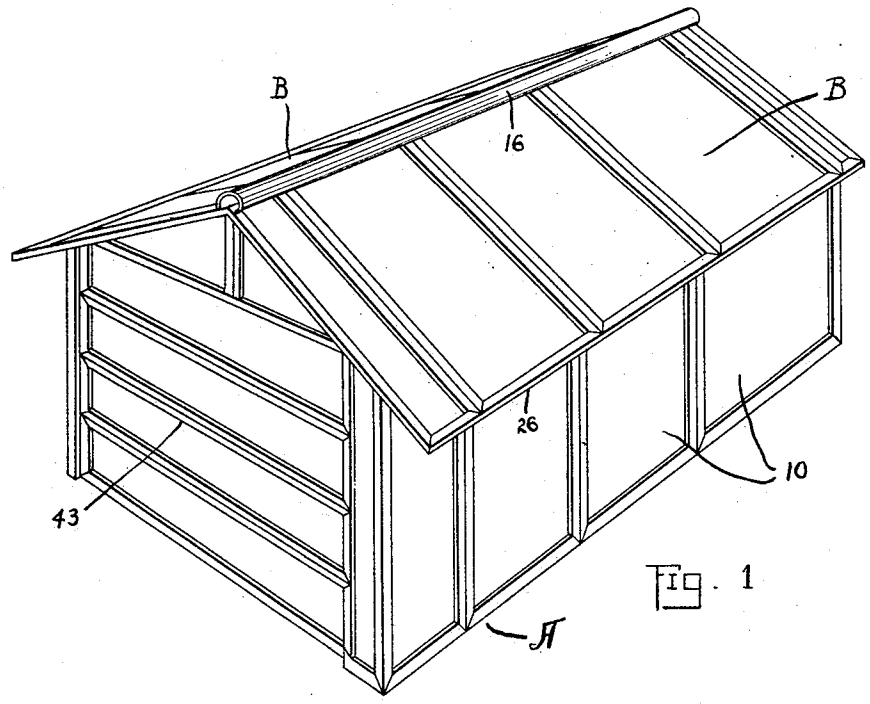


Fig. 1

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THERMAL BUILDING

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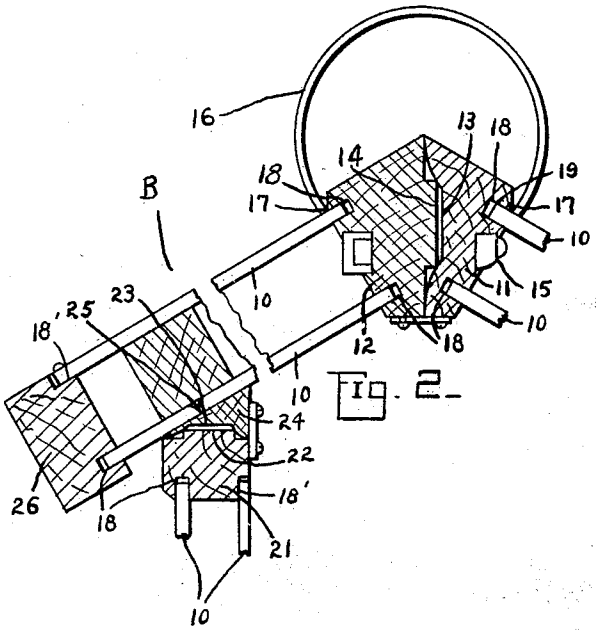


Fig. 2.

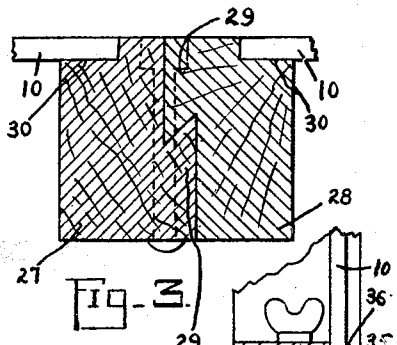
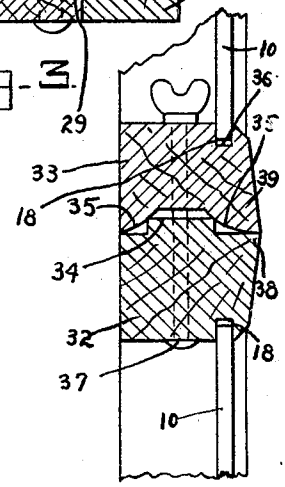


Fig. 3.



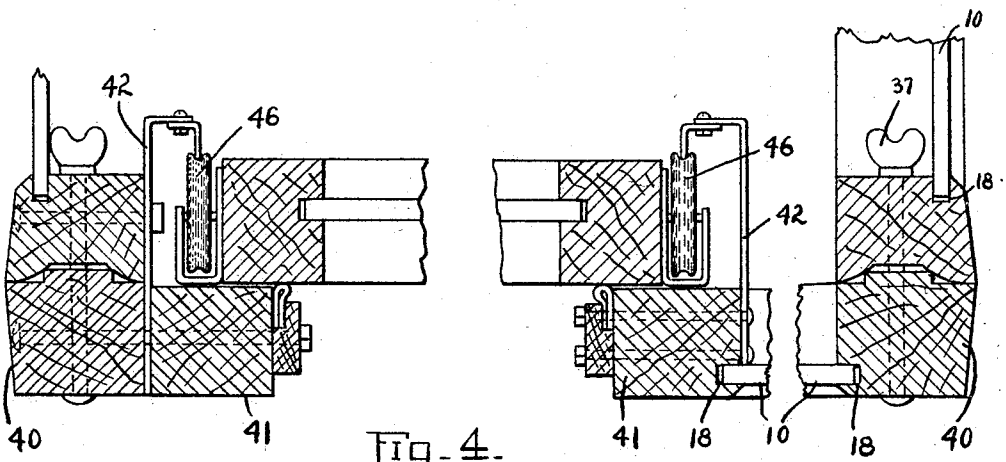


Fig. 4.

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UNITED STATES PATENT OFFICE

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THERMAL BUILDING

Application filed January 15, 1926. Serial No. 81,416.

My invention relates to thermal buildings structure wherein it is desired to provide a building of sheets of material made of a non-metallic substance such as is used and termed a wall-board or other wood pulp or paper pulp substance, formed into sheets so that the sheets can be used to make up the building and means for connecting the sheets together.

A feature of my invention resides in providing suitable connecting means for securing the pieces of material together in a manner so as to make up an entire building. These buildings may be used for garage use or other small buildings where a take-apart construction is very desirable. This provides joints which are weather-tight and which permit for the expansion and contraction of the material and with such a construction, a building can be made very economically yet having all of the desirable features of being weather proof in the sense of keeping out the cold and wind or rain, and being easily disconnected so as to form a knocked down building. The invention includes these means with simple connections so that the building can be knocked down and stored away in a compact state. Such a construction is very desirable as it permits the entire building to be shipped from place to place or stored away when it is desired.

It is also a feature of my invention to provide means for a double wall throughout the roof structure, if it is desired, so that the thermal effect is apparent on the roof and preventing the heat from being dispensed out of the ceiling of the building. The wall structure may also be of a double spaced apart thickness if it is desired without departing from the spirit of my invention.

I provide a building with a suitable door or opening which is made up of a series of members connected together and interfitting so as to provide a sliding door with track means for permitting the door to be elevated and extended along at or near the ceiling of the building so when the door is opened it is simply raised up and pushed along on the track. Counter-balance means permits the door to be easily raised. In garage structures this is very important as it permits the garage door to be easily opened and prevents it from being injured in breaking off or being swung back and forth by the wind.

In one form of my invention I provide a door which is adapted to include an automatic catch for holding the door which operates to hold the door locked in closed position or is adapted to drop and engage the ground so as to prevent the door from freely swinging back and forth in the wind and thus holding the door open at a desired position, the weight of the catch arm engaging the ground to automatically set the door in any desired position when open. In closing the door, the catch arm is raised and as the door slams shut the catch portion of the arm drops into engagement with the catch in the building so as to lock the door closed.

These features, together with other details of the invention will be more fully and carefully set forth in the specification and claims.

In the drawings forming part of this specification:

Figure 1 is a perspective view of my thermal building which is made up of sheets of wall-board or other similar material of a non-metallic nature, connected together in the manner illustrated.

Figure 2 is a detail of a portion of the roof in section illustrating the connecting means of the same, together with a portion of the double roof structure and double wall structure on the sides.

Figure 3 illustrates one of the connections along the side of the building in section.

Figure 4 is a section, a portion of which is broken away, of the door and track means, together with the corners of the building showing the connecting means at the corners.

In the drawings my building A is made up of sheets of non-metallic material such as 10. These sheets can be of wall-board or paper pulp, together with wood pulp construction if it is desired, and formed in sheets such as 10 which are of any suitable size and which are connected together in a manner to form my building A. A primary feature in my invention is to provide a light-weight building which can be easily shipped and which can

be knocked down into a compact form, the knocked-down formation not being illustrated as it will be readily apparent from the drawings that the sheets can be taken apart and laid together while the connecting joints can be assembled, and the whole package of a very compact state. It is an important feature of the invention that a light-weight structure be provided and one which can be taken down easily and moved from place to place if it is desired, and primarily my invention is adapted to automobile garages or buildings of a like nature having a smaller size and dimension, although it is possible that my building can be made into larger structures carrying out the principles of connecting the parts together if it is desired.

The ridge of the building A is formed by the connecting members 11 and 12 which are illustrated in Figure 3, and which are formed with a groove 13 in the member 11 and a tongue 14 which fits in the groove 13 projecting from the member 12. These members are connected together at intervals by the bolts 15. Over the top of the ridge I desire to place a ridge roll 16 made of metal and of a spring nature adapted to grip the members 11 and 12 at the shoulders 17 under spring tension so as to assist in drawing the members 11 and 12 together and to provide a water-tight joint over the ridge of the building A. Across the ridge roll 16 forms a clamping member to assist in making the ridge of the building more firm and also providing a water-tight joint over the top of the building.

Each of the members 11 and 12 are recessed with longitudinally extending grooves 18 in which the ends of the sheets 10 are adapted to fit. The sheets 10 do not extend into the depth of the grooves 18 as it is desirable to leave a small space, such as 19, so that the material of the sheets 10 can expand and contract sufficient to prevent buckling of the sheets in the building. This structure as illustrated in Figure 3 permits the double wall constructed with the sheets 10 spaced apart, as illustrated, and fitting snugly or other frictional contact in the recesses or grooves 18.

The outer edge of the sheets 10 of the roof B of the building A are held spaced apart by the spacing block 20 which extends along the length of the building and is positioned just above the upper side connecting member 21 which is positioned on top of the side wall members of the sheets 10, as illustrated in Figure 3.

The member 21 is adapted to form the top member for the side wall and extends along longitudinally the length of the building and is formed with a projecting tongue 22 which engages in the groove 23 of the member 24. The member 24 is formed with an inclined upper portion 25 on which the inner sheets 10 of the roof B rest to support the roof on the side member 21. The member 24 is secured to the spacing block 20 from inside the groove 23 so as to rigidly attach the member 24 to the under side of the roof B.

The outer ends of the roof are finished with a side member 26 which is attached to the edges of the sheet members 10 to form a finished edge to the roof B of my building A. The top member for the side 21 receives the edges of the side sheets 10 in suitable grooves 18 with a space so that the sheets can expand when in use, the inside recess 18′ being a groove along the edge of the block of the member 21 and permitting the sheet to be nailed in this groove if it is desired. This same kind of a groove 18′ is used in the edge member 26 for the top sheet of the roof.

The floor connecting members 27 and 28, are illustrated in Figure 4 and are provided with interconnecting hook ends 29 which are hooked together and these members are held together by suitable bolts and spaced at intervals to securely connect the members 27 and 28 together. The sheets 10 are adapted to fit into grooves or notches 30 formed on the upper edge of the members 27 and 28 so as to provide a smooth floor and to hold the sheets 10 flush with the top side of the connecting members 27 and 28.

All of the connecting members and joints used at the ridge and wall or other connection of the sheets are made of wood or non-metallic material which are tongue and grooved to fit together in the manner illustrated.

The wall and roof connectors for the sheets 10 are illustrated in section in Figure 5 of the drawings and are provided with the members 32 and are made up of the members 32 and 33. The members 32 are formed with a tongue member 34 which has sharp corners 35. This tongue member fits into the groove 36 formed in the member 33 and by means of the bolt 37 the members are clamped rigidly together by the operation of the thumb screw on the bolt 37. This causes the sharp edges 35 of the tongue 34 to bite into the groove of the outwardly flaring sides of the groove 36 and seal the same tightly together, while the outer surfaces 38 and 39 of the connecting members 32 and 33 pitch upwardly toward the meeting point of the two members to provide a water tight connection when the members are pinched together by the bolt 37. The sheets 10 fit into the same groove 18 formed in these members with space for expansion and contraction.

I provide a corner member 40 which is similar to the members 32 and 33, as illustrated in Figure 5, and which is connected by means of a similar bolt 37 in a manner to connect the members of the corner 40 together with the same tongue and groove means 34 and 36. The grooves 18 are positioned differently in these members for the corner 40 so as to per-

mit the sheets 10 to extend in a right angular direction to each other.

Jamb members 41 are provided which have sheet receiving grooves where it is desired and which are connected by bolts either to a corner member such as 40, or merely attached to the side or sheets 10, as illustrated in Figure 5, by the groove 18. To these jamb members 41 I connect the rail 42 which is adapted to carry the door 43. The door 43 is made up of members which are hingedly connected and are provided with rollers 46 which run on the track 42 in a manner so that the door can be slid down to close the opening of the building A, or to be raised and run along the horizontal portion of the track which is positioned near the ceiling of the building A. The members 44 are tongue and grooved so as to interfit together and form a tight joint when they are in vertical position to close the door opening.

The features of the invention reside in the objects and detail of construction pointed out in the specification and while the drawings illustrate the specific formation of the building A, I desire to have it understood that this is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth within the scope of the following claims.

I claim:

1. A building formed of non-metallic material made up of a series of non-metallic sheets connected by inter-connecting non-metallic members, said connecting members being tongued at right angles and grooved at an incline, bolts adapted to hold said members together to form rigid, firm connecting joints whereby a building can made up of a series of non-metallic wall-board sheets of a light weight.

2. A building structure including, joint members formed with right angular tongues and inclined side groove means, bolts for connecting said members together, said tongues and grooves forming air-tight joints to provide water-tight connection, and wall-board receiving grooves formed in said connecting members whereby ridge connections and side and corner connections are provided, all of a non-metallic nature.

3. A building including, non-metallic members adapted to receive the edges of wall-board members to provide walls, roof and floor for a building of a non-metallic nature having a light weight, the connecting members including a pair of wooden members tongue and grooved in a manner so that a right angular projection engages an inclined surface to form an air tight joint and bolts adapted to hold said members together.

4. A building of a non-metallic nature including, wood connecting members, grooves for receiving wall-board sheets in said members in a manner to provide expansion and contraction of the wall-board sheets, tongue and grooved means formed so that a right angular projection engages an inclined surface in said connecting members, bolt means for holding said members connected together to form a water and air-tight joint therebetween, a ridge roll member including tongue and groove connecting means, bolts for holding said ridge roll together, and spring ridge roll means adapted to clamp over said ridge roll connecting members to hold the same under spring tension and to provide a tight joint over said ridge roll connecting member.

5. A thermal building of a non-metallic nature including, a series of wall-board sheets, means for receiving the edges of said sheets in a manner to permit expansion and contraction of the same in connecting members, means disposed between said receiving means for spacing said sheets apart to provide dead air spaces between the same to form an insulating means between the roof sheet and side walls of the said building, and means for connecting the sheet holding members together in a manner to form tight joints.

WALTER C. MISS.