

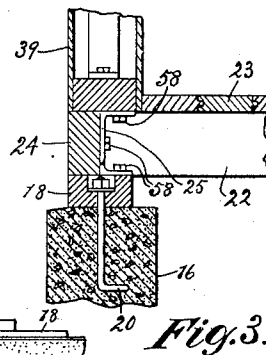
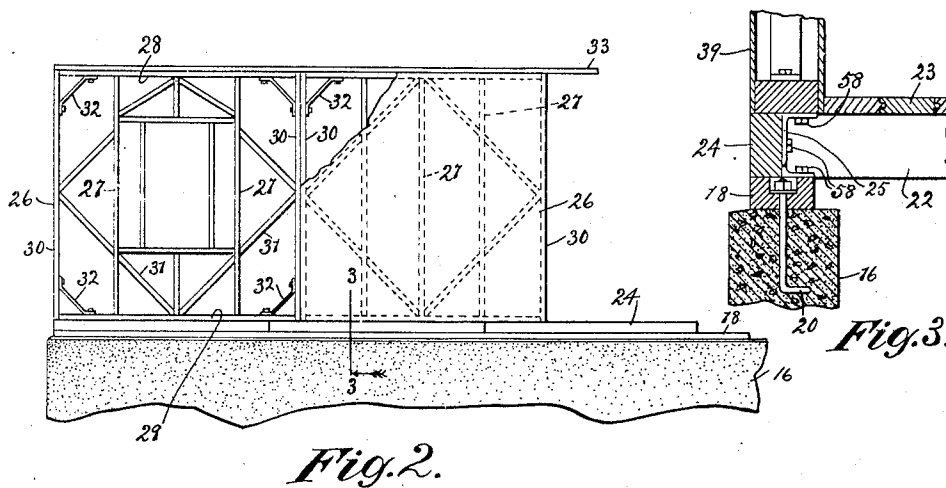
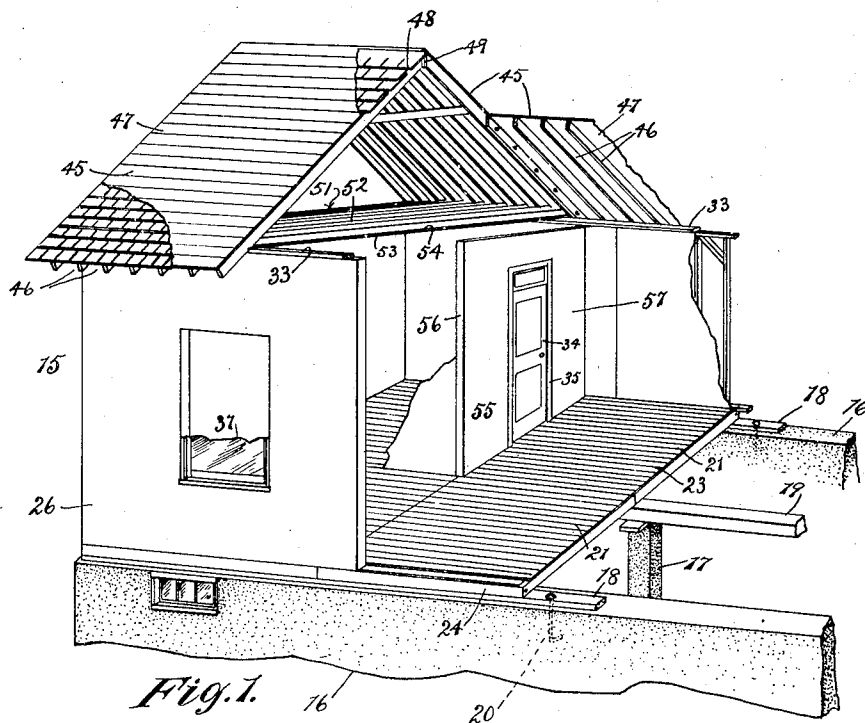
March 29, 1927.

1,622,962

C. L. MICHOD
BUILDING CONSTRUCTION

Filed Sept. 10, 1923

2 Sheets-Sheet 1



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March 29, 1927.

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2 Sheets-Sheet 2

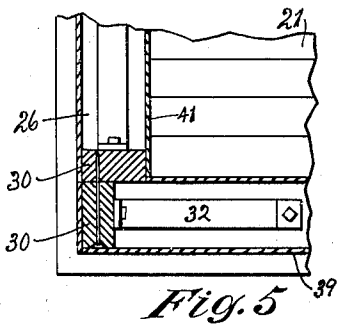


Fig. 5.

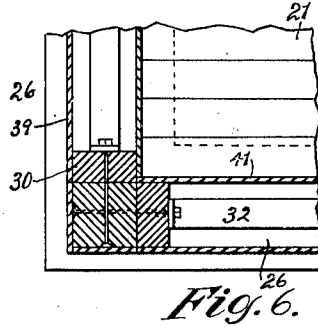


Fig. 6.

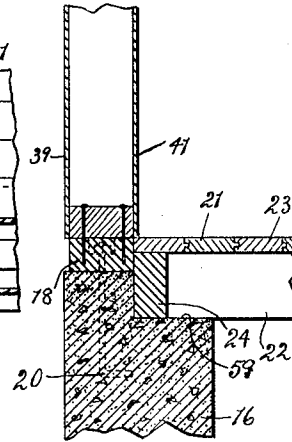


Fig. 4.

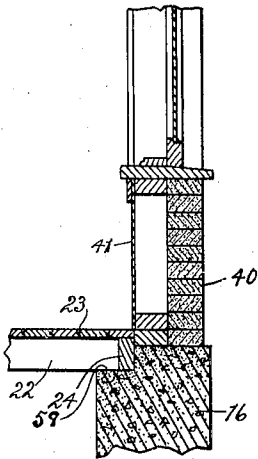


Fig. 8.

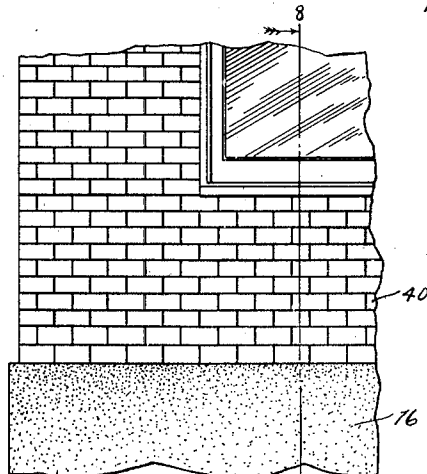


Fig. 7.

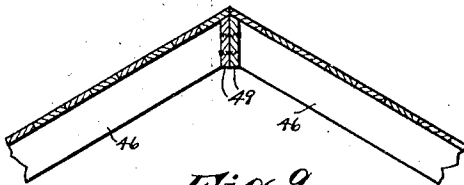


Fig. 9.

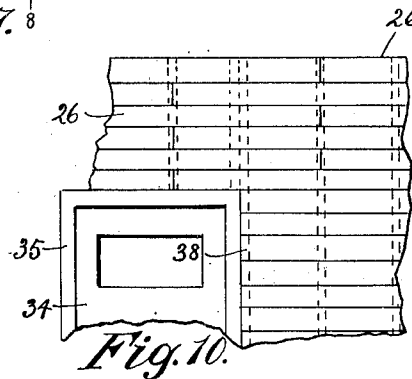


Fig. 10.

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UNITED STATES PATENT OFFICE.

CHARLES L. MICHOD, OF CHICAGO, ILLINOIS.

BUILDING CONSTRUCTION.

Application filed September 10, 1923. Serial No. 661,870.

My invention relates to buildings and more particularly to buildings which are partially constructed in the shop or factory and to an improved method of constructing and erecting the same.

I am aware that partial construction of buildings in the shop or factory is not new, as there are numerous constructions extant in which lumber is cut in the factory, ready for framing and assembly on the building site, and in some instances, wall sections are partially factory constructed. In all such constructions there remains a substantial amount of framing and construction work to be done on the building site, which of necessity requires a considerable time in erecting the building ready for occupancy. Such buildings are necessarily delayed in their erection by inclement weather. In my construction, I find it is easily possible to erect and complete, ready for occupancy, a fair sized dwelling on a foundation already prepared, in as little as two days, of any desired exterior material such as stucco, sheathing, or the like and of any desired interior material such as stucco, plaster board or the like. This is accomplished by constructing the building in the factory in large size sections, preferably about eight and one half by eleven feet, as I find that sections of these dimensions permit the utilization of standard sizes of framing and other materials to advantage, and are small enough to be easily handled and remain within the limits set by the carriers as to shipping sizes. Such sections are preferably made rectangular, and constitute a substantially complete segment of a wall, floor, roof, partition, or porch as the case may be and comprise the necessary framing and bracing together with either or both the outer and inner walls finished complete as to details, painting, staining, etc. and so constructed that no special connections are required. The short time required to erect a building of such sections enables a building to be planned for erection without regard to the season. A further advantage is the economy incident to keeping labor constantly employed under cover and the utilization of standard sizes of material, and the primary object of my invention is to provide an improved method of factory construction and of erection by means of which stronger and more comfortable buildings can be completed at a substan-

tial saving in the time required for erection, and in labor and material costs over methods of construction and erection heretofore employed.

Another object is to provide for the construction of a dwelling in major sections, substantially complete in the shop, and according to special plans for each building if desired, so that it can be erected at any season and immediately after erection is ready for occupancy. This result is accomplished by making the roof, walls, partitions, floors, closets and porches practically complete in the shop according to such plans with the doors, windows and hardware in place.

It is well known that there is considerable circulation of air between the outer and inner wall surfaces of frame buildings as heretofore constructed and that a large amount of the artificial heat provided for such houses escapes. In my construction, each of the wall sections are hollow and has its lateral edges closed preferably by timbers which are adapted for fastening to the corresponding lateral timbers of adjacent sections so that there can be no circulation of air from one section to another. Such timbers are preferably two by fours or two by sixes and are utilized for fastening the adjacent sections together with the result that no special connections are required. Each of said sections is thereby provided with a dead air space which makes the walls practically non-conducting, and a further object of the invention is the provision of a building having walls comprising shop constructed major sections which are adapted by their construction to keep the house relatively cool in summer and warm in winter.

The provision of large sized sections enables bracing of substantial lengths to be provided as a part of the framing and the mounting of doors and windows therein, ready for use before shipment. The tendency, in frame buildings, of windows to bind and doors to sag, is well known and this provision of large rectangular sizes permits the sections to be braced against deformation even though the building should settle on its foundation and this in turn eliminates the possibility of sagging doors and binding windows. Another object is the provision of relatively large shop constructed building sections which are braced so as to assure mechanically correct joints when the sec-

tions arrive on the building site and to eliminate warping and weaving of the materials and any distortion due to the settling of the building, whereby windows and doors mounted therein are prevented from sagging and binding.

A further object is to provide sections of sufficiently large sizes to enable the advantageous use of standard framing material with a minimum of cutting or sawing of the lengths thereof which thereby eliminates waste and speeds the construction of the sections in the factory.

A still further advantage is the provision of a building substantially all constructed in the shop and which by reason of the breaking of joints in accordance with the prepared plans and their arrangement to coincide where possible with the edges of doors and windows and in other portions overlap, has the appearance of a building constructed on the site and which is stronger and relatively more economical and comfortable than similar buildings constructed on the site of corresponding materials and by the same class of labor.

The foregoing and other objects will appear in the following detailed description.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which—

Fig. 1 is a perspective view of a building erected of sections constructed according to the principles of my invention, with a portion of the sections removed and a layer or layers of the remaining sections partially torn away.

Fig. 2 is an elevational view with the outside covering of two wall sections removed.

Fig. 3 is a detail view along the line 3—3 of Fig. 2.

Fig. 4 is a detail view showing an alternative form of floor framing and wall support.

Figs. 5 and 6 are sections showing two different methods of securing the wall sections together at a corner of the building.

Fig. 7 is a fragmentary section of a building constructed according to the methods of my invention with a veneer of brick covering the sections.

Fig. 8 is a section along the line 8—8 of Fig. 7, and

Figs. 9 and 10 are detail views illustrating features of my invention.

Referring now to the drawings, the numeral 15 generally designates a dwelling constructed by the principles of my invention, and 16 and 17 the outside foundation wall and piers respectively, by which the dwelling is supported. Caps 18 and sills 19 rest directly upon the supports and are secured thereto by bolts 20 as indicated in Figs. 1, 3 and 4.

The floor is made up of rectangular shop constructed sections 21, preferably of such

dimensions that the joints between adjacent sections underlie the partition walls. In large rooms, exposed joints may be eliminated by applying a finish floor after the building is assembled. The floor sections 21 comprise joists 22 to which the flooring 23 is applied in the shop and may include a finish floor (not shown). Outside framing members 24 are fastened to the ends of the joists by "toe-nailing" or any other convenient method, and to the caps 18 and the sills 19 by channels 25 and bolts 58, as is best shown in Fig. 3. An alternative connection of the floor is shown in Figs. 4 and 8, where the members 24 are fastened by nails (not shown) to the caps 18, the foundation 16 being provided for this purpose with a shoulder 59, on which the members 24 rest. The joists 22, flooring 23 and members 24 are preferably constructed of standard size timbers and may be cut in the shop, using a template to speed up the work and insure uniformity of lengths of the various corresponding members.

The walls (except for brick or stone construction) are likewise made up of factory constructed sections 26, various details of which are shown in Figs. 2 to 8, inclusive. The framing of the wall sections is best illustrated in Fig. 2 where the studding 27, top and bottom edge members 28 and 29 and vertical edge members 30 respectively are fastened together preferably by nails (not shown) and by the diagonal timber bracing 31 as well as the metal bracing members 32. The wall sections 26 are surmounted by a plate 33 which assists in tying the adjacent sections together and forms a support for the roof. The framing material is spaced apart for the insertion of the door 34, the frame 35 of which is directly connected to the studding, the door being mounted and with all of its appurtenances in position before the section 26 of which it forms a part, leaves the factory. Studding, bracing and crosspieces of standard sections and special lengths are provided for connecting windows 37. Any desired mill work construction can be used with this construction and no special material or cutting is required.

The wall sections adapt themselves to a great variety of construction. If desired, the sections can be finished complete in the shop with siding 38 as shown in Fig. 10. In this construction, it is advantageous to arrange the sections so that one vertical edge is in alignment with one edge of a door or window and the joint merged with the joint of the siding to the window or door frame by having the interfitting portions of the siding of both adjacent sections cross the extended line of said edge or side and not be noticeable. The particular siding above the door and the window can be cut to a template and project to alternate and fit

with the corresponding siding of the section to which it is joined and the impression of a sectional joint be thereby entirely prevented. If the exterior wall is of composition applied in the shop, this arrangement of the joint adjacent door or window edge is also advantageous.

If the exterior wall 39, Figs. 3, 4, 5 and 6, is of plastic material to be applied on the site, exterior sheathing, wire mesh or other desired material is applied to the section in the shop. In Figs. 7 and 8, bricks 40 are provided to form a veneer either with or without exterior sheathing material. Any one of the numerous fibrous materials made up into sections and constructed from cane stalks or similar vegetation is found to be well adapted for the purpose.

The interior walls 41 may be constructed of plaster board or of fibrous or any other desired material, and nailed to the studding or to the interior sheathing. The interior walls may also be of plaster applied on the site in which case the lath are fastened in the shop. It is obvious that the construction adapts itself to a great variety of materials for the interior and exterior walls and that either or both such walls may be finished in the shop including all details, painting, tinting, trim or the like, it being only necessary where both walls are in a finished condition that a small opening or openings be left adjacent the vertical edges in order that such edges may be nailed or bolted together. Where the plastering is to be applied on the site no such openings are left as the lath can be removed as desired in order to make the interior of the section accessible for bolting or nailing wherever it is found to be necessary. In case that the wall surfaces are of plaster board or the like, the joints may be covered with a trim arranged as a panel or in any other scheme which serves to hide the joint in an artistic manner.

The roof sections 45 are constructed in the shop and include rafters 46, of standard framing, on which is fastened sheathing 47 by nailing or otherwise and on top of which any desired prepared roofing 48 may be mounted as a cover. The layers of roofing 48 may project over either side as indicated in Fig. 1, and when the sections are assembled, the projecting portions are lapped over the edges of the adjacent sections to form a waterproof joint. In case shingles are used, the shingles adjacent the joint are best applied after the roof is assembled, by nailing or bolting the outer rafters of adjacent sections together and to the plate 33. The sections 45 meeting at the gable are fastened together at the peak by boards 49 which are nailed to the rafters 46. If desired, the joints between adjacent sections 45 on the same side of the gable may lie between the

joints of the sections on the opposite side of the gable, this being accomplished by making one of the sections relatively narrow.

The ceiling is preferably constructed in sections 51 of joists 52 and any desired ceiling material 53 fastened on the under side of the joists 52. These joists are spaced so as to be nailed to the corresponding roof rafters and the interior surface joints are made to overlie the partitions where possible. Such joints as are left exposed may be artistically hidden as explained for the exposed joints in the exposed wall surfaces. The ceiling may have plaster applied on the site to lath 54 fastened in the shop as described for the interior surface of the wall sections.

The partitions are made up of sections 55 comprising studding 56 covered with material 57 similar to the interior surface of the wall sections 36 of the same room. These sections 55 are provided with the necessary doors and the like already mounted and equipped with the necessary appurtenances complete in the shop, the manner of assembling and fastening the sections together being similar to that described for the wall sections.

Thus it will be seen that I have provided a method and type of construction, not according to some distinctive design differing in mechanical or architectural features from other buildings, but one in which standard types of materials are utilized to the best advantage by doing substantially all of the constructing in the factory according to predetermined plans, where production is more accurate on account of non-interference of the weather and other disturbances incident to construction in the open and which includes the possibility of more careful selection of materials, as well as the advantages accruing as a result of increased speed of application, diminished first cost of materials and of handling the same, low overhead and design costs. Sectionized appearance of the wall and roof is avoided by cutting the edges to a template so that alternate portions overlap the adjacent section and the intermediate portions are cut back to receive the corresponding projecting portion of the adjacent section, and also by making the edges of the sections coincide with the lateral edges of door and window frames. This method and type of construction is adapted to any sort of building and any sort of material and to sections of any type and shape to fit the plans of any special or standard type of building. These features all combine to produce stronger, better built and relatively non-conducting construction which is thought to constitute a very decided step in advance of any existing system or method of construction.

What I claim as new and desire to secure by United States Letters Patent is:

1. In a building construction, a wall section having a frame about an opening there-
5 through, siding on said wall section, a second wall section, the second wall section having siding, the latter siding at a portion thereof substantially uninterruptedly fitting against a side of said frame, said siding
10 having an extension beyond an end of the frame interrupted to interfit with the first mentioned siding, the interfitting portions of the siding of both sections crossing the extended line of said side to avoid the ap-
15 pearance of a line joint between the sections at said side.

2. In a building construction, a wall section having a frame about an opening there-
through, siding on said wall section, a sec-

ond wall section, the second wall section
20 having upstanding studding members, siding fastened to the studding members, one of said studding members and a portion of the siding substantially uninterruptedly fitting against a side of said frame, said siding
25 having strips beyond one end of the frame, the last mentioned studding member extending beyond said end of the frame, and the first mentioned siding having strips beyond said end of the frame interfitted with
30 the first mentioned strips, the interfitting portions of the strips crossing the extended portion of the last mentioned studding member to avoid the appearance of a line joint
35 between the sections.

In testimony whereof, I have hereunto affixed my signature.

CHARLES L. MICHOD.