

May 30, 1939.

J. J. NEWMAN

2,160,225

BUILDING CONSTRUCTION

Filed May 23, 1938

3 Sheets-Sheet 1

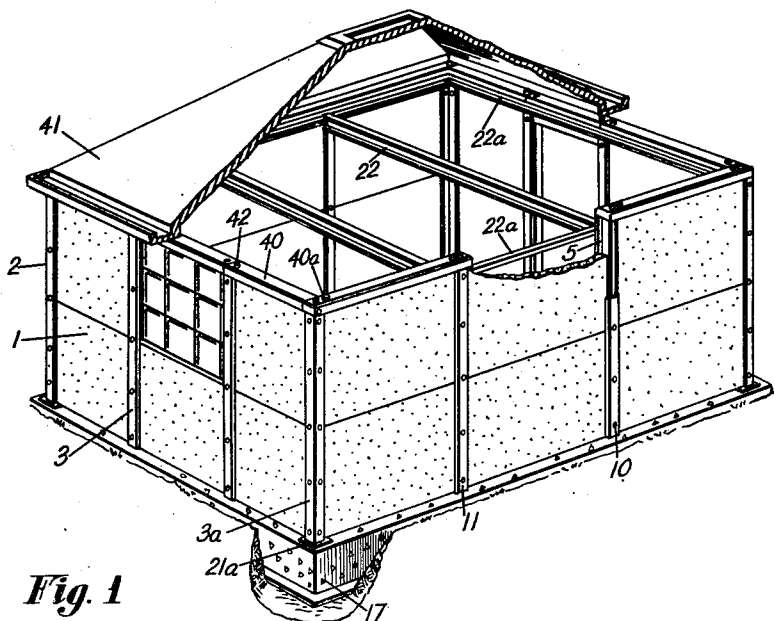


Fig. 1

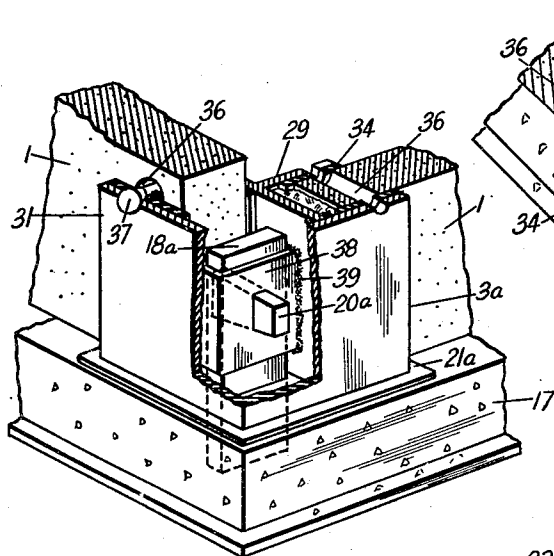


Fig. 2

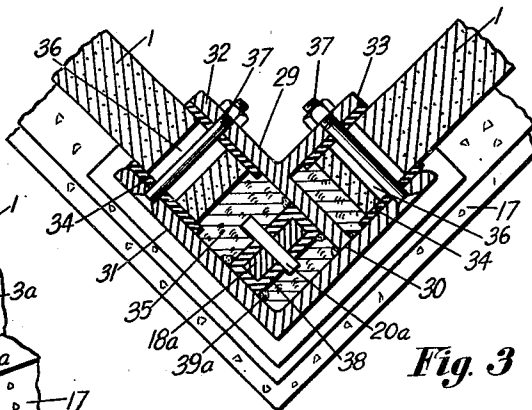


Fig. 3

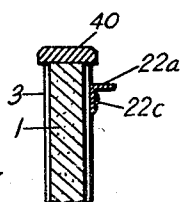


Fig. 5

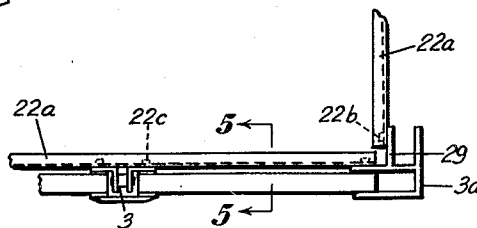


Fig. 4

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3 Sheets-Sheet 2

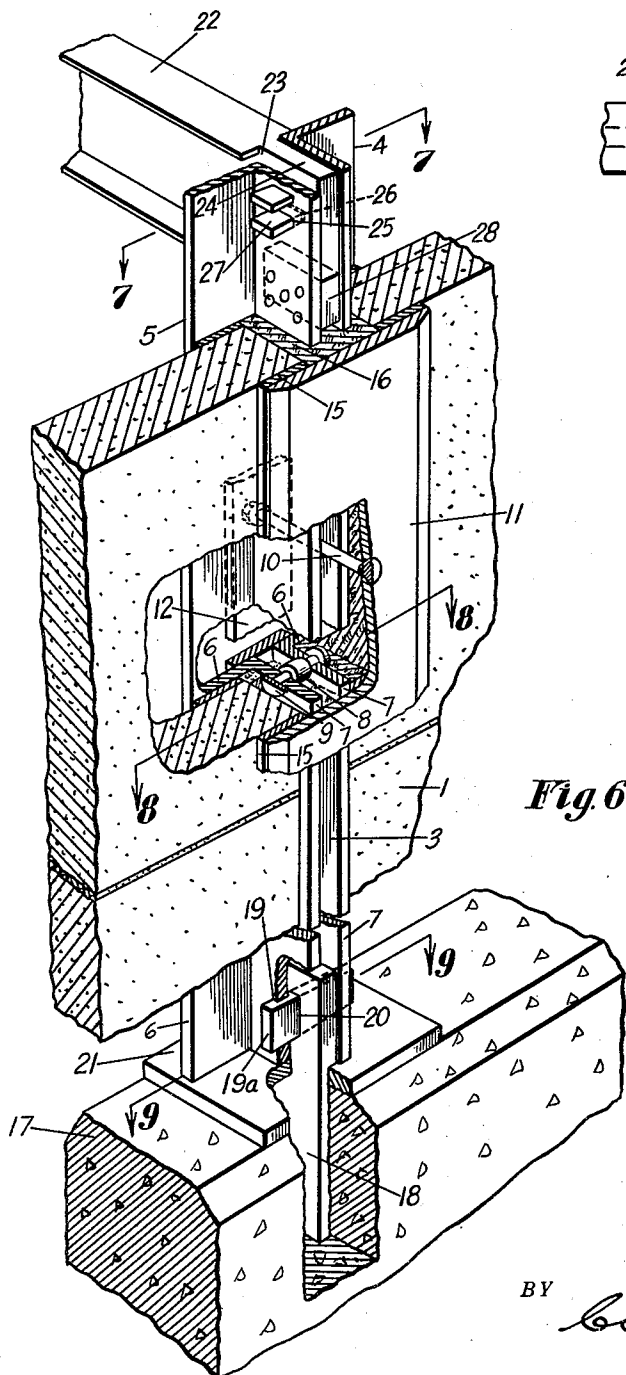


Fig. 6

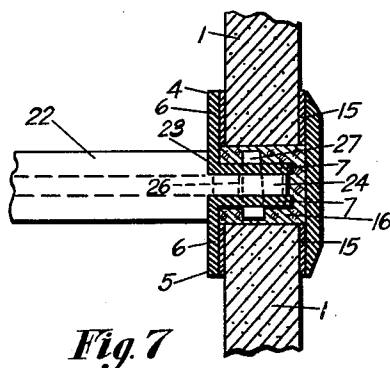


Fig. 7

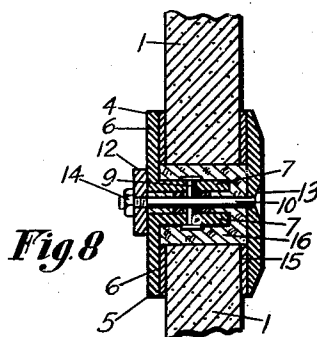


Fig. 8

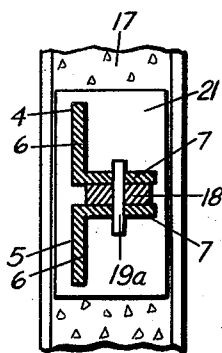


Fig. 9

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3 Sheets-Sheet 3

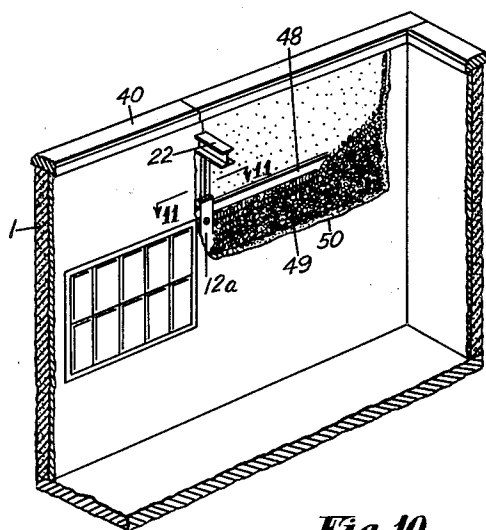


Fig. 10

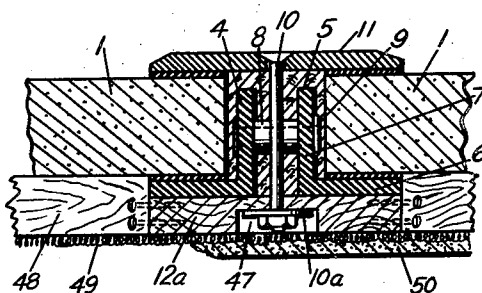


Fig. 11

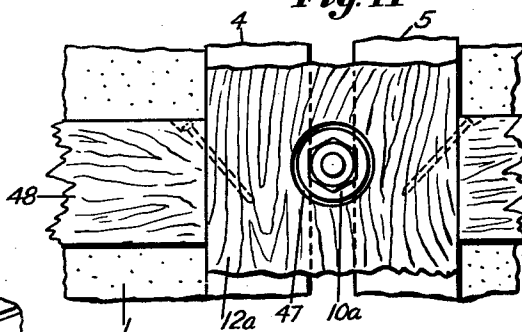


Fig. 12

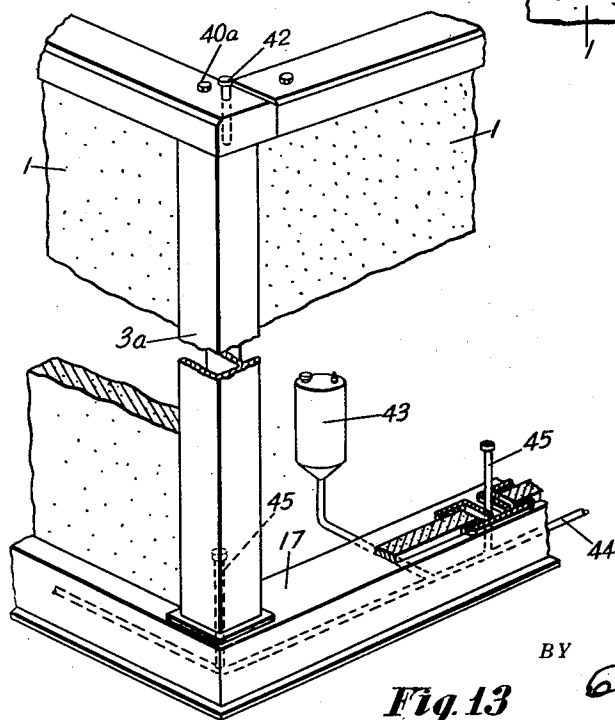


Fig. 13

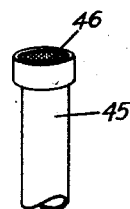


Fig. 14

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UNITED STATES PATENT OFFICE

2,160,225

BUILDING CONSTRUCTION

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Application May 23, 1938, Serial No. 209,456

9 Claims. (Cl. 72-1)

My invention relates to a building construction. It has to do, more particularly, with a building structure which is composed of preformed or prefabricated units that may be produced at a factory or shop and later set in place and assembled on the site to form the building.

As is well understood, the most prevalent practice at the present time is to construct building structures from small pieces put together on the site, the various parts being masonry, wood, metal or similar material. There have been many attempts in the past to produce a suitable building structure of prefabricated units so that it could be produced in a factory by machine processes rather than be produced from a large number of small pieces on the site of the building by slow expensive hand processes. However, none of these attempts have been successful to any considerable extent. Most of the prefabricated structures produced heretofore have been less pleasing in appearance and have been of a lower quality than buildings produced by the conventional methods from the conventional materials. Therefore, it is still in practice to produce most building structures of the conventional materials and by the conventional methods.

One of the objects of our invention is to provide a building structure which is composed of preformed and prefabricated units which may be manufactured in a factory or shop by mass production equipment before moving to the building site.

Another object of my invention is to provide a building structure composed of prefabricated or preformed units which may be erected quickly and easily at the site of the building and without the employment of skilled labor.

Another object of my invention is to provide a building structure which even though it is composed of preformed or prefabricated units is of very pleasing appearance and is of a very high quality.

Another object of my invention is to provide a building structure of the type indicated which is of such a nature that after it has once been erected, it may be completely disassembled, removed to a new foundation and reerected easily and quickly, all without the building having the appearance of a temporary structure.

Another object of my invention is to provide a building construction wherein all joints are sealed water-tight without the use of adhesive or hardening substances, such as cement, mortar or the like.

Another object of my invention is to provide a building structure of the type indicated wherein the joints between the various sections are such as to permit variations in the cutting of the material, well within the economical production tolerances for factory sizing of such materials, and also to allow for flexibility sufficient to take care of all uneven settling of the building which would otherwise break the wall material.

Another object of my invention is to provide a building structure in which high class materials such as stone and steel may be employed so that the building will have the appearance of a permanent high class structure but which can be produced at a relatively low cost because all of the units thereof may be produced by mass production factory methods.

Another object of my invention is to provide a building structure of the type indicated which is composed of preformed slabs and preformed frame members which may be made of steel and which is provided with lubricating means for protecting the exposed surfaces of the steel within the walls of the building.

In its preferred form my invention contemplates the provision of a building structure which has its walls composed of frame members which may be made of steel or other suitable metal and slabs held in cooperative relationship by the frame members and which are composed of any suitable material such as stone, concrete or the like. The slabs preferably take the form of large rectangular finished slabs which may be formed completely at a factory or shop. The steel members which form the frame and which hold the slabs in position are also preformed and prefabricated at the shop or factory. The units are such that they may be assembled and erected on the site quickly and without the employment of skilled labor. No fitting, precision work, riveting or cementing is required at the site of the building in order to properly erect it. Furthermore, it is not necessary to provide the large slabs with notches, dovetails or any interfitting portions. All of the joints between the slabs are sealed water-tight by pressure exerted on any suitable pliable stripping thereby eliminating the need for adhesive or hardening substances, such as cement, mortar or the like. By such construction the building may be completely disassembled, removed to a new foundation and reerected easily and quickly without tearing apart or replacing permanently cemented or mortared joints, all without the build-

ing having the appearance of a temporary structure.

My method of construction makes possible the use of materials used conventionally in only permanent structures of high class and high cost. The high quality of my building structure is attained by the use of high quality materials while the cost is greatly reduced inasmuch as factory methods and equipment may be used in forming the units. Records show that in the erection of first class stone building, the material is not expensive, but the heavy cost is in the preparation, precision fitting and sizing of the stone at the building site by slow highly paid skilled manual labor. These operations in addition to the slow mortaring and plumbing processes involved in the placing of the many stones required to make up a comparatively small section of wall require much time and can be successfully accomplished only by highly paid skilled labor.

In my building structure I provide a joint between various slabs which is of such structure as to permit much variation in the cutting of the material and to allow for flexibility sufficient to take care of all uneven settling of the building which would break the wall material if such provisions were not made. I also provide means in association with the steel frame members of my building structure for oiling the exposed surfaces of the steel within the walls in order to protect them from deterioration as a result of "sweating" and corrosion.

My building structure is of such a nature that it will have a finished appearance both inside and out and yet will be composed of a single wall which requires no covering of any all-over substance on the inside of the building or outside of the building for the purpose of finishing. Thus, the slabs of stone or other material will produce finished wall surfaces both inside and out without the use of other materials on the surfaces thereof. However, in some instances it may be desirable though not necessary to apply a covering of material, such as plaster, to the interior surface of the wall.

My construction applies to building structures of many stories as well as single stories there being necessary only changes in dimensions of my structure to take care of the various loads, strains and stresses.

The preferred embodiment of my invention is illustrated in the accompanying drawings wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a perspective view, partly broken away, of a one-story building structure produced in accordance with my invention.

Figure 2 is a perspective view, partly broken away, of a portion of the corner joint of my building structure.

Figure 3 is a horizontal section of the structure illustrated in Figure 2.

Figure 4 is a detail of means employed for tying the studding together.

Figure 5 is a transverse section taken substantially along line 5—5 of Figure 4.

Figure 6 is a perspective view partly broken away showing one of the frame members and the associated slabs and illustrating how the slabs are held in their proper positions.

Figure 7 is a horizontal section taken substantially along line 7—7 of Figure 6.

Figure 8 is a horizontal section taken substantially along line 8—8 of Figure 6.

Figure 9 is a horizontal section taken substantially along line 9—9 of Figure 6.

Figure 10 is a cut-away view of the inside of a building structure having the inner wall surface furnished with plaster.

Figure 11 is a detail in horizontal section illustrating a vertical joint between the slabs and showing how steel lath may be secured to the wall structure.

Figure 12 is a detail in side elevation showing wood members to which the lath may be nailed.

Figure 13 is a view in perspective showing the lubricating system provided for lubricating the steel frame members.

Figure 14 is a perspective view of a portion of the oil conduit.

With reference to the drawings, in Figure 1 I have illustrated a one-story building structure produced in accordance with the principles of my invention. As illustrated, this building structure is composed of a plurality of large rectangular slabs 1 of any suitable material, such as stone, concrete or the like. These stone slabs are preformed and are cut to the required size at the factory or shop. The stone slabs are held in proper association with each other by a steel frame structure indicated generally by the numeral 2. This steel frame structure is made of units which are preformed and prefabricated at the factory or shop. Instead of employing steel for the frame any other suitable metal may be employed.

The steel frame consists of assembled steel units designated generally by the numeral 3 which are vertically disposed and spaced as studding which hold the walls made up of the slabs 1 in vertical upright position but do not support the weight of the walls. The large rectangular slabs of the wall material extend from one steel vertical studding 3 to the next adjacent steel vertical studding.

With reference to Figures 6 to 9, inclusive, I have illustrated the details of the vertical steel studding 3. Thus, as shown in these figures, this studding comprises two steel angle members 4 and 5, each of which has one of its flanges 6 extending laterally in overlapping relationship to the inner surface of the slab 1 and its other flange 7 in overlapping relationship to the ends of the slab. The steel angles 4 and 5 are vertically disposed and the flanges 7 thereof are spaced apart by spacers 8 which are in the form of metal sleeves. These spacers are disposed at suitable intervals and rivets 9 pass through these spacers and aligning openings in the flanges 7 of the angles in order to secure them together integrally so as to form a single unit. The wall slabs 1 are clamped tightly to the flanges 6 of the angles by bolts 10 disposed at vertically spaced intervals. These bolts 10 draw together an outside finishing strip 11 and an inside finishing strip 12 which are provided with openings through which the bolts pass. The outside finishing strip overlaps the outer surfaces of the slabs 1 and the inside finishing surface 12 overlaps the flanges 6 of the angle members 4 and 5. The strips 11 and 12 may also be made of steel. The head of the bolt 10 is countersunk in the outside finishing strip as at 13 while the nut 14 which is threaded on the inner end of the bolt bears against the strip 12. Between the portions of the strip 11 which overlap the slabs 1 and between the flanges 6 and the cooperating surfaces of the slabs, gaskets 15 are disposed. These gaskets may be of any suitable pliable material in the form of strips

such as cork, rubber and the like. Thus, it will be apparent that the wall slabs will be clamped tightly to the vertical studding. Sufficient spacing is left between the ends of the slabs 1 and the steel angle members to allow for variations in the cutting of the slabs and also to allow for variations caused by the settling of the building. These spaces are filled with granulated cork or other comminuted material, which will preferably absorb oil, after the walls are completed. Thus, it will be apparent from Figures 6 and 8 that the spaces at the ends of the slabs and between the angle members 4 and 5 are filled with the granulated material 16. It will be apparent that a weather-tight joint is produced and the stone slabs will be supported in such a manner that there will be no danger of chipping or injuring such slabs.

In Figure 6 I illustrate how the vertical studding 3 may be secured to the foundation 17. The foundation in this instance is composed of concrete. At each point where a vertical studding is to be supported on the foundation, the foundation is provided with a steel member 18 embedded therein. This steel member 18 projects upwardly from the foundation and is adapted to project between the flanges 7 of the angle members 4 and 5. The flanges 7 have adjacent their lower ends aligning slots 19 formed therein. These slots are vertically disposed and are of substantially rectangular form. A similar aligning slot 20 is formed in the portion of the steel member 18 which projects between the flanges 7 of the angles. The studding 3 is secured to the member 18 by driving a steel wedge member 19a through the aligning slots 19 formed in the angle 7 and slot 20 formed in the member 18. The lower end of the steel studding rests on a steel plate 21 which is properly slotted to fit over the member 18 and which rests on the upper surface of the foundation. Thus, it will be apparent that the lower end of the steel studding will rest on the foundation and will be effectively secured thereto.

The upper ends of the steel studding members disposed at opposite sides of the building are joined together by transversely extending I-beams 22 as illustrated in Figure 1. These I-beams have their ends connected to the vertical studding 3 in the manner illustrated in Figures 6 and 7 of the drawings. Thus, as illustrated in Figure 6, the flanges of the I-beams 22 are cut away as indicated at 23 adjacent the end of the I-beam so that the portions 24 thereof will fit between the flanges 7 of the angle members 4 and 5. The flanges 7 are provided adjacent the upper end of the vertical studding with horizontally disposed slots 25, the slots in the two flanges aligning with each other. These slots also align with horizontal slots 26 formed in the portion 24 of the I-beam. These slots are substantially rectangular in form. The position of slots 25 in the flanges and slots 26 in the portion 24 of the beam is such that when wedges 27 are driven through these slots, the beam 22 is drawn tightly against the flanges 6 of the angle members, the ends of the cutaway portions 23 of the beam forming a stop to limit inward movement of the angle members 4 and 5 as the wedges 27 are driven into position. A steel spacer block 28 may be riveted between the flanges 7 adjacent the upper end of the steel studding so that the beam 22 will rest thereon and the load of the beam will be carried thereby.

It will be apparent that the steel studding 3 may be assembled and fabricated into a single unit at the factory. The I-beam 22 will also be pre-

formed at the factory. It will also be apparent that the vertical studding may be easily and quickly secured to the foundation and may be easily and quickly secured to the cross-beams 22. The wedges make possible the quick erection of the steel and also permit the building to be disassembled as quickly, without the cutting of rivets, removal of bolts or the cutting off of the steel members at the foundation level. Steel so erected may be assembled, disassembled and reerected many times without destroying its value in the least, and without the use of special tools or riveting equipment on the job. It may be done also by cheap unskilled labor. Furthermore, the stone slabs 1 may be preformed and cut to the required size and may be finished at the factory. They may be easily and quickly set into position and clamped in their proper position by applying the finished strips 11 and 12 to the steel studding after the slabs have been properly positioned. Thus, cheap and unskilled labor may be used for erecting the entire building structure.

It will be apparent that it will be necessary for the corner studding 3a to be of slightly different structure than the studding 3. This structure is illustrated in Figures 2 and 3. In this structure I provide a steel member 29 which is T-shaped in vertical cross-section. This steel member 29 is welded along its length as indicated at 30 to one flange of a corner angle member 31. This angle member 31 has one flange overlapping the slab 1 of one of the walls and the other flange overlapping the slab 1 of the other wall disposed at right angles to the first mentioned wall. The T-member 29 is provided with a flange 32 which overlaps the slab 1 of one of the walls and which is parallel to the cooperating portion of the angle 31. The T-member is provided with a similar flange 33 which overlaps the slabs of the other wall. The member 29 is so positioned relative to the angle member 31 that ample room is provided for gaskets 34 between the slabs 1 and cooperating portions of the members 29 and 31. Also, the spacing is such as to provide spaces at the ends of the wall slabs to take care of uneven ends or lengths of these slabs and to take care of uneven settling of the building. These spaces receive granulated cork or similar material indicated by the numeral 35 in Figure 3.

The portions of the slabs which are disposed between members 29 and 31 are provided with large openings 36 extending completely through the thickness of the slabs. Bolts 37 pass through these openings and through openings provided in the members 29 and 31. These bolts serve to secure the slabs to the corner studding 3a. The bolts may be tightened to clamp the slabs 1 tightly between the cooperating portions of the members 29 and 31. The openings 36 and the cooperating bolts are provided at suitable vertically spaced points. The holes 36 are approximately twice the diameter of bolt 37 to allow for variation in the matching of the holes in the steel and slabs, and also to allow some slippage at the hole without the slabs engaging the bolts 37 in case of uneven settling of the building. It will be apparent that the slabs are held in proper position by the clamping action of the cooperating portions of the members 29 and 31 rather than by the bolts 37 cooperating with the openings 36.

The corner studding 3a is secured to the foundation 17 in a manner similar to that in which the studding 3 is secured thereto. Thus, as shown in Figure 2, the foundation at each corner is pre-

vided with an upwardly projecting steel member 18a. A steel plate 21a is provided with a slot so that it can be slipped down over the members 18a and will rest on the top of the foundation.

5 The lower end of the member 3a will bear against the plate 21a. The member 3a is provided with a short section of a hollow member 38 which is rectangular in cross-section. This member 38 is welded to the T-member 29 as at 39 and to the angle member 31 as at 39a. The member 38 slips over the upwardly projecting portion of the member 18a. This member 38 and the member 18a are provided with aligning vertically disposed slots which receive a wedge member 20a. The wedge member 20a is driven into position before the slabs 1 are set in position so that the members 3a will be securely fastened to the foundation. The member 38 is spaced from the parallel flange of the member 31 so as not to interfere with driving the wedge 20a into position.

20 It will be apparent that the member 3a may be fabricated at the factory like the member 3. Furthermore, it may be erected and secured to the foundation in a similar manner. In assembling and erecting the entire building structure, the corner members 3a and the members 3 are first erected. Then the slabs 1 adjacent the corners are slipped between the cooperating portions of the members 29 and 31. The bolts 37 are then positioned to clamp the slabs in position. Then the finishing strips 11 and 12 of the studding 3 are positioned to clamp the slabs adjacent thereto in position.

35 The coping 40 is then applied to the upper edge of the wall. It preferably extends from studding to studding and may be suitably secured in position by bolting it to the studding 3 and 3a with bolts 40a. The coping may be of stone, copper, rustless steel, or any other suitable material. A roof structure 41 of any suitable design and structure may be secured to the upper ends of the wall structure in any suitable manner. If desired, a flat roof structure may be applied to the building.

45 As previously indicated I provide means for lubricating the steel frame members in order to protect them from corrosion. Thus, as illustrated in Figures 1 and 13, in the coping 40 above each steel studding assembly I provide a pipe indicated generally by the numeral 42 which is fitted with a removable cap to form an oiling port. This pipe extends into the granulated cork which is placed in the spaces at the ends of the slabs after the wall structure is assembled. At intervals during the life of the building oil or any other steel preservative may be poured through the oiling ports until the granulated cork is thoroughly saturated. Thus, the cork not only serves as a cushion for the ends of the slabs but also holds the steel preservative such as oil or the like over a long period of time.

Although the pouring of the oil through the pipes 42 into the granulated cork will oil the steel sufficiently an oiling system of the type indicated in Figure 13 may be provided. In this system the oil is placed in a pressure tank 43. This tank is connected to a pipe 44 disposed in the foundation and extending entirely around the building. Branch pipes 45 lead upwardly from the pipe 44 into the space in each studding assembly where the granulated cork is disposed. As indicated in Figure 14, a screen 46 may be provided at the upper end of the pipe to prevent the cork from entering the pipe. Thus, the oil will be poured from the tank 42 into each branch pipe

45 and upwardly into each studding assembly. It will pass through the granulated cork which will absorb it. The ports 42 may also be used in conjunction with this system to permit the escape of air in order to facilitate rising of the oil through the granulated cork.

It will be apparent that the slabs 1 may be provided with finished surfaces both on the inside and the outside. Thus, a single slab will form the entire wall and no covering of any all-over substance on the inside or the outside will be required in order to produce a finished wall surface. Plain or ornamental trim is used only at the joints and no paint is required. However, in some instances it may be desirable although not necessary to apply a covering of plaster to the interior of the wall. However, this will make the building structure more difficult to disassemble.

In case it is desired to apply plaster to the interior of the wall it is desirable to provide wood strips to which the lath may be nailed. Thus, in Figures 10, 11 and 12, I show a wood strip 12a which may be used in the studding instead of the strip 12. The end of the bolt 10 is provided with a large washer 10a which bears against the strip 12a. The washer and nut are countersunk in the wood strip 12a as indicated at 47. Furring wood strips 48 may be horizontally disposed and may be nailed to the vertical strips 12a. The strips 12a and the strips 48 serve as members to which the metal lath 49 may be nailed. The metal lath 49 may receive a layer of plaster 50 in the usual manner. The spaces between the wood strips may be filled with a suitable insulation material or left as dead air space as desired.

As indicated in Figures 1, 4 and 5, angle irons 22a may be used for tying the studding together especially the corner studding. An angle iron is provided at each side of the building. It extends horizontally and is disposed a short distance below the upper edge of the wall. The end wall angle irons 22a are on a level with the cross beams 22. Thus joints or rafters may be supported on these members in case the building is to be more than one story or is to have a flat roof. The angle irons are removably bolted to the corner studding 3a by bolts 22b and each studding 3 by bolts 22c, as indicated in Figure 4.

It will be apparent from the drawings that there may be a plurality of slabs between the studding disposed in superimposed relationship. For sealing the horizontal joints between the slabs I provide gaskets like the gaskets 15 which are made of strips of cork or other suitable pliable material. The weight of the slabs will serve to compress this material and make a water-tight seal. The gaskets will also prevent chipping of the edges of the stone.

It will be apparent from the above description that I have provided a building structure having many advantages. The units of this building structure may be preformed or prefabricated at a factory or shop and later erected on the site to form the building. However, although the building is of preformed and prefabricated units, it is made of high quality materials and has the appearance of a high quality permanent structure. It will be apparent that with my structure I have made allowance for wind strains and contraction and expansion of materials used for the slabs and studding. The slabs form the outer surface of the wall structure and it is not necessary to apply a veneer of other material. Furthermore, the slabs actually impart structural strength to the wall structure.

Various other objects and advantages will be apparent from the preceding description, the drawings and the following claims.

In the following claims where I refer to stone slabs it is to be understood that I intend to cover slabs which are actually cut from stone or other similar material or slabs which are cast from concrete or cast or molded from other suitable materials.

Having thus described my invention, what I claim is:

1. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding comprising laterally extending flanges which extend in opposite directions and overlap one of the surfaces of said stone slabs, and a removable metal clamping strip vertically disposed and secured to said studding, said strip extending laterally in opposite directions into overlapping relationship to the opposite surface of said stone slabs, said strip being secured to said studding by adjustable members adapted to cause said strip to clamp said slabs to said flanges.

2. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding being preformed from a pair of angle irons, said angle irons being so disposed relative to each other that one of the flanges of each of the angle irons are parallel with each other and the other flanges of the angle irons extend laterally in opposite directions, said flanges extending into overlapping relationship with one surface of said slabs, and a clamping strip secured to said studding and extending laterally in opposite directions into overlapping relationship to the opposite surface of said slabs.

3. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding being preformed from a pair of angle irons, said angle irons being so disposed relative to each other that one of the flanges of each of the angle irons are parallel and spaced from each other and the other flanges of the angle irons extend laterally in opposite directions, said flanges extending into overlapping relationship with one surface of said slabs, a clamping strip secured to said studding and extending laterally in opposite directions into overlapping relationship to the opposite surface of said slabs, a strip disposed on the opposite side of said studding and bearing against the adjacent flanges of said angle irons, and bolts extending through aligning openings in both of said strips and extending through the space between said flanges of said angle irons.

4. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, said studding including side wall studding and corner studding, each of the side wall studding having two pairs of flanges adapted to form oppositely disposed sockets for receiving the edges of adjacent slabs disposed on opposite sides of the studding, said corner studding also having two pairs of flanges adapted to form two sockets for receiving the edges of the adjacent slabs forming

one wall and the edges of the adjacent slabs forming the other wall at right angles to the first wall, and means associated with said flanges for clamping said slabs therebetween.

5. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, said studding including side wall studding and corner studding, said corner studding comprising an outer vertically disposed angle member and an inner vertically disposed member of T-cross-section, said member having one of its edges welded to said angle member and being so disposed relative thereto that a pair of sockets at right angles to each other is formed for receiving the edges of adjacent slabs.

6. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding comprising flange members disposed on opposite sides of the slab and adapted to receive the edges of the slabs therebetween, means for causing said flanges to clamp the slabs disposed therebetween, and gasket members disposed between said flanges and the cooperating surfaces of said slabs.

7. A wall structure comprising vertically disposed metal studding spaced laterally from each other, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding having sockets formed therein for receiving the ends of said slabs, a space being formed within the studding, said space being filled with absorbent material, and means for supplying oil to said space.

8. A building structure comprising a foundation, vertically disposed metal studding having their lower ends secured to said foundation at laterally spaced points, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding including angle irons disposed in spaced relationship, means for securing the lower end of the studding to the foundation, said means comprising a member secured to the foundation and projecting upwardly between the spaced angle irons, aligning slots being formed in said member and said angle irons, and a wedge member projecting through said aligning slots.

9. A building structure comprising a foundation, vertically disposed metal studding having their lower ends secured to said foundation at laterally spaced points, stone slabs disposed between said studding and extending the entire distance therebetween, each of said studding including angle irons disposed in spaced relationship, means for securing the lower end of the studding to the foundation, said means comprising a member projecting upwardly from the foundation between the spaced angle irons, aligning slots being formed in said member and said angle iron, means for connecting the upper ends of studding of oppositely disposed walls to each other, said means comprising a beam, means for connecting the beam to said studding, said means including a portion of the beam which extends between said angle irons, said portion of the beam and said angle irons being provided with aligning slots, and a wedge member projecting through said aligning slots.

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