Aug. 13, 1935. E. S. PRINCE 2,010,890

BUILDING CONSTRUCTION

Filed May 8, 1933 6 Sheets-Sheet 1

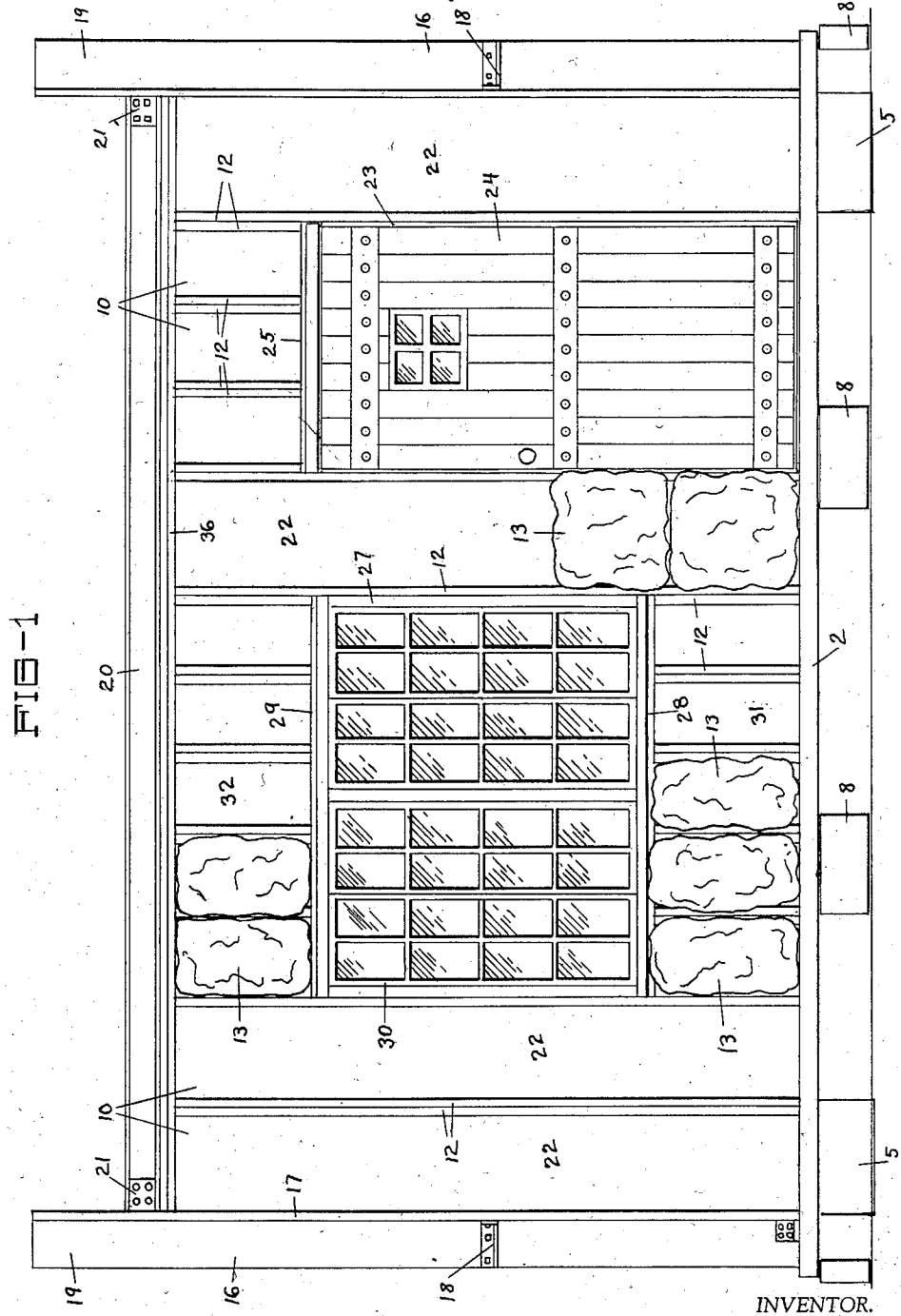


FIG-1

INVENTOR.

Earl S. Prince

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Aug. 13, 1935. E. S. PRINCE 2,010,890

BUILDING CONSTRUCTION

Filed May 8, 1933 6 Sheets-Sheet 2

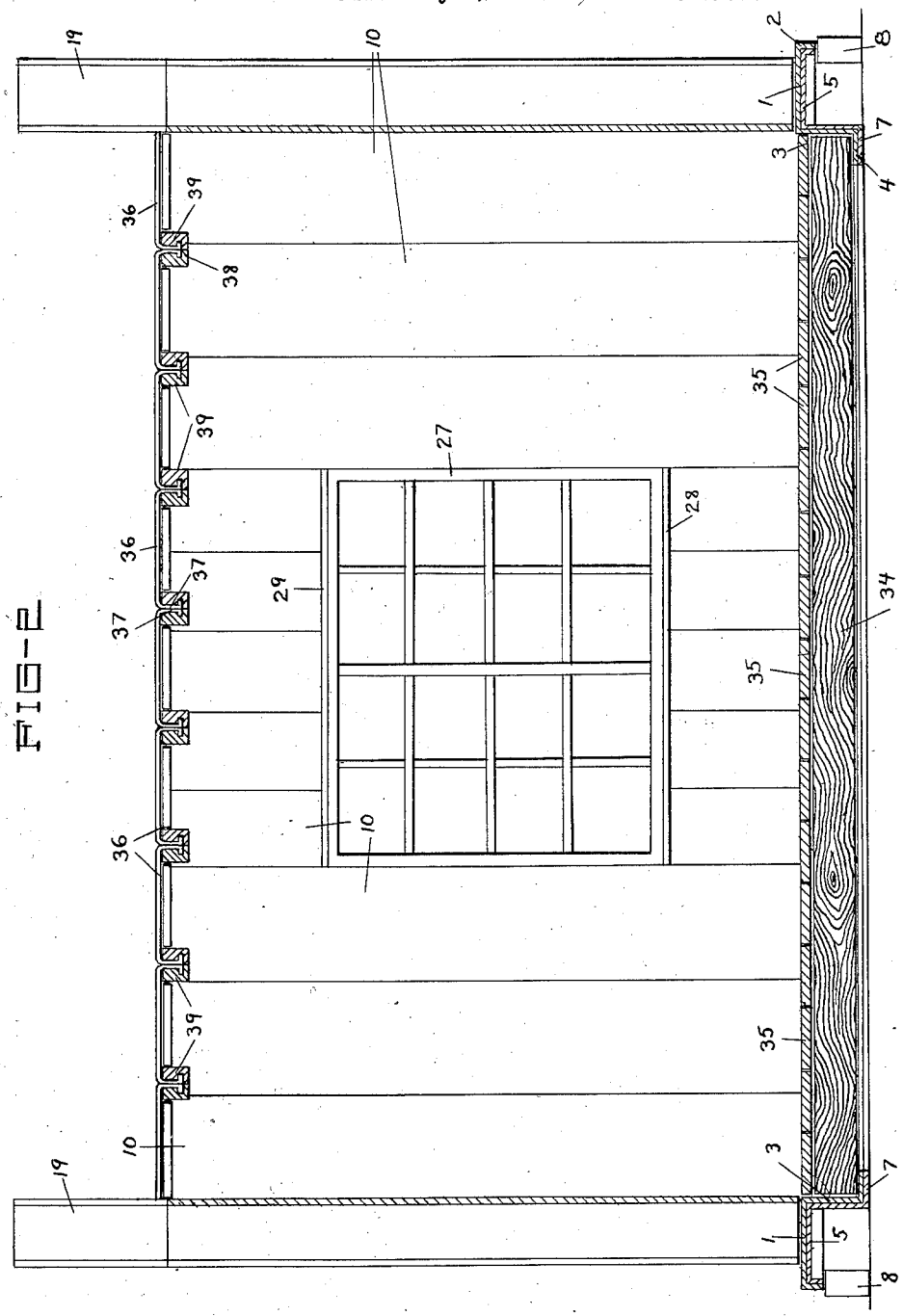


FIG-2

INVENTOR.

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Aug. 13, 1935. E. S. PRINCE 2,010,890

BUILDING CONSTRUCTION

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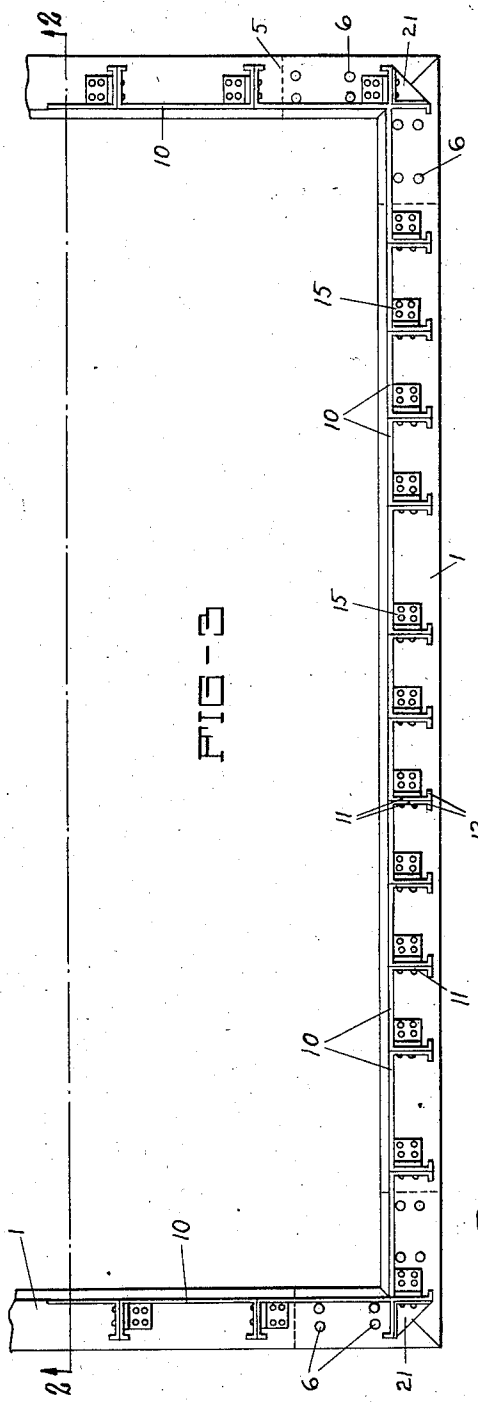


FIG-3

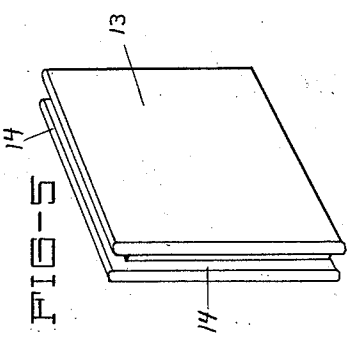


FIG-5

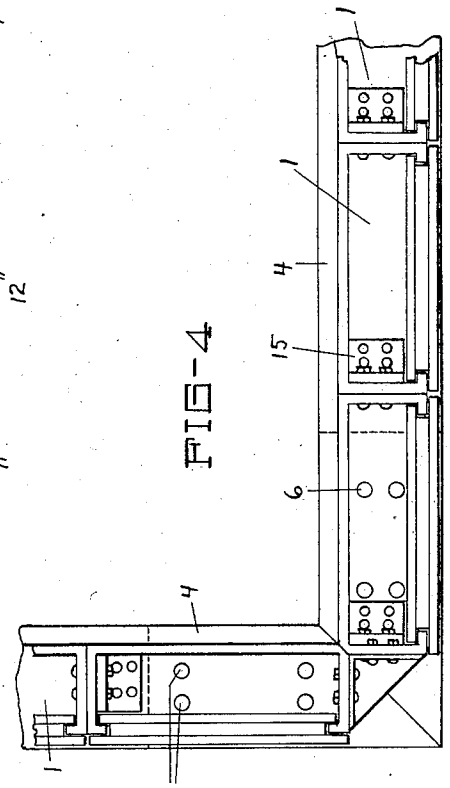


FIG-4

INVENTOR.
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Aug. 13, 1935. E. S. PRINCE 2,010,890

BUILDING CONSTRUCTION

Filed May 8, 1933 6 Sheets-Sheet 4

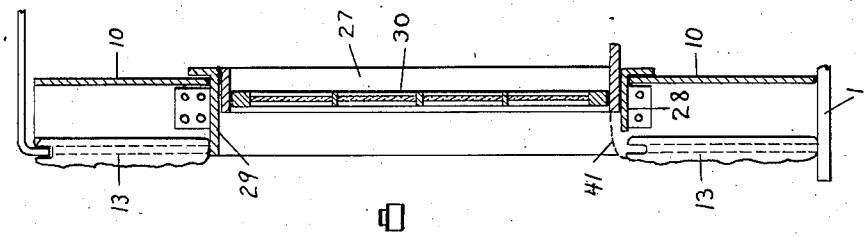


FIG-8

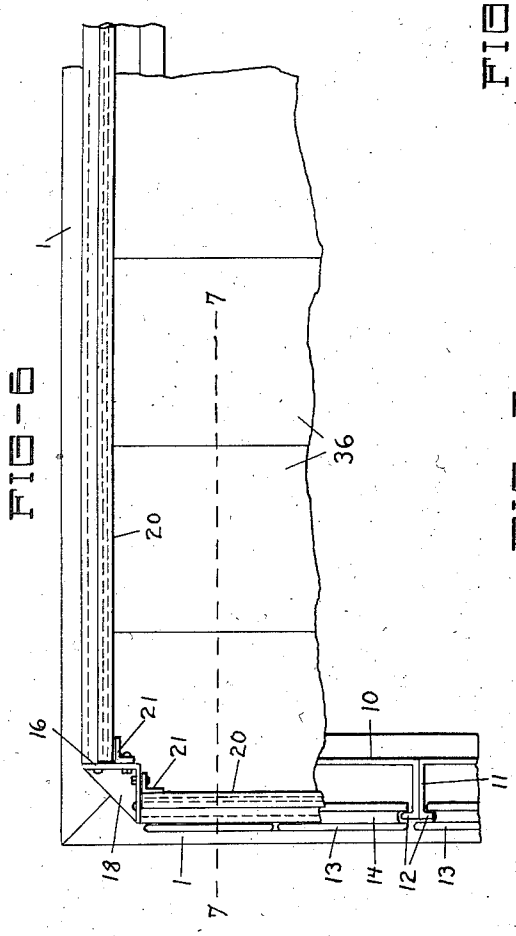


FIG-6

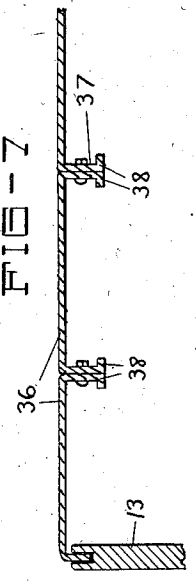


FIG-7

INVENTOR.
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Aug. 13, 1935. E. S. PRINCE 2,010,890

BUILDING CONSTRUCTION

Filed May 8, 1933 6 Sheets-Sheet 5

FIG-12

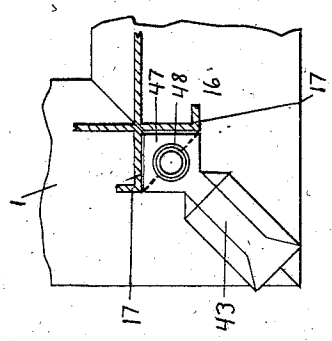


FIG-10

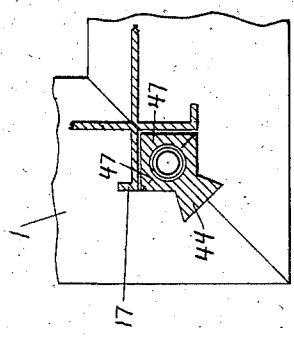


FIG-11

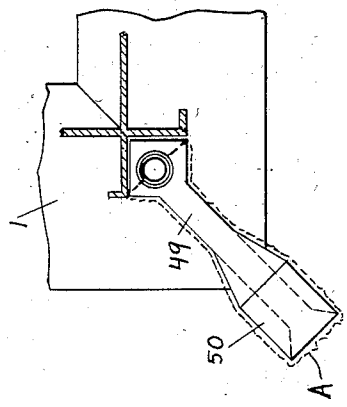
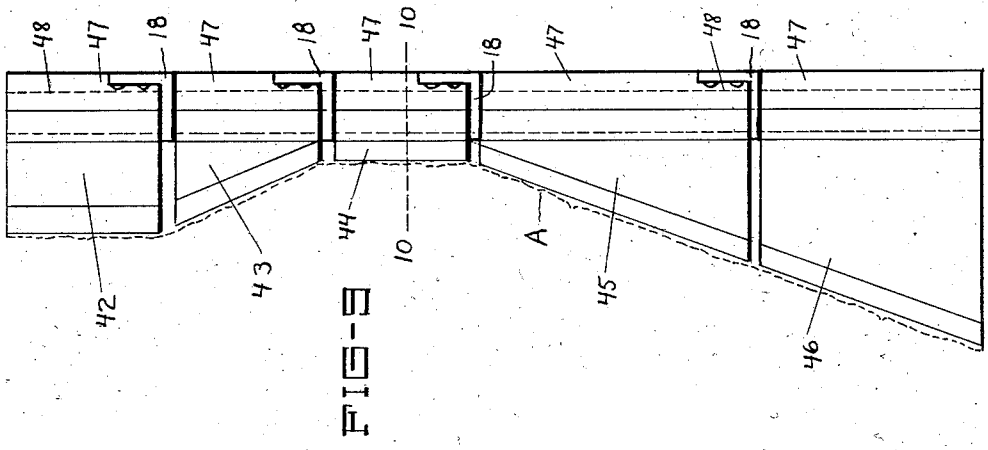


FIG-13



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Aug. 13, 1935. E. S. PRINCE 2,010,890

BUILDING CONSTRUCTION

Filed May 8, 1933 6 Sheets-Sheet 6

FIG-14

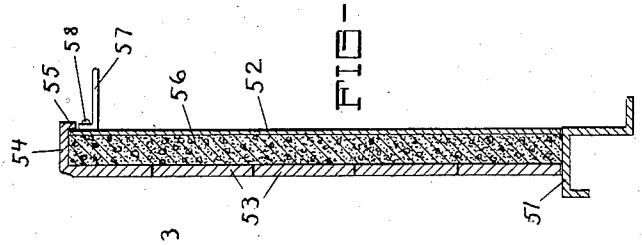
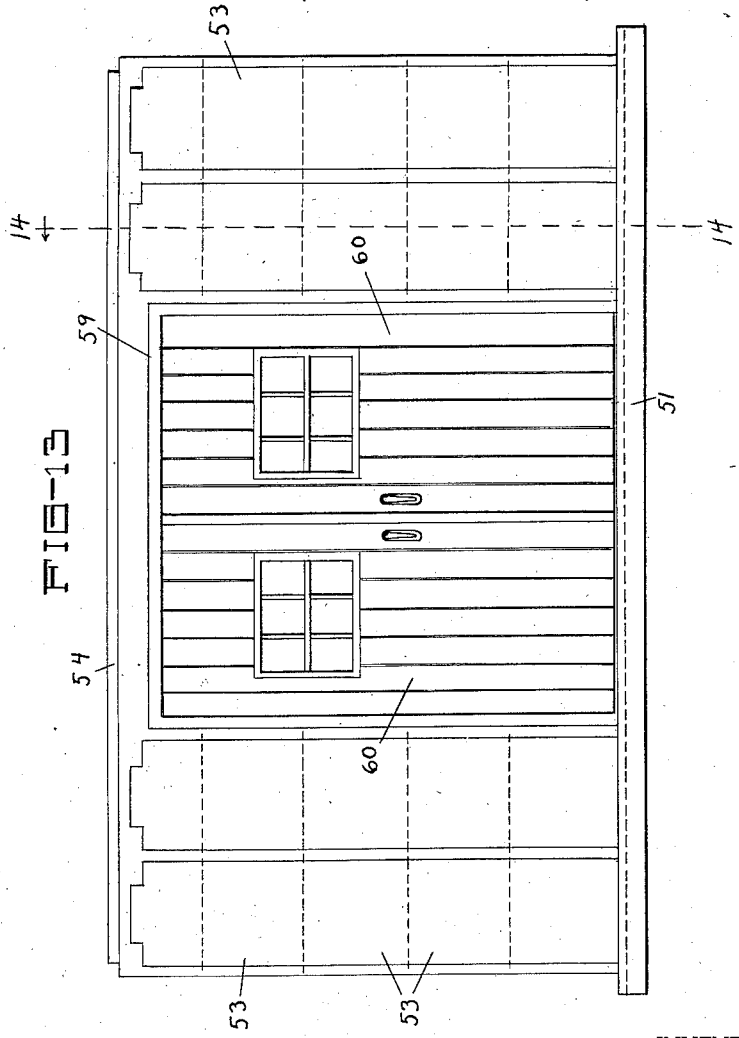


FIG-13



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Patented Aug. 13, 1935 2,010,890

UNITED STATES PATENT OFFICE

2,010,890

BUILDING CONSTRUCTION

Earl S. Prince, Sterling, Ill.

Application May 8, 1933, Serial No. 669,820

2 Claims. (Cl. 189—1)

My invention has reference to building construction, and has for its purpose to provide a simple and efficient means for producing a merchandise booth, such as is shown in Design Patent No. 82,904 issued to myself on December 23, 1930. It also relates to a construction formed of fire-proof material, being chiefly of metal and stone, as set forth herein. Substitutes may be provided for either material, however, with an equal amount of efficiency.

Buildings of the kind mentioned are of a relatively small type, being designed as a place for dispensing ice-cream and similar products, and they are frequently placed temporarily on a piece of land, with the intention of removing the same at some later date. The structures produced along the line of the present invention are specially adapted for this purpose, being built of removable and detachable parts, capable of being easily transported after being separated. This also makes it possible to transport the material to the place where it is to be used in a knock-down condition, and have the same assembled later.

As set forth herein the main part of the structure is to be built of sheet metal, preferably sheet steel, and when the frame and side plates are fully assembled and joined, with the reinforcing roof frame and roof formations, a building of great strength and durability is produced, and one which will be able to resist a great amount of the earth's devastating forces.

While the invention is set forth herein with special reference to its removable features, and to use with buildings of a small type, it is not limited thereto, but can be employed in the construction of private garages, summer cottages, portable school buildings, temporary buildings on real estate and similar structures. When desired, the invention can be given a little additional development, to provide a structure of a more permanent character.

While a building to be produced by the means mentioned is designed to be formed chiefly of steel and stone, such as concrete, provision is made therein for the installation of doors and windows, and where the size of the building warrants it, the interior can be subdivided by suitable partitions.

The particular manner of carrying out the purposes of the invention will more fully appear from the following specification, taken in connection with the accompanying drawings, in which:—

Fig. 1 shows an elevation of the front wall of a structure under partial completion.

Fig. 2 is a vertical cross-section of said structure, on the broken line 2—2 of Fig. 3 including the roof section and rear wall of the structure.

Fig. 3 is a fragmentary plan view of the sill and wall formation, with the roof and other superstructure removed.

Fig. 4 is an enlargement of one corner of the structure shown in Fig. 3.

Fig. 5 shows one of the slabs 13, in perspective.

Fig. 6 is a fragmentary view of the roof formation, and supporting walls therefor, in plan.

Fig. 7 is a section on the line 7—7 of Fig. 6.

Fig. 8 is a vertical section through one of the walls, showing the window formation.

Fig. 9 shows a form for a corner buttress, in elevation.

Fig. 10 is a cross-section through the block 44 of the buttress form.

Fig. 11 is a detail plan view of the block 46.

Fig. 12 is an inverted plan view of the block 43.

Fig. 13 is a front elevation of a garage constructed along the lines of the invention.

Fig. 14 is a vertical section on the line 14—14 of Fig. 13.

The structure is supported on a sill of sheet-metal formation, having horizontal plates 1, (Figures 2 and 3) bent downwardly at their outer edges into flanges 2, and bent downwardly at their inner edges to form vertical plates 3, provided at their inner edges with inwardly turned flanges 4. The sill sections have miter joints at their ends, and are secured in place by corner-plates 5, attached thereto by means of bolts 6. Said corner-plates are positioned on the lower faces of the sills and conform in shape therewith, including a flange 7 upon which the flange 4 rests. The corner-plates are also united by miter joints, and are rigidly attached to each other at the joints, as by welding. When it is desired to separate the sill sections this can be done by detaching the corner-plates therefrom. When thus separated the sections and corner-plates can be packed in a small space for transportation, and can be quickly assembled for use. The flanges 2 form an apron about the sill, and temporary supporting means can be provided therefor, such as the blocks 8. Upon completion of the structure the space beneath the sill will be filled in with earth, and the surrounding ground levelled up with the apron.

The side walls of the structure are formed of sheet-metal units, arranged vertically, and each consisting of a plate 10, having its edges turned to form angle-plates 11, the adjacent pairs of which are united by bolts passing through openings provided therefor in said flanges. The outer edges of the flanges 11 are disposed oppositely

into flanges 12, which, with the joined plates form metal studding for the walls of I-beam formation. The flanges 12 also provide guides for slabs of concrete, stone, or similar durable material, shown at 13, and provided in their side and top edges with channels 14, which engage with the flanges 12, as shown in Fig. 4. At their lower ends the flanges 11 are secured to the sill by means of brackets 15, one leaf of which is bolted to the sill plate and the other leaf bolted or welded to the flanges. At the corners of the structure are flanges 16, at right angles with each other, and with flanges 17 turned away from the corners, for use with the adjacent flanges 12 for retaining the slabs in place. Said flanges 16 are united by brackets 18, and said flanges may be projected upwardly, as at 19, for supporting parapets or other structures above the main wall. Said corner-plates are also shown united by I-beams 20, connected with the projections 19 by means of brackets 21, (Fig. 1), secured to the corner-plates by welding or the like, and bolted to the I-beams. The flanges 16 may be extensions of the wall plates similar to the flanges 11, or separate angle-plates as shown in Fig. 6.

Some of the wall units extend from top to bottom of the structure, with spaces between, as shown at 22, and slabs 13 are provided in sufficient quantity and of suitable widths to fill and close said spaces, thus forming a double wall of fire proof material, the spaces being filled, if desired, with heat and cold insulating material. In Fig. 1 the wall of the building is shown provided with an opening between two of the wall units, in which opening is a door frame 23 and closure 24 therefor. Above the frame is a metal lintel plate 25, above which are short wall units. An opening is also provided for a window frame 27, beneath which is a metal sill 28 of angle-plate formation, (Fig. 8) and above said frame is an angle-plate 29. The plate 28 is narrowed to permit the passage of some of the slabs 13 in front of the same, to form a lower wall section, but the upper plate 29 is of full width, and furnishes a support for the slabs above the same. Within the window frame is a sash 30 of conventional construction, the parts of which may be arranged to swing outwardly for opening. Short wall sections 31 are filled in above the frame 27, and similar sections 32 below the same, (Fig. 1) with stone fillers in front as shown.

A floor may be provided for the structure, as shown in Fig. 2, supported on stringers 34 and consisting of boards 35, which may be of wood or of sheet metal formation. The ends of the stringers rest upon sub-sills formed of the flanges 4 of the main sill. A roof for the structure is formed of sheet-metal plates 36, having downwardly turned angles 37, ending in flanges 38, which are united in pairs the same as the wall plates, and form I-beam supports for the roof. Said beams may be enclosed in wooden strips to form beams 39. The outer edges of the roof plates are turned downwardly to form flanges which are inserted in the channels in the upper edges of the slabs 13, making a thoroughly waterproof covering.

When the parts of the structure have been fully assembled with the stone slabs in place, the joints and spaces between said slabs are pointed up and the exterior given such stone finish as may be desired. The slabs 13 may be of a roughened stone finish, as shown in Fig. 1, instead of smooth as shown in Fig. 5. Said blocks can also be given a finish similar to that shown in the design patent hereinbefore referred to, and giving the general appearance of a castle wall. The finish can also be carried up on the window sill, as at 41 in Fig. 8, and the sides and top of the opening can be similarly finished. The window and door frames are positioned between two of the flanges 11 as shown, and are held in place by bolts or similar fastening means, not shown in the drawings.

It will be evident that a building constructed along the lines set forth herein can be erected upon a building site of small size, and without injury to the premises, in case of removal. By removing the connecting bolts of the various parts such parts can be separated, and the structure dis-assembled. Before doing this the stone units forming the outer wall are separated and removed, and if the structure is re-assembled in a new location said units are repointed at the joints.

In Fig. 9 is shown a buttress formation for use at the corners of the building, consisting of sectional pieces or blocks 42, 43, 44, 45, and 46, each having a rectangular body portion 47 for positioning in the corners, and separated by the corner brackets. Each of said body portions is provided with a tubular opening 48, forming a continuous opening through said blocks, and providing a seat for a rod or bar for holding said blocks in place. The larger blocks are formed with relatively thin sections 49 and heavier sections 50 which may be given any desired formation, as shown at A, to conform with the general finish of the building. The blocks are preferably formed of plastic concrete, with the tubular sections 48 molded therein.

In the main construction, wherever bolts and bolt openings are employed, the openings are of oval formation, allowing for variations in the positioning of the parts that are to be united.

In Figs. 13 and 14 is shown a relatively small building, such as a garage, formed with an inner metal wall and an outer stone wall as hereinbefore set forth. The structure is supported upon a sill 51, and has inner wall plates, one of which is shown at 52, also supporting means for slabs 53 connected therewith, the space between the plates and slabs being closed at the top by a cap or coping 54, which has an inner flange 55 engaged with the upper edges of the wall plates. If desired certain of the spaces between the inner plates and outer walls may be filled with concrete or other material in a plastic condition, as shown at 56. Supporting pillars can thus be provided at intervals in the wall, for the better support of the roof, or at the sides of door or window openings in the walls. For more permanent buildings all of the spaces in the walls could thus be filled, rendering the same more lasting, and providing an insulation to repel the passage of heat or cold. Supported by the walls of the building last described is a roof formed of channel plates and reinforcing beams as hereinbefore described, one of said plates being shown at 57, partly broken away, and with the outside edge turned upwardly into a flange 58, bolted to the plate 52.

The interior of a building constructed as herein set forth can be given any desired finish, as with fiber board, or by providing furring strips and lath and plastering, or metal lath and plaster thereon.

What I claim, and desire to secure by Letters Patent, is:

1. In building construction, a sill adapted for

installing in the top of the ground, sheet metal plates mounted on said sill to form a wall thereon, flanges at the edges of said plates united and coinciding to form vertical I-beams for said wall including oppositely disposed guides on the edges of said flanges, means for detachable attachment of said flanges with said sill, monolithic slabs channelled in their edges for slidable and releasable engagement with said guides, and a sheet metal roof provided at its edges with downwardly turned flanges for engagement with channels in the upper edges of said slabs, said slabs being non-releasable while the roof is in place.

2. In building construction, a sheet metal sill consisting of horizontal plates with downwardly turned flanges at their outer edges, vertical plates extended downwardly from said horizontal plates, and projected at their lower edges into horizontal flanges forming a sub-sill, means for connecting the ends of said horizontal plates, channel plate wall units mounted on said sill, means for attaching said wall units with each other, means for attaching said wall units to said sill, and a floor supported upon said sub-sill.

EARL S. PRINCE.