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L. TATEVOSSIAN  
TRANSPORTABLE BUILDING CONSTRUCTION WITH  
AN EXTENDABLE BODY STRUCTURE

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3 Sheets-Sheet 1

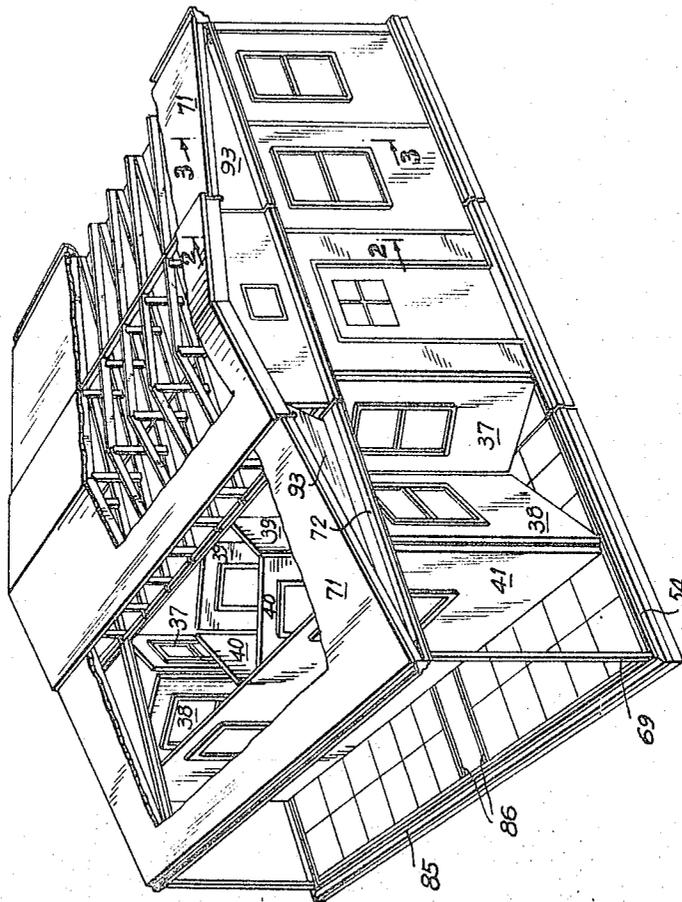


FIG. 1

INVENTOR.  
LEON TATEVOSSIAN

BY  
*Rachewbach & Siegel*  
ATTORNEYS

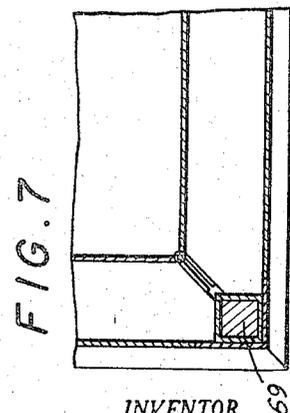
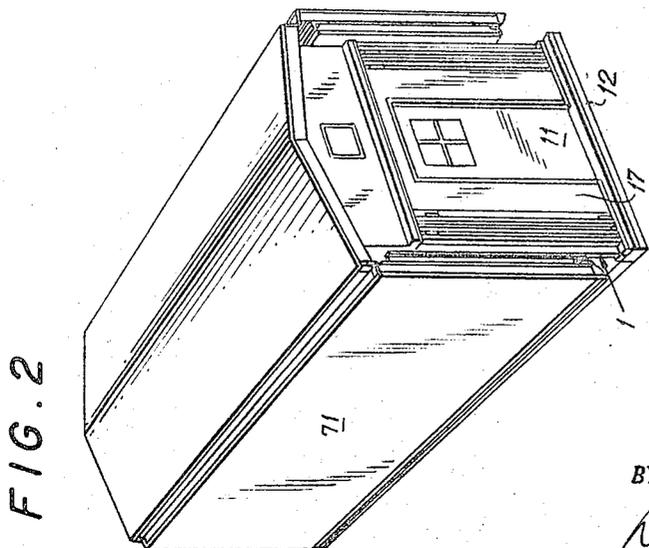
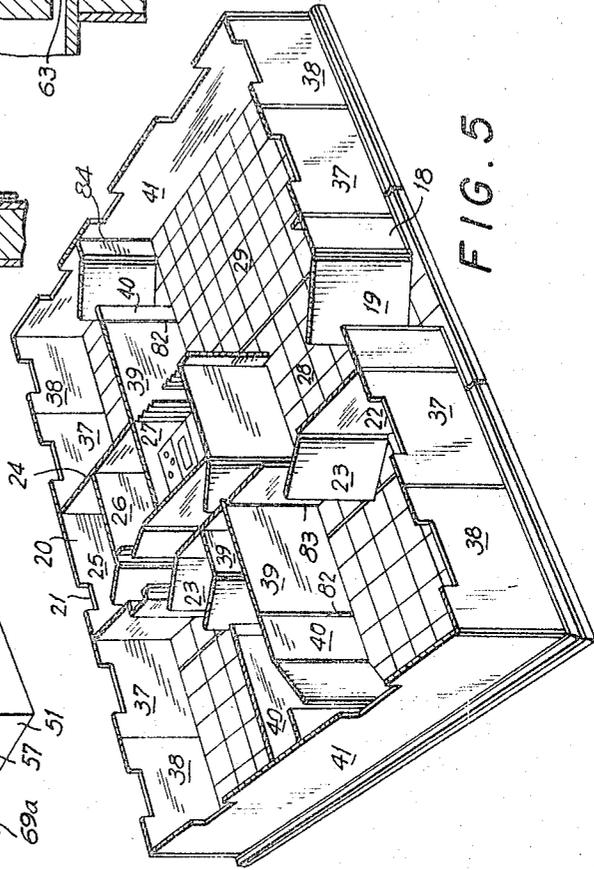
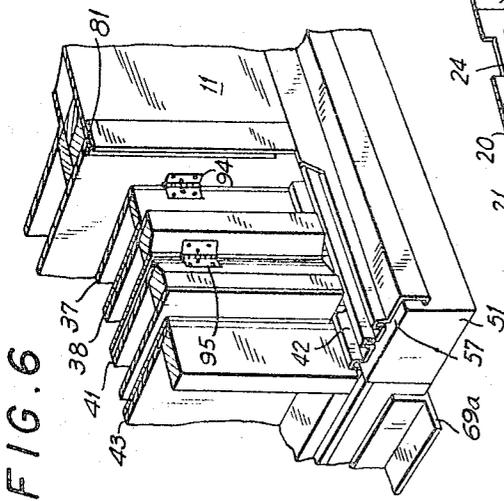
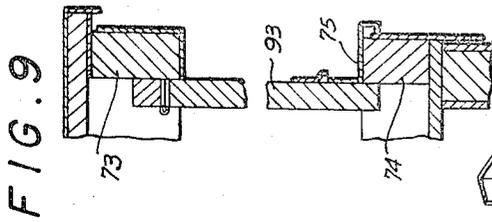
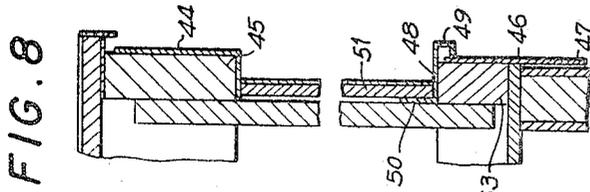
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3 Sheets-Sheet 2



INVENTOR.  
LEON TATEVOSSIAN

BY  
*Rackebach & Siegel*  
ATTORNEYS



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**TRANSPORTABLE BUILDING CONSTRUCTION WITH AN EXTENDABLE BODY STRUCTURE**

Leon Tatevossian, 69—44 Olcott St., Forest Hills, N.Y. 11375

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13 Claims. (Cl. 52—22)

This invention relates to transportable structure prefabricated in the factory and assembled in one package.

A primary object of this invention is to provide a building which can be transported to a required site in a closed accordion style packed condition and opened out to provide full living accommodations.

Another object of this invention is to provide low-cost manufactured homes basically the same as a typical framed construction, one story, residential building.

Another object of this invention is to provide a main core body with bathroom, kitchen and utilities located in the central part of this main core including heating, plumbing and electrical wiring for the entire building.

Another object of this invention is to provide a strong and rigid main core body with the finished wall, floor, and ceiling structures of the extended portion of the house being assembled along the length of this body and supported by the floor framing structure.

A further object is to provide a central body with extendable portions being assembled along both sides of this body and hinged together and to the central body enabling the extendable portions to be opened outwardly into positions defining a completed house.

Another object of this invention is to provide a structure of the class described which can use any kind of material such as steel, aluminum or wood. By way of example this invention is demonstrated as a wood framing structure with aluminum facing.

A further object of this invention is to provide a structure which can be used for a larger construction of any desired size or layout or any local climatic conditions.

Finally it is an object of this invention to provide a transportable house which is inexpensive to construct, compact, light, easily opened out, strong and rigid for a long life time performance.

The above and other important features of this invention will become apparent from the following detailed specifications in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view with the ceiling and the roof partially broken away with the left side exterior and interior walls in a partially erected condition.

FIG. 2 is a perspective view showing the house preassembled in packed condition.

FIG. 3 is a partial section view showing the roof truss of the main core body and roof and ceiling for the extended portion of the building.

FIG. 4 is a partial section view showing the floor of the main core body and the floor of the extended portion of the building.

FIG. 5 is a perspective view showing the interior arrangement in open condition.

FIG. 6 is an enlarged perspective view taken about line 1—1 of FIG. 2.

FIG. 7 is a partial sectional plan view showing details of the corner post detail intersection.

FIG. 8 is a vertical section view taken along line 2—2 of FIG. 1, showing the gable end panel in connection with the gable end rafter and the bottom cord.

FIG. 9 is a vertical section view taken along line 3—3 of FIG. 1 showing the gable end panel in connection with the gable end rafter and the bottom cord for the extended portion.

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FIG. 10 is a cross-sectional plan view showing corner post section.

Referring now to FIGS. 2 and 4, the main core body 11 is of dimensions approximately corresponding to those of a large trailer. This structure which is mounted on a suitable chassis 12 is formed of a frame, comprising single or double studs 13, which, at their lower ends are firmly secured to the soleplate 14 and which, at the upper ends thereof are secured with the horizontal top plate member 15. The wall framing structure 16 of the main core body are covered internally by hardboard or other suitable material and are covered externally by aluminum sheathing 17. The walls are rigidly connected to each other and to the floor and are firmly braced so as to support the extended portion which constitutes the additional living space.

Referring to FIG. 5, this core comprises end wall 18 with entrance door 19, end wall 20 with window 21, side wall 22 with doors 23 and side wall 24 partially opened to the extending living room, and partition walls with suitable doors extending therebetween. By way of example this core is provided with a full bathroom 25, utility room 26 with heating facilities, kitchen 27 with full equipment and foyer 28 as a part of extending living room 29. In this core all the plumbing, heating and electrical wiring are permanently located for the entire building.

Referring to FIG. 3, the roof framing structure of the main core body comprises rafter 30, bottom cord 31, vertical and diagonal members 32 and 33 providing a truss arrangement firmly and rigidly attached to horizontal top plate 15 along the length of the main core body. The roof comprises sheathing 34 attached to rafters 30 and roofing 35. The ceiling comprises hardboard sheathing 36 secured to the bottom cord 31. Ceiling insulation material such as fiber glass or mineral wool may be placed on the top of sheathing 36 between bottom cords 31. Rafters 30 and roofing 35 of the main core body are projected outwardly to provide sufficient space for the placement of the ceiling frame structure of the extended portion in the closed position. Side walls 22 and 24 of the main core body (see FIG. 5) are recessed to provide sufficient space to accommodate the end walls 37 and 38, partition walls 39 and 40 and side walls 41 which are all supported on floor channel 42 and for the placement of upwardly folded floor sections 43 of the extended portion of living area 32 (see FIG. 6). The roof and the ceiling overhang said recessed portion of main core body 11.

Referring now to the gable end truss of main core body 11 (see FIG. 8), an angle 44 is adapted to cover the face of rafter 45 and to extend inwardly to cover the bottom face of said rafter 45. Cornice plate flashing 46 is adapted to cover the face of bottom cord 63, cornice plate 46 comprising downwardly extended portion 47 overlapping the top edge of the end wall of the main core body. A modified channel 48 is provided to cover the top face of bottom cord 63, downwardly extended lip 49 thereof overlapping said cornice plate and upwardly extending lip 50 of channel 48 which is secured to the braces of the gable end truss. The gable end comprises sheathing of hardboard with aluminum facing or any suitable material and is secured to the interior side of the gable end truss.

Referring now to FIG. 4, a floor edge sill 51 is provided along the edge of the extended living area and is covered by modified channel or flashing 52. The top face of this channel is provided with two grooves 53 and the outer edge 54 is upwardly extended providing a rectangular corner. At the inner side bottom edge of the floor edge sill a T-shaped beam 55 is provided and at the outer bottom side a flexible plastic material 56 is provided to compensate any unevenness of the concrete slab and at the

same time act as a weather strip for weather protection. The floor channel 42, at the recessed portion of the floor in the main core body is slightly shorter than sill 51 to define a sill projection 57 (FIG. 6) to receive adjacent floor channel 52 for connection and alignment of the grooves.

Referring again to FIG. 3, the extended portion of the roof comprises rafters 58, sheathing 59 and roofing 60 defining a solid frame structure, extending outwardly along the pitch line to gutter 61 secured longitudinally to the frame structure, sheathing 62 extending beyond the frame and partially over gutter 61 providing positive drainage and weatherproofing.

With continued reference to FIG. 3, the extended portion of the ceiling comprises bottom cord 63 and sheathing 64 defining a solid frame structure. Cornice plate 65 is provided covering the three exterior sides of the ceiling frame and extended downwardly to receive adjoining side and end walls 37, 38 and 41 of the extended portion of living quarters. The upper end of cornice plate 65 is projected outwardly to cover the hinges and the joint, the inner end of ceiling frame structure being secured by means of T-shaped beam 66 which rests alongside of adjacent ceiling frame of main core body.

The roof section of extended portion of the living quarters is hinged to the overhanging portion of the roof section of the main core body as by hinges 67 as shown in FIG. 3. The roof section folds downwardly to a vertical position against main core body in packed condition. The ceiling frame of the extended portion of the living quarters is hinged as by hinges 68 at its outer edge to the outer edge of said roof framing structure enabling it to be folded upwardly to a vertical position against main core body 11 in the packed condition as shown in FIG. 2 and FIG. 3. Corner post 69 is hinged to the corner of the ceiling frame section and folded against said ceiling section to a vertical position in packed condition. A roller is secured at the lower end of corner post 69 to facilitate movement along channel 52. The main core body described above is provided with T-shaped beam 69a secured alongside of the chassis. After proper location and anchoring of main core body 11 to concrete floor 70, edge sills 51 are located on the perimeter of the extended portion of the living area and firmly secured to concrete floor 70 by means of T-shaped beam 55 secured along the inner side of edge sill 51.

Referring now to FIG. 1, the first stage in extending roof section 71 of extended portion, comprises pivoting upwardly the roof section, simultaneously swinging downwardly ceiling section 72 against braces 32 (see FIG. 3) of the trusses toward a horizontal position. While this operation is being performed, corner post 69 is dropped down on the floor channel and rolled along the groove until it reaches the corner of the building whereby it acts as a temporary support for the roof and ceiling. In the meantime the gable and panel 93 hinged to the inner side of gable end rafter 73 (see FIG. 9) unfolds to cover the gap between said gable end rafter 73 and bottom cord 74 secured to upward extended lip of weather-proofing channel 75. All the above operation in bringing the roof and ceiling of the building into position are so performed that the weight of the roof and ceiling is constantly supported on the main core body while the unfolding operation is in progress.

Referring again to FIG. 4, the extended portion of floor section 76 comprises floor beams 77, subfloor 78 and finished floor 79, similar to the adjacent finish floor of main core body. During the unfolding process, the floor section drops between floor edge sill 51, and over T-shaped beams 55 attached to the said floor edge sill and the T-shaped beams 69 attached along chassis 12 of main core body 11.

The walls of the extended portion of the building are of hollow construction provided with insulation. The walls are covered internally by hardboard or other suitable ma-

terials and externally by aluminum sheathing. The exterior walls are provided with suitable windows such as indicated on the end walls 41 and side walls 37 and 38 (see FIG. 5).

Referring again to FIG. 6, exterior end wall panels 37 are hinged as by hinges 94 to main body 11 on one side edge, and on the other side edge are hinged to the adjacent end wall panel 38. The other side of end wall panel 38 is hinged as by hinges 95 to the adjacent exterior side wall 41 providing accordion type action on both the left and right side of main core body 11, extending outwardly to provide the additional living area. The exterior side wall is provided with roller means attached to the bottom end corners of said panel and rolls over groove 53 of floor channel 52 (see FIG. 4). The side wall panel is pushed out and rolled upon said channel groove until it aligns itself with the opposite end floor channel 85 (see FIG. 5). The side wall and end wall panels when completely extended form a snug joint against corner post 69 and are held in place by T-shaped channel 80 attached to both sides of the corner post as shown in FIGS. 7 and 10. At the bottom, the side wall panels 41 are held against the upwardly extended edge of floor channel 52 (see FIG. 4) and the downwardly extended edge of cornice plate 65 (see FIG. 3). Simultaneously, end wall panels 37, 38 also align with the upwardly extended edge of the floor channel and the downwardly extended edge of the cornice plate and against T-shaped channel 81 attached to the vertical corner of the main core body (see FIG. 6). The interior partition wall panels 39 and 40 (see FIG. 5) are hinged together as by hinges 82 (see FIG. 5) and on one side are hinged to the main core body 11 as by hinges 83 and the other side hinged to exterior side wall panel 41 as by hinges 84. The interior panels when pushed out also align themselves with the floor channel 86 and ceiling channels, as shown in FIG. 1. The above operation in bringing the interior and exterior wall into position is performed in a manner that the weight of the walls are supported on the floor and on the main core body and are rolled into position with minimal effort in a harmonious action. After the walls are completely located in relation to the floor channel, cornice plate corner posts, and main core body, the members are firmly attached to each other by means of screws and in each case sufficient overlapping connecting members are provided for proper attachment.

While the invention has been shown, described, illustrated and disclosed in terms of an embodiment or modification which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiments or modifications herein shown, illustrated, described or disclosed, such other embodiments or modifications as may be suggested to those having the benefit of the teachings herein being intended to be reserved especially as they fall within the scope and spirit of the claims here appended.

I claim:

1. A transportable building comprising, in combination,
  - pre-erected substantially rigid core body structure, and extendable body structure,
  - said extendable body structure being pre-assembled with said core body structure and adapted to be easily erected adjacent thereto to define therewith a sturdy, aesthetically appealing and weather-tight building;
  - said extendable body structure comprising, in turn, ceiling structure and roof structure pivotally connected with each other and with said core body structure adapted to be folded into adjacent relationship with said core body structure for transport and erected to extend generally horizontally outwardly of said core body structure and angularly of one another, whereby said ceiling and roof structures are spaced at one end, at least one post structure pivotally connected with said ceiling and roof structures at a lo-

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cation spaced apart from said core body structure and adapted to be folded into adjacent relationship with said ceiling structure for transport, and guide means for said post structure.

2. A transportable building as defined in claim 1, wherein said guide means comprises roller means mounted with said post structure in spaced apart relationship to said ceiling and roof structures, and track means adapted to be positioned generally laterally outwardly relative to said core body structure, enabling said post structure to be easily moved into supporting relationship with said ceiling and roof structures.

3. A transportable building as defined in claim 2 wherein said extendable body structure further comprises extendable floor structure, said track means being mounted with said floor structure.

4. A transportable building as defined in claim 3 further comprising T-shaped beam means structurally associated with said core body structure, said T-shaped beam means being so constructed and arranged as to support said extendable floor structure relative to said core body structure.

5. A transportable building as defined in claim 1, wherein said extendable body structure is adapted to be erected on a slab, and wherein said extendable body structure further comprises peripherally extending sill means adapted to be structurally associated with said core body structure and floor panel means adapted to be received within said sill means.

6. A transportable building structure as defined in claim 5 further comprising T-shaped beam means structurally associated with said core body means and said sill means, said T-shaped beam means being adapted to be supportingly engaged by such slab and to supportingly engage said floor panel means.

7. A transportable building structure as defined in claim 6 further comprising flexible seal means structurally associated with said sill means for sealingly engaging such slab.

8. A transportable building as defined in claim 1 further comprising support means structurally associated with said core body structure in generally vertically spaced relationship to said extendable roof structure for enabling said extendable ceiling structure to be supported thereby in a generally horizontal position.

9. A transportable building as defined in claim 1 further comprising extendable gable end panels hingedly mounted with said extendable roof structure, enabling said gable end panels to be automatically positioned upon erection relative to said extendable roof structure and said extendable ceiling structure.

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10. A transportable building as defined in claim 1, wherein said core body structure further comprises finished flooring, walls, ceiling and sloped roofing rigidly interconnected, said extendable body structure further comprising peripherally extending sill structure, finished flooring and extendable walls, said corner posts adapted to be supportingly positioned relative to said peripherally extending sill structure and said extendable body enabling rapid and simple assembly of said building at a desired location.

11. A transportable building as defined in claim 10 wherein said core body structure is recessed to enable said extendable body structure to be positioned relative thereto for transport to such location.

12. A transportable building as defined in claim 10 further comprising flashing means for sealingly overlying the joints between said walls, flooring and roofing.

13. A transportable building as defined in claim 10 wherein said extendable walls comprise a rigid side wall adapted to be slidably moved generally laterally relative to said core body structure and accordion-type foldable walls extending between said side walls and said core body structure.

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JOHN E. MURTAGH, *Primary Examiner.*

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