Sept. 25, 1962 A. S. DADRAS 3,055,061

CHANGEABLE INTERIOR WALL BUILDING CONSTRUCTION

Filed May 29, 1957 5 Sheets-Sheet 1

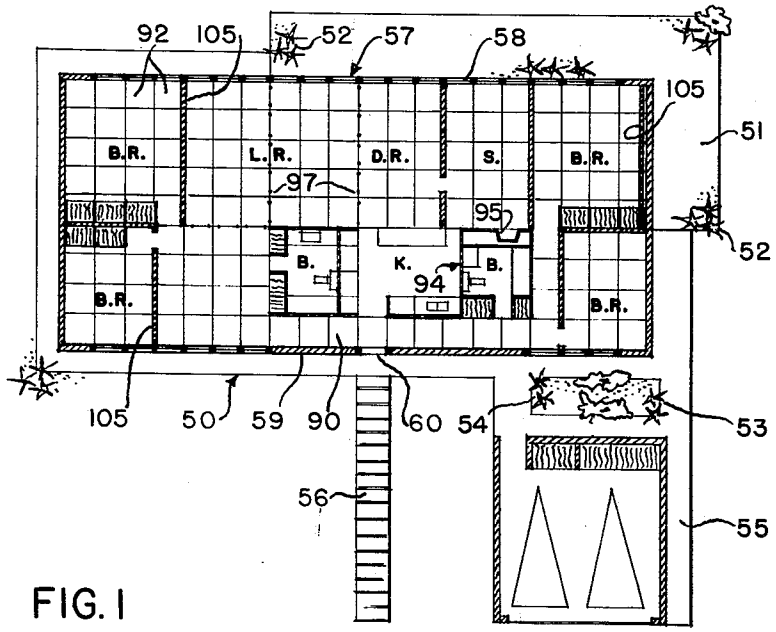


FIG. 1

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CHANGEABLE INTERIOR WALL BUILDING CONSTRUCTION

Filed May 29, 1957 5 Sheets-Sheet 2

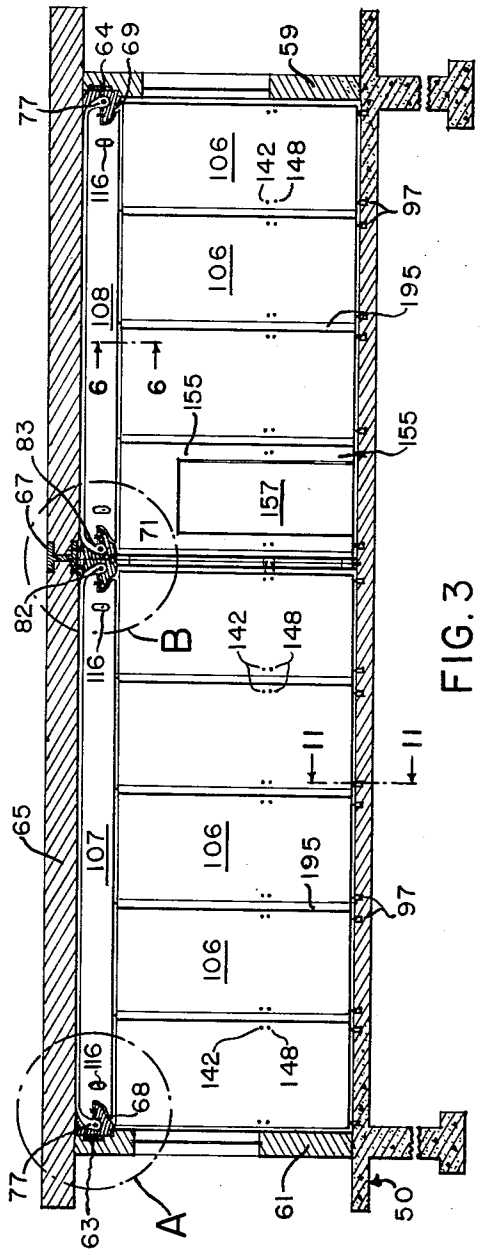


FIG. 3

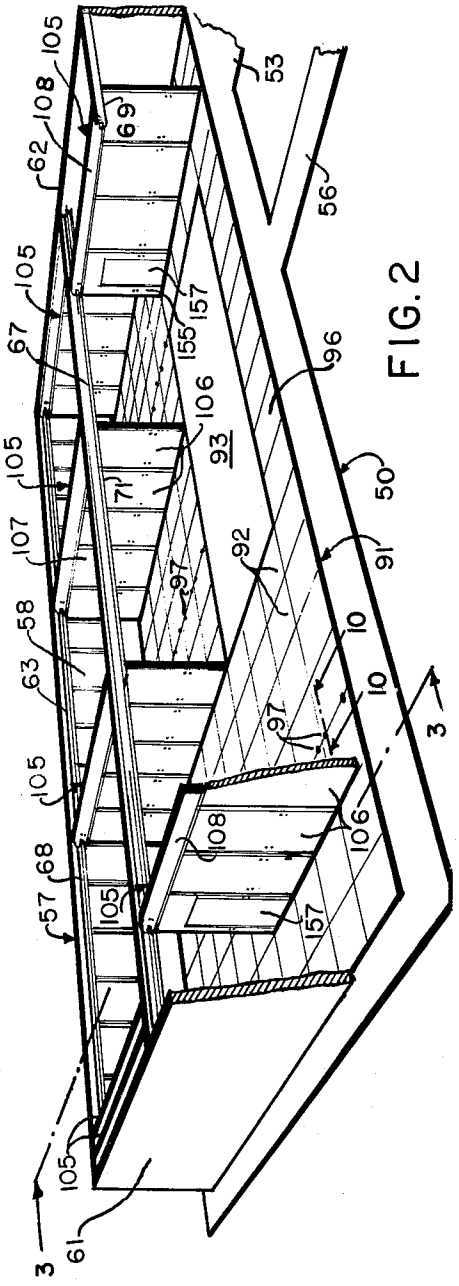


FIG. 2

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CHANGEABLE INTERIOR WALL BUILDING CONSTRUCTION

Filed May 29, 1957 5 Sheets-Sheet 3

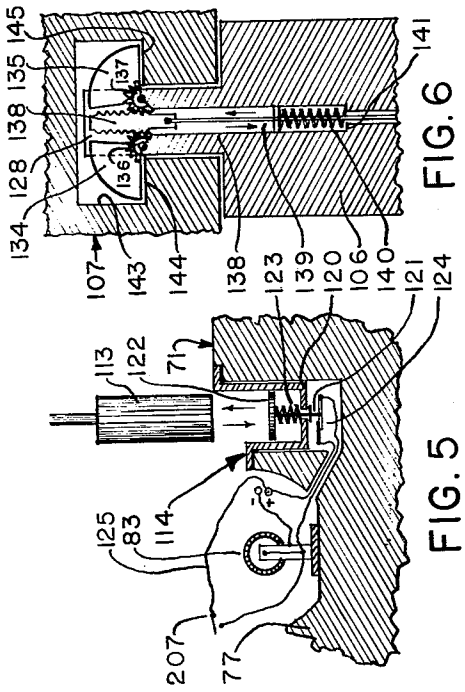


FIG. 6

FIG. 5

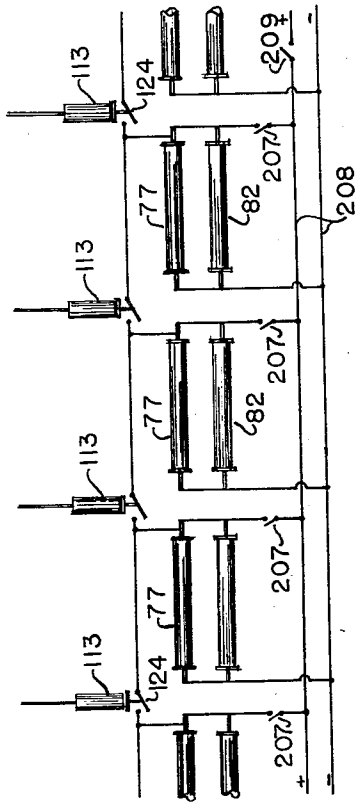


FIG. 7

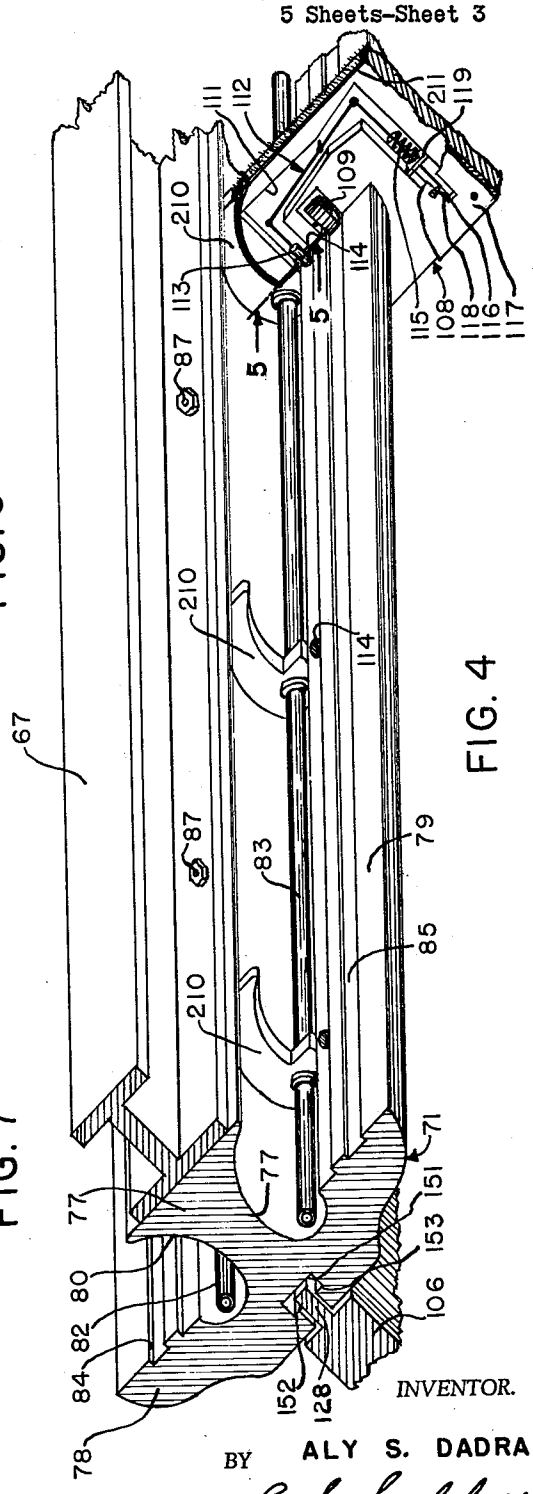


FIG. 4

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CHANGEABLE INTERIOR WALL BUILDING CONSTRUCTION

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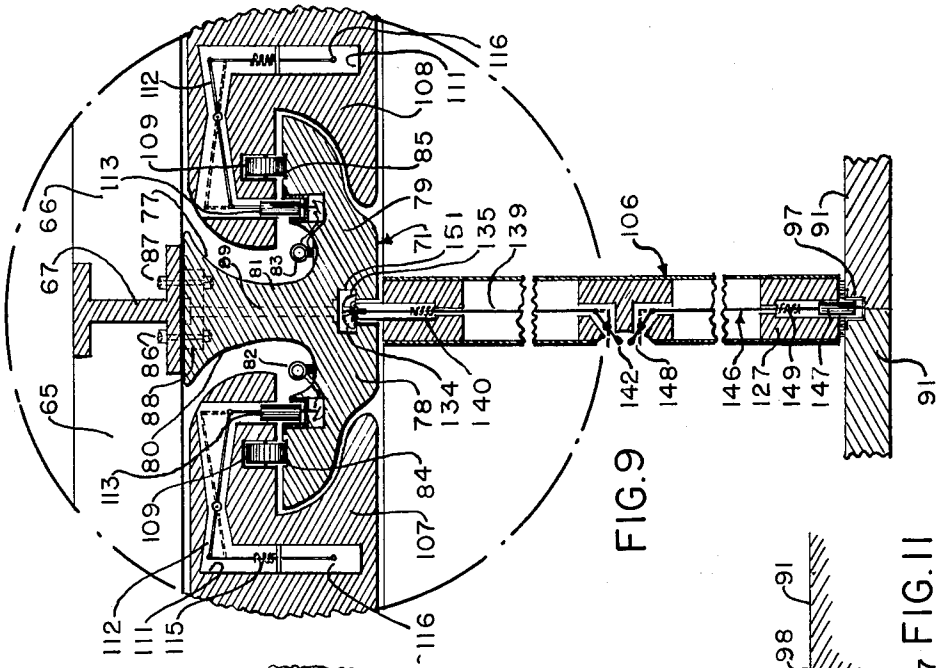


FIG. 9

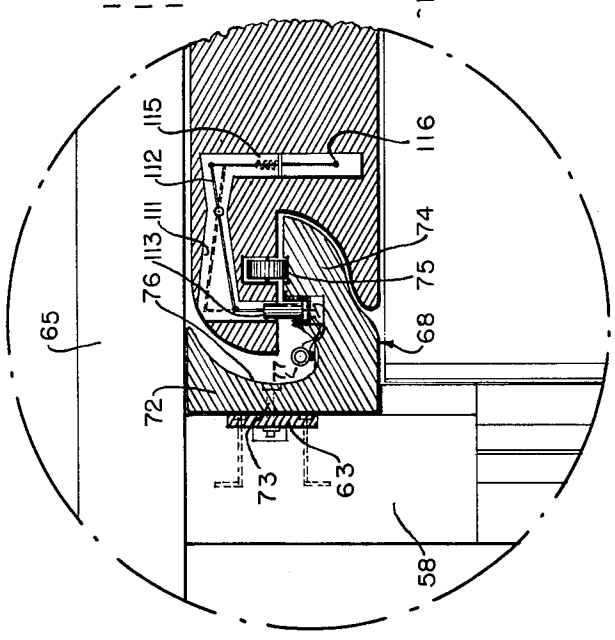


FIG. 8

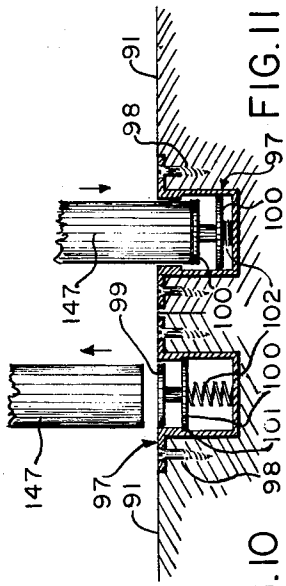


FIG. 10

FIG. 11

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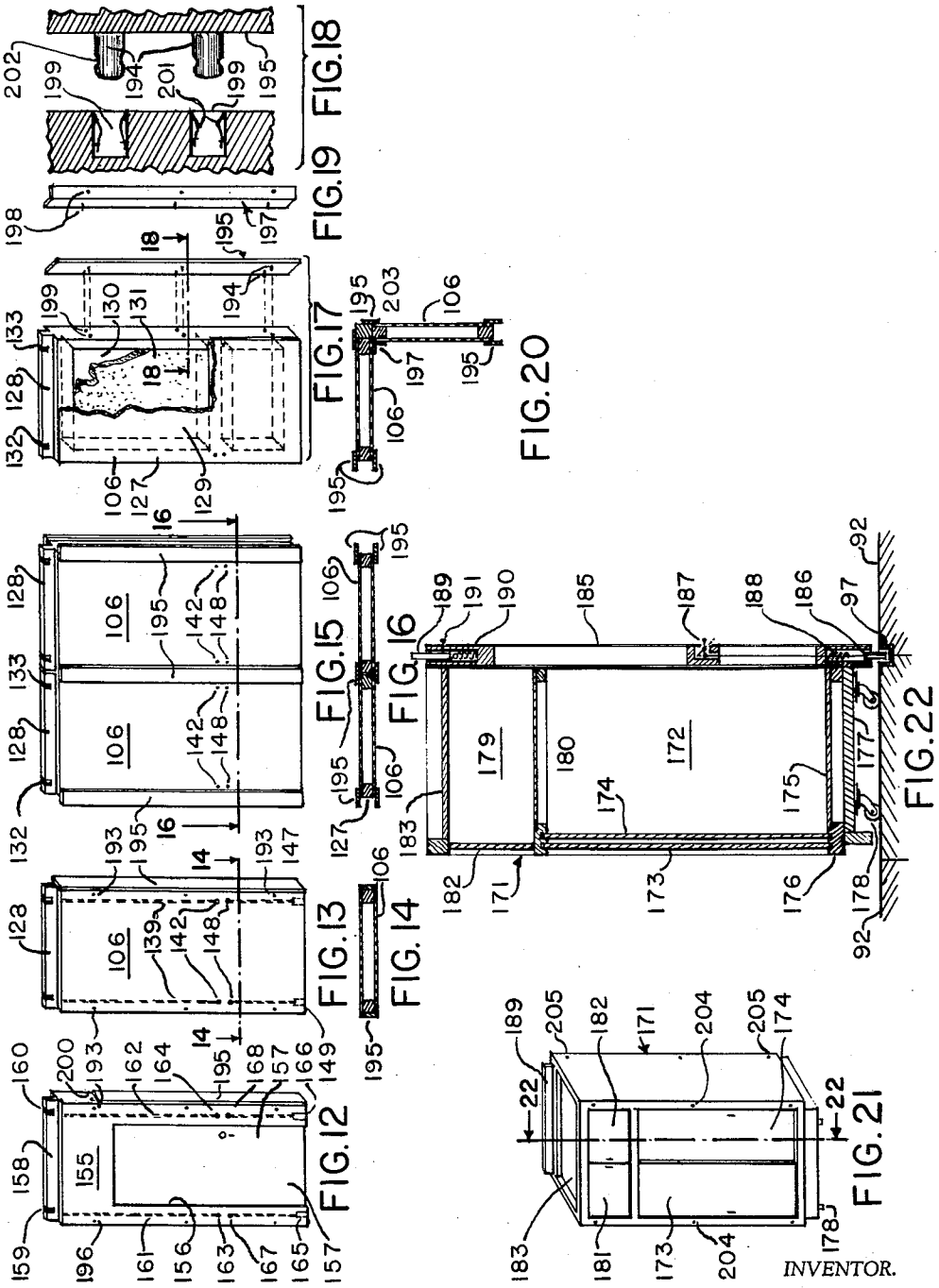
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CHANGEABLE INTERIOR WALL BUILDING CONSTRUCTION

Filed May 29, 1957 5 Sheets-Sheet 5



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3,055,061

CHANGEABLE INTERIOR WALL BUILDING CONSTRUCTION

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Filed May 29, 1957, Ser. No. 662,354
2 Claims. (Cl. 20—1)

This invention relates to building constructions and more particularly to a changeable interior wall arrangement for houses.

It is the principal object of the present invention to provide a house having changeable interior walls therein that can be arranged or rearranged as easily as moving furniture to alter the number or size of the rooms within the interior of the house.

It is another object of the invention to provide a stationary kitchen and bathroom unit adapted for use in a changeable interior wall house that permits the assemblies to be changed and the size and number of the rooms altered without the accessibility to the kitchen and bathroom unit being effected.

It is still another object of the invention to provide a building construction that has an overhead trolley track on which the movable wall assemblies, made up of selected wall sections or panels, can be suspended and run or shifted from and to storage locations without disassembling the wall assembly and by simply pulling or pushing the walls along the building trolley tracks.

It is still another object of the invention to provide an interior wall assembly for use upon a trolley track that has locking devices easily accessible to the home owner for locking the wall assembly to the floor and to the ceiling.

It is a further object of the invention to provide a changeable interior wall assembly in which wall sections having cabinets, doors or other utilities can be interfitted with plain panels or sections and have the same means for attachment of the sections with one another and for locking the assembly to the floor and to the supporting trolley bars that run on the ceiling trolley tracks.

It is a still further object of the invention to provide with the means for locking the wall sections to the floor, self-closing receptacles in the floor that are disposed at all the various locations in the floor to which the walls may be moved for different room arrangements.

It is a still further object of the invention to provide in the trolley track trough that supports the wall assemblies, an indirect fluorescent ceiling light arrangement that is automatically sectionalized as the wall assemblies are locked in their locations to place automatically the control of the ceiling lights within the different rooms as they are made up and wherein adequate provision is made between the wall assemblies and the floor, ceiling and trolley trough to prevent the escape of light from the rooms.

Other objects of the invention are to provide a home building construction having changeable wall assemblies that have the above objects in mind, which is of simple construction, inexpensive to build, may in whole or part be prefabricated, has a minimum number of parts, of pleasing appearance, of light weight, durable, efficient, effective and automatic in use.

For still further objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which—

FIG. 1 is a floor layout showing the wall assemblies arranged for providing for four bedrooms but where these bedrooms are located in the respective corners of the layout,

FIG. 2 is a fragmentary perspective view of the building with ceiling and rear wall broken away and without the kitchen and bathroom unit in place,

FIG. 3 is a vertical sectional view of the building structure taken generally on line 19—19 of FIG. 2,

FIG. 4 is an enlarged fragmentary perspective view of the central double trolley trough that runs longitudinally from one side end of the building to the other side end,

FIG. 5 is an enlarged vertical sectional view taken generally on line 21—21 of FIG. 4 showing the fluorescent tube, latch plug and light control switch,

FIG. 6 is an enlarged vertical sectional view taken generally on line 22—22 of FIG. 3 and showing the manner in which the individual wall sections or panels are locked and suspended from the carrier or trolley bar,

FIG. 7 is a partial wiring diagram of the lighting system that is automatically sectionalized by the wall assemblies as they are moved and locked in place at the different stations in the house,

FIG. 8 is an enlarged vertical sectional view identified with circle A of FIG. 3,

FIG. 9 is an enlarged vertical sectional view identified with circle B of FIG. 3,

FIGS. 10 and 11 are respectively enlarged sectional views of the floor latch receptacle in respective closed and depressed positions as viewed respectively on line 26—26 of FIG. 2 and line 27—27 of FIG. 3,

FIG. 12 is a perspective view of a wall section or panel having a door therein and with a closure strip on one vertical edge thereof,

FIG. 13 is a perspective view of a plain wall section or panel,

FIG. 14 is a horizontal sectional view of a plain wall section taken on line 30—30 of FIG. 13,

FIG. 15 is a perspective view of two joined plain wall sections or panels and the wall surface closure strips,

FIG. 16 is a transverse sectional view taken on line 32—32 of FIG. 15,

FIG. 17 is a collective and perspective view of a plain wall section with portions of the wall section broken away to show the sound proofing material therein and a closure plate being aligned to be fixed upon the end of the wall section,

FIG. 18 is an enlarged fragmentary collective and sectional view of the plug and socket connections on the closure strip plate and in the wall section, the view being taken generally on line 34—34 of FIG. 17,

FIG. 19 is a perspective view of a corner end plate adapted to join two corner wall sections together,

FIG. 20 is a fragmentary sectional view of two corner sections showing the manner in which the angled corner plate is used to join the sections and with an external corner filler piece joined thereto by closure strip plates,

FIG. 21 is a perspective view of a wall section having a closet cabinet mounted thereon and adapted to be fitted into the wall sections and interlocked into the floor and wall therewith, and

FIG. 22 is an enlarged vertical sectional view taken on line 38—38 of FIG. 21.

Referring now particularly to FIGS. 17 and 19, 50 represents a foundation floor that has a step up terrace 51 with appropriate foliage 52 in the corners thereof, a breezeway 53 with foliage 54 and a garage floor 55 extending therefrom. Other appropriate foliage can be located over the concrete floor and the usual landscaping 52' may be provided. A concrete walk 56 running parallel with the garage area 55 extends rearwardly from the foundation floor area. Upon the main part of the floor area 50, there is erected an exterior building shell 57 having a windowed front wall 58, a less windowed rear wall 59 with a door 60 aligned with the concrete walk 56 and unwindowed side end walls 61 and 62. These exterior walls are made up of any standard construction and may be prefabricated and assembled. Running along the upper

portions of and incorporated in the front and rear walls are attaching hanger plates **63** and **64**, FIGS. 18 and 19.

A combined roof and ceiling structure **65** is supported upon the walls and has a central I-beam **67** that runs from one end wall to the other. The hanger plates **63** and **64** respectively support single trolley track troughs **68** and **69**. The I-beam **67** supports a double trolley track trough **71**. These trolley track troughs may be made from light weight extruded aluminum. The single trolley track troughs **68** and **69** respectively have a vertical portion **72** by which they are secured to hanger plates **63** and **64** by bolts **73** and a horizontally extending portion **74** having a track groove **75** running therealong, FIG. 8. Running along the trough **68** between the vertical and horizontal portions is an undercut recess **76** that provides a reflecting surface for light rays projected from fluorescent tubes **77** that are mounted in the recess and run the full length of the trolley trough to indirectly light the rooms.

The double trolley track trough **71** has a vertical central portion **77** and two horizontally-extending track portions **78** and **79**. Between these vertical and respective horizontal portions are respective undercut recesses **80** and **81** that provides reflecting surfaces and house respectively fluorescent lighting tubes **82** and **83** that run the full length thereof. The horizontally-extending portions **78** and **79** respectively have track grooves **84** and **85**. The vertical portion **77** is attached to the bottom of the I-beam **67** by bolts **86** and **87**, FIG. 9. These bolts are connected to a hard metal plate **88** embedded in the top of the vertically-extending portion **79** and the portion **29** is anchored thereto by long vertical bolts **89**.

A finished interior floor outline **91** may be provided having equal-sided squares **92** that may measure any desired dimension on each side FIG. 2. A rectangular area **93** supports a prefabricated combined kitchen and bath unit **94** with a kitchen space K and bathroom spaces B. Appropriate piping is provided to supply the necessary water to the kitchen sinks, lavatories and water closets. This combined unit may have appliances and closets provided in the rooms. A fireplace or open grill **95** is also provided on the area **93** on the exterior of the unit **94**. This combined unit **94** in this layout is spaced from the rear wall **59** to provide a runway **96** along the rear of the house for access to and from back door opening **60** and between the opposite side ends of the house.

Along the floor squares **92** there are provided several series of self-closing bottom latch socket devices **97**, FIGS. 10 and 11. These socket devices are secured by screws **98** to the floor **91**. Each device has a closure plate **99** which is normally held in the closed position with its lower stop plate **100** against shoulder **101** by a compression spring **102** lying in the bottom of the socket. There are two of these sockets along joined edges of the squares **92**. These socket devices are adapted to receive plug latch elements of the wall sections that will be later described.

It will be apparent that parallel trolley track troughs oppose one another at each side of the longitudinally-extending I-beam **67**. Shiftable wall assemblies **105** formed of prefabricated wall sections or panels **106** and the trolley bar or beams **107** or **108** can be moved to any spaced distance between the ends of the building. The trolley bars **107** and **108** have their ends recessed to receive the respective horizontally-extending portions of the trolley troughs. The trolley bars **107** and **108** respectively have rollers on their ends that travel in the track grooves **75**, **84** and **85**.

The trolley bars have an opening **111** on their opposite ends that contain a spring latch linkage **112**. This linkage has a latch plug **113** adapted to enter any one of latch openings **114** in the trolley troughs spaced from one another at distances equal to the distances between the floor squares **92**. The latch plug **113** is urged toward the plug socket receptacle **114** by a compression spring **115** and can be released from the plug opening by pulling downwardly on an easily accessible hand knob **116** that extends outwardly through a slot **117** in a side cover plate **118**. The spring **115** reacts against a shelf plate **119**. The plug socket receptacle **114** has a bottom **120** through which a switch actuator **121** extends. This actuator has an internal plate **122** within the receptacle **114** that is engaged by the plug **113** and depressed against the action of a compression spring **123** to open a switch **124** connected in circuit relation through appropriate wiring **125** connected with an electric source and with fluorescent tubes **77**, **82** or **83**, FIG. 5.

Each wall section **106** has an internal frame **127** and a top tongue projection **128**, FIG. 17. Cover pieces **129** and **130** overlie the frame **127** and disposed therebetween is sound deadening material **131**. Within the tongue projection **128** and adjacent the respective ends thereof, are respective latch notches **132** and **133**, and in the notches **132** and **133** are a pair of opposing swing latch plates **134** and **135** that are respectively connected to pinions **136** and **137** journalled in the tongue notches **132** and **133**, FIG. 6. These latch plates are operated by a double-sided rack gear **138** and pinions **136** and **137** in mesh therewith. The gear rack **138** is pulled down from the notch and into an opening **138** in the wall section **136** by a pull rod **139** against the action of a compression spring **140** that is shouldered at **141** within the opening **138**. The rod **139** is operated by a hand lever **142**. Each of the trough bars **107** and **108** has a groove **143** running along its under edge that has opposing shoulders **144** and **145** adapted to be engaged by the respective swing latch plates **134** and **135**, FIG. 6. When the hand lever knob **142** is operated the latch plates **134** and **135** are retracted and the tongue projection **128** of the wall section **106** may be then inserted into the groove **143**. Upon the hand lever **142** being released, the spring **140** will lift the rack **138** and position the latch plates **134** and **135** to engage the respective shoulders **144** and **145**. This assemblage provides releasable devices upon the tongue projections to suspend the wall sections **106**. The width of these wall sections **106** are equal to the dimension of the imaginary squares **92** and several of the wall sections are suspended from the trolley bar **107** or **108** to make up the full wall section assembly **105**. The wall assemblies **105** can be made up of four or five sections and can be pushed or shifted from one side end of the building to the other. When the assemblies are not needed to make the rooms they are stored in the side ends of the building upon the trolley track troughs. With all of the wall assemblies **105** in one end or the other of the building a full floor space is provided for open living. To provide the different rooms, the wall assemblies **105** are moved from the side end walls and fixed within the building at any one of several spaced locations along the trolley troughs.

Within the bottom of each wall section at each side thereof is a bottom latch linkage **146** having a latch plug **147** adapted to enter any one of the floor receptacles **97** with which the wall assembly **105** will be aligned, FIG. 9. A compression spring **148** reacts upon the linkage **146** to normally urge the plug downwardly and into the receptacle **97**. To lift the plug latch **147**, a hand lever **148** is depressed against the action of a compression spring **149**. By the plug latches **114** of the trolley bar **107** or **108** and the floor plug latches **147**, the wall assembly is held immovable against longitudinal displacement along the trolley troughs and through the building. To move the wall assemblies **105** the pull knobs **116** of the trolley bar **107** or **108** and the floor hand levers **148** of the wall sections are simultaneously operated thereby allowing the assembly to be moved to and from the end storage space or shifted to an adjusted position.

The wall assemblies **105** can be shifted in the building to different distances to provide any one of the room layouts shown in FIG. 1. In order to close the inner ends of the rooms, individual wall sections **106** shown in FIG. 2 stored in one side end of the building are taken one at a time and placed in groove **151** in the central double trolley trough. To do this, the latch plates **134** and **135**

are retracted and the tongue projection 128 is slid upwardly into a groove 151 and released within the groove 151 to engage shoulders 152 and 153 thereof. The number of these wall assemblies that are used depends upon the length of the exterior building structure. These wall assemblies are light in weight and can be easily lifted and handled. The dimensions of the wall sections, the length of their tongue projections 128, the width and shape of the slot in the trolley bar and the height of the sections are such that they can be lifted broad side and assembled in the trolley bar slots to be suspended from the trolley bars and closed with the floor at their bottom edges by pile fabric depending from the surfaces of these edges. All of the knobs 116, and levers 142 and 148 are preferably made so that they may be locked in their plug retracted positions and the hands left free to move the wall assembly along the trolley track.

In order to have a door in the wall assembly 105 a wall section 155 is used, FIG. 12. This wall section has a door opening 156 in which a door 157 is hinged. This section 155 has a tongue projection 158 on its upper edge adapted to be fitted into either the groove 143 of the trough bars or groove 151 of the double trolley track trough 71. This tongue projection 158 has notches 159 and 160 from which latching devices 161 and 162, the same as those above described for the plain wall sections, are extended and released by respective hand levers 163 and 164. Bottom plug latch devices 165 and 166 respectively have hand levers 167 and 168 located respectively adjacent to the upper latch hand levers 163 and 164. These hand levers are also adapted to be locked in their retracted positions. This door wall section 155 can be either lifted separately and placed on the double trolley track trough or can be made a part of a wall assembly 105 and supported on the trolley bar 107 or 108.

In FIGS. 21 and 22, there is shown a closet or cabinet 171 that may stand substantially the full height of the wall. This closet has a floor bottom 175. Slide doors 173 and 174 are supported on a bottom frame 176 that is in turn supported and carried on a dolly 177 having caster wheels 178. Above the large compartment 172 is small compartment 179 that has a shelf support 180, twin doors 181 and 182 and a top frame 183. The closet is mounted on a wall section 185 of the same width and height of the wall sections 106 and 155 that has bottom plug latches 186 adapted to enter the floor receptacles 97 and lifted by a pivot lever 187 against the action of the spring 188. In the upper part of the wall section 185 is a retractable latch 189 adapted to fit the groove 143 of the trolley bar and groove 151 of the double trolley trough 71 and urged toward its latching position by compression springs 190. This latch 189 is retracted against the action of the springs 190 by pull knobs 191 that may be locked to the latch in its retracted position. It will be seen that these closets 171 can thus be located in any one of the wall assemblies and be accessible from a room space. These closets 171 when free of the walls can be stored at the side ends along with individual wall sections 106 and 155.

To close the cracks between the wall sections and to improve the appearance of the wall assembly surface, the sides of the faces of the wall sections 106 are provided with three spring sockets 193 and 196 into which plugs 194 of closure strips 195 can be fitted. These closure strips 195 extend the full height of the wall sections and will completely cover the cracks between the wall sections. The door wall section 155 has similar socket openings 196 that receive the plugs 194 of the cover strips 195.

To provide finish on the side edges of the wall sections spaced pairs of socket openings 199 are used to receive the plugs 194 to fix the cover strip 197 thereover, FIGS. 17 and 18. Similar socket openings 200 are provided in the edges of the door wall section 155 so that the cover strip 195 can be attached thereto. All of these socket openings have opposing inwardly bent flat springs 201 adapted to be joined with indentations 202 on the opposite sides of each plug 194, FIG. 18.

Where the wall sections 106 or 155 are joined to form a corner as illustrated in FIG. 20, an angle strip 197 is fitted inside the corner so that plugs 198 thereof enter socket openings 193 or 196 of the joined wall sections 106. The exterior of the corner, FIG. 20, has a corner filler piece 203 of square section that is held in place by cover strips 195 with its plugs 194 entering the wall section socket openings 199.

The closets 171 are provided with sockets 204 on their front faces. They can be joined with one another by closure strips 195. The socket openings permit the closets 171 to be joined by angle plates 197 with wall sections 106 and 155.

While different wall sections including a door and a closet unit have been provided, it will be understood that other types of wall sections in the nature of book cases, chests, store-away beds, etc. can be similarly provided. The furniture used in this type of a house would include studio couches that can be converted into beds for use in the bedrooms.

The fluorescent tubes 77, 82 and 83 are disposed along the trolley track troughs 68, 69 and 71, and are individually controlled by respective switches 207. They are supported with current from a main supply line 208 that has a main switch 209. As the wall assemblies 105 are positioned and the top plug latches 113 are connected to the switch receptacle 114 to open switches 124 the fluorescent tubes are automatically sectionalized so as to be controlled by the individual switches 207. The fluorescent lights 82 and 83 on the respective sides of the double trolley are joined in parallel circuit relationship with the respective fluorescent tubes lying within the respective single trolley troughs 68 and 69, are controlled therewith.

To prevent light and air from passing between the upper edge of the trolley bar 108 and the ceiling surface 65, a pile fabric strip 211 is fixed to the upper edge of the trolley bar so as to be moved therewith, FIG. 4. In the trolley troughs, there is fixed thereto at intervals equal to the length of the fluorescent tubes, closure members 210 to block off light that would pass through the trolley trough to an adjacent room. The pile fabric 211 will extend over the rounded ends of the bar and engage with the inner edges of the closure members 210. On the bottom edges of the wall sections are similar pile fabric strips which are secured thereto so that the hairs thereof engage with the floor surface and thereby prevent the passage of light through the walls at the floor.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What is claimed is:

1. A changeable interior wall building comprising an exterior wall structure with a floor therein, parallel overhead trolley track troughs running through said exterior structure from one end of the structure to the other end thereof, and interior shiftable walls suspended from and operable along said trolley track troughs to shift broad side the interior walls over the floor and within the exterior structure whereby rooms may be provided and changed therein, each of said interior walls including a trolley bar spanning the trolley troughs, said trolley bar having an assembly slot running through the under edge thereof, each of said interior shiftable walls further including a plurality of wall sections respectively having upstanding tongue projections fitted into the trolley bar assembly slot, releasable devices on the projections of the respective sections engaged within the slot suspending the sections from the trolley bar, and releasable devices on the wall sections engaged within the floor to retain the wall sections in vertical alignment with the trolley bar.

2. A changeable interior wall building comprising an exterior wall structure with a floor therein as defined in

claim 1, and cover strip devices having detachable plug projections and said wall sections having along their vertical edges socket openings releasably receiving the cover strip plug projections whereby the side edges of the adjoining wall sections are covered.

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