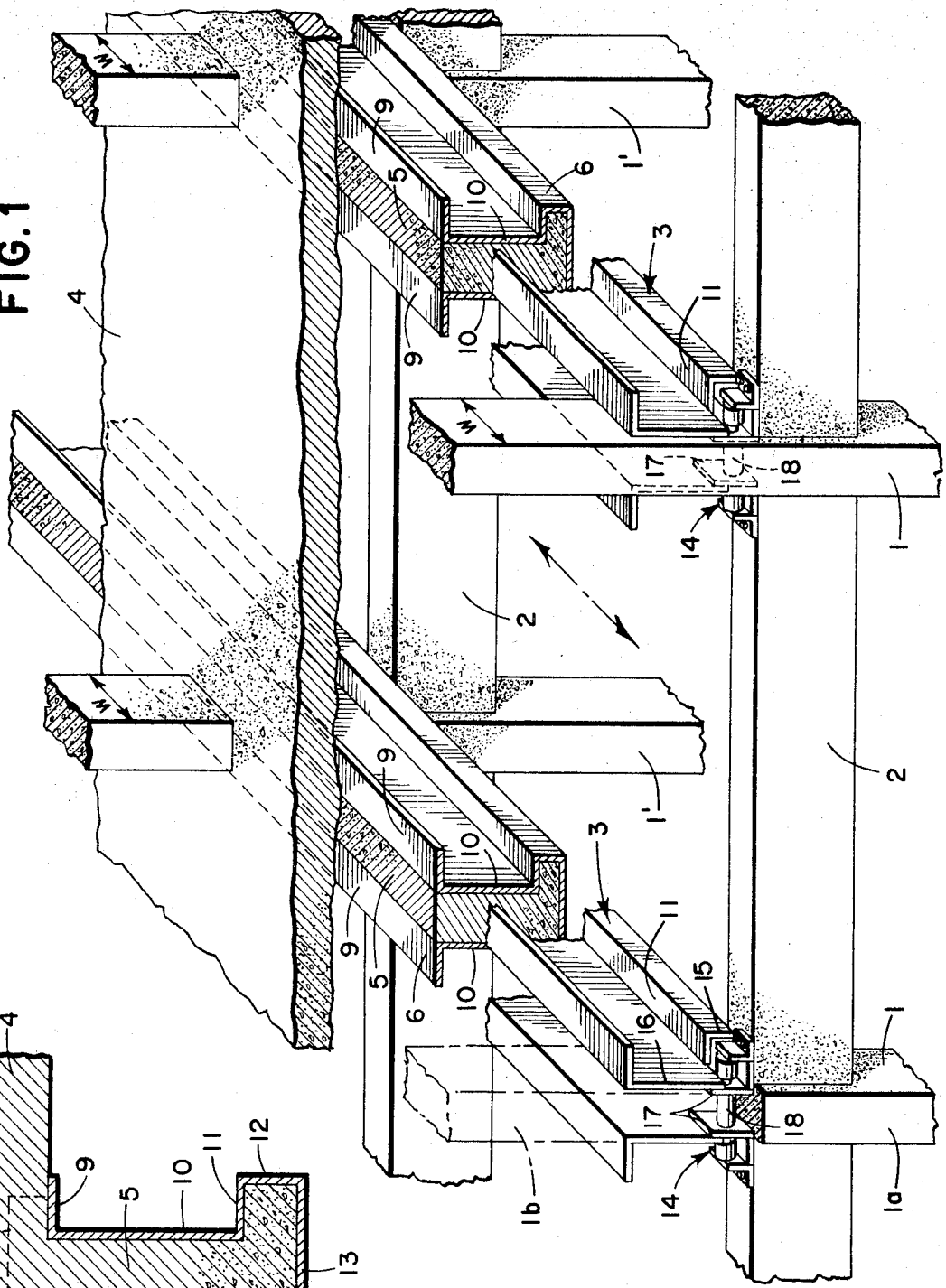
May 19, 1970 A. VITALINI 3,512,315

BUILDING HAVING TELESCOPIC SECTION

Original Filed April 21, 1967 6 Sheets-Sheet 1

FIG. 1



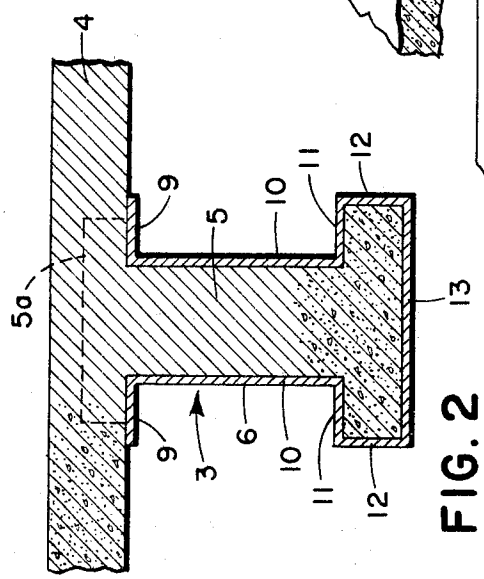


FIG. 2

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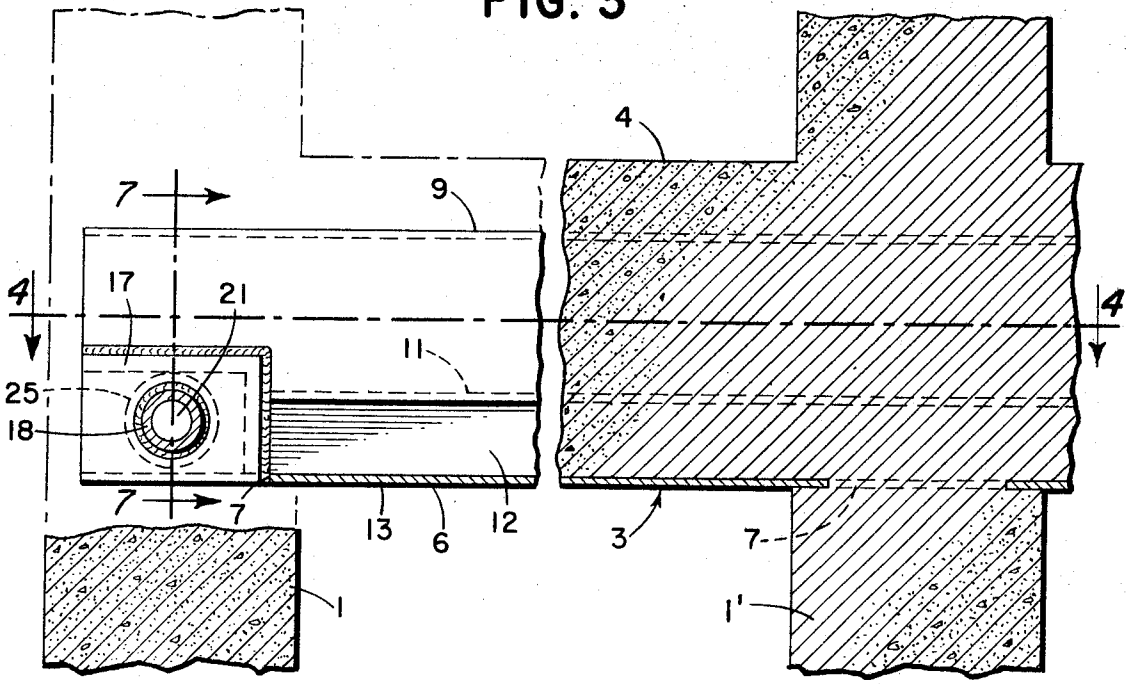
ATTORNEYS

May 19, 1970 A. VITALINI 3,512,315

BUILDING HAVING TELESCOPIC SECTION

Original Filed April 21, 1967 6 Sheets-Sheet 2

FIG. 3



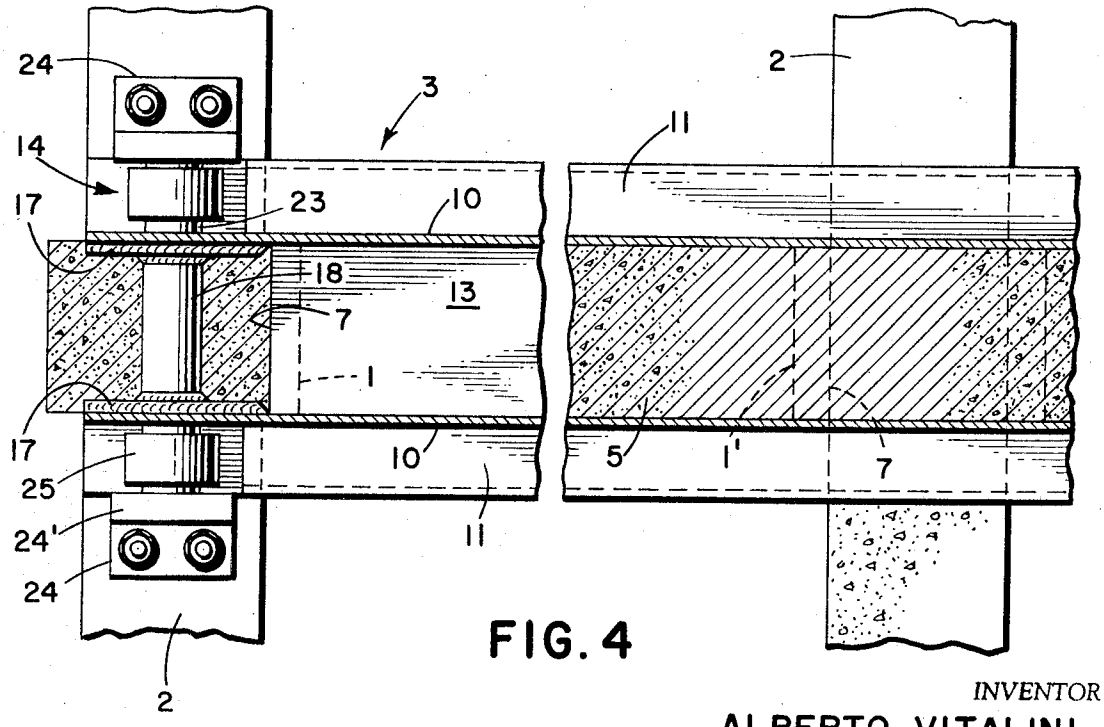


FIG. 4

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BUILDING HAVING TELESCOPIC SECTION

Original Filed April 21, 1967 6 Sheets-Sheet 3

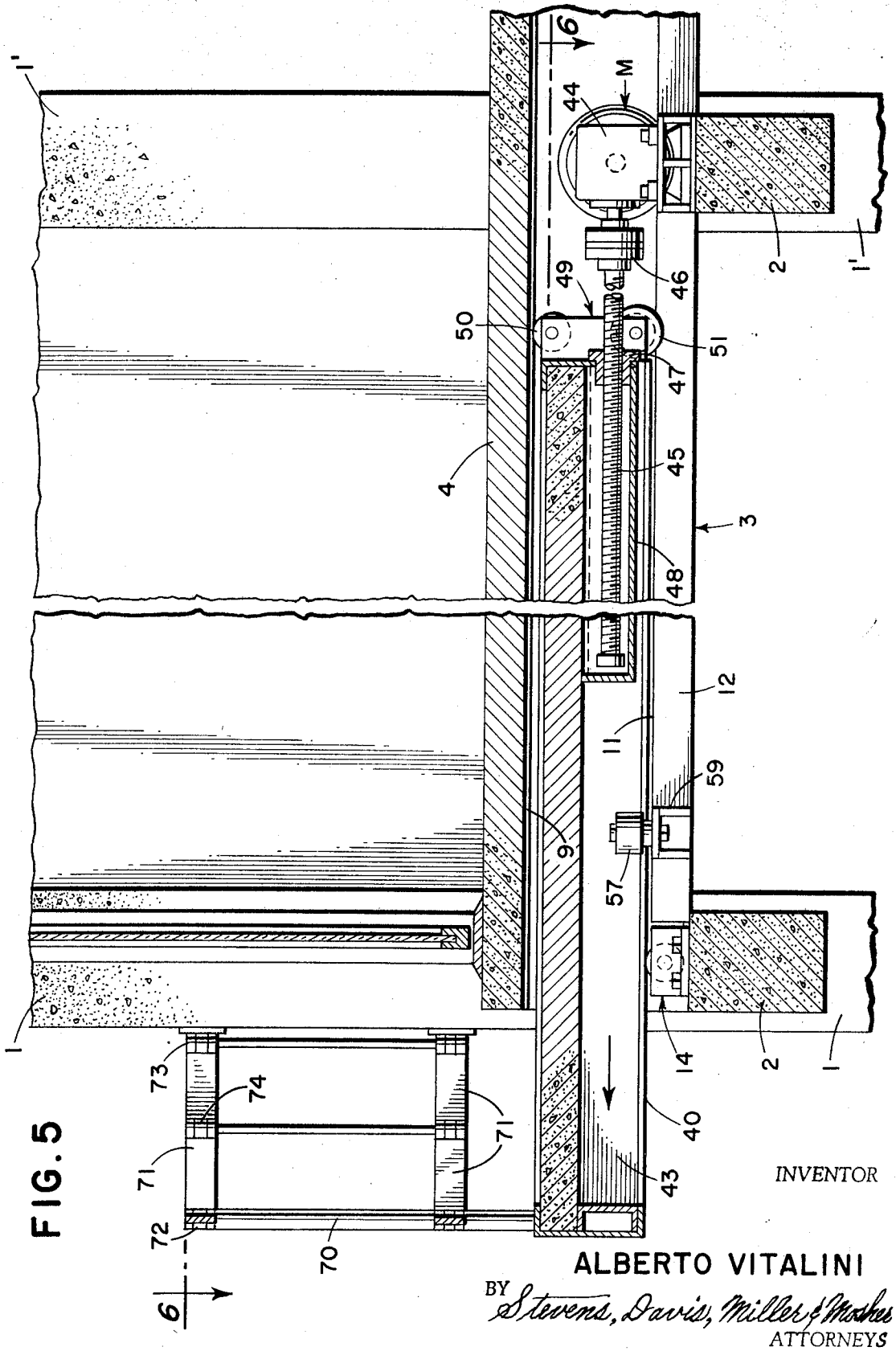


FIG. 5

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BUILDING HAVING TELESCOPIC SECTION

Original Filed April 21, 1967 6 Sheets-Sheet 4

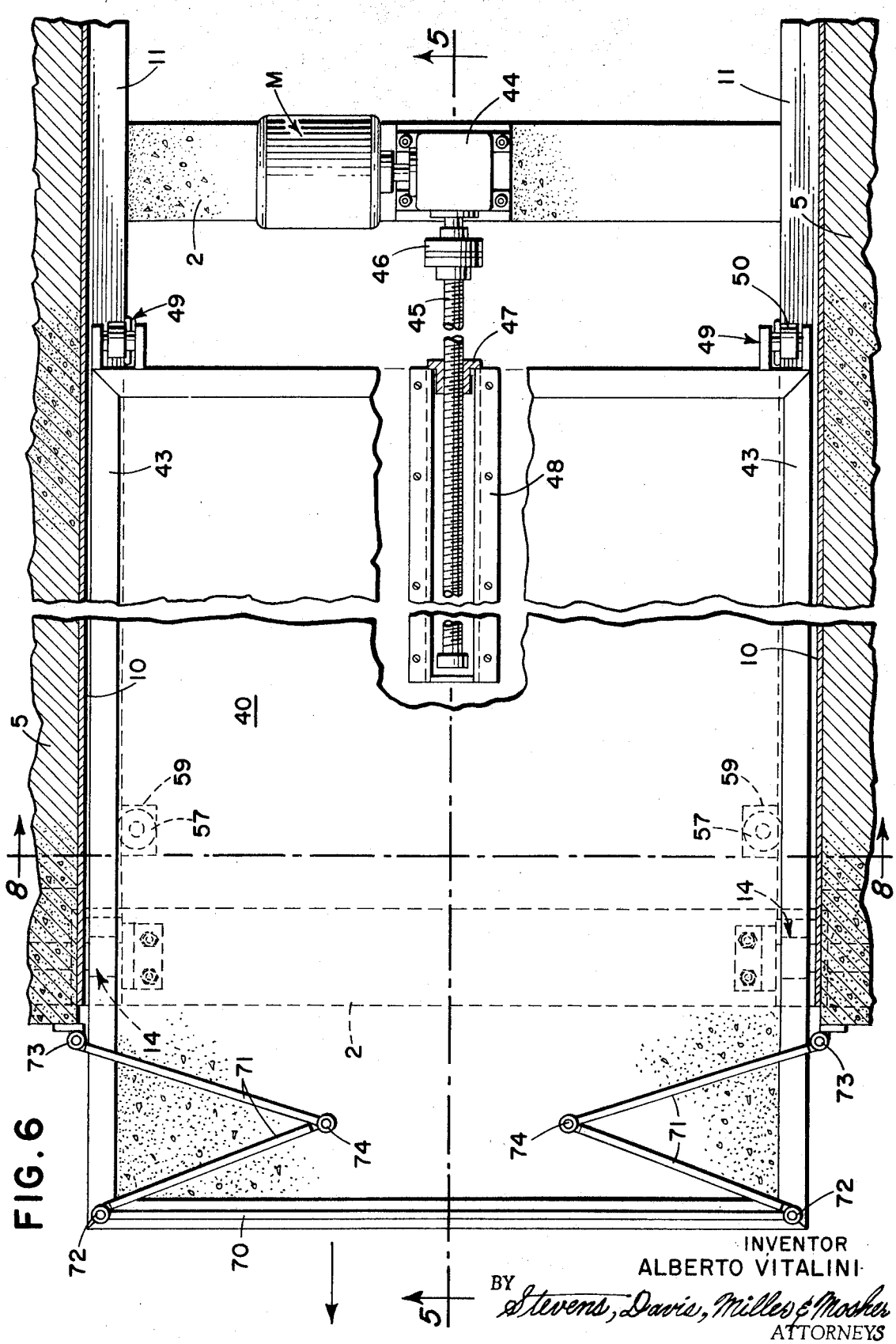


FIG. 6

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FIG. 7

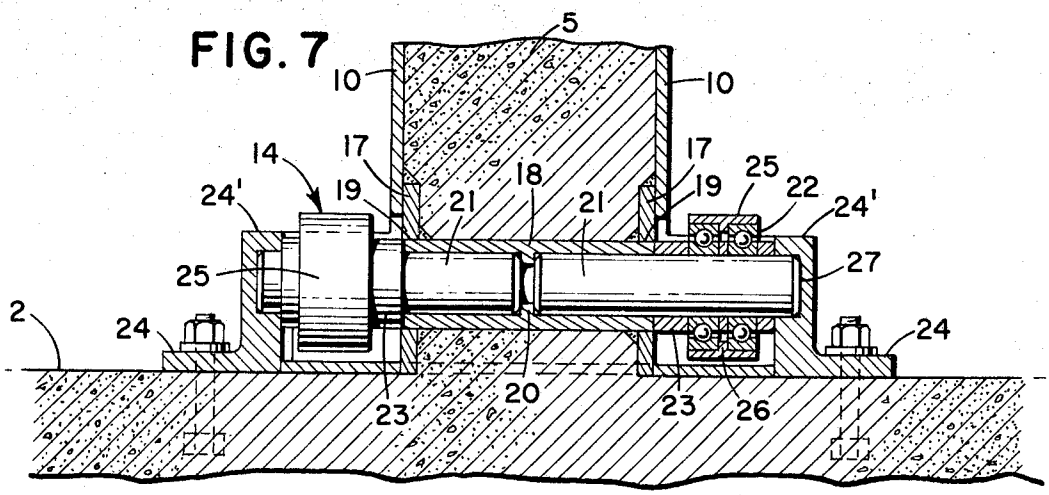
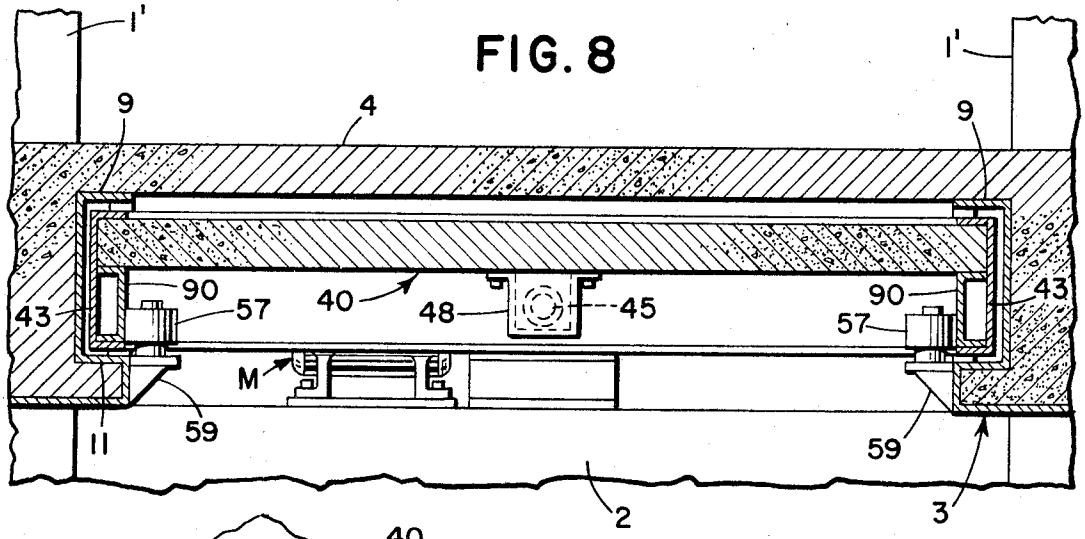


FIG. 8



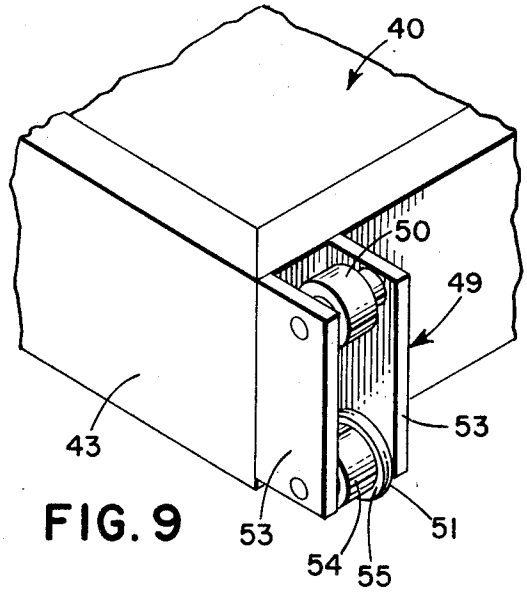
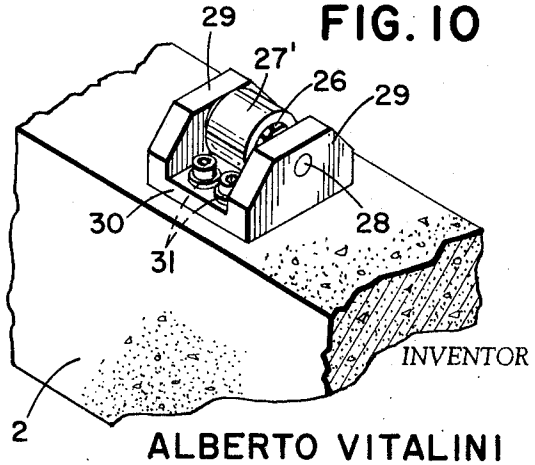


FIG. 9

FIG. 10



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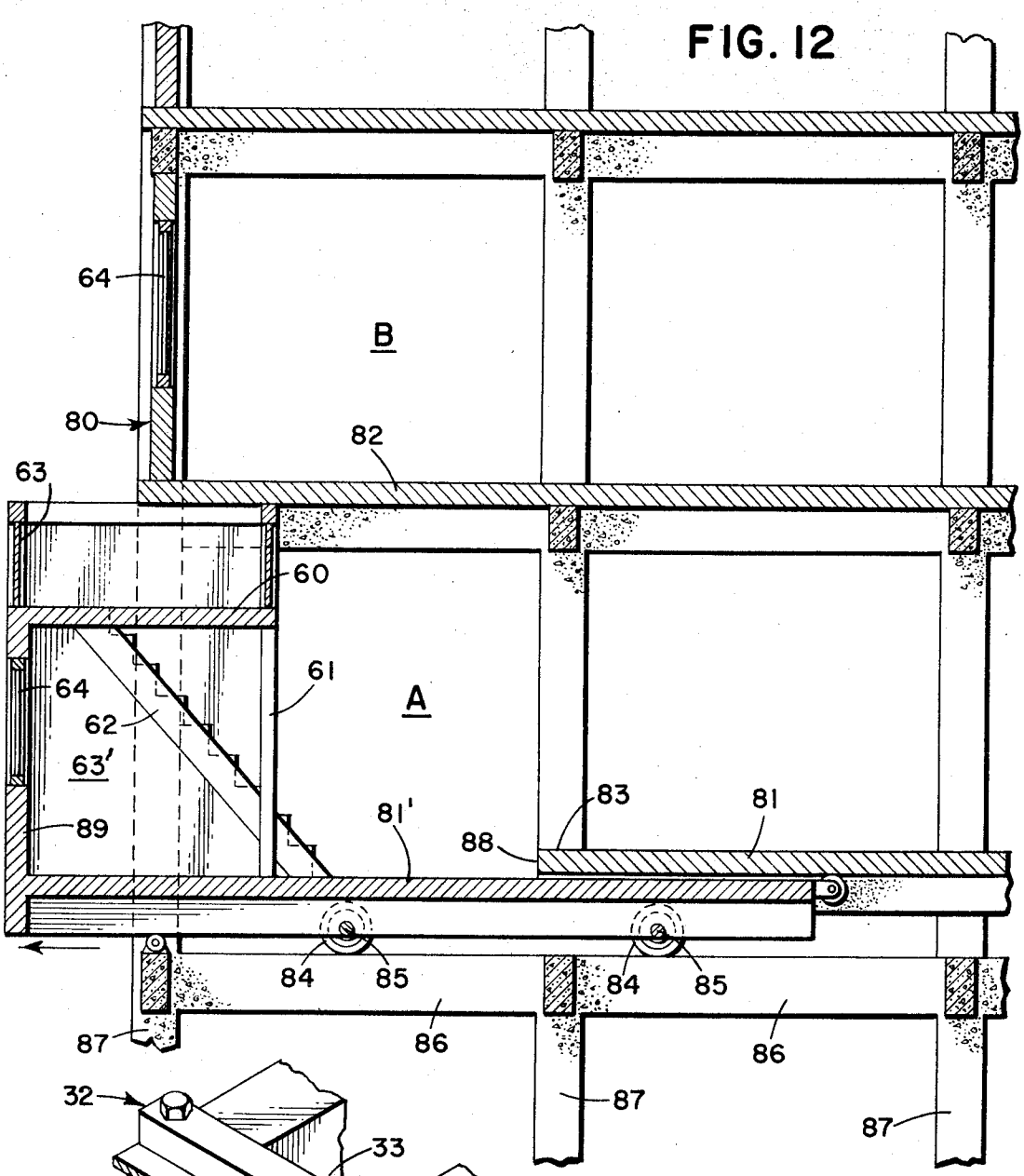
ATTORNEYS

May 19, 1970 A. VITALINI 3,512,315

BUILDING HAVING TELESCOPIC SECTION

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FIG. 12



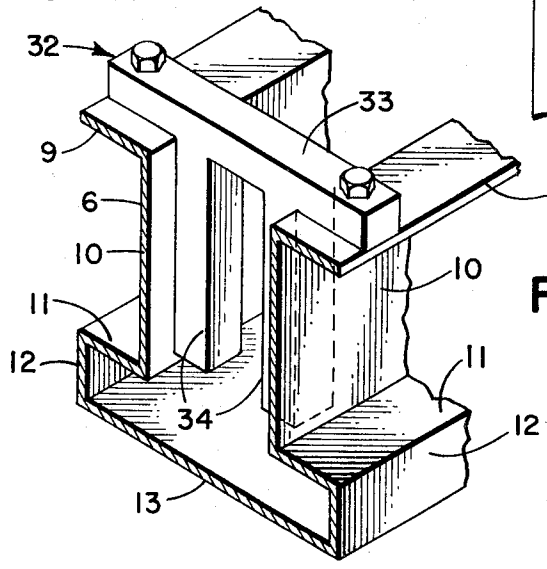


FIG. 11

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United States Patent Office 3,512,315 Patented May 19, 1970

3,512,315

BUILDING HAVING TELESCOPIC SECTION

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Continuation of application Ser. No. 632,735, Apr. 21, 1967. This application June 10, 1969, Ser. No. 834,609
Claims priority, application Italy, Mar. 13, 1967, 35,391/67, 35,392/67
Int. Cl. E06b *1/343;* E04h *1/04;* E04c *3/283*
U.S. Cl. 52—67 26 Claims

ABSTRACT OF THE DISCLOSURE

A building construction wherein various units of the building are dynamically constructed relative to the main static supporting structure thereof so that said units are extensible and retractable relative to an exterior wall of said building as, for example, externally protruding balconies which can be telescoped into the building and also entire room structures which can overhang from an exterior wall in the nature of balconies and which can be retracted inwardly to form a flush exterior wall on said building.

This is a continuation of my copending application Ser. No. 632,735, filed Apr. 21, 1967, and now abandoned.

This invention relates to a system for constructing buildings wherein various parts thereof, such as balconies, terraces, and even closed room structures are movably arranged relative to a static supporting structure whereby such parts can be selectively extended or withdrawn relative to an exterior wall of the building.

The invention is, for example, applicable to balconies which extend outwardly from an exterior vertical wall of the building and which, conventionally, are static relative to said wall. Consequently, in conventional building structures the extent to which a balcony protrudes from the building wall is constant and the profile of said wall is unchangeable.

According to this invention, however, such balconies are dynamically arranged whereby they can be selectively retracted towards the building exterior wall as would, for example, be done in winter to avoid the accumulation of snow thereon, or extended outwardly of said wall as would be done in summer for conventional "al fresco" living. In any event, according to this invention the profile of a building exterior wall can be changed through the extension or withdrawal of balconies, terraces, or entire room structures at various locations on said wall.

The invention is also applicable to a closed room structure having a floor, side walls, an exterior end wall, and a ceiling. In this instance, the entire room structure including the aforementioned walls, floor, and ceiling would be slidably arranged, in the nature of a desk drawer, relative to the static exterior wall construction of the building.

Generally, therefore, this invention relates to a novel building construction wherein various areas thereof are arranged to slide inwardly and outwardly relative to a static supporting structure and specifically, inwardly and outwardly relative to an exterior vertical wall of said structure. The concept of this invention could to some extent be analogized to the concept of a desk or a chest of drawers wherein various areas thereof (the drawers) are horizontally slidable relative to the static frame of said desk or chest of drawers. The application of this concept, however, to a building structure, and especially a large building having many floor levels, involves problems which are quite remote from the relatively simple problems involved in the construction of a desk, etc., and

it is the solution of such problems that this invention is directed to.

In this regard, it should be noted that buildings are constructed in accordance with particular conventional building techniques and that a construction requiring a radical departure from such techniques could involve prohibitive building costs. Further, buildings must be constructed in accordance with certain stress principles to assure the strength and rigidity thereof and any constructional features which would tend to undermine or weaken the building from this point of view, would be summarily rejected by architects, buyers, and by building code inspectors. In the case of a multi-level building, there must be continuity of the vertical pillar supports from one level to the next. Heretofore, a major problem which has arisen when it has been attempted to provide a multi-level building with components which could slide exteriorly of the building outer walls has been the fact that it was necessary to locate the supporting beams or rails for the sliding structure on the inside of the pillars so that the pillars would not obstruct the movement of the sliding structure. In addition, it was necessary to provide the usual cross-beams in the plane of the pillars, these cross-beams being parallel and adjacent to the rails for the sliding structure. According to this invention, however, a special cross-beam is provided which extends in the plane of the pillars as the usual cross-beams do but which also, because of its novel construction, serves as a support rail for the sliding structure and thereby eliminates the need for separate support rail members for said sliding structure.

As a still further consideration, it will be noted that structural members such as pillars, girders, beams, etc., are to a large extent constructed of reinforced concrete and that, additionally, such members are prefabricated at locations remote from the building site. A new constructional arrangement, therefore, should be adaptable to use of reinforced concrete members and also adaptable to prefabrication techniques for such members.

It is, therefore, an object of this invention to provide a building construction whereby parts thereof defining balconies, rooms, etc., are dynamically arranged relative to a static supporting structure.

It is a further object of this invention to provide a building construction whereby the areas of various components such as balconies, room, etc., can be selectively enlarged or reduced and wherein such components in their entirety can be individually added to or subtracted from an existing static structure.

It is a further object of this invention to provide a building construction wherein various areas thereof such as balconies, rooms, etc., are movably arranged relative to a fixed external vertical wall of said building.

It is a further object of this invention to provide a building construction wherein various areas thereof are telescopically arranged in relation to a fixed static supporting structure to either project or be withdrawn relative to a fixed external wall of the building.

A further object of this invention is to provide a building construction wherein various components thereof such as balconies and closed rooms can be prefabricated in their entirety as movable structures and then lifted by a crane for installation into appropriate spaces in the building static structure, said components being movably installed relative to said static structure. It is, conversely, an object of this invention to provide a building construction wherein said movable structures can be in their entirety dismounted from the static support structure of the building and removed therefrom by a crane.

A further object of this invention is to provide specially designed structural members for realizing the building construction of any of the aforementioned objects.

It is a further object to provide such structural members which are susceptible to being constructed in reinforced concrete.

It is a further object to provide such structural members which are susceptible to being prefabricated in reinforced concrete.

It is a further object of this invention to provide specially designed roller supporting means for slidably supporting the building movable parts relative to the static supporting structure.

It is further an object of this invention to provide a novel reinforced concrete I-beam construction which is especially adapted for the movable balcony, room, etc., construction of this invention but which is also of utility in a conventional, non-dynamic structural environment because of its space and cost saving features as well as its increased strength relative to known reinforced concrete beams.

Other objects are those which are inherent in the invention, a detailed description of which follows with reference to the accompanying drawings, in which:

FIG. 1 is a foreshortened isometric view showing various of the static structural members of a building according to this invention;

FIG. 2 is a cross-sectional view of the novel I-beam of this invention showing also the flooring which is supported thereon;

FIG. 3 is a vertical longitudinal sectional view along the beam 3;

FIG. 4 is a horizontal sectional view taken along line 4—4 in FIG. 3;

FIG. 5 is a vertical section view taken along line 5—5 in FIG. 6;

FIG. 6 is a horizontal section view taken along line 6—6 in FIG. 5;

FIG. 7 is a sectional view taken along line 7—7 in FIG. 3;

FIG. 8 is a sectional view taken along line 8—8 in FIG. 6;

FIG. 9 is a detail isometric view of the roller means attached to the inner end of the movable flooring;

FIG. 10 is an isometric view of a further embodiment of the roller means shown in FIG. 7;

FIG. 11 shows the trueing-up member of this invention; and,

FIG. 12 is a vertical sectional view of another embodiment of this invention wherein the movable flooring is part of a complete room structure which is extensible relative to the building external wall in the nature of a balcony.

With reference to FIG. 1, the building comprises a plurality of pillars **1** which serve as vertical support members for the transverse beams **2** and for the cross-beams **3**. The pillars **1** and the transverse beams **2** are reinforced concrete members of conventional construction. On the other hand, the cross-beams **3** are especially constructed and constitute one of the important aspects of this invention. Supported upon the cross-beams **3** is a fixed flooring **4** which is shown as being of concrete but which could also be of other construction.

The special I-beam **3** of this invention comprises a concrete core **5** of inverted-T-cross section enclosed in a sheet steel casing **6** which preferably is cold formed from one piece of flat steel into the I-shape shown in FIGS. 1 and 2. The I-beams **3** can be prefabricated in which case the prefabricated portion of concrete core **5** would only partially fill casing **6** leaving appropriate spaces therein along the length thereof corresponding to the width *w* of each pillar **1**. Further, a hole **7** would be cut out of the bottom of casing **6** substantially symmetrically about the vertical axis of each pillar **1**. If, therefore, beams **3** were prefabricated, the construction of the building would proceed as follows.

First the lower sections **1***a* of pillars **1** and the beams **2** would be poured in place, these members being made

of reinforced concrete. Then the prefabricated cross-beams **3** would be set in place as shown in FIG. 1 and finally the concrete for the upper sections **1***b* of the pillars would be poured, this concrete filling the unfilled portion of casing **6** and flowing through the hole **7** in the casing **6** and forming an integral bond with the concrete of lower section **1***a*. Further, it should be noted that reinforcing rods extend upwardly from the lower pillar section **1***a* and tie in with reinforcing rods in the upper pillar section **1***b*. If the fixed floor **4** is also of concrete, it can be poured simultaneously with the pouring of the upper pillar sections **1***b* or subsequent thereto. In any event, as is seen in FIG. 2, the concrete core **5** of beam **3** forms an integral mass with the concrete of flooring **4**. It should be noted that as regards the reinforced concrete beams **3** themselves, the core **5** actually may also comprise an upper portion **5***a* overlapping the flanges **9** as is indicated in dash lines in FIG. 2. Since in FIG. 2 the static flooring **4** is also of concrete which may be poured simultaneously with the pouring of core **5** in situ, the flooring concrete **4** and core concrete **5** form an integral mass; however, if flooring **4** were not of concrete or if beam **3** including core **5** were prefabricated, said core would still include portion **5***a*.

In the event that the I-beams **3** are not to be prefabricated, the metal casings **6** are still provided with holes **7** so that when these casings **6** are set in place and the concrete for pillars **1** is poured, the pillar sections **1***a* and **1***b* will still form an integral mass of concrete. In the case of beams **3** not being prefabricated, the casings **6** act as forms for the concrete which is poured in situ. While in the case of the pillars **1** and the transverse beams **2** the concrete forms or molds into which the concrete is poured must be assembled, and then disassembled in place after the concrete has set, the casings **6** are in all cases prefabricated and they are never removed.

With reference to FIGS. 1 and 2, it is seen that casing **6** is generally in the shape of an I and comprises an upper pair of flanges **9** extending perpendicularly to spaced apart vertical walls **10**, bottom flanges **11** parallel to top flanges **9**, vertical side walls **12**, and bottom wall **13**. An extremely important aspect of the new I-beam **3** is that casing **6**, in addition to various other functions, constitutes a metallic reinforcing structure for the concrete core **5**. Conventionally, concrete beams are reinforced by means of metal rods embedded with the concrete portion of the beam. The metal casing **6**, however, provides considerably greater reinforcement than the conventional metal rods so that the beam **3** of this invention can be considerably smaller in height than an equivalent strength conventional reinforced concrete beam. Further, it should be noted that casing **6** serves important functions other than the reinforcing one. It serves as a form or mold for the concrete core **5** and thereby eliminates the costly and time consuming labor required for constructing and then disassembling the forms which are usually used when concrete beams are either formed in situ or even prefabricated. Further, casing **6** provides external metallic surfaces, namely the undersurface of flange **9** and the facing upper surface of flange **11**, which are suitable as sliding bearing surfaces for the yet to be described movable floor structure. In this regard, it will be noted that a concrete surface is totally unsuitable as a bearing surface between moving parts because of its coarse, abrasive texture. A smooth metallic surface is the most practical for such a purpose; however, it is not a simple matter to attach a metal bearing surface to a concrete body because, among other difficulties, it is very difficult to permanently secure the metal bearing surface to the concrete and further, it is very difficult to obtain a level orientation of said surface when it is to be attached to concrete because the concrete surface against which attachment is to occur cannot be finished within close tolerances. On the other hand, the casing **6** of this invention ob-

viates all such problems since the flanges 0 and 11 can be accurately formed by conventional bending methods and their disposition is not determined by the contour of the concrete core 5; instead, the casing 6 determines the contour of the concrete core.

It should be noted that for purposes of increased strength, even the beam 3 of this invention could be provided with further reinforcing means in the form of conventional steel rods embedded within the concrete core 5. The upper rods alone could be used for a certain additional amount of reinforcement and for still additional reinforcement the lower rods could be used in conjunction with the upper ones. The amount of reinforcement used, namely whether only casing 6 will be used, or also upper rods, or also upper and lower rods, will depend upon the height of beam 3 and also upon the distance between outer pillars and inner pillars 1'.

A movable flooring 40 (FIGS. 5 and 6), preferably prefabricated, can now be slidably mounted relative to the static supporting structure of FIG. 1 in a manner somewhat analogous to a sliding desk drawer. In this regard, it should be noted that in FIG. 1 the outer pillars 1 represent an external wall of the building while pillars 1' are interior pillars of said building. The sliding direction of the movable floor structure is indicated by the arrows in FIG. 1.

According to this invention a novel fixed roller means 14 provides a low friction support for the movable flooring at the front end of the static support structure. With reference to FIG. 1 it is seen that the front end 15 of portions 11 and 12 of beam 3 is cut back relative to the front edge 16 of transverse beam 2 so as to accommodate roller means 14 between end 15 and edge 16. The bottom 13 of casing 6 is not cut back.

The roller means 14 comprises a pair of plates 17 welded to opposite ones of walls 10 on the interior side thereof. A tube 18 extends between plates 17 and through aligned holes 19 in the plates and in the walls 10, said tube being welded to said plates 17. A spacer 20 is positioned centrally in said tube relative to its length and a pair of axles 21 are fixedly mounted in said tube on opposite sides of the spacer and extend through the respective holes 19 to points outwardly of the casing walls 10. A pair of roller bearings 22 in tandem are mounted on the end of each axle 21. In order to prevent axial displacement of said bearings on said axles, an annular spacer 23 is positioned between the end of tube 18 and the inner side of one bearing while an L-shaped bracket 24 is secured by screw means to the upper surface of beam 2 and acts as a limit means against the outer side of the other bearing. The vertical leg 24' of bracket 24 includes a recess 27 within which is supported the end portion of axle 21 whereby said axle is supported at both ends thereof. A cylindrical sleeve 25 is tightly fitted over the outer periphery of both bearings and acts to evenly distribute a load to both bearings. Said sleeve 25 includes an inner spacer means 26 for preventing the two bearings from rubbing against each other. The diameter of the roller bearings sleeve 25 is such that a space exists between the outer periphery thereof and the top surface of bottom 13 of beam 3 whereby said bearings and sleeve are free to rotate without touching said bottom 13.

It is of course understood that plates 17 and tube 18 are welded in place within casing 6 before any concrete is poured into the end portion of said casing. The concrete which eventually is poured into said casing can easily flow around tube 18 in order to form an integral pillar of concrete as is shown on the right side of FIG. 1 wherein it is seen that the plates 17 and tube 18 become permanently and solidly embedded in the concrete which forms the front pillars 1. The brackets 24 and the axles 21 with the bearings 22 are, however, mounted in place after the concrete is poured and these last mentioned parts are replaceably mounted in the structure.

FIG. 1 shows the bearing roller means 14 extending from both sides of each beam 3, this arrangement being adapted to accommodate sliding flooring on each side of the respective pillars. If a fixed floor were to be mounted adjacent to a sliding floor, the roller means 24 would only require one axle and one pair of bearings extending from only one side of each beam 3. Even in this instance, however, two plates 17 would be required and tube 18 would still extend the full distance between walls 10 of casing 6 in order to possess sufficient rigidity and strength.

As an alternative to the roller supporting means 14, it is also possible to provide a variation of such means upon the upper surface of transverse beam 2 at locations thereon spaced from the cross-beams 3. A roller means for this purpose is shown in FIG. 10 wherein the roller means comprises a pair of roller bearings 26 having a sleeve 27' thereover analogous to the aforedescribed sleeve 25 and bearings 22. The bearings 26 are mounted on an axle 28 which in turn is fixedly mounted at both ends within openings in spaced apart vertical plates 29 which are rigid wih a connecting web 30. Web 30, in turn, is fixedly mountable on the upper surface of beam 2 by suitable screw means extending through holes 31 in said web.

The purpose in having two roller bearings in tandem interconnected by a sleeve such as 25 or 27' is to make use of commercially available roller bearings and yet obtain a larger bearing surface to support the considerable loads to which said bearings may be subjected. Of course, specially sized single bearings could be constructed for this purpose; however, this would increase the cost of the arrangement.

In order to true-up the respective walls of the casing 6, that is, in order to assure perpendicularity between walls 10 and flanges 9 and 11, a number of trueing brackets 32 are secured within casing 6 at spaced locations along the length thereof before the concrete core 5 is poured, said brackets remaining permanently embedded within the concrete core. It is seen that said brackets include a horizontal web portion 33 which overlaps the upper casing flanges 9 and is secured thereto by bolt means extending through holes in portion 33 and in the flanges 9. Perpendicularly and rigidly extending from the web portion are two parallel legs 34 which snugly fit between the walls 10. It is seen, therefore, that by making brackets 32 of considerably heavier metal than the metal of casing 6, said brackets serve to true-up the casing walls when the bolt means extending through the aligned holes in the bracket and in flanges 9 are tightened.

In FIGS. 5 and 6 it is seen that the movable flooring 40 comprises main lateral structural members 43 from which all other flooring members are supported. A reversible motor M is mounted on the static part of the building structure and is connected through a speed reducer 44 and a flexible coupling 46 to an elongated screw member 45. The screw member 45 is received within a correspondingly threaded nut member 47 which is fixedly mounted on the movable flooring 40. An elongate casing 48 is mounted on flooring 40 around screw member 45, said member resting upon the inner surface of said casing and obtaining support therefrom while at the same time said screw member can turn. Friction between the screw member and the casing is minimized by virtue of said casing containing a quantity of lubricating oil therein.

It is evident, therefore, that actuation of the motor M through suitable control means will result in rotation of screw member 45 and consequent movement of flooring 40 in either of two directions dependent upon the direction of rotation of the motor. Screw member 45 can also be rotated through a manually powered handle instead of the motor means in instances wherein it is desired to eliminate the motor because, for example, of cost considerations. Of course, a manual operating means can be installed in conjunction with a motor means to account for possible breakdown in the motor.

The flooring also comprises roller means **49** mounted on the inner end thereof and arranged to roll respectively along the underside of flange **9** and the upper side of flange **11**. Roller means **49** is comprised of a pair of rollers **50** and **51** rotatively mounted on parallel axles which are fixedly mounted between the two parallel plates **53**. Said plates are attached to the rear end of the flooring main structural members. The lower roller **51** comprises a smaller diameter portion **54** which rolls along flange **11** and a larger diameter portion **55** whose radial face bears against the wall **12** of casing **6**.

When the flooring **40** is retracted within the beams **3**, the load thereof is borne by the lower rollers **51** by virtue of portion **54** bearing against flange **11**; however, when the flooring **40** is extended in cantilever fashion to a certain extent outwardly of beams **3**, the load shifts to the upper rollers **50** which then bear upwardly against flanges **9**.

The function of larger diameter portions **55** is to provide sidewise guiding of flooring **40** in order to maintain its sides parallel to the adjacent sides **10** of beams **3** and thereby prevent jamming of flooring **40** against said sides **10**.

A fixed vertical balustrade means such as an end wall or railing **70** extends upwardly from flooring **40** along its outer end while side railings **71** of the accordion type are hingedly connected at **72** and **73** to the opposite ends of fixed railing **70** and to the exterior wall of the building static structure, respectively. It is seen, therefore, that when flooring **40** is fully retracted within the beams **3** the hinged railing sides **71** fold upon each other so that railing sides **71** and railing end **71** lie substantially flat against the building static exterior wall structure. On the other hand, when the flooring **40** is extended, the railing sides pivot about their respective pivot points **72, 73, 74** and become extended as railing end **70** moves outwardly away from said exterior wall structure. In FIGS. 5 and 6 the railing and flooring **40** are shown only partially extended.

The flooring **40** with railing **70, 71**, therefore, constitutes a retractable balcony structure whose retractability can serve many purposes. For example, in colder climates the balcony can be retracted in order to avoid the accumulation of snow thereon during the winter season. Also, the retraction and extension of the balconies of a building can be used to vary the building profile at will. A further purpose of retractability is especially noteworthy in regard to the lower floors of the building. During the night or during an absence of the occupants from the related quarters, it would be desirable to retract the balconies to prevent unwanted trespassers, such as burglars, from using the balconies as convenient stepping means for climbing up to the floor level and for standing on the balconies while attempting to break into the apartment. Retractability of the balconies at all levels can serve many useful purposes other than those specifically mentioned herein.

FIG. 12 shows another embodiment of the invention wherein a component of a building is constructed as a vehicle adapted to move on various of the static structural members of the building from a retracted position to an extended position relative to an exterior static wall of said building.

According to this embodiment, the building comprises an exterior wall structure **80** and various levels of static flooring **81** and **82**. The lower level of static flooring **81** terminates at **83** at a distance from the exterior wall structure **80**. Underlying the shortened flooring **81** is a movable flooring structure **81'** supported on four wheels **84** by suitable axle means **85**, said wheels riding on static cross-beams **86** which extend between the static pillars **87**. The movable flooring **81'**, therefore, constitutes an extension of the static flooring **81**, a small step **88** existing between the upper surfaces of these two floorings.

At its outer end the movable flooring **81'** is integral with a vertical wall **89** which constitutes a part of the building exterior wall **80** when flooring **81'** is fully retracted or telescoped beneath flooring **81**. A low ceiling **60** extends inwardly from wall **89** and is supported at its inner end by a vertical structure **61** which extends down to the movable flooring **81'**. A stairway **62** leads from flooring **81'** to the upper level of ceiling **60**. A railing or other balustrade means **63** extends upwardly from and along both sides of ceiling **60** between outer wall **89** and inner support structure **61**. Further, a side wall means **63'** also extends along both sides of the flooring **81'** up to the low ceiling and inwardly from the wall **89** so as to enclose the space beneath said low ceiling.

When the vehicle is fully retracted within the static framework of the building, the wall **89** forms a substantially flat continuation of the building outer wall **80** and the building appears as a conventional one with windows **64** on each floor facing outwardly. Internally, the lower floor **81** has the same area as the upper floor **82** and differs therefrom only in that while the upper flooring **82** is completely flat all the way up to the exterior wall **80**, the lower floor **81** includes a step at **83**; further, the lower level A differs from upper level B in that the ceiling in the lower level is lower at **60** than the ceiling height throughout the remainder of the level. Ceiling **60**, however, is sufficiently high so that the space thereunder is still useable as a continuation of the remainder of the level A.

When the vehicle is extended so that wall **89** protrudes outwardly from static wall structure **80** to an extent substantially equal to the distance between **89** and **61**, the ceiling **60** becomes an open air terrace and, in addition, floor **81'** has become enlarged by an amount equal to the distance between wall **89** and support **61**. In other words, the living area of the room will have been increased by an amount equal to about two new rooms, one of said new rooms being due to the increase in size of flooring **81'** and the other new room being constituted by the conversion of ceiling **60** to an open air terrace.

In this regard, it should be noted that if the distance between ceiling **60** and the window sill **62** on the window of the upper level B is about six feet, the privacy of persons using upper level B will not be infringed by persons standing or sitting on ceiling **60**. It should further be noted that ceiling **60** is constructed sufficiently strong to serve its intended function as a terrace.

With reference to FIG. 8, it is seen that the movable flooring **40** may constitute a reinforced concrete slab supported on either side by the main flooring members **43** which in turn are slidably mounted between flanges **9** and **11** of beams **3**. The strength required in flooring **40** will determine the thickness thereof and in the instance of FIG. 8 it is seen that flooring **40** is considerably of less height or thickness than the distance between flanges **9** and **11**. In such an instance, therefore, the main flooring beams **43** are in the form of channel members, as shown, and C-channel member **90** is mounted between flange **11** and the bottom of flooring **40** in order to support said flooring at the highest position possible against the upper flange of the channel member **43**. Member **90** can be welded to member **43**, both these members being of structural metal.

With reference to FIGS. 5 and 8, it is seen that in order to laterally guide the flooring **40** at a location near to the outer end of the static structure, a bracket **59** is attached to each beam **3**, said bracket mounting roller means **57** thereon for rotation about respective vertical axes. The rollers **57** roll against the exposed surface of the web portion of the respective channel members **90** and thereby function together with the rollers **51** on the inner end of movable flooring **40** to maintain the flooring **40** in a straight condition relative to beams **3**.

It will be understood that flooring **40** is not necessarily of concrete but could be made up in various manners and of various materials. In any event, the top surface of said flooring will be finished with a suitable floor covering.

The details presented herein with reference to various preferred embodiments of realization are by way of illustration and are not intended to be limitative of the applicability of the inventive concept presented herein at this time or by way of subsequent amendment, it being understood that all modifications, substitutions, or equivalents which are either obvious or well within the purview of one skilled in the art are intended to be within the scope of said concept.

What is claimed is:

1. A building construction having an exterior wall and a supporting structure defining a floor level, part of said structure being static and other parts thereof being dynamically arranged relative to the static structure, said other parts comprising a floor of said building, said movable floor being movably supported by said static structure for movement inwardly and outwardly relative to said exterior wall, said movable floor constituting a permanent structural part of said building and being totally supported by said static structure while it is in either its inward or extended positions, means for horizontally displacing said movable floor from one to the other of said positions as a normal function thereof for varying the horizontal extent of said floor level, said supporting structure including a static flooring located inwardly of said exterior wall, said movable floor being mounted for telescopic movement relative to said static flooring, said movable floor being arranged to form a horizontal extension of said static flooring to extend outwardly beyond said exterior wall.

2. The construction of claim 1, wherein said static flooring terminates at a distance inwardly from said exterior wall and said movable floor includes a fully retracted position whereby a portion thereof is telescopically overlapped by said static flooring and another portion thereof forms a horizontal extension of said static flooring from the termination of said static flooring and up to said exterior wall.

3. The construction of claim 2, wherein said movable floor lies in a plane parallel and adjacent to the plane of said static flooring whereby a vertical step exists between said floor and flooring along the termination of said static flooring.

4. The construction of claim 1, wherein said building exterior wall comprises an access opening leading outwardly onto the movable floor when the latter is extended relative to said wall, an end railing extending upwardly from the outer end of the movable floor and extending generally parallel to said exterior wall, said railing lying adjacent to said wall when the movable floor is retracted, accordion type railing sides connected at opposite ends thereof to said end railing and to said wall.

5. A building construction having an exterior wall and a supporting structure defining a floor level, part of said structure being static and other parts thereof being dynamically arranged relative to the static structure, said other parts comprising a floor of said building, said movable floor being movably supported by said static structure for movement inwardly and outwardly relative to said exterior wall, said movable floor constituting a permanent structural part of said building and being totally supported by said static structure while it is in either its inward or extended positions, means for horizontally displacing said movable floor from one to the other of said positions as a normal function thereof for varying the horizontal extent of said floor level, said static structure comprising vertical pillars extending upwardly of the movable floor, cross-beams extending between said pillars in a direction perpendicular to said exterior wall, and transverse beams extending between said pillars in a direction parallel to that of said wall, the movable floor having a first bearing means mounted thereon adjacent the inner end thereof and engaging said cross-beams for providing continuous bearing support at the inner portion of said movable floor upon said cross-beams, a second bearing means mounted at a fixed location on said static structure at a point adjacent to said exterior wall and supportingly engaging said movable floor, said movable floor being movable along the length of said cross-beams.

6. The construction of claim 5, wherein said pillars and cross-beams are reinforced concrete structural members.

7. A building construction having an exterior wall and a supporting structure defining a plurality of floor levels, part of said structure being static and other parts thereof being dynamically arranged relative to the static structure, said other parts comprising a floor of said building, said movable floor being movably supported by said static structure for movement inwardly and outwardly relative to said exterior wall, said static structure comprising vertical pillars extending upwardly of the movable floor, cross-beams extending between said pillars in a direction perpendicular to said exterior wall, and transverse beams extending between said pillars in a direction parallel to that of said wall, the movable floor being movably supported on said cross-beams and between said pillars, said pillars and cross-beams being of reinforced concrete, the concrete of said pillars being integrally joined with the concrete of said cross-beams and said pillars extending uninterruptedly in a vertical direction through the central plane of said cross-beams.

8. The construction of claim 5, said cross-beams comprising a concrete core encased in a reinforcing sheet metal casing, said casing having laterally directed upper and lower flanges, the movable floor comprising a main floor beam on each side thereof slidably mounted between said flanges in respective ones of said cross-beams on each side of said movable floor.

9. A building construction having an exterior wall and a supporting structure defining a plurality of floor levels, part of said structure being static and other parts thereof being dynamically arranged relative to the static structure, said other parts comprising a floor of said building, said movable floor being movably supported by said static structure for movement inwardly and outwardly relative to said exterior wall, said static structure comprising vertical pillars extending upwardly of the movable floor, cross-beams extending between said pillars in a direction perpendicular to said exterior wall, and transverse beams extending between said pillars in a direction parallel to that of said wall, the movable floor being movably supported on said cross-beams and between said pillars, said cross-beams comprising a concrete core encased in a reinforcing sheet metal casing, said casing having laterally directed upper and lower flanges, the movable floor comprising a main floor beam on each side thereof slidably mounted between said flanges in respective ones of said cross-beams on each side of said movable floor, including first roller means mounted on the inner end of each said main floor beams, said roller means being in rolling contact with said upper and lower flanges, a second roller means mounted on said static structure in a plane corresponding to the outer plane of said cross-beams, said second roller means bearing against the underside of the movable floor.

10. The construction of claim 9, said second roller means comprising a roller rotatably mounted adjacent the outer end portion of each said cross-beams in alignment with the axis of said lower flange whereby said main floor beam bears against said roller.

11. The construction of claim 10, wherein said second roller means comprises a roller rotatably mounted on an axle, said axle being fixedly mounted in said cross-beam and extending laterally into said concrete core and laterally outwardly of said casing.

12. The construction of claim 11, including a tube extending between the walls of said casing and surrounding said axle, said tube being encased in said concrete core, said axle being fixedly but removably mounted in said tube.

13. The construction of claim 12, including a support member attached to the end of said axle which extends outwardly of said cross-beam, said support member resting against a said transverse beam.

14. The construction of claim 9, said second roller means comprising a pair of roller bearings in tandem, a sleeve tightly extending over both roller bearings whereby the load of the movable floor is evenly distributed to both said bearings.

15. The construction of claim 14, including spacer means between said bearings.

16. The construction of claim 5, said cross-beams comprising a concrete core encased in a sheet metal casing, said casing in cross-section having a generally I-beam shape, said casing comprising a pair of vertical, spaced parallel walls, an upper and a lower flange respectively extending perpendicularly from the respective upper and lower end of said walls, a bottom wall parallel to said flanges and spaced vertically from the bottom flanges, vertical side walls connecting the bottom flanges to said bottom wall, the concrete core within said casing having an inverted-T cross-section.

17. The construction of claim 16, including a concrete static flooring supported over said cross-beams, the concrete in said flooring and in said cross-beam cores being a single integral mass of concrete.

18. The construction of claim 16, wherein said concrete core includes an upper portion extending upwardly beyond the upper ends of said vertical walls and transversely overlapping said upper flanges, whereby said core is itself T-shaped in cross-section.

19. The construction of claim 16, said pillars being of reinforced concrete integrally joined to the concrete of said core, said pillars extending uninterruptedly in a vertical direction through the central plane of said core and between said casing vertical walls, said casing vertical walls respectively lying adjacent to the outer sides of said pillars, an opening in said casing bottom wall through which passes a respective pillar.

20. The construction of claim 9, said first roller means also including a roller which bears laterally against a side of said casing thereby providing lateral guiding of said movable floor.

21. A building construction having an exterior wall, and a supporting structure defining a floor level, part of said structure being static and other parts thereof being dynamically arranged relative to the static structure, said other parts comprising a floor of said building, said movable floor being movably supported by said static structure for movement inwardly and outwardly relative to said exterior wall, said movable floor constituting a permanent structural part of said building and being totally supported by said static structure while it is in either its inward or extended positions, means for horizontally displacing said movable floor from one to the other of said positions as a normal function thereof for varying the horizontal extent of said floor level, wherein said building includes a static flooring located inwardly of said exterior wall, said movable floor being mounted for telescopic movement relative to said static flooring in a parallel plane adjacent thereto, said movable floor forming a horizontal extension of said static floor in a plane adjacent thereto when said movably supported floor is

extended outwardly of said exterior wall, wherein the movable floor forms a horizontal extension of said static flooring in a plane adjacent thereto when the movable floor is retracted inwardly relative to said exterior wall, and said static structure defining a compartment space, and including a movable vertical end wall portion extending rigidly along the outer end of said movable floor, said end wall portion forming a substantially flat continuation of the static exterior wall of said building when said movable floor is fully retracted and thereby closing the outer vertical area of said compartment, a low ceiling extending from said wall portion at a distance from the top thereof and inwardly over said movable floor, a stair means leading from said movable floor to the upper side of said low ceiling, a side wall means projecting upwardly from the sides of said movable floor to above said low ceiling and extending from said movable end wall inwardly to the inner end of said ceiling, whereby said low ceiling functions as an open air terrace when said movable floor is extended with said side wall means and said end wall serving as a balustrade therefor, and whereby said movable floor with said side wall means and said end wall portion define an enclosed room below said low ceiling extending outwardly of said building exterior wall when said movable floor is extended.

22. The building construction of claim 21, wherein said end wall portion includes a window therein.

23. The building construction of claim 21, wherein said static structure defines a second compartment above the first mentioned one, said building exterior wall enclosing the outer end of said compartment and including a window therein for said second compartment, the vertical distance from said low ceiling to the window sill of said second compartment window being greater than the average height of a person.

24. The building construction of claim 21, wherein said movable floor is supported on four wheels in the nature of a four-wheel vehicle, said wheels riding upon the upper surfaces of static cross-beams which extend perpendicularly to the plane of said exterior wall, a power means operatively connected to said wheels to rotate same.

25. The construction of claim 5, said second bearing means being mounted on a one of said transverse beams located adjacent to said exterior wall.

26. The construction of claim 5, said second bearing means being mounted on each of two successive said cross-beams at points thereon immediately adjacent to said exterior wall.

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