June 18, 1963 W. D. WATKINS 3,093,834

CONVERTIBLE STRUCTURE

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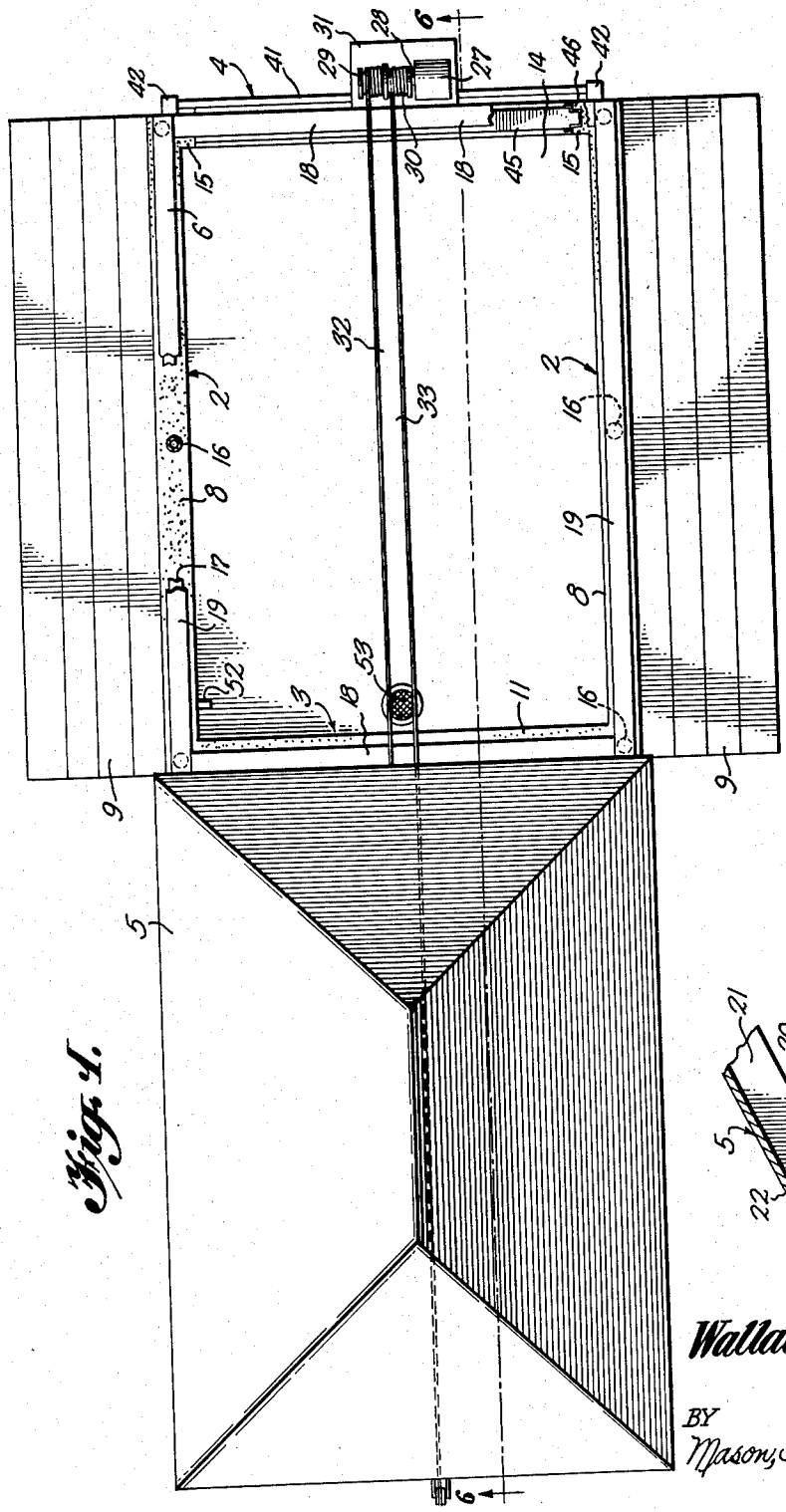


Fig. 1.

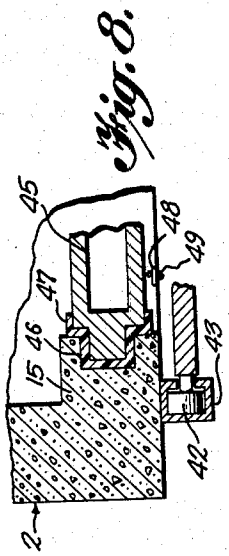


Fig. 8.

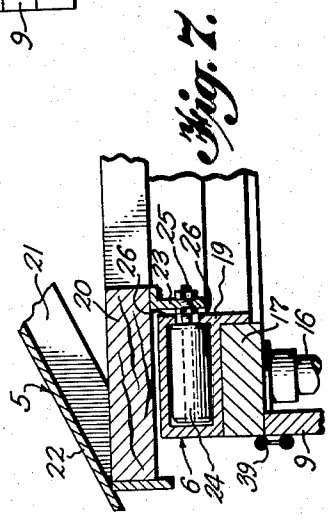


Fig. 7.

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Fig. 2.

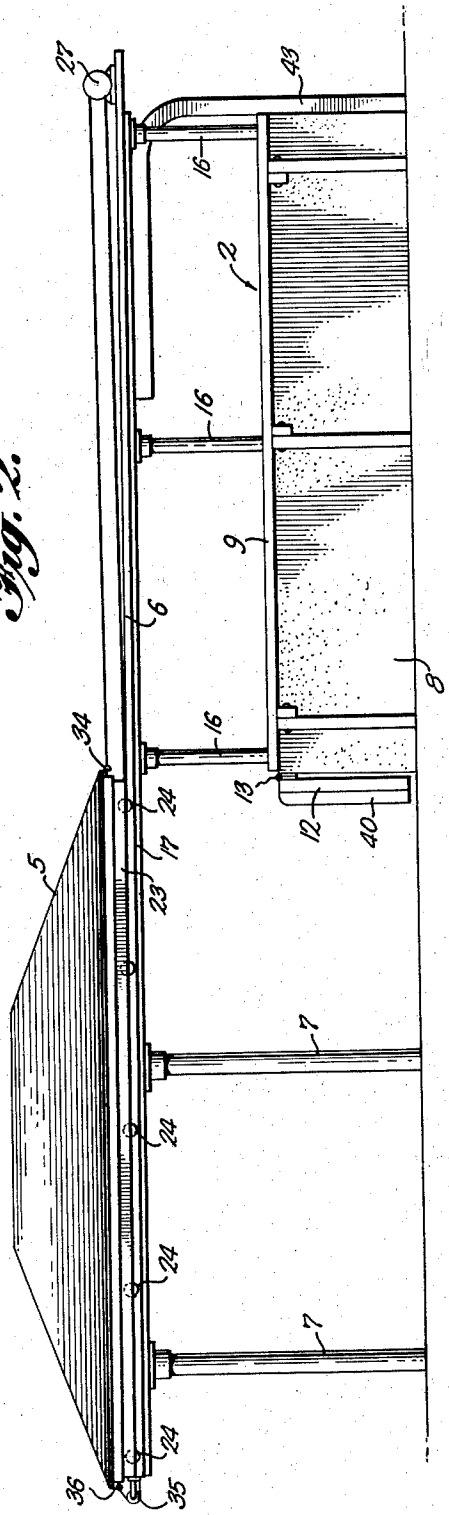
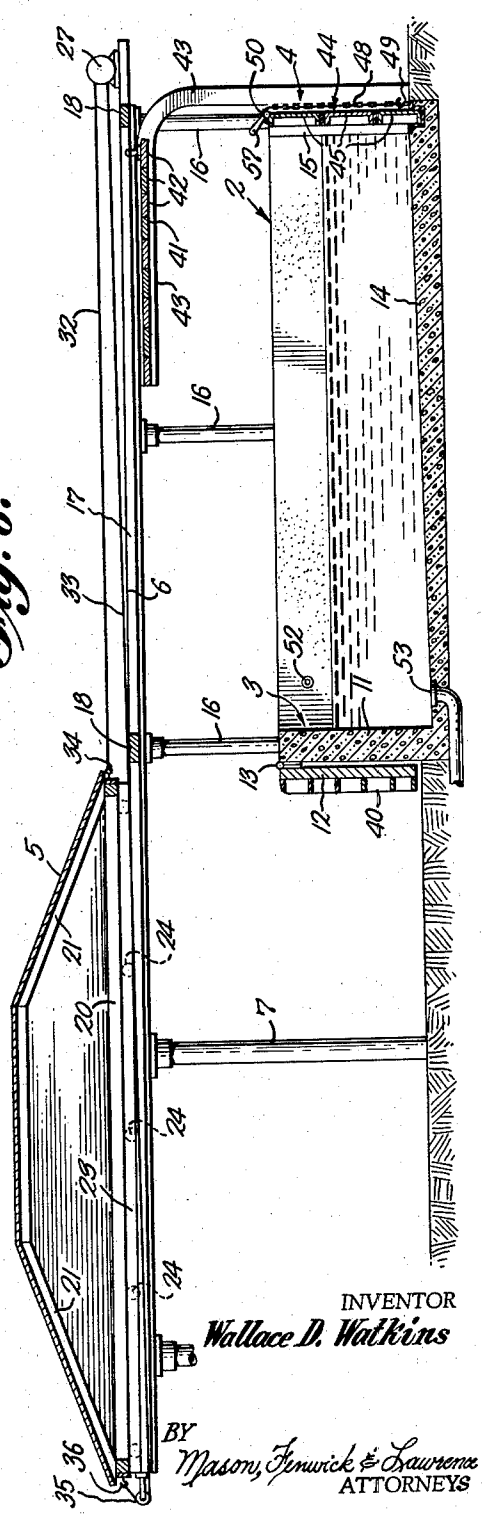


Fig. 6.



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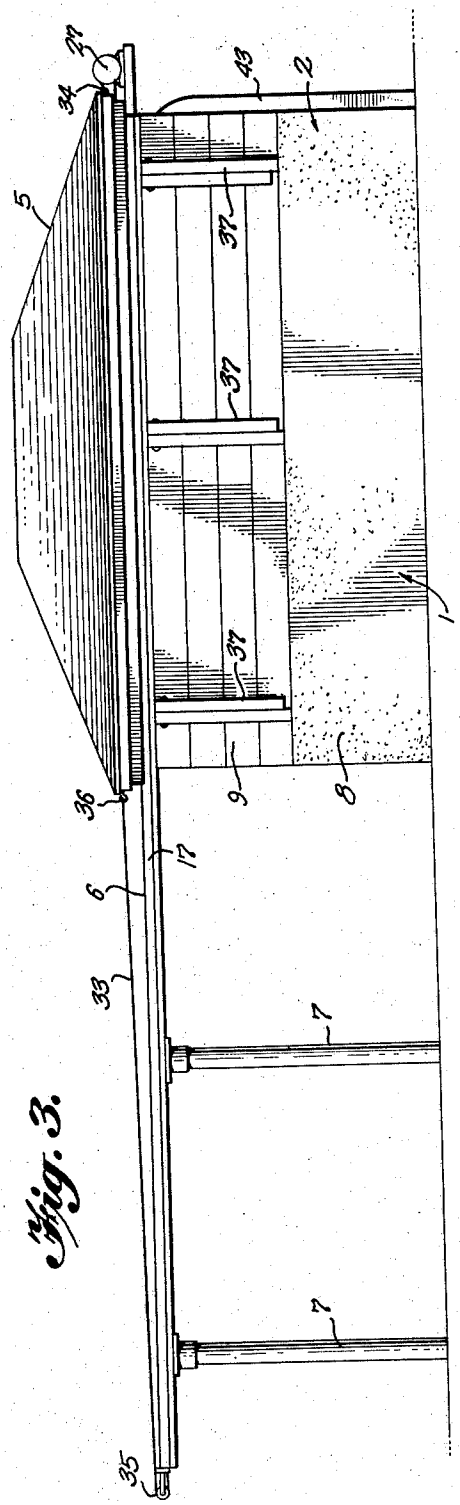


Fig. 3.

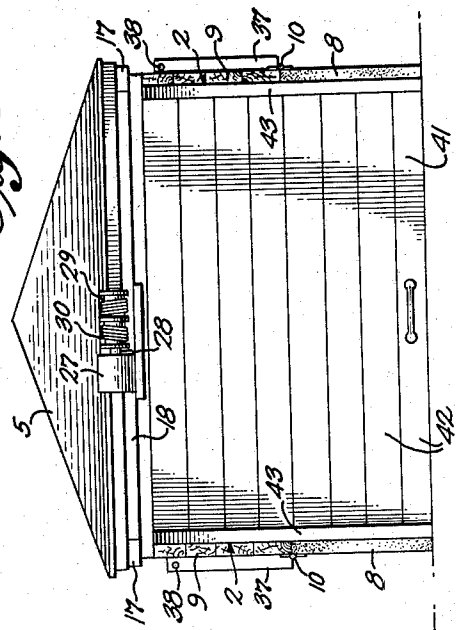


Fig. 5.

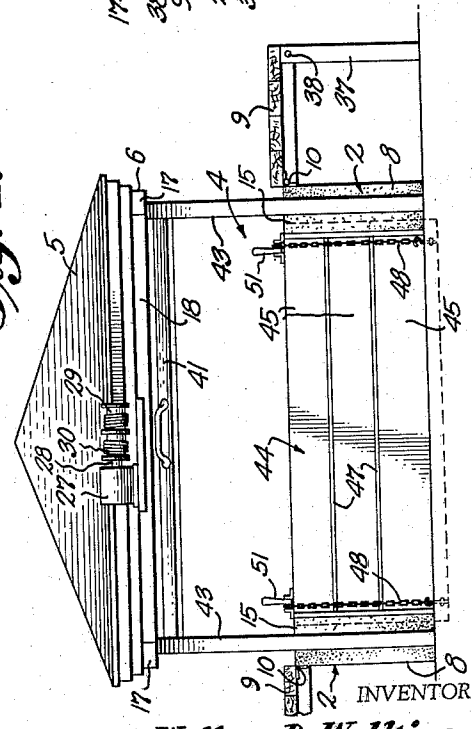


Fig. 4.

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United States Patent Office 3,093,834 Patented June 18, 1963

3,093,834

CONVERTIBLE STRUCTURE

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Filed Oct. 2, 1961, Ser. No. 142,046
4 Claims. (Cl. 4—172)

This invention relates to convertible structures, and more particularly to a building which can be converted to use as a swimming pool or as a garage.

The construction and use of home swimming pools has increased rapidly in the last few years. Although the advantages of owning a pool are well known, there are certain factors which have prevented a more widespread construction. In the first place, a pool requires more space than many homeowners having small lots feel can be devoted to a recreational area having the limited use of a swimming pool. This is particularly true in the more northerly sections, for a conventional pool cannot be used for other purposes and the area is out of use for long periods of time. Another drawback is the special care required for periods of cold weather, when freezing and thawing of the ground surrounding a sunken pool frequently lossens the pool in the ground or causes the pool walls to crack.

The general object of the present invention is to provide a building which can be easily and quickly converted to provide a covered garage for cars or a swimming pool, so that the area upon which it is erected may have full-time use.

A more specific object is the provision of a building of this kind which will provide a completely walled and roofed enclosure, or an open-topped pool with platforms, or decks, along the side.

Another object is to provide a convertible building having a slidable roof, which is movable to a position overlying the building walls to complete an enclosure, or to a position removed from the enclosure where it can serve as a car port cover, or a patio roof.

It is a further object of the invention to provide a structure of this nature having a conventional door opening to permit entry and removal of automobiles when used as a garage, and an insertable side to complete a water-tight walled enclosure when the structure is to be used as a swimming pool.

Other objects of the invention will become apparent from the following description of one practical embodiment thereof, when taken in conjunction with the drawings which accompany, and form part of, this specification.

In the drawings:

FIGURE 1 is a top plan view of a building embodying the principles of the present invention, arranged for use as a swimming pool.

FIGURE 2 is a side elevation of the structure shown in FIGURE 1;

FIGURE 3 is a view similar to FIGURE 2, but with the parts arranged for use as a garage;

FIGURE 4 is a front elevation of the structure set up as in FIGURE 2;

FIGURE 5 is a front elevation of the building when used as a garage;

FIGURE 6 is a longitudinal section through the structure arranged for use as a swimming pool, and is taken on the line 6—6 of FIGURE 1;

FIGURE 7 is an enlarged detail section through the edge of the building roof and the roof support, and is taken on the line 7—7 of FIGURE 2; and

FIGURE 8 is another enlarged detail section illustrating a corner of the building and the door opening, and is taken on the line 8—8 of FIGURE 4, but with the garage door in closed position.

In general, the invention contemplates the provision

of a garage structure with a trackway supporting the roof, so that the roof may be positioned over the walls to complete an enclosure, or moved along the track to a position to one side of the building walls to uncover the interior. The upper sections of the building walls are hinged to swing downwardly, and a dam is provided to close off the building entrance and complete an encircling wall to confine a body of water and form a pool.

Referring to the drawings in detail, the convertible building is shown at 1. It consists of side walls 2, back wall 3, an open front 4, and a roof 5 mounted upon a trackway 6. The trackway continues to the rear of the building, and is supported in that area upon posts 7 which are set in the ground.

The side walls of the building are in two sections, lower fixed sections 8 and upper sections 9 connected along their lower edges by hinges 10 to the upper edges of the lower sections. The back wall also is of two sections 11 and 12, connected by hinges 13. The lower sections 8 of the sides, the lower section 11 of the back and a floor 14 are of reinforced concrete, and are poured to form a monolithic structure. The front ends of the side walls are turned inward at the open front to form jams 15 to receive a dam, to be described.

Short posts 16 are mounted upon the tops of the lower sections of the side walls to support that portion of the trackway 6 which overlies the walls. The trackway is composed of side rails 17 seated upon tops of posts 17 and 16. These rails are interconnected by transverse brace members 18 at their ends and above the back wall of the building. The side rails may carry channel shaped tracks 19, which may be of metal to provide a wear resistant surface along which the roof may roll.

The roof proper may have any desired construction. It is built upon a rectangular frame formed by roof plates 20. The usual rafters 21 and roofing material 22 are provided. The side plates of the roof member carry roller brackets 23 in which a plurality of supporting rollers 24 are mounted. The rollers have their trunnions, or axles, 25 journalled in the side flanges of the brackets 23. Rollers 24 will ride upon tracks 19 and support the weight of the roof. The track 19 will have flanges 26 to prevent lateral movement of the rollers relative to the track.

It will be apparent that the roof may be moved manually along the trackway if desired, however, mechanical means for operating the roof is preferred. To this end, a motor 27, having its shaft 28 carrying a pair of drums 29 and 30, is mounted upon a platform 31 projecting out over the open front of the building. The platform may be carried by the front transverse brace member 18. Cables 32 and 33 will be wound upon the drums 29 and 30, respectively, with the cables being wound in opposite directions. Cable 32 will be connected to the front end of the roof at 34, and cable 33 will pass over a pulley 35 at the rear of the trackway and connect to the rear edge of the roof at 36. Thus, operation of the motor will cause the cables to simultaneously wind and unwind to move the roof along the trackway.

It was mentioned above that the upper sections of the walls 2 and 3 are hingedly mounted upon the lower sections. The upper sections may be composed of aluminum, or other lightweight material, so that they may be raised to vertical, wall forming position, as shown in FIGURES 3 and 5, or to a lowered position as shown in the remaining figures. The upper sections 9 of the sidewalls are lowered to horizontal positions where they will be supported upon legs 37 pivotally mounted, as at 38, to the wall upper sections. Gravity will cause the legs to maintain a vertical position when the side sections are raised or lowered. Any suitable fastening means 39 may be used to hold the side sections in their upper, vertical

positions. The upper section of the back wall does not have supporting legs, and will drop to a vertical position adjacent the concrete lower back wall section when lowered. A ladder **40** may be carried upon the inner face of the back wall section **12** to be used in climbing to and from the top of the back wall bottom section when the upper section is lowered. It will be obvious that the wall sections **9** could be hinged at their tops and raised to form awnings.

The open front of the building is closed by means of a door **41**, which may be of the vertically movable type and be composed of a plurality of hingedly connected horizontal sections **42**, which ride in guide tracks **43**, fixed at the sides of the open front. The guide tracks extend vertically along the front opening and curve inwardly and rearwardly in conventional manner so that the door can be lifted to lie overhead, or pulled down to cover the door opening. As the door structure, including the counterweighting mechanism is conventional, the door is shown schematically.

When the structure is to be used as a swimming pool, the open front is closed by means of a dam **44**. This may be a solid member, or consist of several planks **45** fitted one on top of another in vertical guide grooves **46** in the jams **15**. The planks may be of aluminum for lightweight. Each plank will have a rubber, or other type, sealing gasket **47** around its peripheral edges. The seals should be such that they will make a watertight joint when in the jam grooves and will increase in sealing effectiveness as water pressure increases against the dam. The gaskets abutting between the planks will seal when under vertical pressure. To provide this pressure, tie-down chains **48** are used at each side of the open front of the building. The chains may have anchors **49** in the concrete floor and be connectible to cam-tighteners **50** carried by the top plank. The chains will hook onto the cams and when levers **51** are rocked the cams will serve as chain take-up members to pull down on the top plank to provide the necessary pressure to seal between planks.

When the device is to be used as a garage, the dam is not in place. The roof will be moved forward to overlie the walls of the building, and the upper sections of the side and back walls will be up and fastened in position. When the door **41** is lowered, a completely closed shelter is provided. The track structure extending to the rear of the building may serve to define a pillared patio, or other area. The building can be used in the manner of a normal garage.

When the structure is to be used as a swimming pool, the roof is moved back to its rearmost position, uncovering the entire walled area. The upper sections of the walls are released and lowered to rest upon their legs and provide walkways the length of the enclosure. The back wall will be lowered to hang down to position the access ladder. With door **41** raised, the dam planks are slipped into their guide grooves, chains **48** connected to the cam-tighteners **50**, and levers **51** rocked to tighten the chains. The walled area is now water-tight and may be filled through a water inlet **52**. The roof in its removed position will cover the patio area.

After the season is over, the pool may be drained through an outlet **53** in the bottom, the dam removed, the sides again lifted and fastened and the roof run back

to its original position. The transition from one condition to the other can be done quickly and with little effort.

While in the above, one practical embodiment of the invention has been disclosed, it will be understood that the specific details of structure described and shown are merely by way of illustration, and the invention may take other forms within the scope of the appended claims.

What is claimed is:

1. A structure convertible from a garage to a swimming pool comprising, an enclosure having a floor, spaced side walls, a back wall and an open front, the floor being water tight and the side and back walls being water tight from the floor to a predetermined height, a water inlet through one of the walls, a water outlet in the floor, a trackway at the top of the walls extending the length of the enclosure and beyond, a roof mounted on the trackway and movable therealong to a position overlying the enclosure and to a position removed from the enclosure, a door mounted at the open front of the enclosure movable to and from position across the open front, and removable means for bridging the side walls adjacent the open front in sealing relation with the side walls and floor to complete a water-tight enclosure, said side and back walls are divided into upper and lower sections hingedly connected, with means to hold the upper sections erect in vertical alignment with and in continuation of the lower sections to complete the walls from the floor to the trackway, and means to support the upper sections of at least some of the walls in horizontal position to form platforms along the upper edges of the lower wall sections to which they are hinged.

2. A structure convertible from a garage to a swimming pool as claimed in claim 1 wherein, the trackway is supported from the lower sections of the side walls.

3. A structure convertible from a garage to a swimming pool as claimed in claim 1 wherein, there are power means to move the roof along the trackway.

4. A structure convertible from a garage to a swimming pool as claimed in claim 1 wherein, the removable means for bridging the open front of the enclosure comprises a plurality of planks superimposed in edge to edge relation and having their ends in vertical grooves in the side walls, the planks having sealing means around their peripheral edges, and means to impose downward pressure upon the uppermost of the superimposed planks to cause the planks to bear against one another with sealing pressure.

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