

Dec. 17, 1963

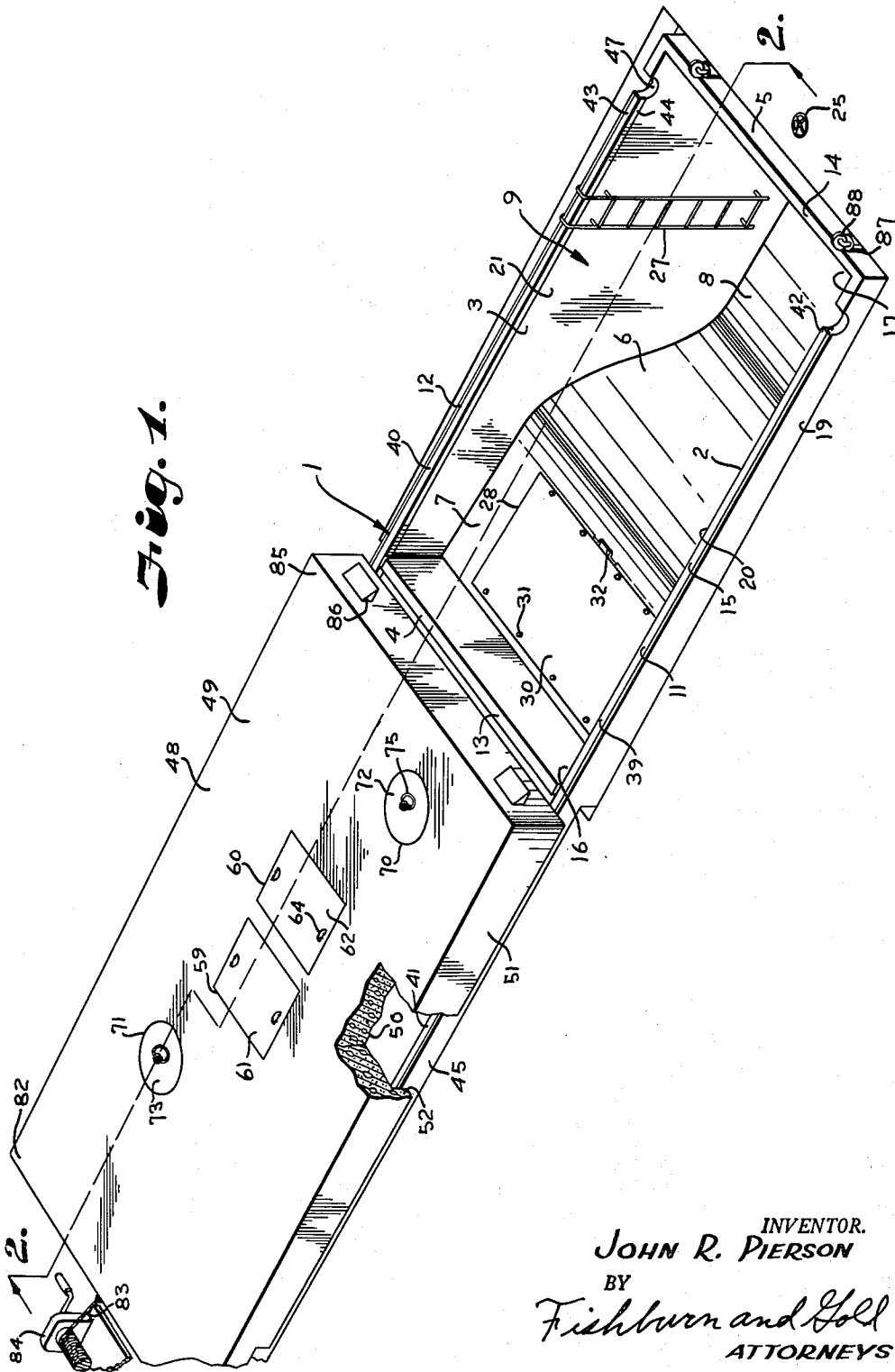
J. R. PIERSON

3,114,153

COMBINATION SHELTER AND SWIMMING POOL

Filed Jan. 29, 1962

3 Sheets-Sheet 1



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Fig. 2.

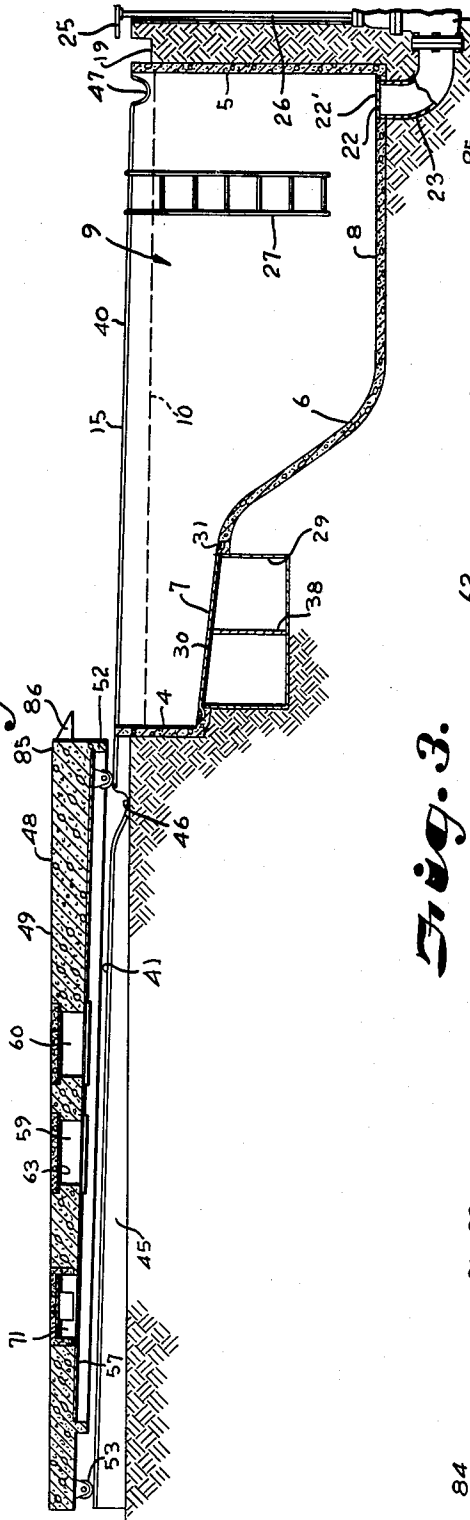
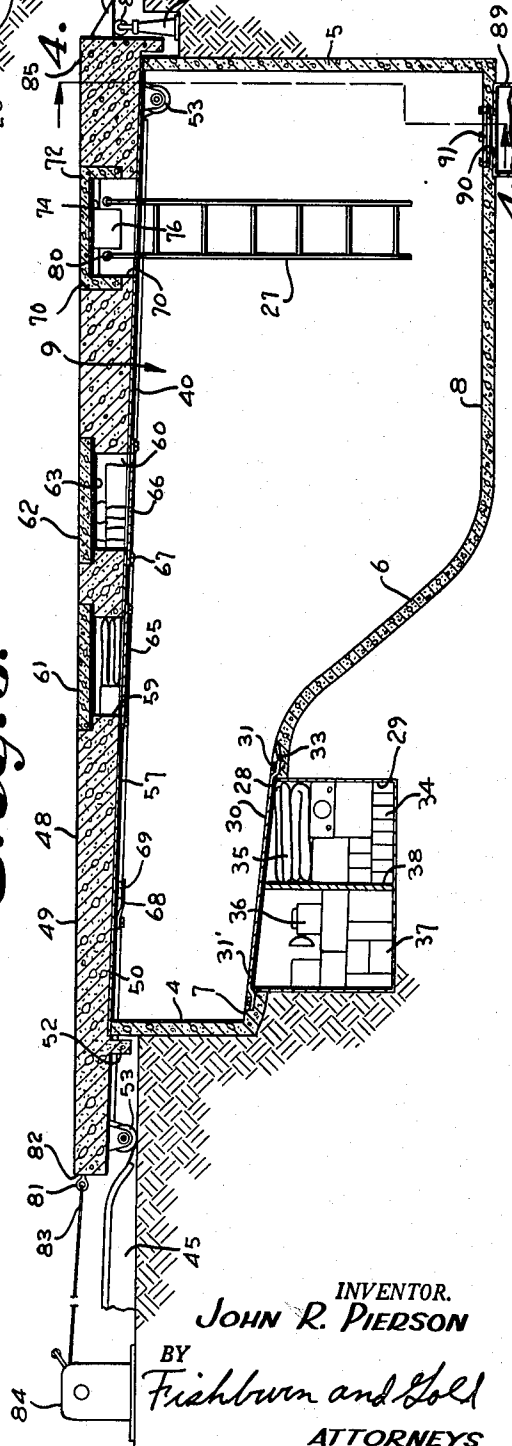


Fig. 3.



INVENTOR.
JOHN R. PIERSON
BY
Friehburn and Gold
ATTORNEYS

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J. R. PIERSON

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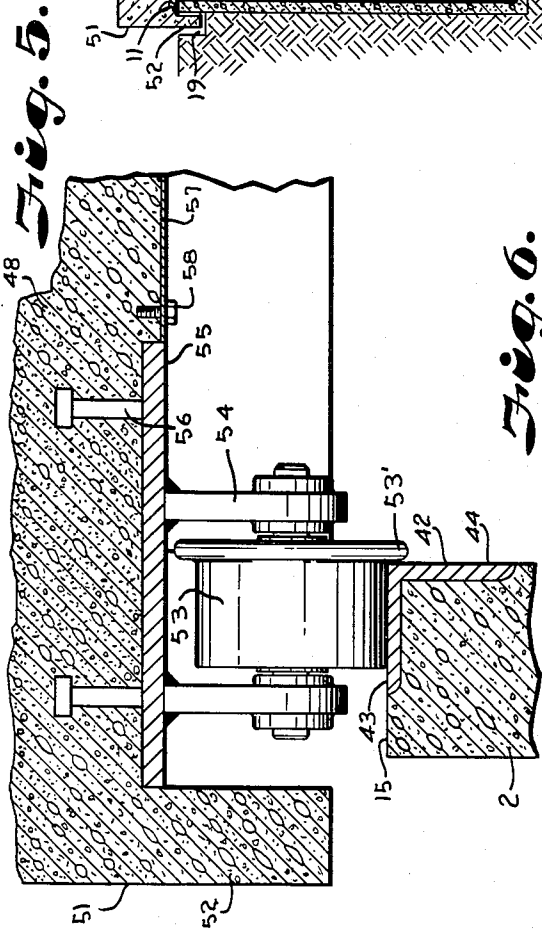
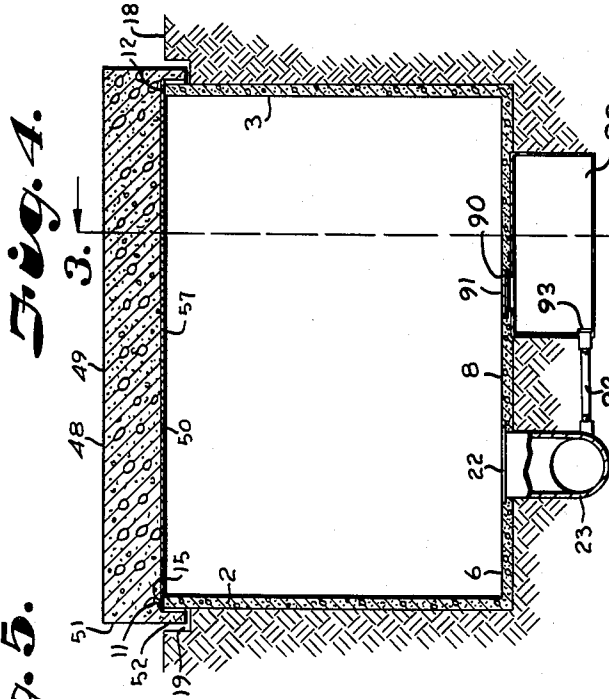


Fig. 6.

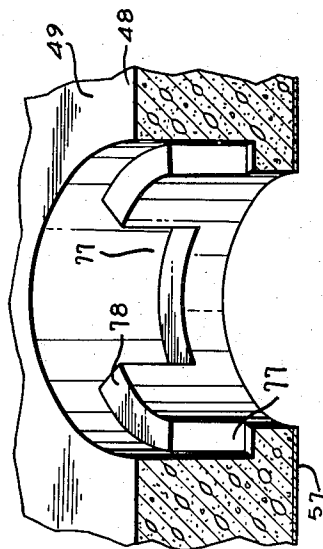
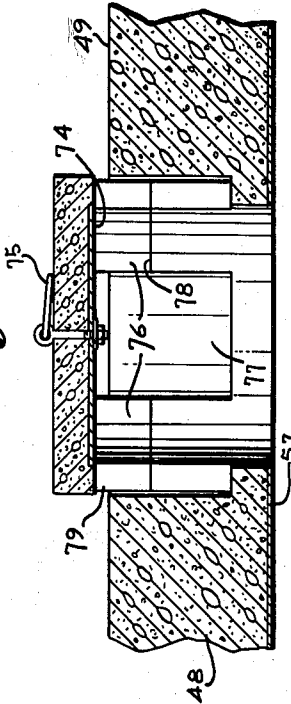


Fig. 7.



INVENTOR.
JOHN R. PIERSON
BY
Fishburn and Gold
ATTORNEYS

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COMBINATION SHELTER AND SWIMMING POOL

John R. Pierson, 5812 Newton Ave., Merriam, Kans.

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1 Claim. (Cl. 4—172)

This invention relates to shelters, and more particularly to a combination shelter and swimming pool.

Underground rooms which are suitably constructed to provide storm and fallout shelter have little utility for any other purpose. The principal object of the present invention is to provide a practical shelter from attack or storm which also has recreational utility as a swimming pool and patio.

Other and more specific objects of the present invention are: to provide a swimming pool construction adapted to receive a lid thereover for conversion into a safely enclosed shelter; to provide such a construction having tracks extending therealong for movably supporting a lid selectively in closed and open positions; to provide such a lid which includes a depending lip on the outer edge adapted to extend downwardly beneath the upper edge of the pool construction so as to form an effective shelter seal; to provide such a construction having water impervious storage means with access thereto from within the pool chamber; to provide such a swimming pool construction having a large drain by which water can be quickly removed during rapid conversion to a shelter, said drain also acting as a sanitary sewer during periods of shelter occupation; to provide such a construction which includes a storage tank for containing palatable water for consumption when the shelter is occupied; to provide a movable shelter lid which includes storage facilities adapted to be loaded from the upper side thereof and unloaded from within the shelter; to provide such a lid having escape and ingress hatches which are adapted to act as ventilators for the shelter when desired; to provide such a lid which forms a suitable patio both in the covered and uncovered positions; and to provide such a shelter-swimming pool construction which is simple in design and highly effective for its intended purposes.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIGURE 1 is a perspective view of the combination shelter and swimming pool structure, the lid therefor being shown in open position.

FIGURE 2 is a transverse cross-sectional view through the construction taken on the line 2—2 of FIGURE 1 particularly showing the lid supporting track.

FIGURE 3 is a cross-sectional view taken on the line 3—3 of FIGURE 4 particularly showing the lid in a closed position.

FIGURE 4 is a cross-sectional view on a slightly enlarged scale taken on the line 4—4 of FIGURE 3 particularly showing the depending lip configuration on the lid.

FIGURE 5 is a fragmentary sectional view on an enlarged scale showing details of a lid supporting track wheel.

FIGURE 6 is a fragmentary sectional perspective view on an enlarged scale showing a lid hatchway.

FIGURE 7 is a fragmentary sectional view on an enlarged scale showing a hatch cover assembled with a hatchway in ventilating position.

Referring to the drawings in more detail:

The reference numeral 1 generally indicates a combination shelter and swimming pool construction embodying this invention. The construction 1 includes a pair of

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oppositely disposed parallel vertically extending side walls 2 and 3 and a pair of parallel oppositely disposed vertically extending end walls 4 and 5. A bottom wall 6 is provided between the side walls 2 and 3 and end walls 4 and 5. The bottom wall 6 slopes downwardly from a shallow portion 7 to a deep portion 8 in the manner of a common swimming pool configuration. The side walls 2 and 3, end walls 4 and 5 and bottom 6 in the illustrated structure are substantially beneath ground level and are joined in watertight relation forming an upwardly open swimming pool chamber generally designated 9 and adapted to contain water (not shown) to an approximate level 10 therein (FIG. 2).

The side walls 2 and 3 and end walls 4 and 5 respectively terminate in upper ends 11, 12, 13 and 14 forming a substantially rectangular pool chamber upper edge 15. The upper edge 15 slopes slightly downwardly from the chamber rear portion 16 to the chamber front portion 17 for a purpose which will become apparent hereinafter. The chamber upper edge 15 has an elevation substantially at or slightly above the ground level 18 and a shallow trench or ditch 19 extends between the chamber upper edge 15 and the ground level 18 at the chamber front portion 17 and the chamber side portions 20 and 21.

The deep portion 8 of the bottom wall 6 has a drain opening 22 therethrough normally covered with a suitable screen 22'. The drain opening 22 communicates with an extra-large drain pipe 23 connected to a large hand operated flow valve 24. The valve 24 is adapted to be opened and closed by means of a control wheel 25 extending above the ground level 18 and connected to a shaft 26 operably engaged with the valve below ground level. The large size of the drain pipe 23 and valve 24 permits a rapid draining of the water in the pool under emergency conditions.

A ladder 27 normally hooks over the chamber upper edge 15 for ease of ingress and egress from the open swimming pool chamber 9. The ladder 27 is easily removed from the edge 15 for a purpose later to be described.

The shallow portion 7 of the bottom wall 6 has an opening 28 therethrough communicating with a storage chamber 29 extending therebeneath. The opening 28 is normally closed by a plate 30 secured by suitable bolts 31 against a gasket 31' to produce a water-tight junction to prevent pool water from entering the storage chamber 29. The plate 30 has a suitable handle 32 secured thereto adjacent one edge thereof and maintained in a recess 33 in the bottom wall 6 for grasping and lifting the plate 30 after the bolts 31 are removed. The storage chamber 29 is adapted to hold any suitable articles needed for survival, such as canned goods 34, blankets 35, lighting equipment 36 and medical supplies 37. A partition 38 in the storage chamber 29 provides support for the plate 30 to prevent undue deflection when the swimming pool 9 is filled with water.

The chamber upper edge 15 at the side portions 20 and 21 has a pair of spaced parallel tracks 39 and 40 secured respectively thereto and extending therealong past the end wall 4 at 41. The tracks 39 and 40 in the illustrated structure consist of elongated angles 42 having horizontally extending legs 43 and vertically extending legs 44, the outer surface of the legs 44 facing inwardly of the swimming pool chamber 9. The rear extensions 41 of the tracks 39 and 40 are supported by suitable concrete supporting walls 45 sloping slightly downwardly in a manner providing continuity with the respective side wall upper ends 11 and 12. Each of the tracks 39 and 40 have a pair of depressions 46 and 47 therealong located respectively rearwardly of, but in the vicinity of the end walls 4 and 5 at the end wall upper ends 13 and 14.

A rectangular substantially horizontally extending protective lid 43 for the swimming pool chamber 9 is preferably formed of a rigid, dense, self-supporting material, in the illustrated structure, reinforced concrete a thickness and strength sufficient to provide desired blast and radioactive fallout protection. The lid 43 has an upper side 49 and a lower side 50 and a substantially rectangular outer edge 51 slightly greater in length and width than the swimming pool chamber upper edge 15. A lip 52 depends from the lid outer edge 51 and is adapted to extend below the upper edge 15 around the entire chamber 9 when the lid 43 is resting thereover as hereinafter described.

Suitable wheels 53 are secured to the lid 43 and extend downwardly from the lower side 50 thereof. The wheels 53 are respectively positioned near each corner of the lid 43 to movably support same on the tracks 39 and 40. The wheels 53 are rotatably mounted on the lid 43 by depending supports 54 welded to plates 55 having anchor rods 56 suitably imbedded in the concrete. The wheels 53 have radial beads 53' for positive tracking and are suitably spaced apart along the tracks a distance permitting a substantially simultaneous engagement in the depressions 46 and 47 for lowering the lid 43 with respect to the chamber upper edge 15. Suitable clearance is provided between the chamber upper edge 15 and the lip 52 so that physical contact therebetween is avoided when the lid 43 is lowered due to the engagement of the wheels 53 in the depressions 46 and 47.

The lower side 50 of the lid 43 with the exception of portions next described, is substantially covered by a metallic sheet 57 secured thereto with suitable anchor bolts 58. The sheet 57 is preferably of highly dense material, such as lead for additional protection against high energy radiation of the type associated with the radioactive fallout.

The lid 43 includes a pair of storage chambers 59 and 60 covered from the upper side 49 with lids 61 and 62 respectively having lead sheeting 63 on the underside thereof. Suitable handles 64 are provided on the lids 61 and 62 for opening the storage chamber 59 and 60 from above. The chambers 59 and 60 have floors 65 and 66 respectively which are comprised of plates removably secured to the underside 50 of the lid 43 by means of bolts 67, whereby access is provided for the storage chambers 59 and 60 from within the pool chamber 9. A spring clamp 68 supports a suitable wrench 69 within convenient reach of occupants of the pool chamber 9 for removing the bolts 67 and 31, as desired.

A forward hatchway 70 and a rear hatchway 71 extend through the lid 43 to provide access to the chamber 9 after closure. The hatchways 70 and 71 are respectively closed by covers 72 and 73. The covers 72 and 73 are generally concrete in construction with a high density metallic plate 74 secured therebeneath for radiation protection. Handles 75 are suitably secured to the respective lids 72 and 73 and provide a grasping member by which the respective covers may be raised out of the hatchways from above. The covers 72 and 73 are formed with integral spaced teeth 76 depending from the periphery thereof and adapted to fit into peripheral slots 77 formed on the internal surfaces of the hatchways 70 and 71. It will be appreciated that when the teeth 76 are engaged in the slots 77, the covers 72 and 73 make a tight substantially dust-proof connection with the respective hatchways 70 and 71; however, by partially withdrawing the respective covers 72 and 73 and rotating same through a small angle on a vertical axis the teeth 76 may rest on ledges 78 formed between the slots 77 in the hatchways 70 and 71 for supporting the respective covers 72 and 73 spaced above the lid upper side 49 to provide ventilating air passages 79.

Suitable sockets 80 are provided in the forward hatchway 70 for receiving and supporting the ladder 27 without excess sway.

An eyebolt 81 is imbedded in the lid 43 at the rear 82

thereof and a rope or cable 83 is secured thereto. The rope or cable 83 is also secured to a suitable winch 84 which may be hand or motor operated, as desired. It is noted that due to the sloping tracks 39 and 40, the natural tendency of the lid 43 is to move forward with respect to the chamber 9. Thus, a controlled release of the winch 84 will permit the lid 43 to slowly roll forwardly until the depressions 46 and 47 are encountered by the wheels 53 at which time the lid 43 will move simultaneously forwardly and downwardly over the chamber 9.

The forward end 85 of the lid 43 is provided with forwardly extending support members or lugs 86 which are engageable with suitable jacks 87 for lifting the forward end 85 prior to withdrawing the lid 43 to the pool-open position shown in FIGURE 2. The jacks 87 are preferably provided with roller anvils 88 for ease in pulling the lid 43 therefrom after removal of the wheels 53 from the depressions 47. The jacks 87 are suitably supported in the shallow ditch 19 which also provides clearance for the lip 52 depending adjacent the side walls 2 and 3.

An underground fresh water storage tank 89 is provided beneath the deep portion 8 of the bottom wall 6, FIGURE 4. Access to the storage tank 89 is provided through an opening 90 communicating with the chamber 9 through the bottom wall 6 and suitably sealed with a cover 91. A drain pipe 92 communicates between the drain pipe 23 and the tank 89 for periodically draining the contents of the tank 89 in preparation for refilling with fresh water. A plug 93 is normally engaged in the drain pipe 92 but is easily removable therefrom to initiate the draining action.

By way of explanation, the chamber 9 acts as a conventional swimming pool when the lid 43 is withdrawn to pool-open position as indicated in FIGURES 1 and 2. The lid 43 presents an upper side which is suitable for a patio in either pool-open or pool-closed position. It is contemplated that during inclement or winter weather when it is desirable to maintain the chamber 9 empty of water, the lid 43 will be closed for safety; however, during the swimming season the lid is maintained in the open position. If an attack warning or a storm warning occurs during the swimming season when the lid 43 is in the open position, the valve 24 is actuated by the wheel 25 for rapidly draining the pool as the lid 43 is closed thereover. It is noted that the ladder 27 should be removed from the chamber upper edge 15 to prevent interference with the closure. By a controlled release of the winch 84, the lid 43 rolls forwardly on the tracks 39 and 40 until respective wheels 53 drop into the depressions 46 and 47 sealing the chamber 9 from the outer environment. The lip 52 provides an effective dust-proof seal. Suitable ingress and egress is provided by means of the hatchways 70 and 71. Access to supplies contained in the storage chambers 29, 59 and 60 is easily obtained with the wrench 69. Fresh water is obtained from the tank 89 and under emergency conditions the drain pipe 23 acts as a suitable sanitary sewer.

It is to be understood that this invention is adaptable to many existing swimming pools as well as new installations. The construction embodying this invention, by combining a shelter with a swimming pool provides much more utility at significantly lower cost than the separate and heretofore unrelated structures presently used.

It is to be further understood that while one form of this invention has been illustrated and described it is not to be limited to the specific arrangement of parts herein described and shown except insofar as such limitations are included in the claim.

What I claim and desire to secure by Letters Patent is: A combination shelter and swimming pool comprising: (a) a plurality of joined walls forming an upwardly open chamber, said walls including a pair of upwardly sloping parallel upwardly facing side edge surfaces and a pair of upwardly facing end edge surfaces, said side and end surfaces forming a rectangle located in an inclined plane,

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(b) a pair of inclined elongated parallel linear tracks respectively having a portion supported on said side surfaces and a separately supported portion extending past the higher of said end surfaces,

(c) a lid of greater size than said rectangle and having spaced apart wheels engaging said tracks, said wheels movably supporting said lid on said tracks between a chamber covered and a chamber uncovered position,

(d) depending side and end lips on said lid forming a lip rectangle of a size greater than said first named rectangle for telescoping over and surrounding said upwardly facing surfaces, said wheels while engaged with said tracks supporting said lid at an elevation whereby one of said lid end lips progressively clears said end edge surfaces as said lid is moved on said tracks over said chamber, and

(e) depressions respectively forming interruptions in said respective tracks for each of said wheels, said depressions being positioned along said tracks to

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simultaneously receive said wheels when said lid has attained chamber covering position, said depressions being at depths with respect to said tracks for lowering said lips below respective upwardly facing surfaces.

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