

Nov. 29, 1966

S. D. GURIAN ET AL

3,288,248

POOL LADDER

Filed Jan. 13, 1965

2 Sheets-Sheet 1

FIG. 1

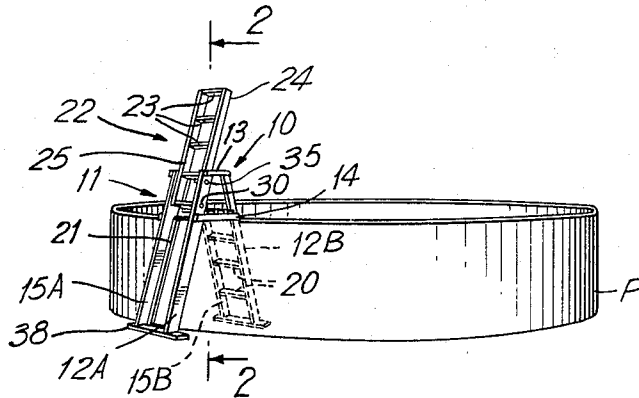


FIG. 3

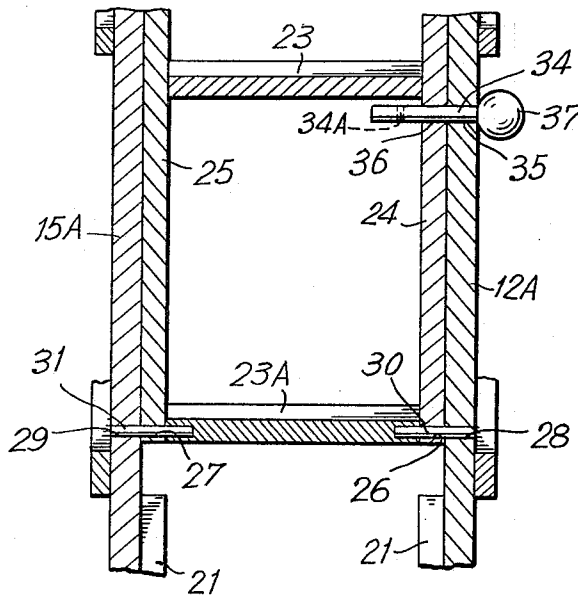


FIG. 2

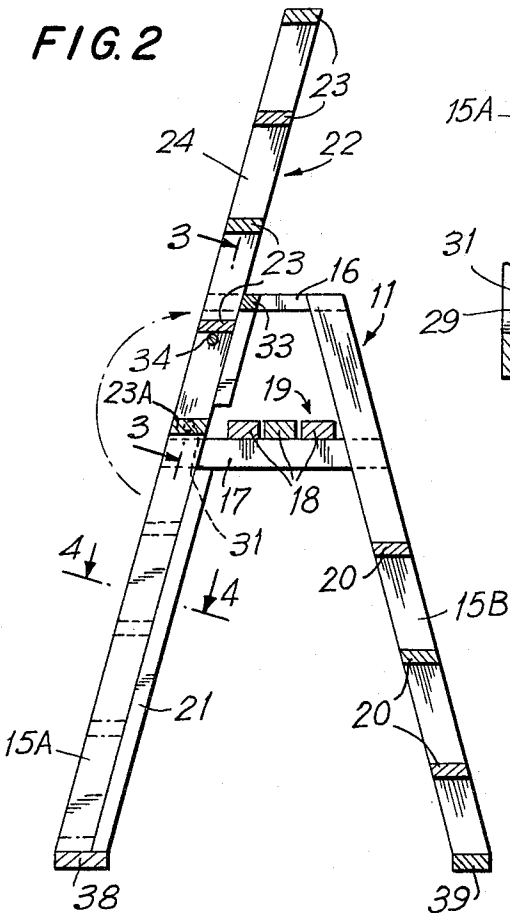
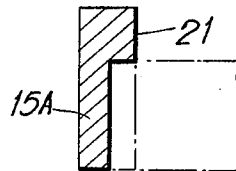


FIG. 4



INVENTORS
STEVEN D. GURIAN
MORTON M. BERNSTEIN
BY

S.C. Yuter

ATTORNEY

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FIG. 5

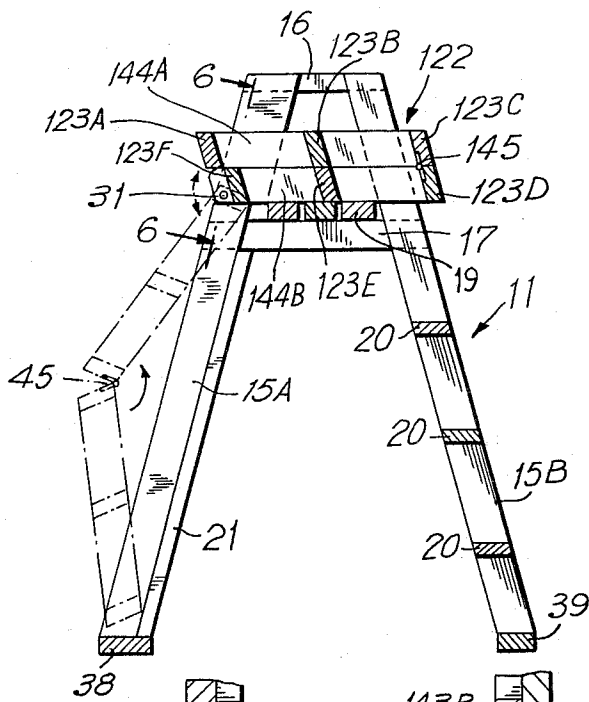


FIG. 7

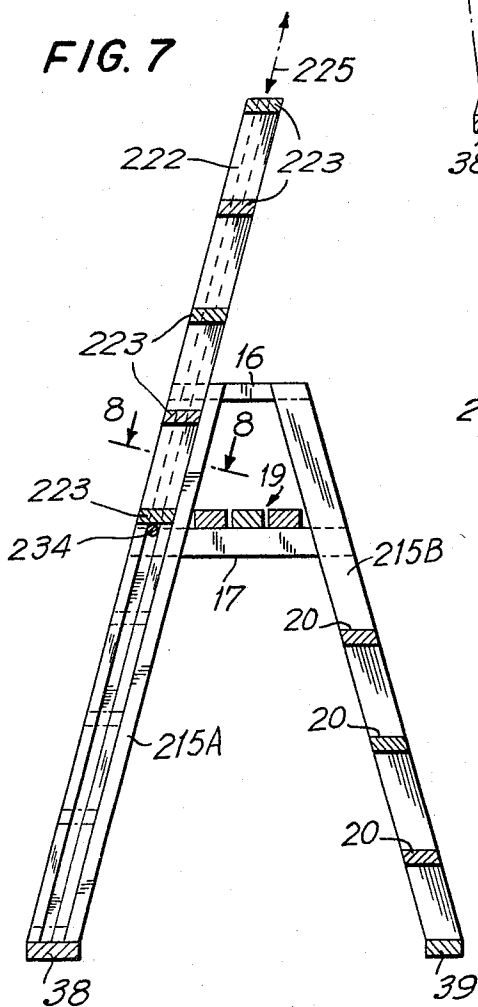


FIG. 6

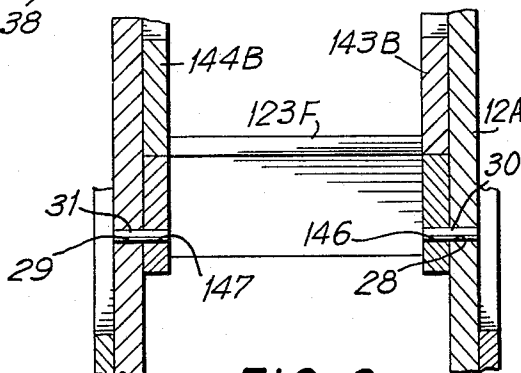
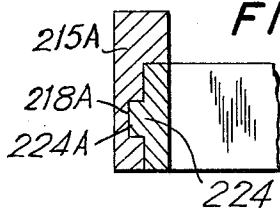


FIG. 8



BY

INVENTORS
STEVEN D. GURIAN
MORTON M. BERNSTEIN

S. C. Yuter

ATTORNEY

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3,288,248

POOL LADDER

Steven D. Gurian, 88 Gate Lane, East Meadow, N.Y., and
Morton M. Bernstein, 38 Dorchester Drive, Manhasset,
N.Y.

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9 Claims. (Cl. 182-118)

This invention relates generally to ladders and more particularly to a pool ladder for use in conjunction with an above-ground pool having an upwardly projecting peripheral wall.

The use of above-ground pools of the large type has necessitated the need for the utilization of some means which would allow children to get into and out of the pool, since the height of the peripheral wall of the pool is normally greater than the height of the children using such pools.

Thus, stepladders have been provided with steps on both sides of the ladder to allow children to enter and exit from such pools. However, a problem is presented with the use of regular stepladders for such purposes because young children have climbed up the ladder when no adults were present and have fallen into such pools and have drowned. As a safety factor, it is incumbent upon adults to remove such ladders when they are not present to oversee the use of the pool. However, it is obvious that this is really no solution to the problem since the removal and replacement of the ladder each time the pool is used is time consuming and inconvenient, particularly where these duties fall upon the housewife.

It is an object of the present invention to provide a ladder for use with an above-ground pool of the large type which will prevent unauthorized entrance of children to the pool.

It is a further object of this invention to provide a ladder for use with an above-ground pool which is simple in construction and economical to manufacture.

In accordance with the preferred embodiment of the invention, the ladder of the present invention comprises a pair of laterally spaced A-frames, including a first pair and a second pair of opposed legs which are adapted to straddle the pool with the first pair of opposed legs being inserted into the pool. A plurality of laterally extending spaced steps are connected between the first pair of opposed legs and extend upwardly from the bottom of the A-frames, preferably to a platform which is spaced below the top of the A-frames. A second plurality of laterally extending spaced steps are mounted between the second pair of opposed legs for movement between a lower position wherein the steps extend upwardly from the bottom of the A-frames to the platform and a raised position wherein the lowest step between the second pair of opposed legs is positioned a substantial distance from the bottom of the A-frame, thereby preventing young children from gaining access to the pool. When the ladder is in use, the movable steps may very easily be moved to the lower position by an adult, thereby allowing children to climb up these steps, onto the platform, and down the steps connected between the first pair of opposed legs and into the pool. After use, the adult simply moves the steps to the raised position, thereby preventing children from gaining access to the pool and eliminating the need for removing the ladder entirely.

It is a feature of the present invention to provide a ladder specifically adapted for use in conjunction with an above-ground pool, which incorporates a group of steps movable between a lower position and a raised position to prevent young children from climbing the ladder when the steps are in the raised position.

The above and other features and objects of the present

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invention will become more apparent from a consideration of the following detailed description when taken in conjunction with the drawings, in which:

FIG. 1 is a perspective view, to a reduced scale, of a first embodiment of the ladder of the present invention, shown in operative position with respect to an above-ground pool;

FIG. 2 is a sectional view taken along the lines 2-2 in FIG. 1;

FIG. 3 is an enlarged fragmentary sectional view of the first embodiment of the present invention taken along the lines 3-3 in FIG. 2;

FIG. 4 is an enlarged detailed sectional view of a leg of the A-frame shown in FIG. 2, taken along the lines 4-4 of FIG. 2;

FIG. 5 is a vertical sectional view of a second embodiment of a ladder constructed in accordance with the present invention;

FIG. 6 is a fragmentary sectional view, to enlarged scale of the ladder shown in FIG. 5, taken along the lines 6-6 in FIG. 5;

FIG. 7 is a sectional view of a third embodiment of a ladder of the present invention; and

FIG. 8 is a detailed sectional view, to enlarged scale, taken along lines 8-8 in FIG. 7.

The drawings are substantially to scale of a working model of the invention. While the invention will be disclosed as being made of aluminum, it is to be understood that the invention may equally as well be composed of other metals, wood or plastic. Like numbers of the various figures indicate identical elements.

As shown in FIGS. 1 and 2, the preferred embodiment of the pool ladder of the present invention comprises a pair of A-frames 10-11. A-frame 10 includes stringer members 12A and 12B (FIG. 1) connected together at their upper ends by a handrail 13 in such a manner that the upper surface of handrail 13 is coplanar with the top edges of stringer members 12A and 12B. Moreover, a spacer bar 14 connects stringer members 12A and 12B at a point spaced a short distance below handrail 13. Similarly, A-frame 11 comprises stringer members 15A and 15B (FIG. 2) connected together at their upper ends by a handrail 16 in such a manner that the top surface of handrail 16 is coplanar with the top edge of stringer members 15A and 15B. A spacer bar 17 is connected between stringer members 15A, 15B at a point spaced a short distance below handrail 16. It is to be understood that handrails 13, 16 (FIGS. 1 and 2) lie in the same horizontal plane and that spacer bars 14, 17 lie in the same horizontal plane.

A plurality of longitudinally spaced planks 18 extend laterally between and are connected to spacer bars 14 and 17, by any conventional means, and form a platform 19. A plurality of a generally horizontal, laterally extending, vertically spaced steps 20 extend between and are connected to opposed stringer members 12B and 15B. As noted in FIG. 2, steps 20 extend upwardly from the bottom of the A-frames to platform 19 and form a fixed group of steps.

A movable group of steps 22 is movably connected between stringer members or legs 12A and 15A in the manner indicated below. The movable group of steps 22 comprises a plurality of generally horizontal, laterally extending spaced steps 23 including end step 23A, connected between the vertically extending legs 24 and 25 (FIG. 1) which are respectively adapted to be in juxtaposed relation with stringer members 12A and 15A. Bores 26 and 27 (FIG. 3) extend laterally inwardly through respective legs 24 and 25 and end step 23A, and are in alignment with the apertures 28 and 29 in respective stringer members 12A and 15A. Pivot pins 30 and

31 respectively extend through apertures 28 and 29 and are received in the associated bores 26 and 27 to pivotally mount the movable group of steps 22 between stringer members 12A and 15A, as noted above. As shown in FIGS. 1, 2, and 3 pivot pins 30 and 31 are axially aligned and are located adjacent the upper edge of respective spacer bars 14 and 17.

The moveable group of steps 22 is sized and positioned to be pivoted counterclockwise, as taken in FIG. 2 about the axes of pins 30 and 31 to a lower position wherein the movable group of steps 22 is co-extensive with stringer members 12A and 15A, and steps 23 extend upwardly from the bottom of A-frames 10 and 11 to platform 19, as indicated by the phantom showing of the steps in FIG. 2. Moreover, the movable group of steps 22 may be pivoted clockwise, as taken in FIG. 2, to an upper or raised position wherein the movable group of steps 22 extend upwardly from platform 19, as shown by the solid lines in FIG. 2, thereby preventing young children from gaining access to platform 19, since the then lowest step 23A is spaced a substantial distance from the bottom of the A-frames.

To prevent the movable group of steps 22 from oscillating about its respective positions, means are provided to position the steps in both the lower or the upper position. Thus, as shown in FIG. 4, stringer member 15A is provided with a laterally inwardly extending flange portion 21 adjacent the rear edge thereof, which extends from the bottom of stringer member 15A and terminates at spacer member 17. It is to be understood that stringer member 12A is provided with a similar laterally inwardly extending flange. When the movable group of steps 22 is pivoted counterclockwise to its lower position, leg 25 will abut flange 21 and leg 24 will abut the flange associated with stringer member 12A to prevent swinging movement of the flight of steps 22 about the pivot axis and to automatically position the steps for climbing. A projection 33 extends laterally inwardly a short distance from handrail 16 and acts as a stop to prevent clockwise rotation of the movable group of steps 22 about the pivot axis when the steps are pivoted to the raised position. It is to be understood that a similar projection is provided on handrail 13. Additionally, the movable group of steps 22 is adapted to be fastened in the upper position by means of a removable fastening pin 34 (FIG. 3). Thus, stringer member 12A is provided with an aperture 35 adjacent its upper edge which is adapted to be aligned with a similar aperture 36 in leg 24 when the movable group of steps 22 is in its upper position in abutting relation with the projections. Fastening pin 34 extends through apertures 35 and 36 and prevents any accidental movement of the movable group of steps 22 to the lower position. For convenience, the end of fastening pin 34 may be provided with a ring 37 for grasping the pin 34 to remove it from its fastening position. The inside end of pin 34 has a transverse aperture 34A adapted to receive the hasp of a padlock, to prevent unauthorized removal of pin 34.

The bottom edges of stringer members 12A and 15A are connected to a laterally extending baseboard 38 (FIG. 2). Similarly, the bottom edges of stringer members 12B and 15B are connected to a laterally extending baseboard 39. Baseboards 38 and 39 are provided to respectively prevent the stringer members from digging into the ground surrounding the pool to keep the ladder level and to prevent the stringer members from puncturing the pool.

In operation, the ladder of the present invention is positioned as shown in FIG. 1 with A-frames 10 and 11 straddling the edge of the pool P with stringer members 12B, 15B extending into the pool and with baseboard 39 resting on the bottom surface of the pool. When the ladder is to be used, fastening pin 34 is removed and the movable group of steps 22 is pivoted in the counterclockwise direction to move the steps to the lower position,

as noted above. Thus, the children may walk up steps 23 onto platform 19 and down steps 20 into the pool. When the adult leaves the site of the pool, he or she may rotate the steps clockwise to the upper position and fasten them in this position by means of fastening pin 34 and an associated lock to thereby prevent children from reaching platform 19 and preventing their entrance into pool P.

In achieving the objects of the present invention, a ladder has been provided for use in conjunction with a pool, which includes a movable group of steps which may be moved out of the reach of children to prevent young children's entrance into the pool when no adults are present.

A second embodiment of the present invention is illustrated in FIGS. 5 and 6 and comprises a movable group of steps 122 which are adapted to rest on platform 19 when in the raised position. As shown more particularly in FIG. 5, the movable group of steps 122 comprises laterally extending steps 123A-123F. Steps 123A-123C are spaced from one another and are connected between one leg member (not shown) and a leg member 144A. Steps 123D-123F are connected between leg members 143B and 144B (FIG. 6). The inner surfaces of steps 123C and 123D, as shown in FIG. 5, are recessed and receive a hinge 145 therein to pivotally connect the upper portion of the movable group of steps 122 (comprising leg member 144A and its opposed leg member, and steps 123A-123C) and the lower portion of the movable group of steps 122 (comprising leg members 143B, 144B and steps 123D-123F). Leg members 143B and 144B are provided with apertures 146 and 147 (FIG. 6), respectively, which are adapted to be aligned with respective apertures 28 and 29 in stringer members 15A and 15B, and which receive pivot pins 30 and 31 therethrough. In this embodiment, the movable group of steps 122 is pivoted counterclockwise about the pivot axis of pins 30 and 31 to move the flight to the lower position. Thus, as the legs are moved to the lower position, as shown in phantom in FIG. 5, the upper and lower portions of the movable group of steps 122 will pivot about the hinge 145. Hence, in the fully extended lower position, the movable group of steps 122 will extend upwardly from the bottom of the A-frames 10 and 11 to platform 19, within the boundaries of stringer members 12A and 15A. When it is desired to raise the steps, they are simply rotated about the pivot pins 30 and 31 and hinge 45 to superimpose the upper portion of the movable group of steps 122 on the lower portion with the lower portion resting on platform 19. Thus young children are thereby prevented from climbing up the ladder and into the pool by means of steps 123A-123F when an adult is not present.

A third embodiment of the present invention is illustrated in FIGS. 7 and 8 and comprises a movable group of steps 222 which is mounted for sliding movement with respect to the stringer members. More particularly, the flight of steps 222 comprises laterally extending spaced steps 223 which are connected between opposed leg members. Since the leg members and the associated stringer members are identical, only one stringer member and associated leg member will be described in detail, it being understood that the other set is of the same construction. Thus, stringer member 215A is provided with a center channel 218A (FIG. 8) which receives a central projection 224A on leg member 224 to form a tongue and groove connection between the movable group of steps 222 and the stringer members. Thus, the movable group of steps 222 is movable upwardly and downwardly, as indicated by the double arrowhead 225, with the respective tongues associated with the leg members received in the respective grooves of the associated stringer members, between a lower position as shown in phantom in FIG. 7, wherein movable group of steps 122 is coextensive with the associated stringer members, and an upper position. An appropriately placed aperture is provided in

stringer member 215A to removably receive the fastening pin 234 therethrough which will abut against the under surface of the lowermost step 223 of the flight of steps 222 to thereby fasten the flight of steps 222 in the upper position.

Accordingly, a pool ladder has been provided which incorporates safety features which prevent young children from climbing the ladder to gain entrance to the pool when an adult is not present by moving steps out of reach of the children, thereby eliminating the need to move the ladder.

While preferred embodiments of the present invention have been disclosed herein, it will become obvious to those skilled in the art that modifications may be made therein without departing from the scope or spirit of the invention.

What is claimed is:

1. A ladder comprising a pair of laterally spaced A-frames, a plurality of laterally extending spaced steps connected between one pair of opposed legs of said A-frames and forming a first group of steps, a second group of steps, and means mounting said second group of steps adjacent the other pair of legs of said A-frames for movement between a lower position wherein the second group of steps are substantially coextensive with said other pair of legs and the lowest step is positioned adjacent to the bottom of said A-frames to allow access to the upper portion of the ladder, and a raised position wherein the lowest step is spaced a substantial distance from the bottom of said A-frames and the space between said lowest step in the raised position and the bottom of said A-frames is void of steps for preventing access to the upper portion of the ladder from the side of the ladder having said second group of steps.

2. A ladder as defined in claim 1, and fastening means for fastening said second group of steps in the raised position.

3. A ladder comprising a pair of laterally spaced A-frames, a plurality of laterally extending spaced steps connected between one pair of opposed legs of said A-frames and forming a first group of steps, a second group of steps, tongue and groove means connecting said second group of steps between the other pair of opposed legs of said A-frame for movement between a lower position wherein the lowest step between said other pair of opposed legs is positioned adjacent to the bottom of said A-frames to provide access to the upper portion of the ladder, and a raised position wherein the lower step between said other pair of A-frames is raised a substantial distance from the bottom of said A-frames so that there is an absence of steps in the space corresponding to said substantial distance from the bottom of said A-frames for preventing access to the upper portion of the ladder from the side of the ladder comprising said second group of steps.

4. A ladder comprising a pair of laterally spaced A-frames, a first plurality of laterally extending, spaced steps connected between one pair of opposed legs of said A-frames and forming a fixed group of steps, a movable group of steps, and pivot means pivotally connecting said movable group of steps between the other pair of opposed legs of said A-frames for pivotal movement between a lower position wherein the lowest step of said movable group of steps is positioned adjacent to bottom of said A-frames to permit climbing to the top portion of the ladder, and a raised position wherein said lowest step is spaced a substantial distance from the bottom of said A-frames which is void of steps thus providing a space for preventing a child from climbing the ladder

from the side of the ladder having said movable group of steps.

5. A ladder as defined in claim 4, and stop means connected to said A-frames for preventing pivotal movement of said movable group of steps past a predetermined position when said movable group of steps is moved to the lower position whereby said steps are positioned between the other pair of opposed legs of said A-frames, and for preventing pivotal movement of said movable group of steps past a preselected position when said movable group of steps is moved to said upper position; and releasable fastening means for fastening said movable group of steps in the upper position.

6. A ladder as defined in claim 5, wherein said releasable fastening means comprises an aperture in said A-frames and a complementary aperture in said movable group of steps which is adapted to be aligned with the aperture in said A-frames when said movable group of steps is in the raised position and abuts said stop means, and a pin removably received through said apertures to releasably lock said movable group of steps against pivotal movement.

7. A ladder as defined in claim 4, and a platform extending laterally between each of said A-frames and spaced downward from the top edge of said A-frames.

8. A ladder as defined in claim 7, wherein said movable group of steps comprises an upper portion and a lower portion, and hinge means pivotally connecting said upper portion to said lower portion whereby the lower portion is adapted to rest on said platform and the upper portion is superposed on the lower portion when said movable group of steps is in said raised position, said upper and lower portions of said movable group of steps being adapted to pivot about the pivot means and the hinge means when moved to the lower position to form a ladder structure wherein the steps extend upwardly from the bottom of said A-frames to said platform when said movable group of steps is in the lower position.

9. A ladder for use in conjunction with an above-ground pool of the plastic-lined type having an upwardly projecting peripheral wall, comprising a pair of laterally spaced A-frames, each of said A-frames including a pair of legs adapted to straddle the wall of the pool, a platform extending laterally between the A-frames and positioned to be above the top edge of the wall of the pool when the ladder is in straddling position; a first plurality of laterally extending spaced steps connected between one pair of opposed legs of said A-frames and forming a fixed group of steps extending upwardly from the bottom of said A-frames to said platform, a movable group of steps, and means mounting said movable group of steps between the other pair of opposed legs of said A-frames for movement between a lower position wherein the movable group of steps extend upwardly from the bottom of said A-frames to said platform to allow access to said platform, and a raised position wherein the lowest step of said movable group of steps is adjacent said platform and there is an absence of steps below the lowest step of said movable group of steps for preventing access to said platform from the side of the ladder outside the wall of the pool.

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REINALDO P. MACHADO, *Primary Examiner*.