

Oct. 2, 1951

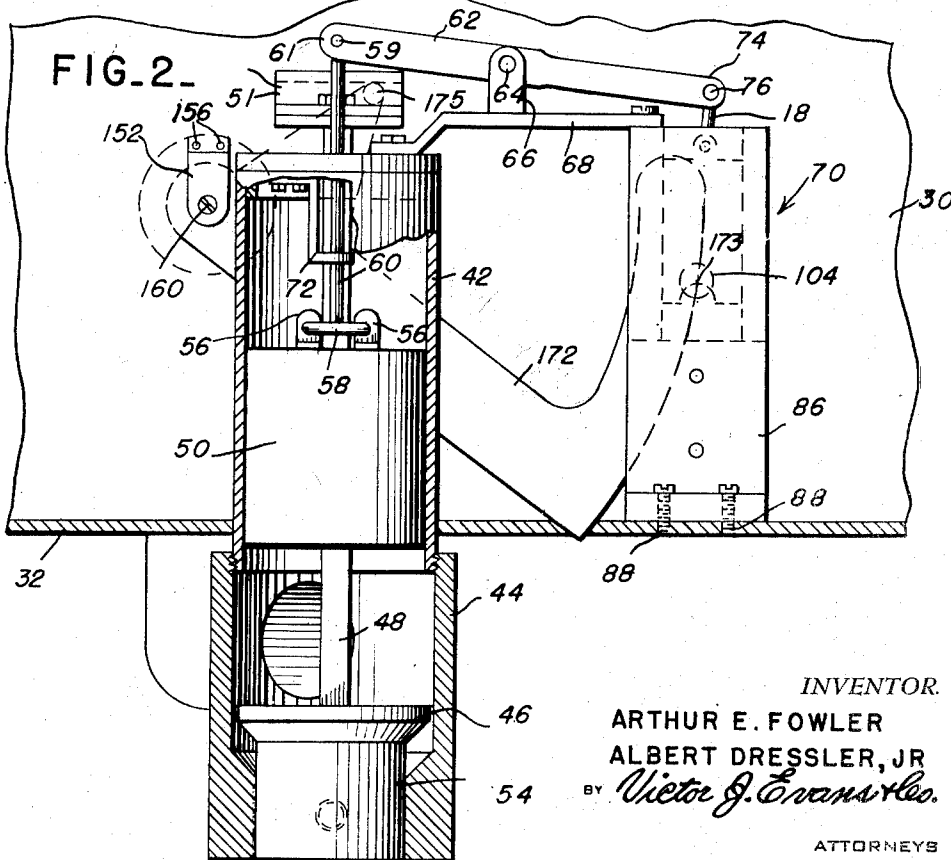
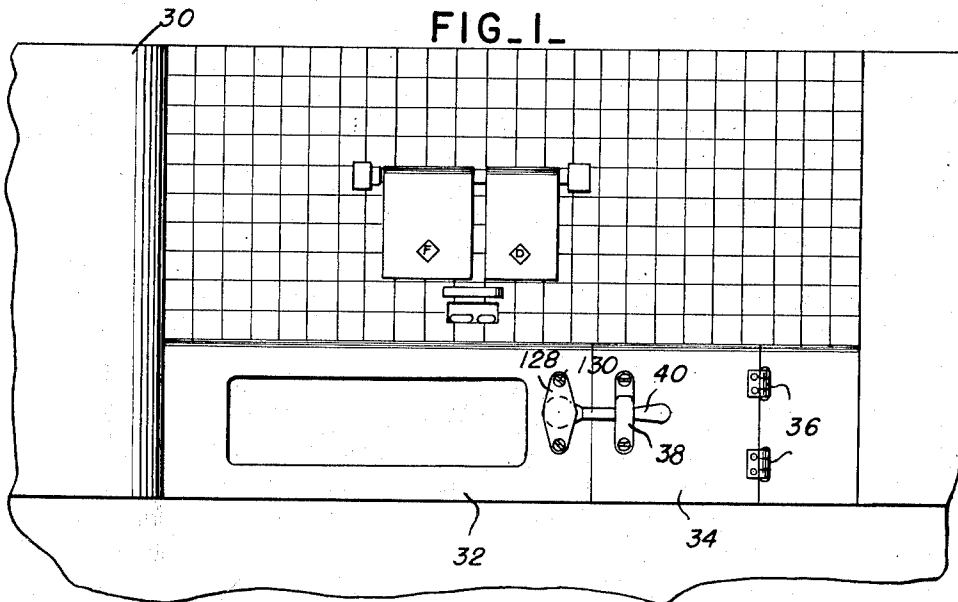
A. E. FOWLER ET AL

2,570,053

WALK-IN-BATH TUB

Filed April 26, 1946

6 Sheets-Sheet 1



INVENTOR.

ARTHUR E. FOWLER  
ALBERT DRESSLER, JR

BY *Victor J. Evans & Co.*

ATTORNEYS

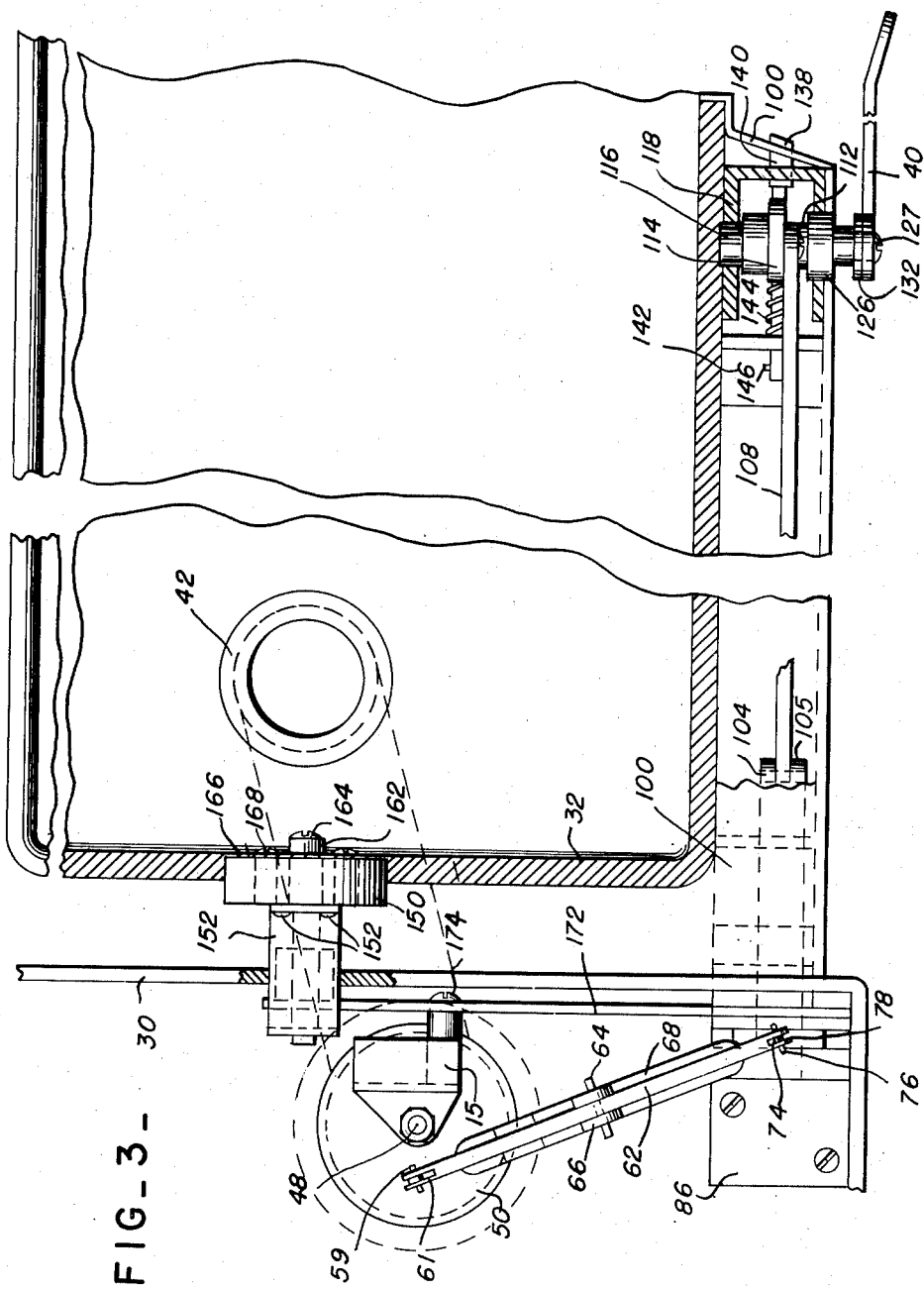
Oct. 2, 1951

A. E. FOWLER ET AL  
WALK-IN-BATH TUB

2,570,053

Filed April 26, 1946

6 Sheets-Sheet 2



INVENTOR  
ARTHUR E. FOWLER  
ALBERT DRESSLER, JR  
BY *Victor J. Evans & Co.*

ATTORNEYS

**Oct. 2, 1951**

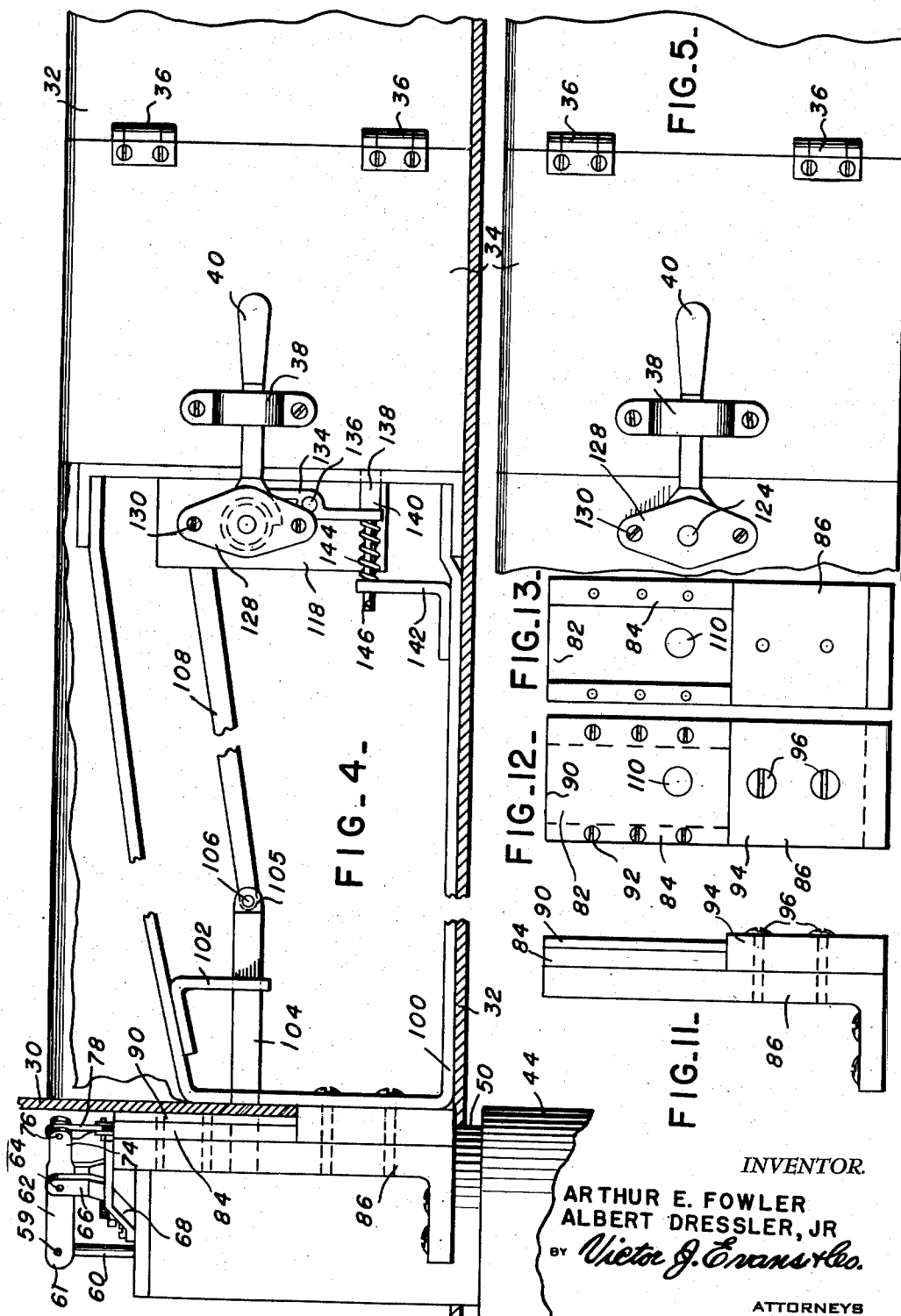
A. E. FOWLER ET AL

**2,570,053**

WALK-IN-BATH TUB

Filed April 26, 1946

6 Sheets-Sheet 3



Oct. 2, 1951

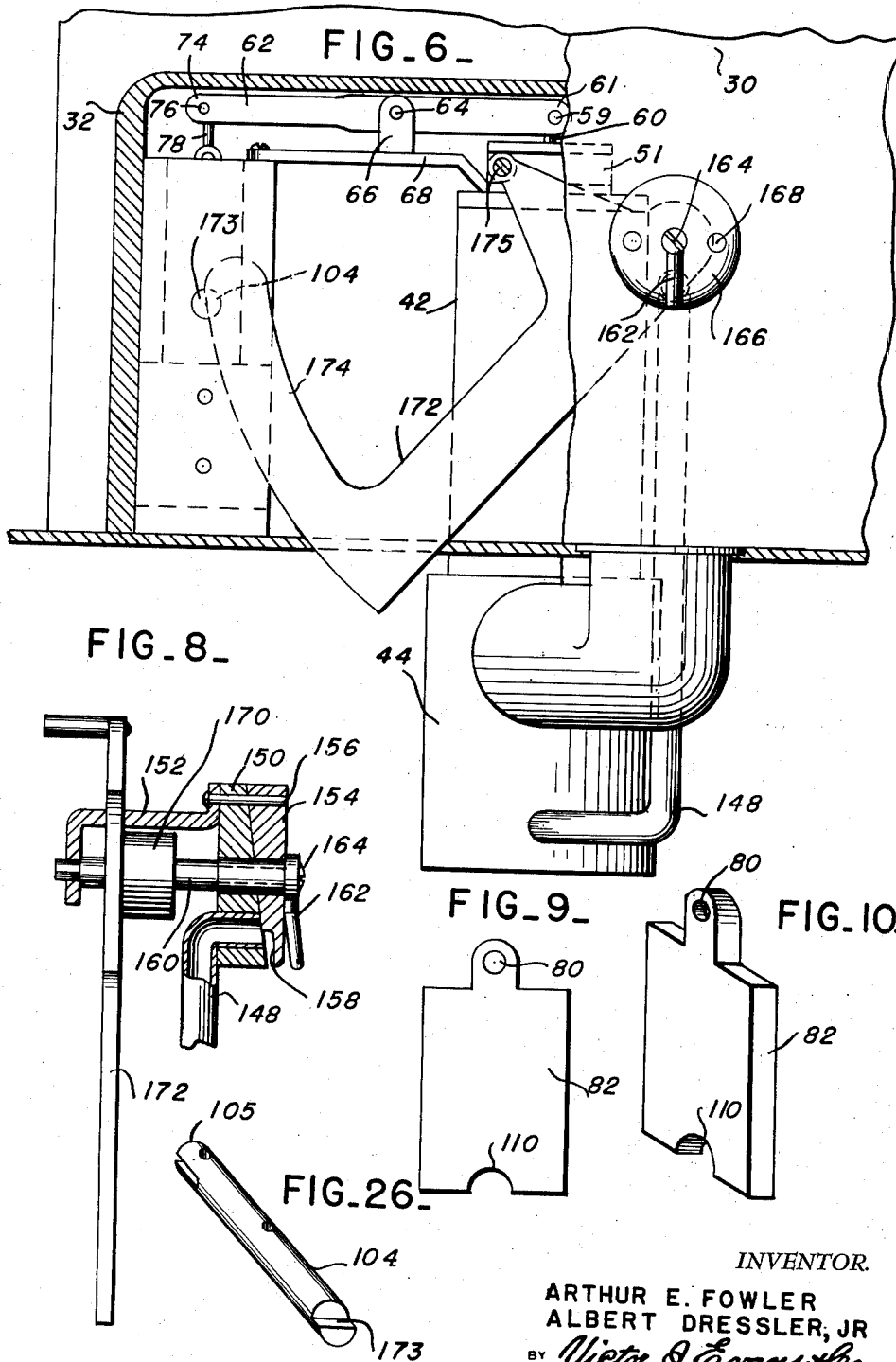
A. E. FOWLER ET AL

2,570,053

WALK-IN-BATH TUB

Filed April 26, 1946

6 Sheets-Sheet 4



INVENTOR.

ARTHUR E. FOWLER  
ALBERT DRESSLER, JR

BY *Victor J. Evans & Co.*

ATTORNEYS

**Oct. 2, 1951**

A. E. FOWLER ET AL

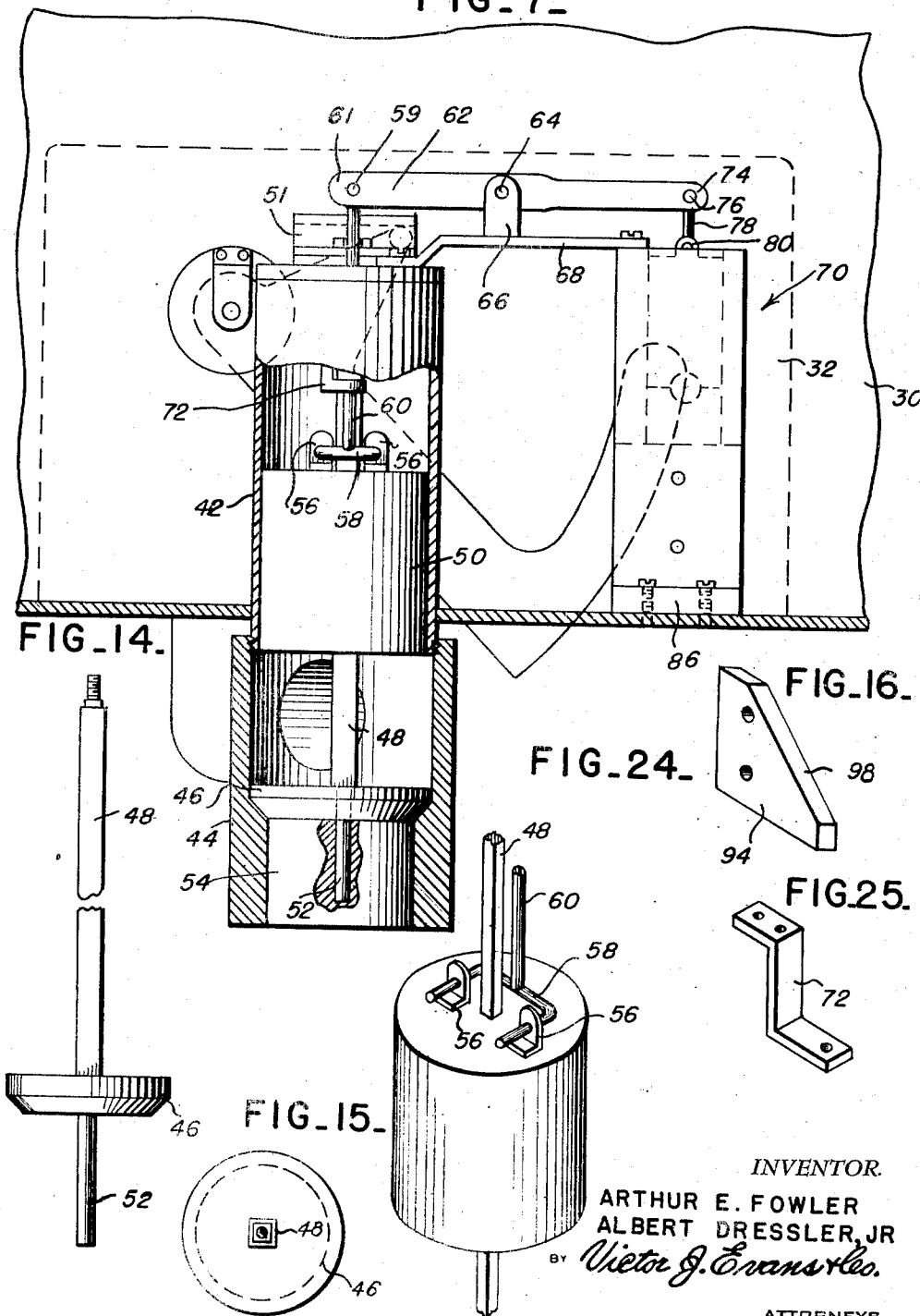
**2,570,053**

WALK-IN-BATH TUB

Filed April 26, 1946

6 Sheets-Sheet 5

FIG. 7\_



Oct. 2, 1951

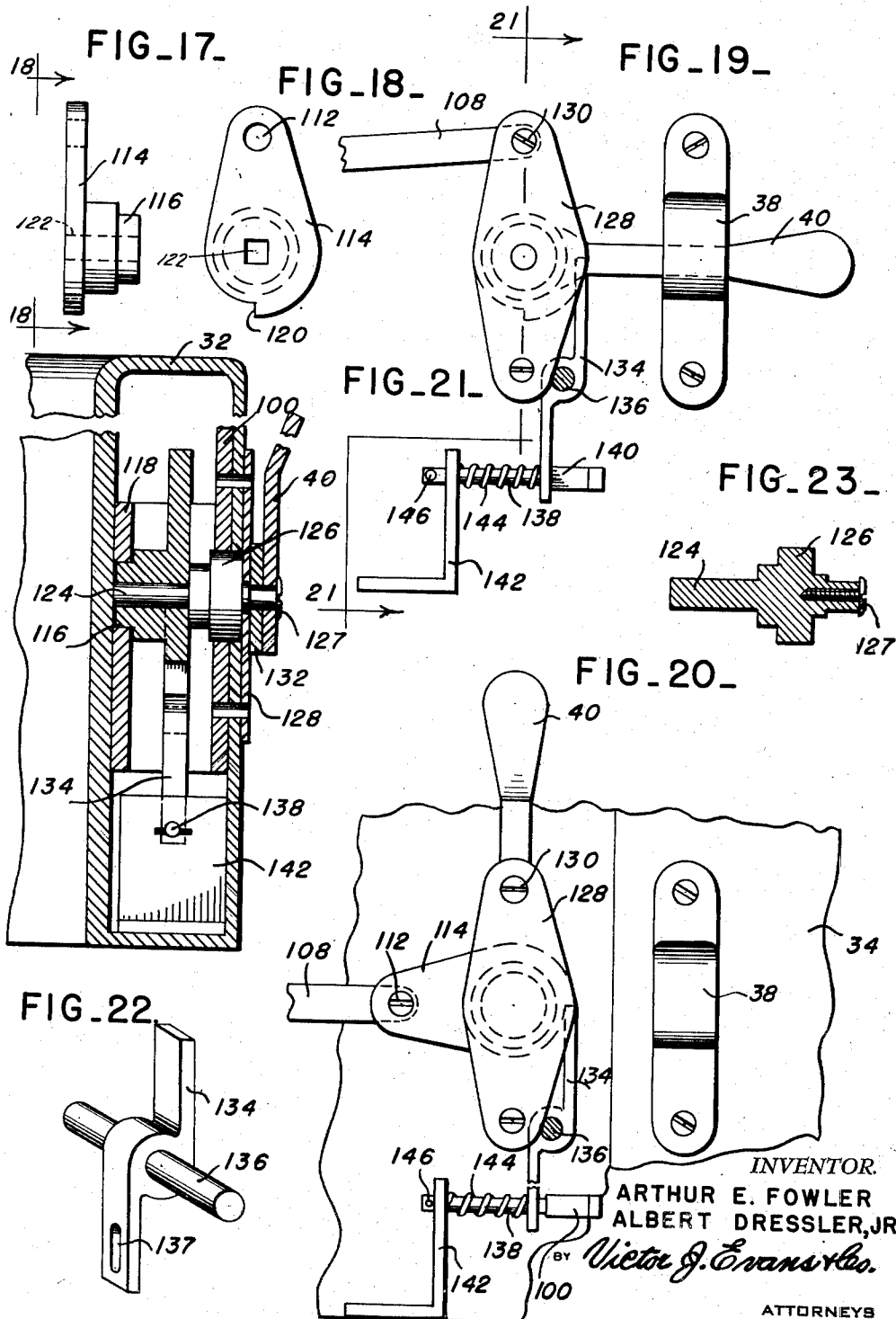
A. E. FOWLER ET AL

2,570,053

WALK-IN-BATH TUB

Filed April 26, 1946

6 Sheets-Sheet 6



## UNITED STATES PATENT OFFICE

2,570,053

## WALK-IN BATHTUB

Arthur E. Fowler and Albert Dressler, Jr.,  
Elmira, N. Y.

Application April 26, 1946, Serial No. 665,230

3 Claims. (Cl. 4—173)

1

This invention relates to a walk-in bath tub which by means of a door permits the user to walk into the tub without having to enter the tub by stepping over the side thereof as is the usual manner of entering the present day bath tubs.

An object of the invention is to provide a bath tub that is leak proof that includes means for entering the tub and means associated therewith that will prevent the user of the tub to fill the tub with water or operate the means for entering the tub until all water has drained therefrom or the tub is empty.

Another object of the invention is to provide a tub that will eliminate the hazards consistent with the entering or leaving of the tub in use at the present time.

With the above and other objects in view the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawing in which:

Figure 1 is an elevational view of an embodiment of the invention;

Figure 2 is detailed sectional view of the control mechanism when the tub is empty before or after draining;

Figure 3 is a top plan view partly in section;

Figure 4 is a side elevational view with wall broken away;

Figure 5 is enlarged detailed view of the door;

Figure 6 is an end view with wall broken and tub partly in section;

Figure 7 is the same as Figure 2 when the tub is full of water or being filled;

Figure 8 is a detailed sectional view of the overflow valve;

Figure 9 is a plan view of the plunger for locking the door handle;

Figure 10 is a perspective view thereof;

Figure 11 is a side view of the plunger assembly;

Figure 12 is a rear view thereof;

Figure 13 is a front view thereof;

Figure 14 is an elevational view of the drain valve;

Figure 15 is a top view thereof;

Figure 16 is a perspective view of the spacer for the plunger assembly;

Figure 17 is an elevational view of the handle latch arm;

Figure 18 is a front view looking in the direction of the arrows on the line 18—18 of Figure 17;

Figure 19 is an enlarged detailed view of the handle operating mechanism;

2

Figure 20 is same in open position;

Figure 21 is a sectional view on the line 21—21 of Figure 19;

Figure 22 is a perspective view of the plunger and handle latch arm;

Figure 23 is a sectional view of the handle shaft;

Figure 24 is a perspective view of the float and the rod attaching means therefor;

Figure 25 is a perspective view of a guide bracket for the valve stem and

Figure 26 is a perspective view of the plunger.

Referring more in detail to the drawings the reference numeral 30 indicates the walls of a bathroom having a built in tub 32 forming an embodiment of the invention properly installed in position.

The tub 32 comprises the door 34 built into the side thereof and hinged thereto at 36 and the door is provided with a handle keeper 38 for reception of the handle 40 therein.

The handle is provided with mechanism which will prevent filling of the tub with water until the door is closed or opening of the door until all water therein has drained therefrom and the description of the various controls and the mechanism embodying such controls constitutes the essential elements of the invention.

Referring more particularly to Figures 2 and 7 the tub 32 is provided with a float chamber or drain pipe 42 having threadably secured to the lower end thereof the drain valve seat 44 for the reception of the drain valve 46 having the square shaped stem 48 extending upwardly therefrom to mount the float 50 and be secured at its upper end to the valve operating bracket 51 and the cylindrical stem 52 extending downwardly therefrom on which is mounted the guide 54 which controls and guides the vertical movement of the float 50 and valve 46.

The float 50 has secured thereto on the upper end thereof the brackets 56 which are apertured to receive the U-shaped end 58 of the connecting rod 60 which is pivotally connected at its upper end at 59 to the forked end 61 of the lever 62 pivoted at 64 in the fulcrum 66 which is mounted on the bracket 68 secured at one end to the chamber 42 and at the other end to the plunger lock assembly 70 and a guide bracket 72 for the rod 60 is secured to the inner surface of the top of the chamber 42. The opposite forked end 74 of the lever 62 is pivoted at 76 to the depending link 78, the lower end of which is pivoted at 80 to the plunger lock plate 82; slidably mounted intermediately the guide

flanges 84 formed on the opposite marginal edges of the bracket 86 secured to the floor or tub by fasteners 88 and a cover plate 90 is secured to the flanges 84 by fasteners 92. Engaging the lower ends of the flanges 84 and plate 90 is the spacer 94 which is secured to the bracket 86 by fasteners 96 and in Figure 16 the spacer 94 is shown having an inclined side 98 and the fasteners 96 secure the frame 100 to the bracket 86. Welded to the frame 100 is the bracket 102 which receives and guides the plunger 104 pivoted at its forked end 105 at 106, to the link 108 and at the other notched end 173 thereof is adapted to be received in the concave recess 110 in the bottom edge of the plunger lock plate 82. The opposite end of link 108 is pivoted at 112 to the handle latch arm 114 having the bearing end 116 for mounting in the housing 118 secured to the frame 100, and a stop 120 formed on the lower edge thereof. A square shaped opening 122 in the arm 114 mounts the complementary shaped shaft 124 therein and the shaft is provided with a bearing surface 126 for mounting the shaft in the housing 118 and tub 32. The handle 40 is secured to the center end of the shaft 124 by a fastener 127 and the retaining plate 128 is mounted on the shaft and secured to the tub by fasteners 130 and a washer 132 is mounted on shaft 124 intermediate the handle 40 and plate 128. The stop 120 on the arm 114 engages the latch 134 which is pivoted by pin 136 on the housing 118 and the lower end of the latch is apertured at 137 to receive the bolt 138 having the head 140 which engages the edge of the door 34 to lock it in closed position, a bracket 142 welded to the frame 100 supports the bolt and a compression spring 144 mounted on the bolt intermediate the latch 134 which engages the head 140 and bracket 142 urges the bolt into locked position and a stop pin 146 in the end of the bolt 138 limits the forward movement thereof. The tub 32 is provided with an overflow pipe 148 which enters the tub at the conventional height and is secured in the cam faced rear plate 150 having the arm 152 secured to the rear thereof and the cam faced front plate 154 secured to the front thereof by fasteners 156. The plate 154 being cut away at 158 to permit water to enter the overflow pipe 148.

Journalled in the arm 152 and rear plate 150 and front plate 154 is the shaft 160 having the drain handle 162 secured to the forward end thereof by a fastener 164 and a face plate 166 underlies the handle 162 and is secured to the tub by fasteners 168. Secured to the shaft 160 intermediate the arm 152 and rear plate 150 by means of the collar 170 is the drain handle locking cam 172 which engages the plunger 104 in the notched end 173 thereof at its cam end 174 and is secured to the bracket 51 by a fastener 175. The cam 172 engaging the plunger 104 on the closing of the drain handle locks the door handle until drain handle is opened.

Thus there has been provided a tub having a door thereby permitting the user thereof to walk into the tub at floor level. The door is provided with a handle which cannot be operated while door is open or the drain valve closed for the filling of the tub with water with the door open. Upon closing of the door 34 the door operates or pushes in the handle arm latch plunger or bolt 138 until the head 140 thereon engages the latch 134. At engagement of the head 140 with the latch 134 the latch is pivoted on the shaft 136 moving the end of the latch 134 out of en-

gagement with the stop 120 on the latch arm 114. This action releases the handle latch mechanism. The handle 40 can then be moved from the position of Figure 20 to the position of Figure 19. Therefore upon locking the door with handle 40 drain valve handle 162 can be closed and tub filled with water. After water is run into tub float 50 in float chamber 42 operates plunger lock plate 82 and locks door handle until all water is run out of tub.

Reversely drain valve cannot be closed and tub filled with water until door is closed and door locked with handle. Valve handle can only be moved after released by closing of door and after water is in tub door handle will stay locked until all water is run out of tub which releases plunger lock plate 82. Also handle locking mechanism is locked through plunger and drain locking cam 172. When door is locked and drain valve is closed, door handle will stay locked until drain valve is opened. After drain valve is opened door handle will stay locked through plunger lock plate 82 until water is run out of tub with door locked and tub filled with water, a solid tub is formed. After water is emptied out of tub, door handle is released and door can be opened.

The drain valve can only be closed after door is closed and locked with door handle. If water is run into tub with door open tub cannot be filled as drain pipe is open. Drain pipe is to be made three to four inches in size to let water run out quickly.

Door handle cannot be moved until door is closed in place. After door is closed and door handle is in locking position and drain valve closed, the door handle is locked until drain valve handle is opened.

After door is closed and locked drain valve closed and water in tub, door handle has a double lock pivot through plunger 104 and cam 172 and second through plunger lock plate 82 which stays locked until all water is run out of tub.

It is believed from the foregoing description, the operation and construction of the invention will be apparent to those skilled in the art, and it is to be understood that changes in the details of construction, arrangement and combination of parts may be resorted to provided they fall within the spirit of the invention and the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a walk-in-bath tub having a tub-like body provided with a drain opening and a door mounted in the sides of the body, the improvement comprising manually operable means carried by the tub-like body and coacting with the door for retaining the door in closed position, mechanism coacting with said manually operable means to prevent operation of said manually operable means while water is being emptied from the tub while the tub is being filled with water, and a float mounted in the drain of said tub-like body for controlling said mechanism.

2. The invention as in claim 1 wherein a drain valve is provided for the drain opening in said tub-like body, and said float is mounted on said valve and is controlled by the opening and closing of said valve.

3. In a walk-in-bath tub having an opening in the side thereof, a door for closing said opening and a drain opening the improvement comprising a manually operable handle means mounted on said tub, and a keeper on said door to receive

5

said handle to releasably retain said door in closed relation to said opening, a drain valve in said drain opening, a float carried by said valve, and linkage means connecting said float to said manually operable handle means to prevent operation of said manually operable handle means during the emptying or filling of the tub with water.

ARTHUR E. FOWLER.  
ALBERT DRESSLER, JR. 10

6

## REFERENCES CITED

The following references are of record in the file of this patent:

## UNITED STATES PATENTS

| Number    | Name              | Date          |
|-----------|-------------------|---------------|
| 1,956,087 | Tracy -----       | Apr. 24, 1934 |
| 2,068,457 | Kirkwood -----    | Jan. 19, 1937 |
| 2,075,933 | Friedlander ----- | Apr. 6, 1937  |