

No. 842,961.

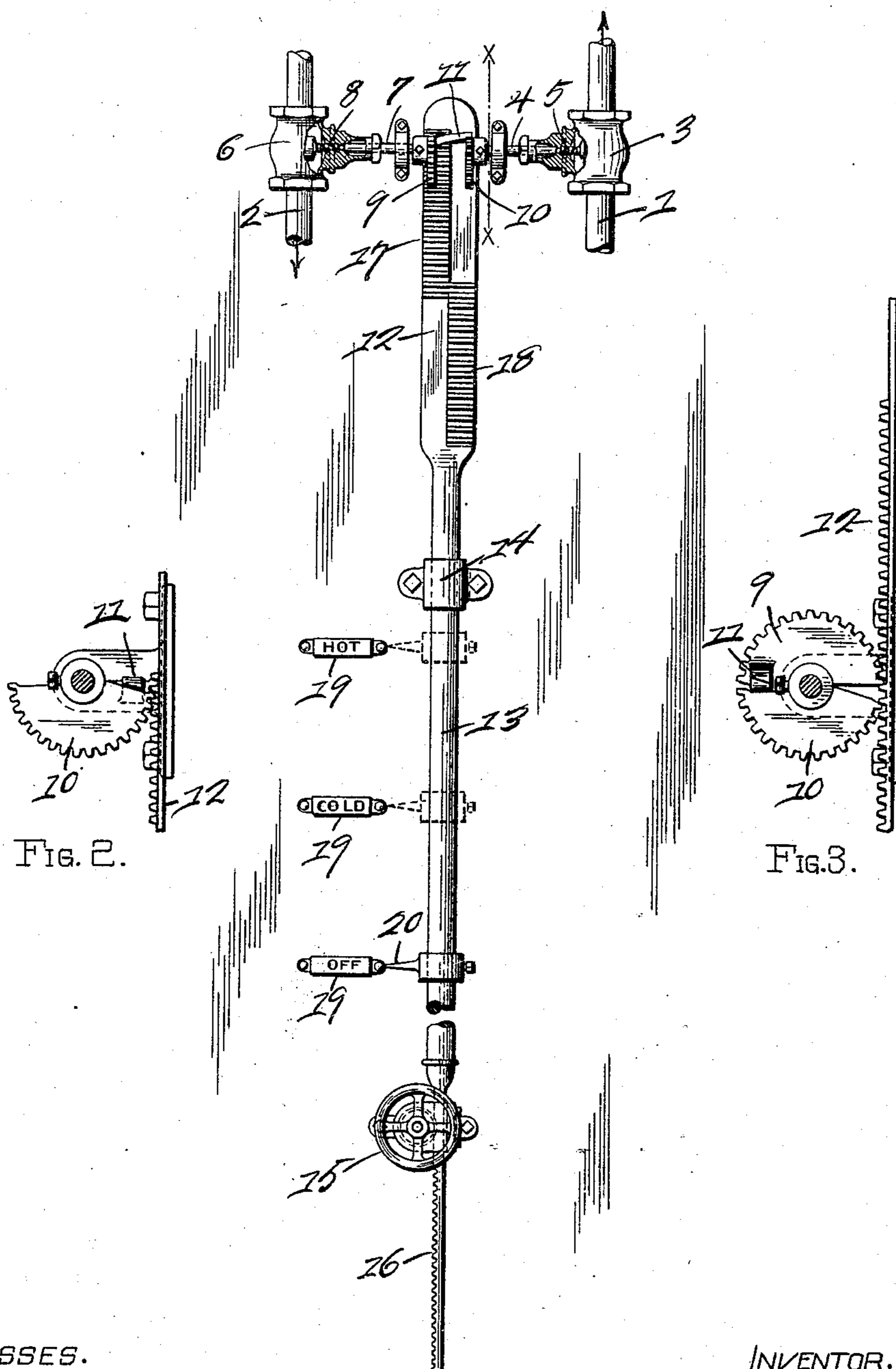
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T. F. KEWLEY.

VALVE OPERATING MECHANISM FOR SHOWER BATH APPARATUS.

APPLICATION FILED MAY 18, 1966.

Fig. 1.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## VALVE-OPERATING MECHANISM FOR SHOWER-BATH APPARATUS.

No. 842,961.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed May 18, 1906. Serial No. 317,466.

*To all whom it may concern:*

Be it known that I, THOMAS F. KEWLEY, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful  
5 Improvements in Valve-Operating Mechanisms for Shower-Bath Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to  
10 which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

15 This invention relates to valve-operating mechanisms for shower-baths.

The invention is especially adapted for use in shower-bath apparatus employing steam as a means for heating the water; and it has  
20 for its object to provide a simple, easily-operated, and effective mechanism which shall turn on the cold water before the steam is turned on and which on being operated to turn off the water will first turn off the  
25 steam-supply, thereby positively eliminating the possibility of overheating the water and of scalding the individual taking the bath.

In carrying out the invention I employ the novel combination, arrangement, and details  
30 of construction hereinafter shown, described, and claimed.

In the accompanying drawings, Figure 1 is an elevation of the valve-operating mechanism, showing the same in position upon the  
35 wall of a bath-room. Figs. 2 and 3 are enlarged elevations of the segmental gears employed, showing altered positions of the same during operation, the sections being on line *x x*, Fig. 1.

40 Referring to the details of construction, 1 is a steam-pipe supplying steam to a water-heater (not shown) of any ordinary or preferred construction, and 2 is a pipe leading water after passing through the heater to the  
45 usual shower-head. The passage of steam through the pipe 1 is controlled by a valve 3, the stem 4 of which has a left-hand thread at 5 to cause the valve to open fully by a half-turn in a right-hand direction of the valve-  
50 stem. In like manner the flow of water through the pipe 2 is controlled by a valve 6, the stem 7 of which has a right-hand thread at 8 to cause the valve to open by a half-turn in a left-hand direction of the stem 7. Rigidly secured to the adjacent ends of the valve-  
55 stems 4 and 7 are segmental gears 9 and 10

facing each other, and the gear 9 has a lug 11 extending over and engaging the gear 10 for the purpose hereinafter described.

12 is a rack-plate guided to operate in a  
60 vertical direction, being carried at the upper end of the operating-rod 13, which is guided in a bearing 14 and is actuated by a hand-wheel 15, carrying a pinion which meshes with a rack 16 at the lower end of the operat-  
65 ing-rod. Rack-plate 12 is provided with two rows of teeth or racks 17 and 18, disposed out of line with each other, the rack 17 engaging the segmental gear 9 and the rack 18 engag-  
70 ing the segmental gear 10, the arrangement being such that the upward movement of the operating-rod will cause the gear 9 to rotate a half-turn, the rotation of said gear being fol-  
75 lowed by the half-rotation of the gear 10, the rotation of the gears following each other in succession.

To insure the positive closing of the steam-valve and also to aline the teeth of the seg-  
80 mental gears to prevent their binding with their respective racks, the lug 11 is provided upon the gear 9, the mode of operation being as follows: When the segmental gears are in their normal position prior to operation, as shown in Fig. 2, the end of the lug 11 will be  
85 in contact with the rear edge of the gear 10. When the operating-rod is elevated to cause the gear 9 to rotate a half-turn to the position in Fig. 3, the lug 11 will engage the forward top edge of the gear 10 and by starting  
90 the rotation of the same will aline the teeth thereof in the right position for engagement with its rack and eliminate the possibility of binding. The rotation of the gear 10 to open the steam-valve is then effected by the con-  
95 tinued upward movement of the operating-rod. The lowering of the operating-rod will rotate the gear 10 in a reverse direction to shut off the steam-supply. The instant the gear 10 ceases to rotate the gear will be en-  
100 gaged by its rack and shut off the water-supply, and as the lug 11 engages the rear edge of the gear 10 the positive seating of the steam-valve is effected, and the danger of the leakage of steam into the water-heater to  
105 overheat the water and scald the individual is eliminated. The movement of the operating-rod to effect the flow of cold and hot water through the shower-head and to shut off the water entirely is indicated by plates 19  
110 and a pointer 20, carried by the rod and moving therewith.

It is thus seen that the simple operation of

turning the hand-wheel will cause cold water to initially pass through the shower-head and that after the steam-valve is opened the water will be heated. The reverse operation  
5 of the hand-wheel will cut off the steam-supply before the water can be turned off. It is therefore apparent that it is impossible for the water to become heated to a dangerous degree.

10 The invention is of especial value in hospitals for the insane and aged, where dependence is placed almost entirely upon the attendant to regulate the temperature of the water.

15 Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination with steam and water supply  
20 pipes and valves controlling the passage of water and steam therethrough, of means for operating said valves comprising segmental gears carried by said valves and a mutilated rack engaging said gears in succession, one of  
25 said gears provided with means for engaging the other gear to aline the teeth thereof with the teeth of the rack, substantially as described.

2. In a device of the class described, the combination with steam and water supply  
30 pipes and valves controlling the passage of water and steam therethrough, of alined valve-stems for said valves, gears carried by said valve-stems, and a vertically-movable rack-plate having rack-faces out of line with  
35 each other to engage said gears in succession, substantially as described.

3. In a device of the class described, the combination with steam and water supply  
40 pipes and valves controlling the passage of steam and water therethrough, of right and left threaded valve-stems for said valves, segmental gears secured upon the valve-stems to operate in different planes, a vertically-movable rack-plate having rack-faces  
45 out of alinement with each other to engage said gears in succession, and means for effecting the final seating of the steam-valve, substantially as described.

In testimony that I claim the foregoing as  
50 my own I affix my signature in presence of two witnesses.

THOS. F. KEWLEY.

Witnesses:

CARL H. KELLER,  
R. E. WRIGHT.