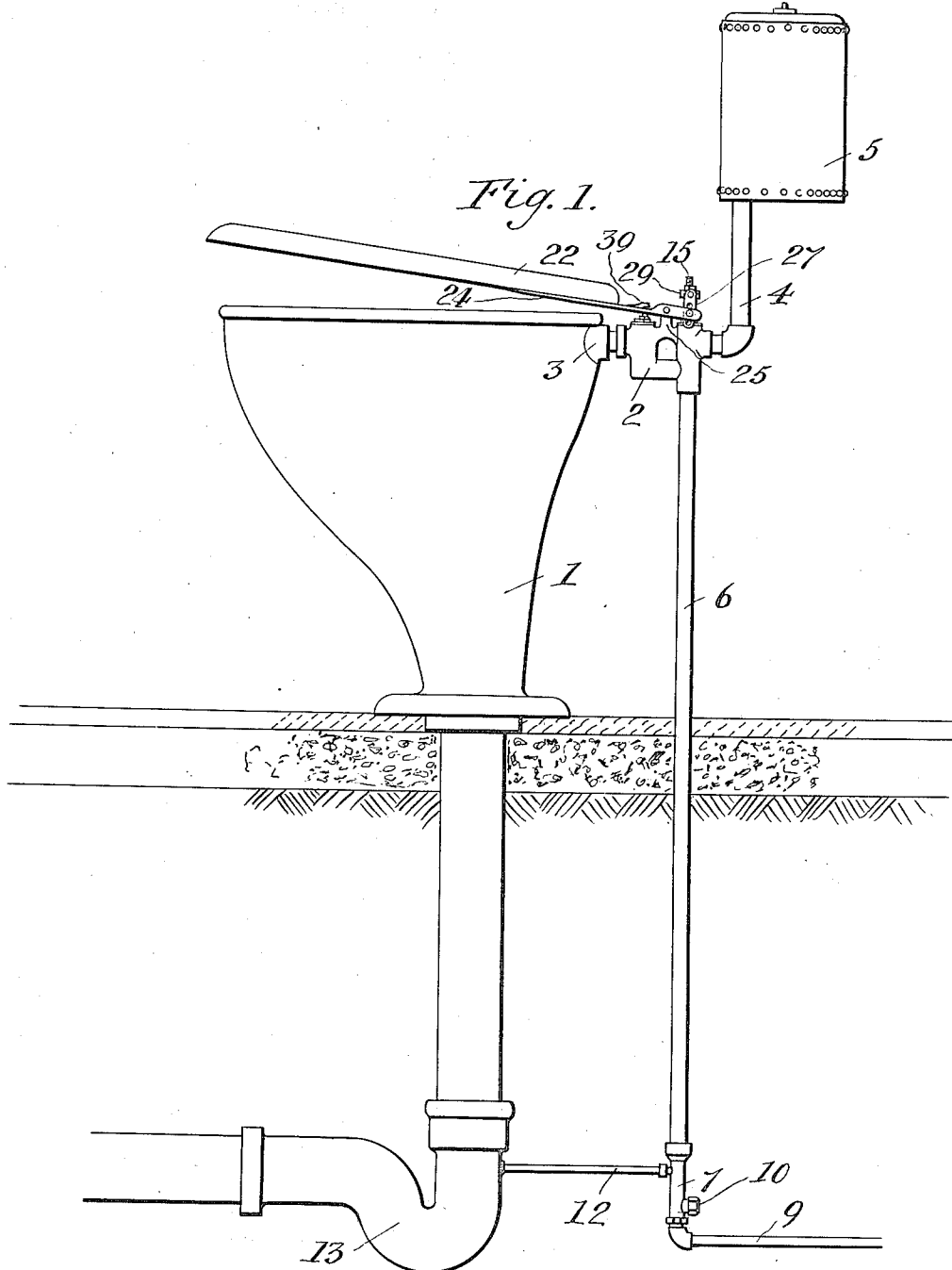


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APPLICATION FILED JAN. 27, 1912.

Patented Nov. 26, 1912.

3 SHEETS--SHEET 1.



WITNESSES

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Sarah Schotta

INVENTOR

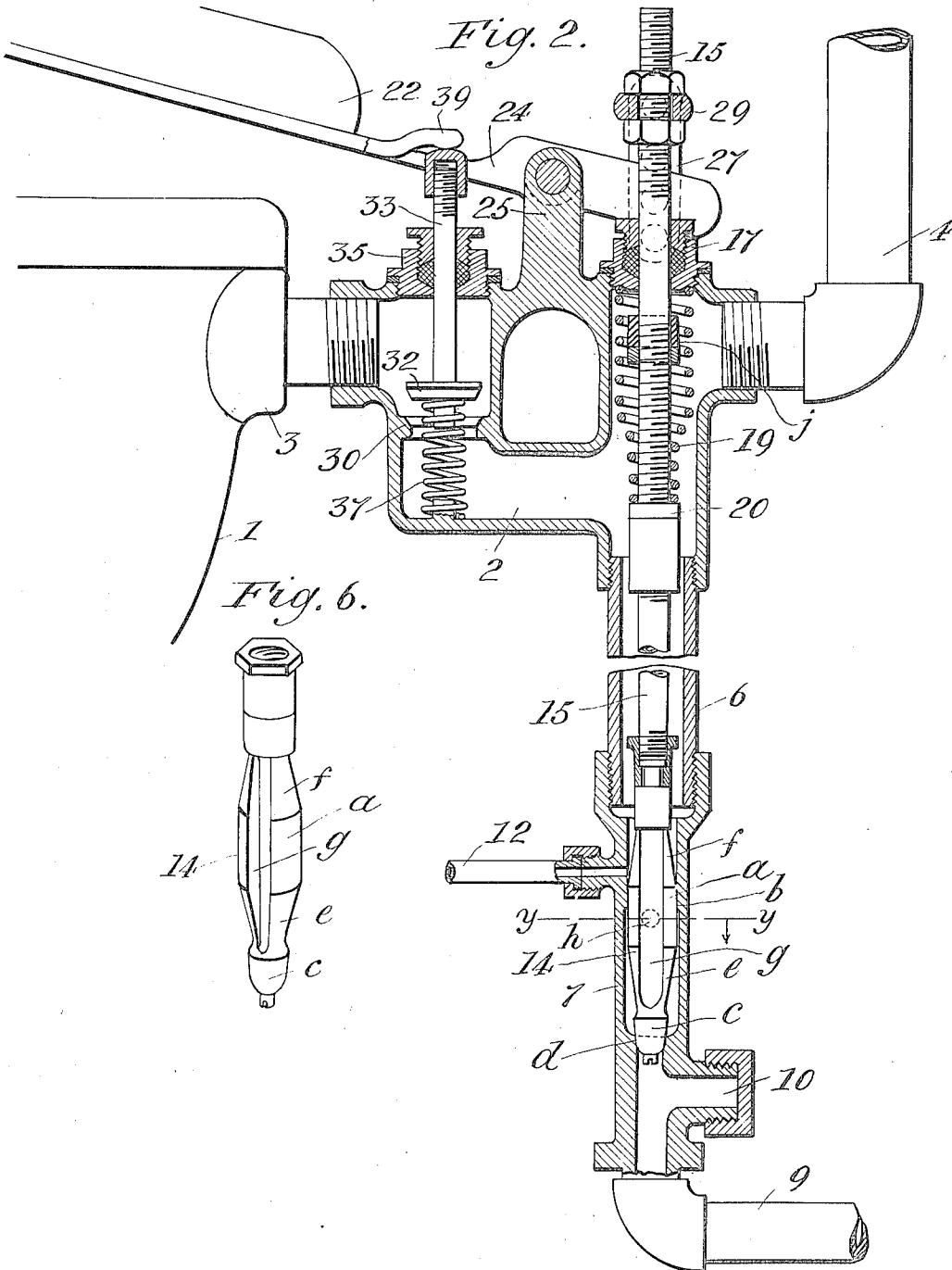
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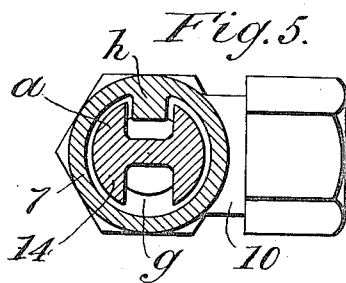
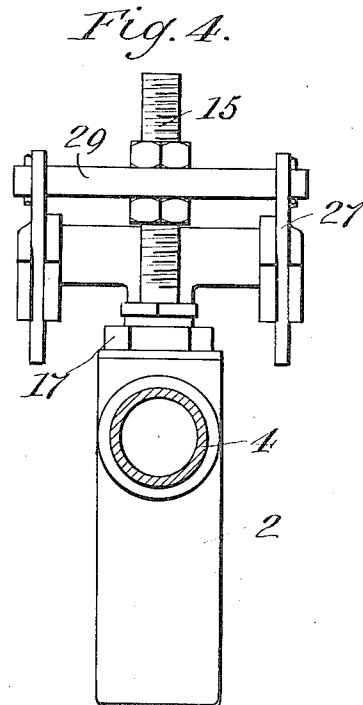
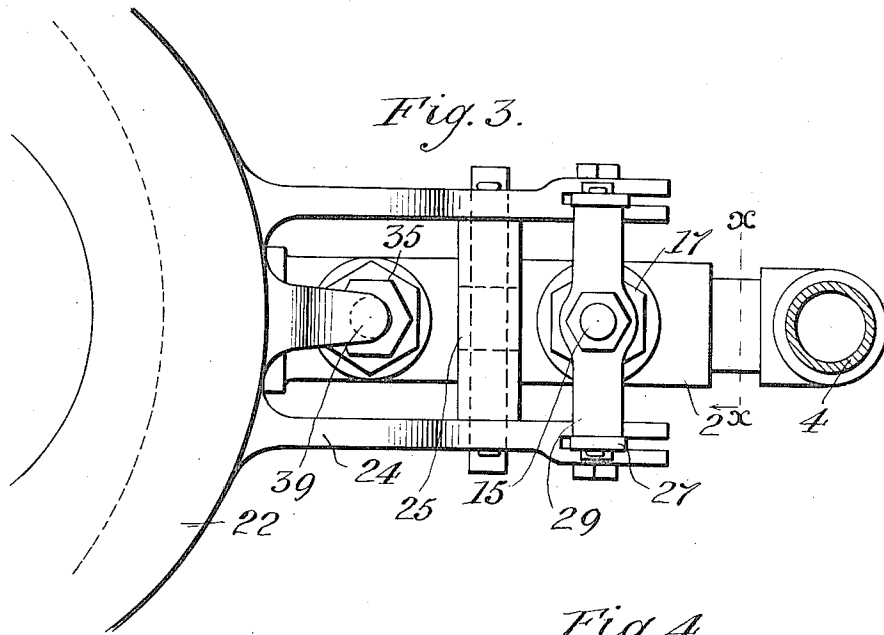
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3 SHEETS-SHEET 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

IZAAK FRENKIL, OF BALTIMORE, MARYLAND.

NON-FREEZING WATER-CLOSET.

1,045,275.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed January 27, 1912. Serial No. 673,951.

*To all whom it may concern:*

Be it known that I, IZAAK FRENKIL, a citizen of the United States, and resident of Baltimore, Maryland, have invented certain Improvements in Non-Freezing Water-Closets, of which the following is a specification.

In the description of the said invention which follows, reference is made to the accompanying drawings forming a part hereof, and in which:—

Figure 1 is an exterior side view of the improved closet; and Fig. 2 an enlarged vertical side section of the valve mechanism and their attachments employed therein. Fig. 3 is a plan of Fig. 2; and Fig. 4 a section taken, on the line  $x-x$  in Fig. 3. Fig. 5 is a section taken on the line  $y-y$  in Fig. 2; and Fig. 6 is a perspective view of a certain valve forming a part of the apparatus.

Referring now to the drawing, 1 is the bowl of the closet, and 2 a shell secured by a nipple to the nozzle 3 of the bowl.

4 is a pipe leading from the shell 2 to the flushing tank 5 which is shown only in Fig. 1. This tank is fitted with a valve to admit air as the tank is discharged of water.

6 is the main water supply pipe extending downward from the shell 2, to the valve chamber 7 the bottom of which is connected to the service pipe 9. The said valve chamber is provided with a nozzle 10 to be used in case it should be necessary to connect the service pipe to the side of the shell instead of to its bottom as shown.

12 is a drain pipe leading from the valve chamber 7 to the trap 13 shown only in Fig. 1.

14 is a valve comprising the central part  $a$  which is cylindrical and fits closely to the bored portion  $b$  of the chamber 7, so as to control the drain pipe 12; and the soft rubber lower end  $c$  of the valve is adapted to close the opening  $d$  when the drain pipe 12 is open to the trap 13. The portion  $e$  of the valve 14 between the cylindrical part  $a$  and the soft rubber end  $c$ , is tapered, as is also the portion  $f$  above, to which is screwed the valve stem 15 extending upward and through the packing box 17 in the top of the shell 2. In order that water may pass the valve 14 when lifted, and enter the shell 2, it is grooved, the grooves being denoted by  $g$ ; and one of the said grooves in connection with the lug  $h$  in the valve

chamber 7 shown in Figs. 2 and 5 prevents the rotation of the valve and the exposure of either groove to the opening leading to the drain pipe 12.

A compressed spiral spring 19 on the valve stem 15, and confined endwise between the packing box 17 and a collar 20 on the stem, tends to keep the valve 14 on its seat around the opening  $d$ ; and to prevent leakage through the packing box, should the stem become reduced in size by continued use, or the packing be defective, the stem is provided with a rubber collar  $j$  which is within the spring 19, which when the valve is lifted, bears tightly against the bottom of the box and seals it.

22 is the seat fastened to the branched lever 24 which is fulcrumed to a lug 25 on the top of the shell 2. The ends of the branches of the lever 24 are connected by means of links 27 to a crosshead 29 held by jam nuts to the stem 15. The object of this indirect connection between the lever 24 and the crosshead 29 is to prevent the arc described by the ends of the lever giving a lateral movement to the stem.

30 is a valve seat in the shell 2, and 32 a valve which controls the opening within the seat. Its stem 33 extends through a packing box 35 at the top of the shell 2; and due to the valve being yieldingly supported in an open condition by means of the coiled spring 37, the stem bears against a lug 39 forming a part of the branched lever 24, and thereby coöperates with the spring 19 to hold the seat 22 yieldingly in an elevated position.

Supposing the various parts of the apparatus to be in the positions shown in Fig. 2, it will be understood that the flushing tank is empty, the opening  $d$  closed by the valve 14 and the drain pipe 12 in communication with the main pipe 6 so that no water is trapped and liable to freeze in the apparatus. When the seat 22 is depressed, the valve 32 is closed, and water under service pressure passes the valve 14 and enters the flushing tank 5 which is immediately filled. At the same time the drain pipe 12 is closed and in consequence there is no escape for the entering water. When the seat 22 is allowed to rise, the valve 14 cuts off the supply water, and the valve 32 being opened, the bowl is flushed by water descending from the tank 5; and any water remaining in the shell 2 leaks out through the drain

pipe 12 which is then open or disclosed by reason of valve 14 being in its lowest position.

I claim as my invention:—

5 1. In a non-freezing water closet, the combination of a practically closed flushing tank, a bowl, a shell interposed between and open to the said parts, having a flushing passage therein, a spring-sup-  
10 ported and normally unseated valve to control the flushing passage; a stem leading from the valve, a seat-supporting lever fulcrumed to the shell with one arm thereof bearing on the flushing valve stem, a valve  
15 chamber situated below and in communication with the shell and through it with the flushing tank, having a drain pipe and an opening leading to a source of supply of water under pressure, a spring held and nor-  
20 mally closed valve to control the source of water supply and also the discharge through the drain pipe, and a stem leading from the second valve and connected with the other arm of the seat-lever, substantially as  
25 specified.

2. In a non-freezing water closet, the combination of a practically closed flushing tank, a bowl, a shell interposed between and open to the said parts, having a flushing  
30 passage therein, a spring-supported, and normally unseated valve to control the flushing passage, a stem leading from the valve, a seat-supporting lever fulcrumed to the shell with one arm thereof bearing on the  
35 stem, a cylindrical valve chamber situated below and in communication with the shell, having a drain pipe and an opening leading to a source of supply of water under pressure, a non-rotatable spring-held and nor-

mally closed valve in the cylindrical cham- 40  
ber, to control the source of water supply, the same having a stem which connects it to the other arm of the seat-lever, and a cylindrical and longitudinally grooved part to control the drain pipe opening, and  
45 adapted when lifted to admit water to the shell and thence to the flushing tank, substantially as specified.

3. In a non-freezing water closet, the combination of a practically closed flushing 50  
tank, a bowl, a shell interposed between and open to the said parts having a flushing passage therein, a spring-supported and normally unseated valve to control the flushing  
55 passage, a stem leading from the valve, a seat-supporting lever fulcrumed to the shell with one arm thereof bearing on the stem, a cylindrical valve chamber situated below and in communication with the shell, and  
60 also with the flushing tank, having a drain pipe opening, and a radially projecting internal lug, a spring-held and normally closed valve situated in the cylindrical chamber, to control the source of water sup-  
65 ply, having a stem, a crosshead on the stem, and links which connect the crosshead with the other arm of the lever, the said valve having a cylindrical part to control the drain pipe opening and grooves either one  
70 of which is adapted to receive the said lug, and also adapted when the valve is lifted to admit water to the shell and thence to the flushing tank, substantially as specified.

IZAAK FRENKIL.

Witnesses:

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