

No. 754,247.

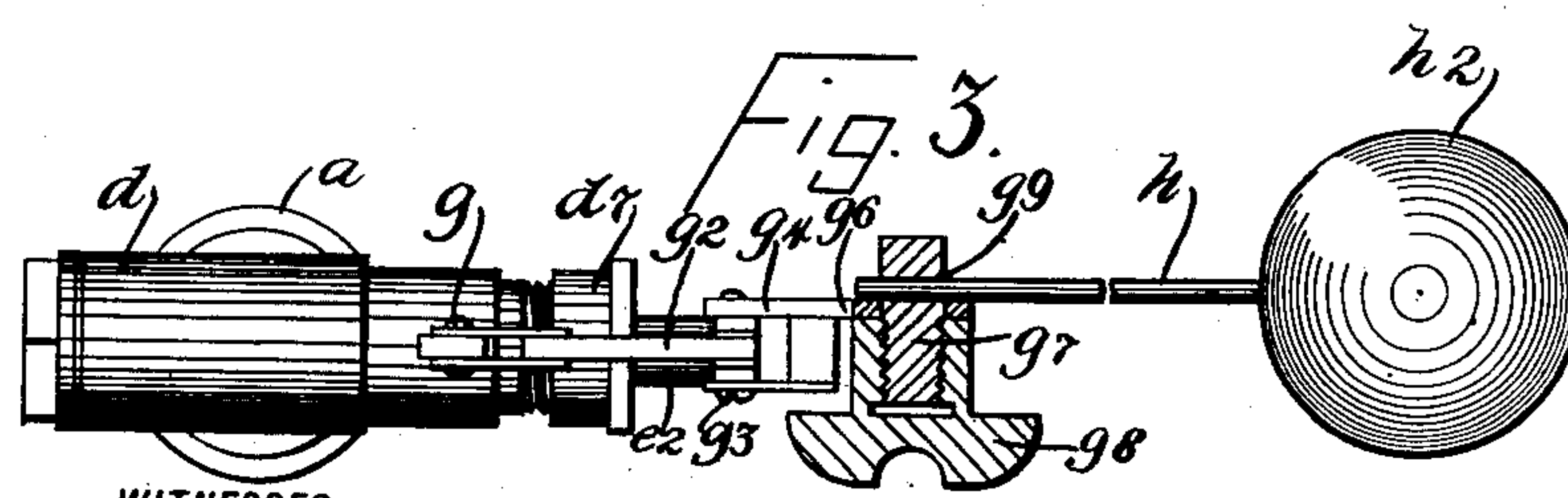
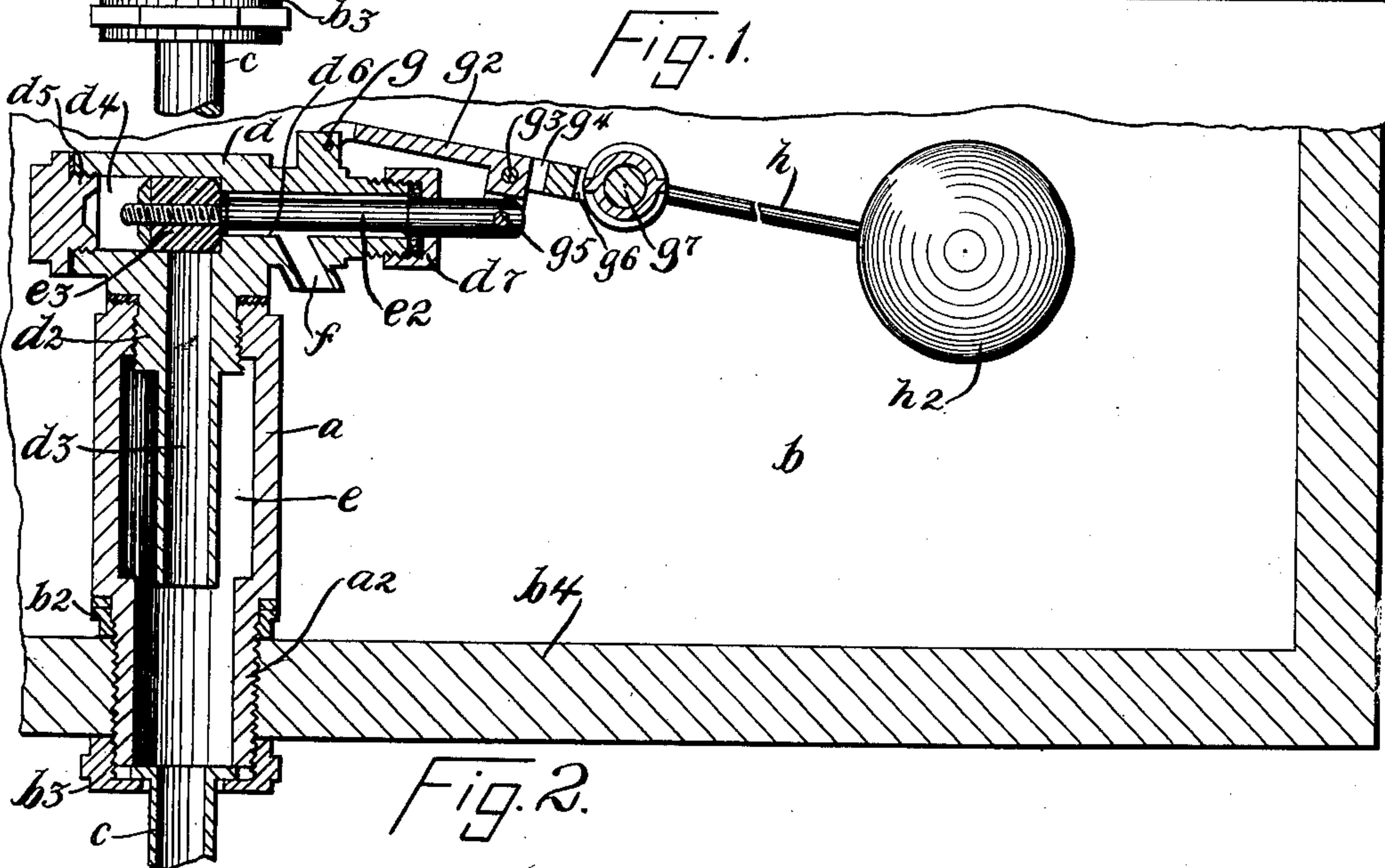
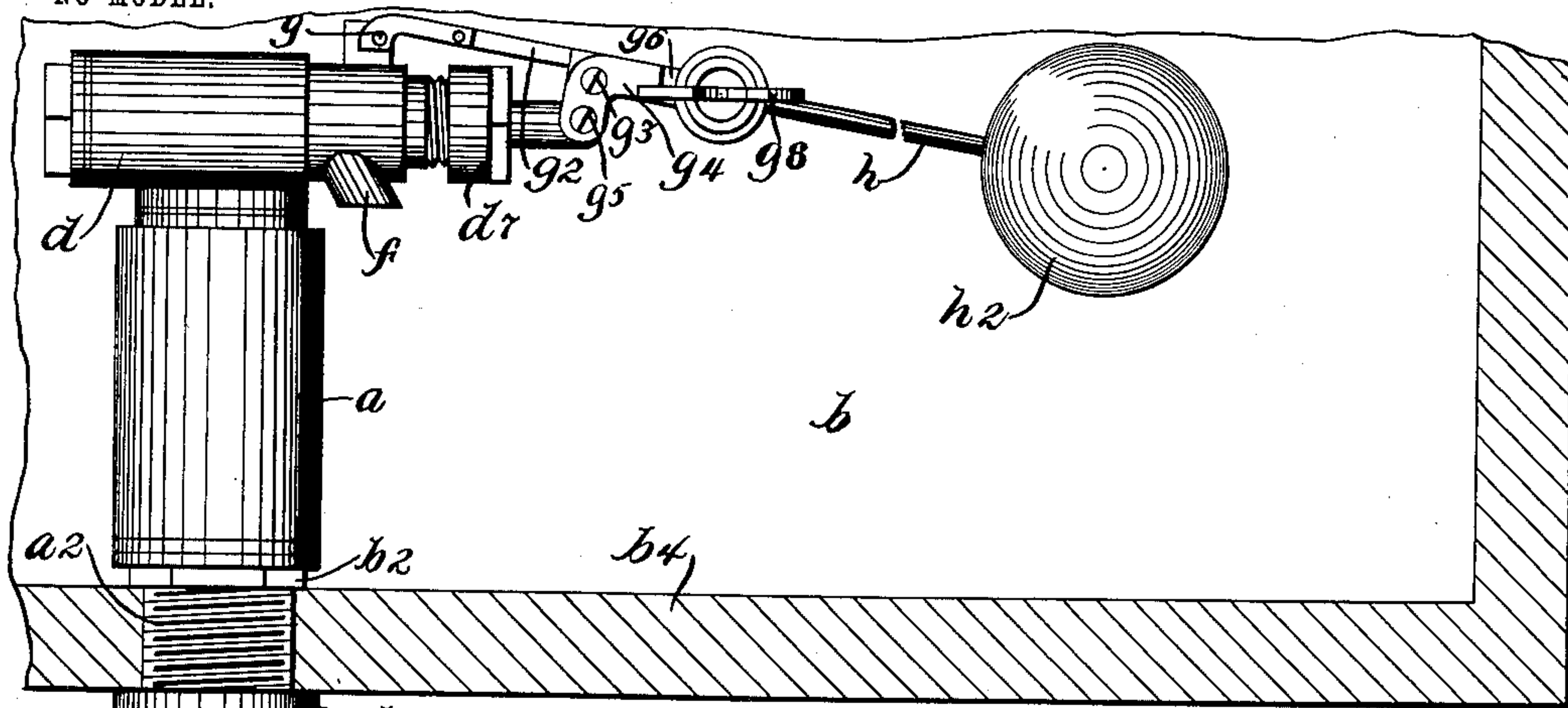
PATENTED MAR. 8, 1904.

J. H. SEAGER & J. J. KELLY.

FLUSH TANK APPARATUS.

APPLICATION FILED APR. 21, 1903.

NO MODEL.



WITNESSES

S. L. Gottheimer.
J. C. Larsson

BY

INVENTORS

James H. Seager
John J. Kelly

Edgar Sater & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES H. SEAGER AND JOHN J. KELLY, OF FLUSHING, NEW YORK.

FLUSH-TANK APPARATUS.

SPECIFICATION forming part of Letters Patent No. 754,247, dated March 8, 1904.

Application filed April 21, 1903. Serial No. 153,708. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. SEAGER and JOHN J. KELLY, citizens of the United States, residing at Flushing, in the county of Queens and State of New York, have invented certain new and useful Improvements in Flush-Tank Apparatus, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the flush-tanks of water-closets; and the object thereof is to provide improved means for controlling the flow of the water into tanks of this class, a further object being to provide means to prevent the "hammering" which almost always accompanies the operation of apparatus of the class, and thus avoid a very disagreeable feature thereof.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of our improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a sectional side view of a part of a flush-tank provided with our improvement, which is shown in full lines; Fig. 2, a similar view showing the improvement in central vertical section; Fig. 3, a sectional plan view of the improvement removed from the tank.

In the drawings forming part of this specification the means for conveying water from the tank to the basin or other article to be flushed is not shown, this invention relating only to the means for conveying the water into the tank, and in the practice of our invention we provide a casing *a*, having at its lower end a screw-threaded member *a*², which passes through the bottom of the tank *b*, and which is preferably packed both above and below said bottom, as shown at *b*² and *b*³, and connected with the lower end thereof is a pipe *c*, which serves as a water-supply pipe. We also provide a piston or valve casing *d*, which is arranged transversely of the top of the casing *a* and provided at the bottom thereof with a screw-threaded member *d*², which is screwed into the top of the casing *a*, and which is pro-

vided with a downwardly-directed tubular member *d*³, which extends almost to the bottom of the casing *a* and around which is an annular chamber or space *e*, which is in free communication with the interior of the screw-threaded member *a*² of the casing *a*, which passes through the bottom *b*⁴ of the tank *b*.

Within the valve or piston casing *d* is a horizontally-arranged chamber *d*⁴, one end of which is closed by a screw-threaded plug *d*⁵, and the other end of said casing is extended and provided with a longitudinal bore *d*⁶, which is closed by a cap *d*⁷ in the usual manner, and passing through the bore *d*⁶ and the cap *d*⁷ is a piston or valve rod *e*², the inner end of which is connected with a piston or valve *e*³ within the piston or valve chamber *d*⁴, and one side, preferably the bottom, of the extension of the casing *d* is provided with a large port or passage *f*, which communicates with the bore *d*⁶, and said bore *d*⁶ is much larger in diameter than that part of the piston or valve rod *e*² which passes therethrough.

Pivotally connected with the top portion of the extension of the casing *d* at *g* is an arm *g*², to which is pivoted at *g*³ a crank-yoke *g*⁴, to which the outer end of the piston or valve rod *e*² is pivoted at *g*⁵, and said crank-yoke is provided with a projecting member *g*⁶, through which passes a screw *g*⁷, provided with a thumb-nut *g*⁸, and the head portion of said screw on the side of the projecting member *g*⁶ opposite the thumb-nut *g*⁸ is provided with a transverse passage *g*⁹, through which passes a float-rod *h*, with which is connected a float *h*², and by means of the thumb-nut *g*⁸ the position of the rod *h* in the head of the screw *g*⁷ may be adjusted so as to bring the float *h*² nearer to or farther from the valve or piston rod *e*², as may be desired.

The central bore of the tube *d*² within the casing *a* communicates with the piston or valve chamber *d*⁴ near the inner end of said chamber, and the piston or valve *e*³ is designed to close and open said bore in the operation of the apparatus as hereinafter described, and it will be understood that by means of the thumb-nut *g*⁸ the float *h*² may be rigidly held in any desired position, as the head of the screw *g*⁷ is cylindrical in form and movable through the

extension or projection g^6 of the crank-yoke g^4 , and the thumb-nut g^8 thus serves both as a means for adjusting the position of the rod h and also for locking it in any desired position, and the said rod forms practically an extension of the arm g^2 , and it is by this arm and the float h^2 that the valve or piston e^3 is operated, said valve or piston being operated directly by the float h^2 , the operative connection of which is with the arm g^2 .

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof: It will be understood that the water is free to flow at all times through the pipe c , and supposing the tank b to be empty and the float h^2 to be in its lowest position the passage through the pipe d^3 and through the chamber d^4 and the bore d^6 and the outlet port or passage f will also be open, and the water will rise into the interior of the casing a and pass through the pipe d^3 and through the chamber d^4 and the bore d^6 and the port or passage f into the tank b , and when the water reaches the desired height in said tank the float h will be raised in the position shown in Fig. 2 and the piston or valve e^3 will close the passage through the pipe d^3 and cut off the flow of water into said tank. It will be understood that in the operation of flushing the water is discharged from the tank b by the usual apparatus, which is not shown, and in this operation the float h^2 falls and the rod e^2 is forced inwardly, and the passage through the pipe d^3 is again opened, and the water is again free to flow into the tank until the float rises to the position shown in Fig. 2, when the passage through the pipe d^3 and its connected parts will be again cut off.

It is a well-known fact that in the operation of apparatus of this class the flow of water through the pipe c into the tank, as hereinbefore described, produces a hammering which is very objectionable; but with our improvement the chamber e in the casing a is filled with air, which forms a cushion, and when the water flows into the tank, as hereinbefore described, and especially at the time when the operation of the float h^2 closes the passages

through the pipe d^3 , this air-cushion serves to prevent the hammering of the water referred to or the force of said water is taken up by the air-cushion and no sound of hammering is produced.

This device is simple in construction and comparatively inexpensive and may be employed wherever apparatus of this class is desired, and it will be apparent that changes in and modifications of the construction described may be made without departing from the spirit of our invention or sacrificing its advantages.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A water-supply device for flush-tanks, comprising a main casing one end of which is adapted to be secured in the bottom of a tank; a supplemental casing detachably connected with the top thereof and ranging transversely thereof and one end of which is closed by a removable plug and the other end of which is provided with an extension having a longitudinal bore, said supplemental casing being also provided with a tube which projects downwardly into said main casing a predetermined distance and with a horizontal valve-chamber communicating with said tube and with said horizontal bore and between which and said bore is a valve-seat; a valve mounted in said valve-chamber and adapted to close the communication with said tube and provided with a valve-rod which passes through said bore and outwardly through the end of said extension, said end being closed by a removable cap; and a float-rod loosely connected with said supplemental casing at the top thereof and in operative connection with the outer end of said valve-rod, substantially as shown and described.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of the subscribing witnesses, this 20th day of April, 1903.

JAMES H. SEAGER.
JOHN J. KELLY.

Witnesses:

J. C. LARSEN,
F. A. STEWART.