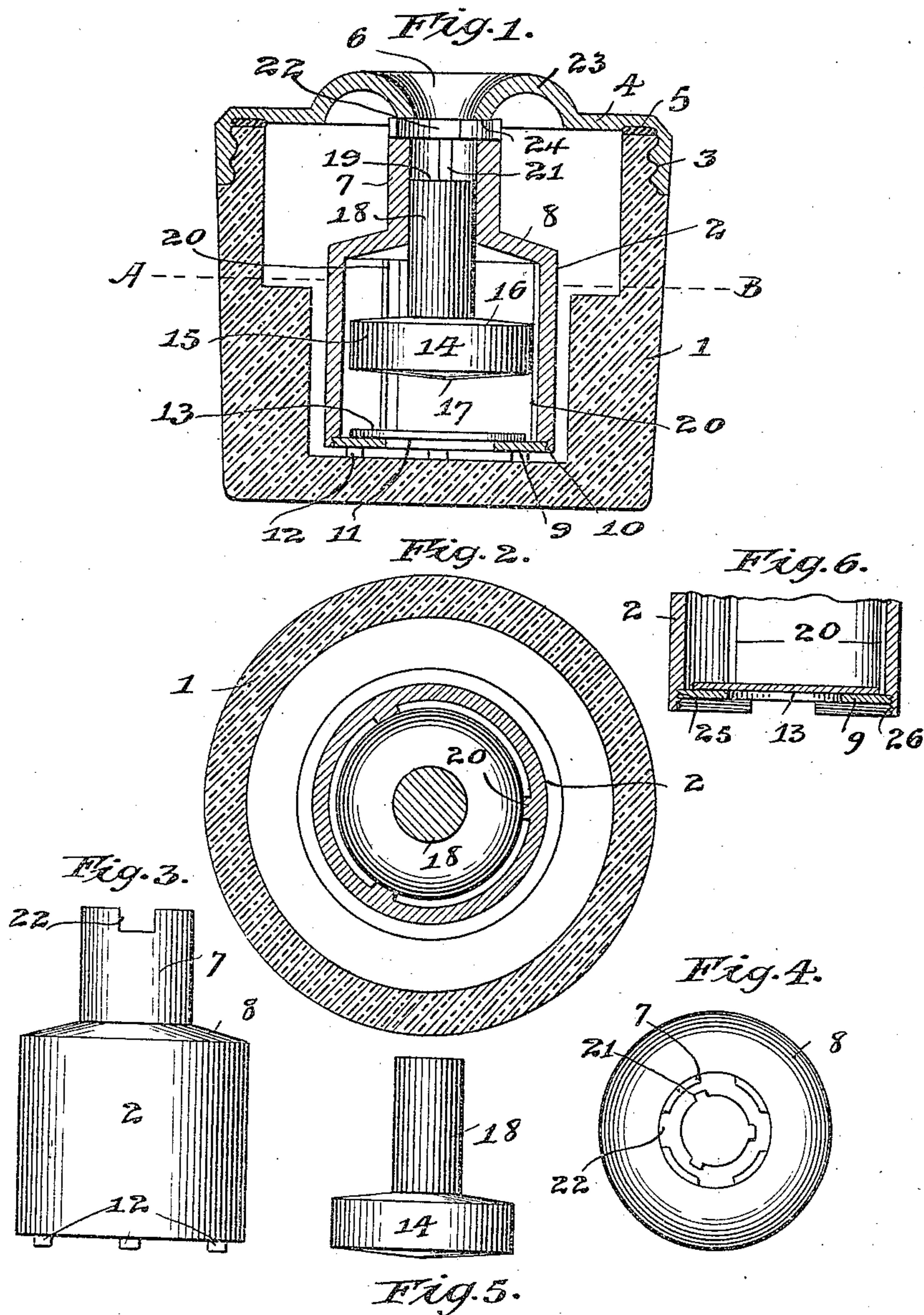


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G. J. SENGBUSCH.
INK WELL.

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UNITED STATES PATENT OFFICE.

GUSTAV J. SENGBUSCH, OF MILWAUKEE, WISCONSIN.

INK-WELL.

No. 841,345.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GUSTAV J. SENGBUSCH, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Ink-Wells, of which the following is a description.

My invention relates to improvements in ink-wells of that general type in which there is inclosed in the main body of the well a fountain-chamber with an upwardly-leading delivery member and a plunger arranged within the fountain-chamber and provided with an extension rising into the dip-recess, so that as the plunger is depressed ink is caused to well upwardly into the dip-recess.

The salient objects of my invention are to provide a construction in which an overflow is provided from the dip-recess back into the main body of the well, so that it is impossible to cause the ink to spurt up and flow outside of the well, combined with a check-valve mechanism controlling the inflow to the fountain-chamber, to provide a construction wherein the plunger takes the form of a float which acts to seal the dip-opening while the ink-well is not in use and is so formed and guided that it is extremely certain in its operation, to provide a construction of which the several parts may be economically and accurately formed and assembled with great readiness, to provide an improved construction which enables all parts of the device to be readily cleansed without separating those parts which are difficult to reassemble, to provide a construction which will permit the accumulation of a considerable amount of sediment in the base of the well without in any wise interfering with the successful operation of the same, and in general to provide an improved construction of the character referred to.

The invention is an improvement on a prior invention patented to me in reissue Letters Patent of the United States No. 12,264, dated August 23, 1904.

I attain the foregoing objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical or axial section of the main portions of the well. Fig. 2 is a cross-section on line A B of Fig. 1. Fig. 3 is a side elevation of the fountain-chamber. Fig. 4 is a plan view of the same. Fig. 5 is a side ele-

vation of the plunger, and Fig. 6 is a sectional detail of the lower end portion of a modified construction of the fountain-chamber.

In said drawings, 1 designates the main well, which is cup-shaped and may be of any suitable shape and material. Preferably it is internally circular and the lower portion of the well or ink-cavity of reduced diameter, so as to be but little larger than the exterior of the fountain-chamber, (designated at 2.)

The rim of the main body is conveniently externally threaded, as indicated at 3, to receive a top cap or closure 4, correspondingly threaded to fit thereon. This top cap is preferably of hard rubber, and at the point where it overlies the upper edge of the cap a sealing-ring 5, of soft rubber, is interposed. The cap is provided with a raised portion 23, which is centrally depressed and centrally apertured, as indicated at 6, to form the upper part of a dip-recess.

The fountain-chamber 2 desirably takes the form of a cylindric member, provided at its upper side with a centrally-disposed up-standing tubular extension 7, the top wall 8, which unites the cylindric sides of the main body with the lower end of the tubular extension, being upwardly inclined or conical. The top end of the tubular extension 7 is recessed and rises to and fits around the downturned portion 24, which forms the perimeter of the aperture 6, thus serving to hold the fountain-chamber centered. The lower end of the fountain-chamber is partially closed by a washer-like member 9, the periphery of which is fitted within a slightly undercut recess 10, formed in the bottom edge of the main-chamber body. The member 9 is provided centrally with a relatively large opening 11, and desirably this member is made of hard rubber or other slightly elastic material, so that it may be forced into the slightly undercut seat 10 and retained therein with sufficient security. This member may, if preferred, have screw-threads 25 and be seated in corresponding threads 26, formed in the main chamber-body, as shown in the modification illustrated in Fig. 6. In order to support the chamber somewhat above the flat bottom of the well, the member 9 is desirably provided with a number of short legs 12. The opening 11 is controlled by a disk 13, desirably of hard rubber or glass, which rests by gravity upon the bot-

tom of the chamber and tightly closes said opening when seated. This disk is of such weight as to rise readily whenever the hydrostatic balance between the interior of the fountain-chamber and the main well is destroyed and is less in the former.

14 designates the float, which is hollow throughout and constitutes a completely-sealed member. The main body member 15 thereof desirably takes the form of a relatively short cylinder of slightly less diameter than the interior of the cylindric portion of the fountain-chamber and which is provided with slightly convex upper and lower walls 16 and 17, respectively. The upper portion of the plunger takes the form of a tubular extension 18, which extends upwardly and fits easily within the tubular extension 7 of the fountain-chamber, the length of said extension 18 being such that when the float is elevated to its normal position its closed upper end 19 engages the downturned edge 24 of the top cap and seals the opening 6 through the latter. The main body 15 of the float is guided and centered in the chamber by means of a plurality of ribs 20 upon the interior of the fountain-chamber.

In order to provide for the flow of ink from the fountain-chamber to the space above the upper end of the plunger extension, (when the latter is depressed,) a plurality of grooves 21 are formed within the interior of the extension 7, and to provide for a free overflow from the upper end of the extension 7 radially outward into the main body of the well lateral openings 22 are formed in the upper end of such extension 7. These openings conveniently take the form of notches formed in the extreme end of the extension, as best seen in Figs. 3 and 4.

It is to be noted that the upper ends of the grooves 21 are overhung by the flattened surface 24, which surrounds the dip-opening 6, so that said surface acts as a stop or deflector which prevents the ink from spurting upwardly through the dip-opening, especially when the float is depressed suddenly.

The operation of the device will be obvious, but may be briefly stated. The top cap having been removed and ink poured into the main chamber, it flows upwardly through the port and check-valve into the fountain-chamber and balances the hydrostatic pressure inside and outside of the latter. When the cover is replaced, the upper end of the float, which is carried by the liquid in the chamber, engages the central portion of the cover and seals the dip-opening in the latter. If now a pen be inserted, it engages the upper end of the float and depresses the latter, thereby causing the ink to well up through the passages 21 and pour into the space left above the end of the float, the outflow through the bottom of the fountain-chamber being obviously prevented by the check-

valve. A surplus of ink will be forced into the dip-recess; but this will immediately overflow through the passages 22 back into the main chamber, and when the pen is withdrawn and the float freed to rise the hydrostatic pressure will cause the ink to flow through the check-valve into the fountain-chamber and again equalize the pressure. These operations will of course be repeated each time a pen is dipped into the well.

I claim—

1. An ink-well having a main chamber, a closure for the upper end thereof provided with a dip-opening, a fountain-chamber arranged within the main chamber and having communication with the lower part of the latter through a passage, a check-valve controlling said passage, a tubular extension rising from the fountain-chamber to said top closure and at its upper end surrounding the dip-opening and having a passage affording communication between the upper part of the main chamber and the space normally occupied by the upper end of the float extension, a float within the fountain-chamber having an upper extension rising, when the float is natant, to the dip-opening and closing the latter, and means forming a passage leading from the fountain-chamber to the dip-opening.

2. An ink-well having a main chamber, a closure for the upper end thereof provided with a dip-opening, a fountain-chamber arranged within the main chamber and having communication with the lower part of the latter through a passage, a check-valve controlling said passage, a tubular extension rising from the fountain-chamber to said top closure and at its upper end surrounding the dip-opening and having a passage affording communication between the upper part of the main chamber and the space normally occupied by the upper end of the float extension, a float within the fountain-chamber having an upper extension rising, when the float is natant, to the dip-opening and closing the latter, and means forming a passage leading from the fountain-chamber to the dip-opening and a deflector-stop arranged to overhang the delivery end of said passage.

3. In a fountain ink-well, the combination with a main body having a main chamber and a cover therefor provided with a dip-opening, of an upwardly - pressed feed-controller within the well normally closing said dip-opening, a stationary member surrounding the upper end of said feed-controller and forming therewith, when the feed-controller is depressed, a dip-recess, said surrounding member being provided with a passage affording communication between the dip-recess and the main chamber, a fountain-chamber having an inlet-passage inclosing said feed-controller, means forming one or more ducts leading from the fountain-

chamber to said dip-recess whereby the ink is circulated from the fountain mechanism into the dip-recess and thence through the passage into the main chamber, and a valve
5 operating to close the inlet to the fountain chamber by back pressure of the liquid therein.

4. In a fountain ink-well, the combination of a main body having a main chamber, a top
10 cover therefor provided with a dip-opening, a fountain-chamber arranged within said main chamber provided with an inlet in its lower portion and having a tubular extension at its upper side extending to and surround-
15 ing said dip-opening, said fountain-chamber having a passage leading radially from the upper end of said tubular extension to said main chamber, a float having its main body arranged within said fountain-chamber and
20 provided with an extension rising through the tubular extension of said fountain-chamber, said tubular extension having feed-ducts leading from the fountain-chamber upwardly alongside said float extension to the space
25 above the latter, the lower surface of the body of said float being of different shape from that of the inner bottom surface of the fountain-chamber, whereby sticking of the float in its depressed position is avoided.

5. In a fountain ink-well, the combination 30 with a main body having a main chamber and a top cover therefor provided with a dip-opening, a separately-formed fountain-chamber having a bottom wall arranged within the main chamber and an inlet-opening through 35 said bottom wall, a flat seat surrounding said inlet-opening within the chamber, a gravity valve member resting upon said seat and normally closing the inlet and inlet-space leading from the main chamber be- 40 neath the bottom of the fountain-chamber to the inlet-valve, a tubular extension rising from the fountain-chamber to said top closure and at its upper end surrounding the dip-opening in the latter, and having a passage 45 affording communication between the upper part of said tubular extension and the upper part of the main chamber, and a float within the fountain-chamber having an upper extension rising within the tubular extension 50 of the fountain-chamber and adapted to engage the perimeter portions surrounding the dip-opening to seal the latter when the float is natant.

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Witnesses:

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