

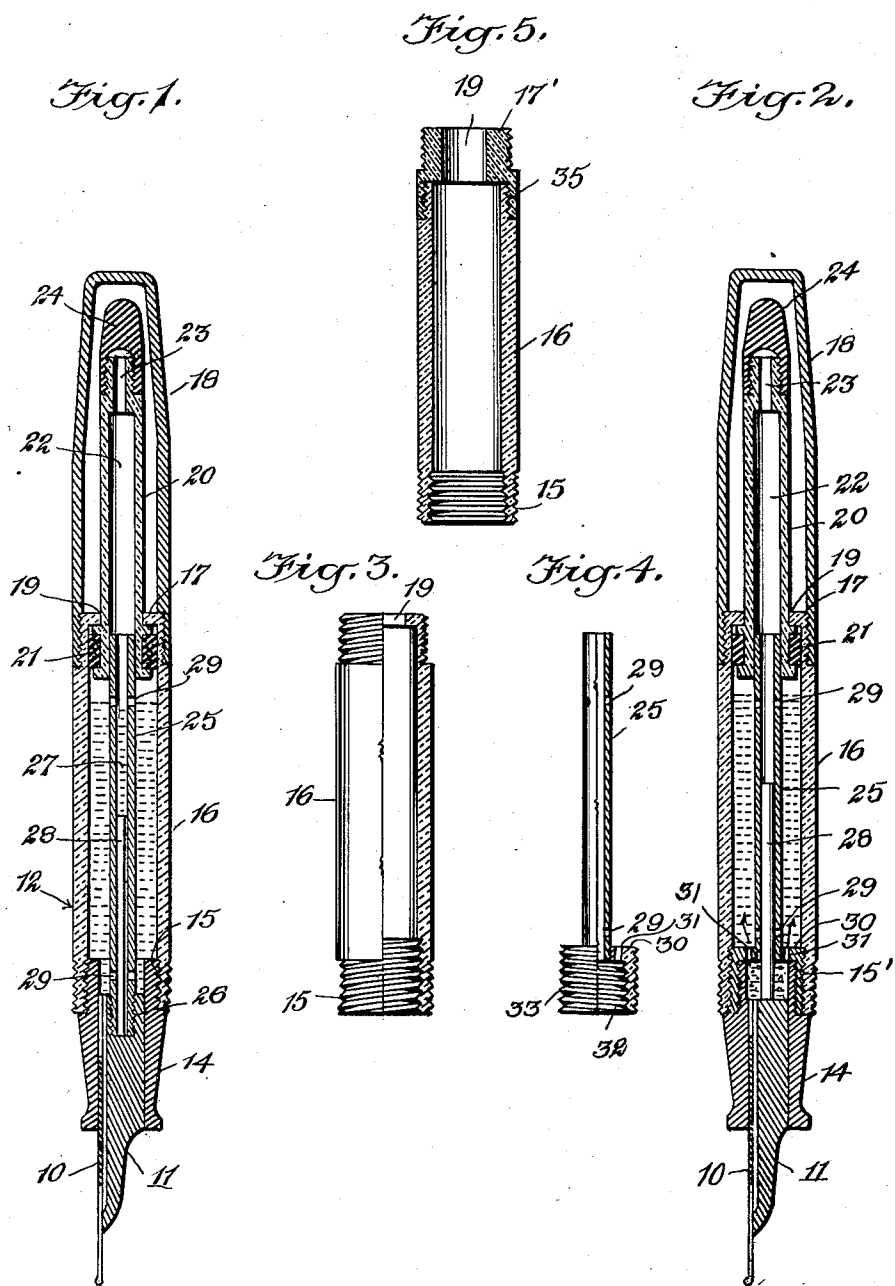
Oct. 26, 1937.

I. SALZ

2,097,256

FOUNTAIN PEN

Filed Dec. 18, 1936



WITNESSES
Geo. W. Maylor
O. H. Kane

INVENTOR
Ignatz Salz
BY
Mumm, Anderson & Liddy
ATTORNEYS

UNITED STATES PATENT OFFICE

2,097,256

FOUNTAIN PEN

Ignatz Salz, New York, N. Y.

Application December 18, 1936, Serial No. 116,466

3 Claims. (Cl. 120—42)

This invention relates to improvements in fountain pens and has particular relation to fountain pens in which the writing fluid is produced in the reservoir or well by means of an ink cartridge, pellet, or stick and a suitable solvent therefor.

It is a particular object of the invention to provide an improved pen of this character in which the ink stick or cartridge can be inserted in the reservoir and will remain therein, gradually dissolving, for repeated fillings of the reservoir. The ink stick or pellet is held in such a manner that it will not be crushed or destroyed by reciprocations of the filling plunger when the pen is filled and so as not to interfere with the maximum reciprocation of the plunger so that the maximum amount of fluid can be drawn into the reservoir.

A further object is the provision of an improved pen of this character which can be economically manufactured, which will last for a long period of time with freedom from wear, which can be easily cleaned, and in which an ink pellet can be conveniently inserted and will be held in the reservoir in such a manner as to serve for repeated fillings of the reservoir with a solvent.

I accomplish the above and other objects in part by providing in the reservoir of the pen a perforated tube for holding the ink pellet or stick, the tube and perforations therein being so arranged that when a solvent such as water is introduced into the reservoir a portion of the stick or pellet will dissolve forming a writing fluid. The tube protects the undissolved portion of the pellet or stick and prevents it from being crushed. Furthermore, the tube is so positioned as not to interfere with the reciprocation of the filling plunger.

For a fuller understanding of the invention reference should be had to the accompanying drawing in which—

Fig. 1 is a longitudinal sectional view of a fountain pen embodying my invention;

Fig. 2 is a similar view of a modified type of pen embodying my invention;

Fig. 3 is an elevation, partly broken away, of the well or reservoir portion of the pen;

Fig. 4 is an elevation, partly broken away, of the perforated tube used in the form of my invention shown in Fig. 2; and

Fig. 5 is a longitudinal sectional view of a modified type of reservoir or well.

Referring to the first form of my invention, my pen has a nib 10 and a feeder 11 of conventional design which are connected in the usual manner

in the end of the barrel 12, the feeder being provided with air and fluid ducts connecting the nib with the well or reservoir of the barrel.

The barrel includes an end portion shown at 14 which supports the nib and feeder and which is provided with a reduced externally threaded shank 15 to which the well or reservoir portion of the barrel 16 is threaded. The upper end of the reservoir or well portion is provided with a shank 17 of reduced diameter to which is threaded the upper end of the barrel indicated at 18. The three sections of the barrel are of such a size and shape as to properly fit together and form a unitary fountain pen barrel of harmonious appearance. The barrel is preferably made of some plastic material such as cellulose acetate, pyroxylin, or the like, and the reservoir or well portion 16 is preferably transparent so that the amount of writing fluid in the well can readily be ascertained.

An opening 19 is preferably formed through the upper end of the reservoir or well portion 16 to receive the hollow stem 20 of the reciprocating plunger or piston which is used in filling the well. Around the lower end of the stem 20 an annular washer 21 is provided and it is preferably formed of cork composition material, leather or the like, which will form sealing engagement between the lower end of the stem and the inside of the well, thus forming a suitable piston or plunger to be used in filling the well.

As previously stated, the stem 20 is hollow, being provided with a central duct 22 extending from the lower end thereof to adjacent the top where it communicates with a duct 23 of reduced diameter extending to the top of the stem. The upper end of the stem is likewise of reduced diameter and is externally threaded so as to receive the cap or closure 24 which when it is threaded to the top of the stem, as shown in Figs. 1 and 2, provides sealing engagement therewith.

For receiving and protecting the ink sticks or pellets I provide a perforated tube 25 in the inside of the reservoir which may be suitably held in position as by being threaded into the upper end of the feeder as indicated at 26. The tube preferably extends substantially the entire length of the well so as to project inside the duct 22 formed in the plunger stem even when the plunger is in elevated position as shown in Fig. 1.

The tube 25 is hollow having a central bore 27 of a size to receive the conventional type of ink stick illustrated at 28 therein. It is also provided with a number of perforations 29 which may be spaced as desired. I have found that four perforations positioned as illustrated in Fig. 1 pro-

duce very satisfactory results but the number and arrangement may be varied.

In using my pen the end 18 of the barrel and the cap 24 of the piston stem are removed and an ink stick or pellet of a size to fit in the tube 25, such as is illustrated at 28 is then inserted through the duct or bore in the stem until it falls downwardly into the tube 25. The cap 24 is screwed tightly in place so as to form sealing engagement with the stem, and the plunger is then forced downwardly so as to evacuate the contents of the well. The nib and end of the feeder are then inserted in a suitable solvent for the ink stick or pellet, such as water, and the plunger raised to the elevated position shown in Fig. 1. As soon as water enters the well and comes into contact with the stick in the perforated tube it will cause a slight swelling thereof and will hold it tightly in position in the tube and prevent it from falling downwardly by gravity into the duct 22 in the stem 20 when the pen is turned so that the nib points upwardly. The water will gradually dissolve the ink in the ink pellet or stick until a suitable writing fluid is formed in the barrel. One filling of the well will normally only dissolve a small portion of the ink pellet or stick with the result that after all of the writing fluid in the well has been used it can again be filled with water and additional writing fluid will be formed. This can be repeated a number of times or until all of the pellet or stick has been consumed. In practice I have found that a single pellet or stick will last for many fillings and will provide ink for a considerable period of time.

In Fig. 2 I have shown a modified form of the invention in which the nib, feeder, barrel and reciprocating plunger are of substantially the same construction as that shown in Fig. 1. The perforated tube 25, however, is supported in the well or reservoir in a slightly different manner. Instead of being threaded directly in an opening formed in the upper end of the feeder it is secured in the upper end of an inverted cup 30 which in turn is threaded to the reduced end portion of the member 14. The cup 30 is formed with a plurality of passageways 31 extending through the disk portion thereof so as to permit communication between the well and the feeder so that the well can be filled with water and so that the writing fluid can feed to the nib. The reduced end portion of the member 14 is indicated at 15' and is of slightly smaller diameter than the portion 15 in the first form of my invention. The cup 30 is screwed thereto by means of a lefthand thread. The cup 30 is also externally threaded and the well portion 16 of the barrel is screwed thereto by means of a righthand thread. In this way removal of the well 16 will not cause unscrewing of the cup 30. This is most clearly brought out in Fig. 4 where the internal lefthand threads are indicated at 32 and the external righthand threads at 33.

The operation of the pen shown in Fig. 2 is the same as has been shown in Fig. 1 with the exception that it is somewhat simpler to clear the well and perforated tube 25 in the second form of my invention than in the first form. In cleaning the tube it may be removed entirely from the barrel. In both forms of my invention cleaning of the tube may be accomplished by means of a pipe cleaner or similar elongated member formed of fabric or the like that can be inserted in the tube.

In Fig. 5 I have shown a modified form of well or reservoir which is somewhat easier to clean than that shown in the first two figures of my drawings. This type of well construction is particularly suited for use in connection with a perforated tube 25 as shown in the first form of my invention in Fig. 1. The shank indicated at 17' which is of reduced diameter and corresponds to the shank in the first form of my invention, instead of being formed integral with the remainder of the well portion, is threaded thereto in the manner of a cap as indicated at 35. It is provided, as in the first form, with an opening 19 to receive the piston stem. The well portion is assembled with the barrel as in the first form of my invention. In cleaning the apparatus the shank 17' may be removed from the remainder of the well portion thereby exposing a larger opening and facilitating the task of cleaning the inside of the well.

It will be seen that by means of the illustrated and described embodiments of my invention I have provided a fountain pen of improved construction which is adapted to receive and retain in the well thereof an ink pellet or stick in such a manner that the undissolved portions of the pellet will be protected and so that it may be used for repeated fillings. It will be seen furthermore that the pen is of relatively simple construction and that it can be conveniently filled and cleaned.

It should be understood of course that modifications may be made in the illustrated and described embodiments of my invention without departing from the invention as defined in the accompanying claims.

I claim:

1. In a fountain pen, a hollow cylindrical member forming a well, a nib, a feeder extending between the well and nib, a second hollow cylindrical member supporting said nib and feeder, and a perforated tube in said well for holding an ink stick or pellet, said perforated tube being supported on a collar threaded to said second cylindrical member and said first cylindrical member being threaded to said collar by an oppositely turned thread.

2. In a fountain pen, a hollow cylindrical barrel forming a well, a perforated tube for holding an ink pellet or the like mounted inside the barrel and projecting into the well, a piston inside the well and having an operating stem for reciprocating the piston extending beyond the end of the barrel, said piston and stem being formed with an opening communicating with the tube and through which an ink pellet may be inserted into the tube, and a removable closure for the opening.

3. In a fountain pen, a tubular barrel forming a well, a nib, a member forming a feeder between the well and nib, a perforated tube secured to said member and projecting longitudinally through the well for a substantial portion of the length thereof, a piston inside the well and having an operating stem for reciprocating the piston extending beyond the end of the barrel, said piston and stem being formed with a central bore communicating with and adapted to receive the tube and said bore serving as a passage through which an ink pellet may be inserted in the tube, and a removable closure for the bore.

IGNATZ SALZ.