

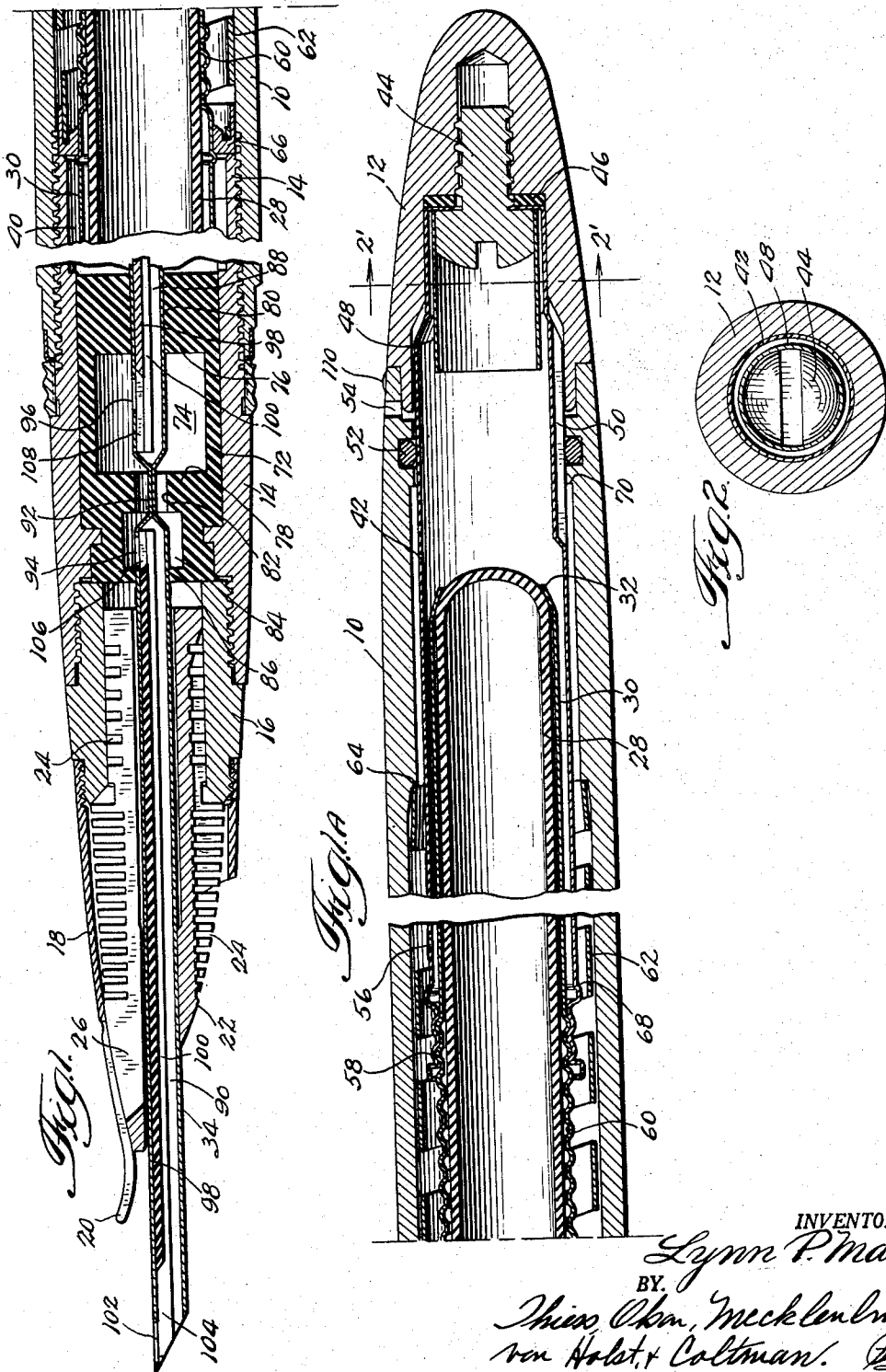
Nov. 24, 1959

L. P. MARTIN
WRITING IMPLEMENT

2,914,028

Filed Feb. 5, 1954

2 Sheets-Sheet 1



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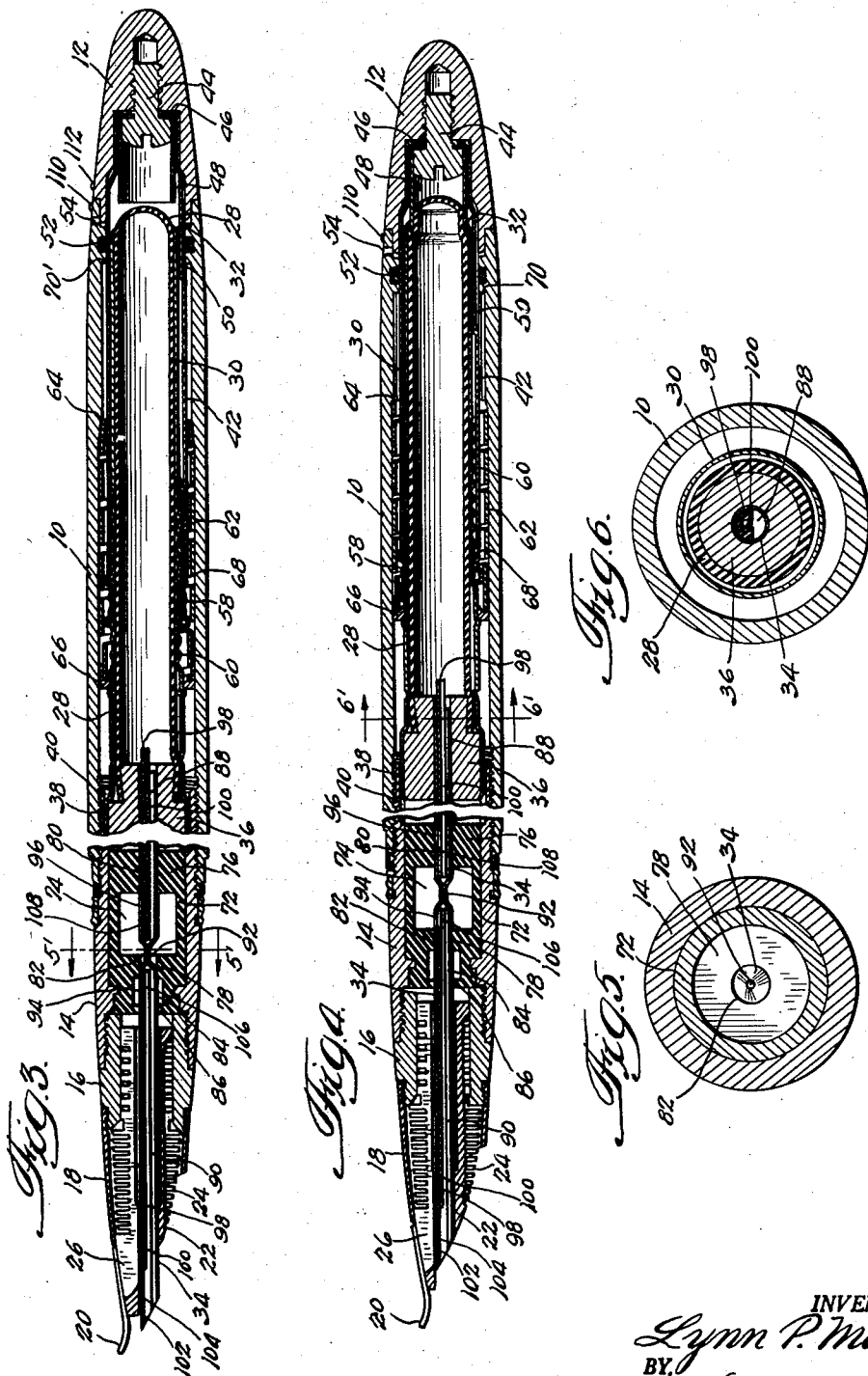
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2,914,028

WRITING IMPLEMENT

Lynn P. Martin, Fort Madison, Iowa, assignor to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware

Application February 5, 1954, Serial No. 408,317

8 Claims. (Cl. 120—42.16)

This invention relates to writing implements and has for an object the provision of a writing implement having a valved writing fluid reservoir normally sealed against access to the atmosphere when the implement is conditioned for writing.

At the present time there is no fountain pen on the market which is entirely leakproof when subject to extreme changes in temperature or barometric pressure. For example, if the ordinary fountain pen is taken in an airplane from sea level to an altitude of about 10,000 feet it will have a tendency to leak because the atmospheric pressure at high altitudes is considerably less than the pressure within the fluid reservoir which was initially filled at lower altitudes. In some writing implements the cap covering the writing point is vented. In such cases writing fluid will be expelled upon a rapid decrease in barometric pressure if the implement is held level or with the point extending downwardly due to the expansion of the body of air contained within the reservoir. One means that has been used in the past to control this undesirable feature to some extent is the provision in the forward end of the writing implement of an expansion chamber which may take the form of a series of comb cuts and grooves. However, such expansion chambers often are not capable of accommodating the amount of writing fluid that may be expelled during extreme and rapid changes in the barometric pressure. It has also been proposed in the past to provide a cap for the writing point of the implement which is substantially airtight so that the air pressure adjacent the writing point will not be substantially affected by changes in barometric pressure. However, if the unvented cap is removed when a condition of lesser barometric pressure has been reached and if at that time the implement is held flat or in a point-down position, a quantity of writing fluid may be suddenly expelled from the forward end of the implement. Accordingly, it is a further object of this invention to provide a writing implement which is substantially foolproof and will not expel writing fluid if the implement is subjected to rapid changes in atmospheric pressure such as may be encountered when the implement is taken aloft in an airplane.

A further object of this invention is the provision of a writing implement which is proof against leakage even though rapidly taken to high altitudes and even though the cap is suddenly removed when the implement is held in a flat or point-down position.

A still further object of this invention is the provision of a writing implement which may be readily filled with writing fluid but which is always in condition for immediate and clean writing even though subjected to extreme and rapid changes in ambient temperatures and pressures.

A still further object of this invention is the provision of a writing implement having a primary fluid reservoir which is normally sealed from the atmosphere when it is in condition for writing.

A still further object of this invention is the provision

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of a writing implement having a normally sealed primary reservoir and a normally vented secondary reservoir from which fluid is withdrawn during the writing operation but which may be readily replenished from the primary fluid reservoir by simple manipulation.

A still further object of this invention is the provision of a writing implement having the characteristics indicated above but which may be quickly and easily filled through the forward end of a filling tube reciprocable to a position forwardly of the writing point.

Further and additional objects will appear from the following description, the accompanying drawings and the appended claims.

In accordance with one embodiment of this invention, a writing implement is provided which comprises a barrel, a writing point and a primary fluid reservoir for holding the principal supply of writing fluid eventually to be supplied to the point during the writing operation. In addition the implement is provided with a secondary fluid reservoir preferably positioned in a forward end of the implement between the writing point and the primary reservoir. A first fluid passageway is provided between the primary and secondary reservoirs and a second fluid passageway is provided between the secondary reservoir and the writing point. The first passageway is provided with a first valve and the second passageway is provided with a second valve and there is also provided a manually operable valve control means movable to a first position whereby to open both valves to condition the implement for filling, movable to a second position whereby to close the first valve while the second valve is open whereby to condition the implement for writing, and movable to a third position whereby to close the second valve while the first valve is open to permit fluid flow between the primary and secondary reservoirs while the reservoirs are sealed against venting or access to the atmosphere. By this construction when the valve control means is shifted to the first position the implement is conditioned for filling purposes so that the primary reservoir may be filled from an external body of writing fluid. When the valve control means is moved to the second position the primary reservoir is sealed and the fluid during writing is withdrawn solely from the secondary reservoir or any auxiliary expansion chambers that may be provided in the forward end of the implement. When the valve control means is moved to the third position the passageway between the primary and secondary reservoir is open to permit the transfer of writing fluid from the primary reservoir to the secondary reservoir but at the same time both reservoirs are sealed against access to the atmosphere so that the fluid transfer between the two reservoirs may be more readily effected.

This invention is particularly useful in a writing implement having a filling tube which is extendible to a position forwardly of the writing point for filling purposes, such an implement being disclosed in my copending application Serial No. 256,897, filed November 17, 1951, now Patent No. 2,769,427, issued November 6, 1956. The primary reservoir is preferably of the collapsible type and in a preferred embodiment of this invention takes the form of a pneumatically collapsible sac of the type disclosed in said Patent 2,769,427 and claimed in my prior Patent No. 2,610,612. Thus in a preferred embodiment of the invention, the primary fluid reservoir and the forwardly extending filling tube are reciprocable within the barrel of the instrument as a single unit. The filling tube has an open forward end and is movable upon reciprocation to an extended position forwardly of the point, to a retracted position rearwardly of the point and to an intermediate position. The secondary reservoir is preferably fixed within the barrel forwardly of the primary reservoir and is provided with openings in the rear-

ward and forward walls thereof through which the tube passes in fluid-sealing relationship. The filling tube is provided with a first longitudinal opening or passageway communicating between the primary reservoir and the secondary reservoir and with a second longitudinal opening or passageway communicating the forward open end of the filling tube with the secondary reservoir. A pair of valve means are also provided, the first of which closes off the first opening or passageway when the forward end of the filling tube is in the retracted position whereby the primary reservoir is sealed against access to the atmosphere or the secondary reservoir, and the second of which closes off the second opening when the forward end of the filling tube is in the intermediate position whereby both reservoirs are sealed against access to the atmosphere and writing fluid may be readily transferred from the primary to the secondary reservoir in the manner hereinafter to be described. In this preferred embodiment of the invention, the manually operable means for controlling the valves is associated with the plunger mechanism for collapsing the reservoir so that only single means is provided for conditioning the implement for filling, for writing or for transferring fluid from the primary reservoir to the secondary reservoir, as will be hereinafter more fully described.

For a more complete understanding of this invention, reference will now be made to the accompanying drawings, wherein

Fig. 1 is an enlarged broken sectional view of the forward end of a writing implement constructed in accordance with one embodiment of this invention showing the filling tube extended to condition the implement for filling the primary reservoir with a writing fluid from an external source;

Fig. 1a is a broken sectional view of the rearward end of the implement showing the positioning of the various parts in the rear end of the implement when the filling tube is extended as shown in Fig. 1;

Fig. 2 is a sectional view taken along the line 2'-2' of Fig. 1a;

Fig. 3 is a broken sectional view of the implement shown in Figs. 1 and 1a somewhat reduced in scale showing the filling tube and associated valves moved to an intermediate position;

Fig. 4 is similar to Fig. 3 but showing the implement conditioned for writing;

Fig. 5 is a sectional view taken along the line 5'-5' of Fig. 3 but enlarged to the scale of Fig. 1; and

Fig. 6 is a sectional view taken along the line 6'-6' of Fig. 4 but enlarged to the scale of Fig. 1.

The implement shown in the drawings comprises a barrel 10, a rearward manually operable means or cap 12, a forward gripping section 14, a nib holder 16, a writing nib 18 having a writing point 20, and a feed bar 22 having comb cuts 24 and grooves 26 forming the usual type of expansion chamber for the device. Within the barrel 10 is positioned a cartridge unit of the general type disclosed in my Patent 2,769,427 which comprises a pneumatically collapsible primary writing fluid reservoir 28, a reservoir protector tube or sheath 30 having an open rearward end 32, a forwardly extending filling tube 34 and a bushing 36 (see Fig. 4). The bushing serves as a support for the filling tube 34, the primary reservoir 28 and the protector tube 30. This cartridge unit is longitudinally reciprocable within the barrel 10 from the writing position shown in Fig. 4 to the filling position shown in Figs. 1 and 1a. The cartridge unit is restrained against axial rotation within the barrel by means of deformations 38 in the forward end of the protector tube 30 and the bushing 36 which deformations ride in splined grooves 40 formed on the inner wall of the gripping section 14.

A first plunger tube 42 having an unvented rear end is secured to the cap member 12 by means of a screw 44, a rubber gasket 46 being provided to prevent venting

at the rear end of the plunger tube. A secondary or auxiliary plunger tube 48 extending only for a short distance forwardly of the screw 44 is also secured to the cap 12 for a purpose hereinafter to be more fully described. The plunger tube 42 is provided with a longitudinal groove 50 in the rearward end thereof which is adapted to span a packing gland 52 when the cap is moved to its retracted position thereby providing in combination with an aperture 54 in the barrel 12 a vent for the interior of the barrel 10 when the cap is moved to the position shown in Figs. 1, 1a, 3 and 4. The forward end of the plunger tube 42 is also provided with a venting aperture 56 (see Fig. 1a) in a side wall thereof which in effect provides a by-pass for the packing gland 52 and therefore vents the space containing the collapsible reservoir when the cap member 12 is moved longitudinally to its most rearward position during the filling operation which position is not shown in the drawings but which will be readily understood from a consideration of the disclosure in my issued Patent No. 2,610,612 and my copending application Serial No. 256,897. The forward end of the plunger tube 42 is provided with threads 58 which may be engaged with corresponding threads 60 formed on the forward end of the protector tube 30. Thus when the cap 12 and the plunger tube 42 are axially rotated within the barrel 10, and while the threads 60 and 58 are in engagement, the cartridge unit including the reservoir 28 and the filling tube 34 will separate from the cap member 12, it being remembered that the cartridge unit is held against axial rotation by the grooves 40 in the gripping section 14. A spring 62 is compressed between a shoulder 64 of barrel 10 and a collar 66 secured to the forward end of the protector tube 30. Thus when the cap 12 is rotated, the spring 62 normally reciprocates the cartridge unit in a forward direction, causing the forward open end of the filling tube 34 to project forwardly of the writing point 20 whereby to condition the implement for filling. When the collar 66 strikes the end of the gripping section 14, as shown in Fig. 1, then the forward motion of the cartridge unit stops and the cap 12 begins to separate from the barrel 10 while the threads 58 and 60 continue to be in engagement. When these threads become disengaged, then the cap 12 and the plunger tube 42 may be manually pulled rearwardly to a position not shown in the drawings. The rearward movement of the cap and plunger tube is limited by abutment of a shoulder 68 on the plunger tube against an inner shoulder 70 on the barrel 10 near the packing gland 52.

A secondary fluid reservoir defining means is retained within the gripping section 14 and comprises a hollow plug 72 of rubber or other resilient material. This hollow plug 72 defines a stationary secondary reservoir 74 for the writing implement and, if desired, this plug and the gripping section 14 may be formed of transparent plastic material so that the amount of writing fluid contained within the secondary reservoir may be readily observed. The plug 72 has a rearward wall 76 and a forward wall 78. These walls are quite thick and have axial openings 80 and 82 therein for receiving the filling tube 34 that is reciprocated therethrough. The plug 72 also includes an auxiliary chamber 84 positioned forwardly of the opening 82 and having a diameter somewhat larger than said opening. The filling tube 34 also extends through this auxiliary chamber 84 and through an opening 86 positioned in the forward wall thereof.

As will be understood, the filling tube 34 in combination with the secondary reservoir 74 including the auxiliary chamber 84 provides the sole means for conducting writing fluid into the primary and secondary reservoirs of the implement and provides the sole means for supplying writing fluid from the primary reservoir to the secondary reservoir and from the secondary reservoir to the writing point 20. The filling tube has a first longitudinal passage 88 communicating the primary reservoir

with the secondary reservoir when the various elements of the implement are positioned as shown in Figs. 1 and 3 of the drawings. The filling tube 34 also has a second longitudinal passageway 90 communicating the forward open end of the filling tube with the secondary reservoir 74 when the elements of the implement are in the positions shown in Figs. 1 and 4 of the drawings. A central section 92 of the filling tube is pinched or otherwise provided with an obstruction to prevent communication between the longitudinal passageways 88 and 90 through the tube itself, it being understood that the tube is provided with two transverse openings 94 and 96 forwardly and rearwardly of the pinched section 92 so that the tube passageways can communicate with each other only exteriorly of the tube. Opening 96, the portion of tube 90 disposed rearwardly of the pinched portion 92, and the rearward portion 76 of resilient plug 72 form a first slide valve, and opening 94, the portion of tube 90 disposed forwardly of the pinched portion 92 and the forward section 78 of plug 72 form a second slide valve.

The filling tube 34 is formed of thin wall sheet metal and is provided with a plastic insert 98 at each end having a semicircular cross section provided with a groove 100, as most clearly shown in Fig. 6. The groove 100 provides an ink feeding channel while the remainder of the space in the tube provides an air vent channel, all as will be clear from a consideration of the disclosure in my Patent 2,769,427 and in another of my copending applications Serial No. 368,852, filed July 20, 1953, now abandoned. The forward end of the filling tube is provided with a slit 102 and the inserts 98 in both the forward and rearward sections of the tube are cut entirely through to provide channels 104, 106 and 108 communicating the passageways with the openings 102, 94 and 96, respectively.

When the implement is in the normal writing position, as shown in Fig. 4, the passageway 90 of the filling tube 34 serves to communicate the open end of the tube and the writing point directly with the secondary reservoir 74. At the same time, however, opening 96 of the rearward portion of the filling tube has been withdrawn from the secondary reservoir 74 and thus the primary reservoir 28 is completely sealed off. In this position the auxiliary plunger 48 secured to the rear cap member 12 engages the rear end of the collapsible reservoir 28 to cause it to deform slightly in somewhat the same manner as shown in Fig. 4.

In order to fill the primary reservoir of the instrument with writing fluid, the cap 12 is rotated with respect to the barrel 10 and by reason of the threaded engagement of the plunger tube 42 with the protector tube 30 the cartridge unit including the reservoir 28 and the filling tube 34 are driven forwardly by means of spring 62. When the cartridge unit has reached this forwardmost position by abutment of the collar 66 against the rear end of the gripping section 44, the several elements are positioned as shown in Figs. 1 and 1a with the forward end of the filling tube moved to its forwardmost position. Thereafter the cap is further rotated and thereby moved in a rearward direction with respect to the barrel for a small distance until such time as the threads 58 and 60 have been disengaged. The cap 12 is then manually pulled rearwardly with respect to the barrel until such time as the shoulder 68 on the plunger tube 42 abuts the shoulder 70 on the barrel 10. At this time the aperture 56 is positioned rearwardly of the packing gland 52 and the interior of the barrel and the plunger tube is thereby vented to the atmosphere through the opening 54. The open forward end of the filling tube 34 is then immersed in the writing fluid and the cap 12 and the plunger tube 42 are moved axially in a forward direction until such time as the threads 58 meet the threads 60. This downward stroke of the cap and plunger tube causes a momentary build-up of air pres-

sure within the space defined by the barrel and the plunger tube, resulting in complete collapse of the reservoir 28. Thus the barrel and a plunger tube comprise a collapsible chamber or means for collapsing the primary reservoir. However, when the threads 58 and 60 come into initial engagement, the venting groove 50 spanning the packing gland 52 comes into play, thus venting the compressed air within the barrel. The resilient nature of the collapsible sac causes it to expand within the protector tube 30 whereby a full charge of writing fluid is sucked into the primary reservoir from the forward open end of the filling tube. It will be understood that the initial venting of air from and intake of writing fluid into the primary reservoir during this filling operation is through passageway 90, channel 106, opening 94, auxiliary chamber 84, opening 78, secondary reservoir 74, opening 96, channel 108 and passageway 88.

It will be apparent that at this point in the operation the secondary reservoir 74 is also filled with writing fluid. Thereafter the cap 12 is rotated so that the threads 58 in engagement with the threads 60 cause the cap to seat on the end of the barrel followed by the withdrawal of the cartridge unit including the filling tube 34 in a rearward direction against the action of the spring 62. When the filling tube and cartridge unit have reached the rearwardmost position, as shown in Fig. 4, the implement is now conditioned for writing. In this condition, however, the opening 96 on the rearward portion of the filling tube 34 is no longer in communication with the secondary reservoir 74 and accordingly, the primary reservoir is completely sealed off from the atmosphere. At the same time, opening 94 extends within the secondary reservoir 74 and fluid may be fed directly to the writing point 20, as will be understood from the consideration of my prior application Serial No. 368,852. At the same time air for venting purposes will pass through the channel 90 into the secondary reservoir as will be understood.

Inasmuch as in this writing position the primary reservoir is completely sealed, there is no possibility that any writing fluid can be expelled therefrom on account of sudden changes in temperature or barometric pressure. Thus the implement is substantially proof against leakage even though it be uncapped with the point downward immediately after being taken aloft to a considerable height in an airplane. The secondary reservoir 74 is comparatively small so that any expansion of any air therein due to ambient pressure changes can be readily taken care of by the expansion chamber formed by the comb cuts and grooves 24 and 26 formed in the feed bar 22 of the implement.

When the secondary reservoir 74 has become exhausted, it is then necessary to replenish the supply from the primary reservoir. This may be effected by manually rotating the cap 12 with respect to the barrel 10 to position the elements in the relationship shown in Fig. 3. This positioning of the elements may be indicated to the user by suitable indicia 110 and 112 secured to the rear portion of the barrel and the forward portion of the cap whereby the user is advised of the proper degree to which the cap is to be turned to effect this positioning of the elements. It will be understood, of course, that various types of indicia or spring detent means could be employed to indicate this condition.

When the several parts are in this intermediate condition (as shown in Fig. 3), the opening 94 is blocked by the forward wall 78 so that there is no communication between the secondary reservoir or the primary reservoir and the open end of the filling tube 34. However, in this position the secondary and primary reservoirs are in communication through the opening 96, the channel 108 and the passageway 88. While this limited filling tube reciprocation is occurring, the auxiliary plunger 48 on the cap 12 becomes disengaged from the rear end of the reservoir 28 which then has a tendency to

assume its fully expanded condition thereby creating a slight vacuum within the reservoir 28. When this occurs and when the filling tube openings and channels come into the position just described, then a charge of air is sucked into the primary reservoir 28. Thereupon if the implement is held in an upright position and with the pen point down, a charge of ink will be propelled into the secondary reservoir from the primary reservoir if the cap is screwed back to the writing position since the auxiliary plunger 48 now partially collapses the reservoir 28, as indicated in Fig. 4. Thus, by turning the cap or manually operable means to a limited extent back and forth the writing fluid will be pumped from the primary reservoir to the secondary reservoir until such time as the secondary reservoir is filled. Thereafter the cap is returned to its at rest or writing position and the implement is ready for writing in the usual manner.

Inasmuch as the filling tube 34 is reciprocable through the openings 80 and 82 in the forward and rearward walls of the plug 72 in fluid-sealing relationship, these walls in combination with openings 94 and 96 form slide valves for each of the two longitudinal passageways for the purposes previously set forth.

While a particular embodiment of this invention is shown above, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated, therefore, by the appended claims, to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A writing implement comprising a barrel, a writing point, a primary fluid reservoir within said barrel, a secondary fluid reservoir positioned between said primary reservoir and said point, said barrel defining wall means intermediate said writing point and said secondary reservoir and intermediate said primary and secondary reservoirs, and a filling and feeding tube having an open forward end adjacent said writing point reciprocable with respect to said point to an extended filling position forwardly thereof, a retracted writing position and an intermediate position, said filling tube having a longitudinal passageway extending therethrough, said tube having an aperture alignable with said wall means to comprise a first valve for establishing fluid communication between said primary and said secondary reservoirs only when said filling tube is reciprocated to said intermediate and said extended positions, and said tube having an aperture alignable with said wall means to comprise a second valve for establishing fluid communication between said open end and said secondary reservoir only when said filling tube is reciprocated to said retracted and extended positions, said first and second valves being so related that they are closed for all positions of said writing tube between said intermediate and said retracted positions.

2. A writing implement comprising a barrel, a writing point, a longitudinally reciprocable cartridge unit including a primary fluid reservoir and a forwardly extending filling tube having a longitudinal passageway and a forward open end movable to an extended position forwardly of said point, to a retracted position rearwardly of said point and to an intermediate position, a stationary secondary reservoir forwardly of said unit having forward, intermediate, and rearward walls provided with openings through which said tube passes in fluid sealing relationship, said filling tube having a first opening axially aligned with said secondary reservoir and providing fluid connection between said primary reservoir and said secondary reservoir only when in said extended and intermediate positions and having a second opening axially aligned with said secondary reservoir and providing fluid connection between said forward open end and said secondary reservoir only when in said extended and retracted positions and axially aligned with said intermediate wall when in said intermediate position, said

longitudinal passageway having an obstruction between said openings dividing said passageway into two sections communicating with each other only exteriorly of said tube through said openings, and manually operable means for reciprocating said unit to said positions within said barrel.

3. The writing implement recited in claim 2 including means for partially collapsing said primary reservoir upon movement of said unit from said intermediate position to said retracted position whereby fluid is transferred between said reservoirs upon reciprocation of said unit between said positions.

4. A writing implement comprising a barrel, a writing point, a longitudinally reciprocable cartridge unit including a primary fluid reservoir and a forwardly extending filling tube having a longitudinal passageway and a forward open end movable to an extended position forwardly of said point, to a retracted position rearwardly of said point and to an intermediate position, means for restraining said unit against axial rotation in said barrel, a stationary secondary reservoir forwardly of said unit having forward, intermediate, and rearward walls provided with openings through which said tube passes and is reciprocated in fluid-sealing relationship, said filling tube having a first opening axially aligned with said secondary reservoir and providing fluid connection between said primary reservoir and said secondary reservoir only when in said extended and intermediate positions and having a second opening axially aligned with said secondary reservoir and providing fluid connection between said forward open end and said secondary reservoir only when in said extended and retracted positions and axially aligned with said intermediate wall when in said intermediate position, said longitudinal passageway having an obstruction between said openings dividing said passageway into two sections communicating with each other only exteriorly of said tube through said openings, and axially rotatable manually operable means in threaded engagement with said unit for reciprocating said unit to said positions within said barrel.

5. A writing implement comprising a barrel, a writing point, a longitudinally reciprocable cartridge unit including a collapsible primary fluid reservoir and a forwardly extending filling tube having a longitudinal passageway and a forward open end movable to an extended position forwardly of said point, to a retracted position rearwardly of said point and to an intermediate position, an axially reciprocable plunger in threaded engagement with said unit to move said filling tube to said positions, said plunger collapsing said primary reservoir for filling purposes when said unit is reciprocated to said extended position, means for restraining said unit against axial rotation within said barrel, a stationary secondary reservoir forwardly of said unit having centrally apertured forward, intermediate, and rearward walls through which said tube passes and is reciprocated in fluid-sealing relationship, said filling tube having a first opening axially aligned with said secondary reservoir and providing fluid connection between said primary reservoir and said secondary reservoir when in said extended and intermediate positions and having a second opening axially aligned with said secondary reservoir and providing fluid connection between said forward open end and said secondary reservoir when in said extended and retracted positions and axially aligned with said intermediate wall when in said intermediate position, said longitudinal passageway having an obstruction between said openings dividing said passageway into two sections communicating with each other only exteriorly of said tube through said openings.

6. A writing implement comprising a barrel, a writing point, a longitudinally reciprocable cartridge unit including a collapsible primary fluid reservoir, a protective sheath for said primary reservoir and a forwardly extending filling tube having a longitudinal passage and a

forward open end movable to an extended position forwardly of said point, to a retracted position rearwardly of said point and to an intermediate position, an axially reciprocable plunger including a sleeve member between the sheath and the barrel and a manually accessible cap on the rearward end of said barrel in threaded engagement with said unit to move said filling tube to said positions, said plunger collapsing said primary reservoir for filling purposes when said unit is reciprocated to said extended position, means for restraining said unit against axial rotation within said barrel, a stationary secondary reservoir forwardly of said unit having centrally apertured forward, intermediate, and rearward walls through which said tube passes and is reciprocated in fluid-sealing relationship, said filling tube having a first opening axially aligned with said secondary reservoir and providing fluid connection between said primary reservoir and said secondary reservoir when in said extended and intermediate positions and having a separate second opening axially aligned with said secondary reservoir and providing fluid connection between said forward open end and said secondary reservoir when in said extended and retracted positions and axially aligned with said intermediate wall when in said intermediate position, said longitudinal passageway having an obstruction between said openings dividing said passageway into two sections communicating with each other only exteriorly of said tube through said openings.

7. The writing implement recited in claim 6 including an auxiliary plunger secured to said cap for partially collapsing said primary reservoir upon movement of said unit from said intermediate position to said retracted position whereby fluid is transferred between said reservoirs upon reciprocation of said unit between said positions.

8. A writing implement comprising a barrel, a writing point, a primary fluid reservoir, a secondary fluid reservoir, a first wall member having a first opening between said primary and said secondary reservoirs, a second wall member having a second opening between said secondary reservoir and said writing point, a first valve in said first wall member for closing said first opening and sealing said primary reservoir against access to said secondary reservoir, a second valve in said second wall member for closing said second opening preventing the flow of fluid to said writing point from said secondary reservoir, and manually operable means connected to said first and second valves for longitudinally moving said valves together and maintaining a fixed sequential operating relationship between said valves, said valves being movable together between a first position in which both of said valves are open for filling said implement, a second position in which said first valve is closed and said second valve is open and in condition for writing, and a third position in which said second valve is closed and said first valve open for transferring fluid between said reservoirs while the latter are sealed against access to the atmosphere, said first and second valves being closed for all intermediate positions of said valves between said second and third positions.

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