March 24, 1931. A. L. DE BIASI 1,797,465

FOUNTAIN PEN

Filed March 26, 1929

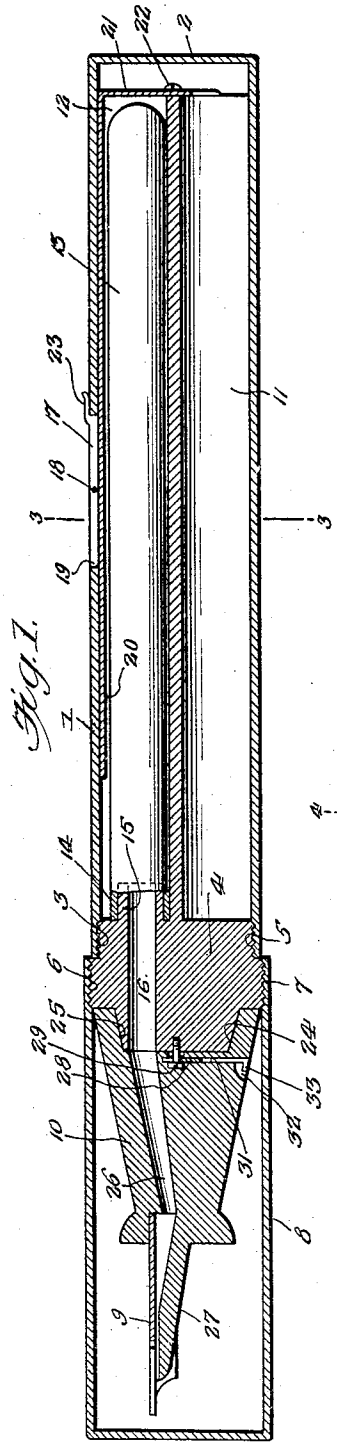


Fig. 1.

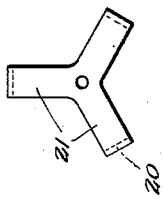


Fig. 5.

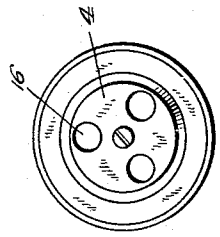


Fig. 6.

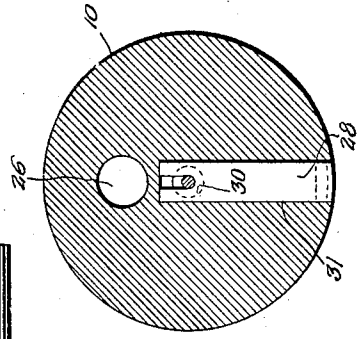


Fig. 4.

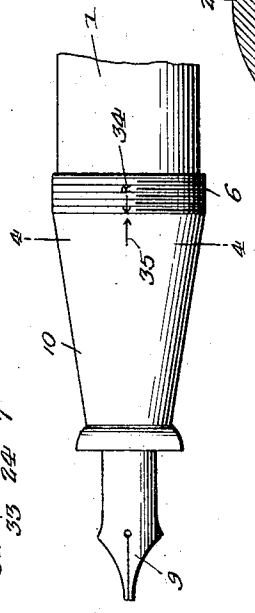


Fig. 2.

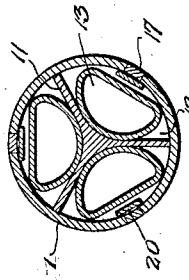


Fig. 3.

Inventor

A. L. De Biasi,

By J. H. Hartman

Attorney

Patented Mar. 24, 1931 1,797,465

UNITED STATES PATENT OFFICE

ANTHONY L. DE BIASI, OF RICHMOND, VIRGINIA

FOUNTAIN PEN

Application filed March 26, 1929. Serial No. 350,088.

The invention relates to improvements in fountain pens.

The object of the present invention is to improve the construction of fountain pens and to provide a simple, practical and efficient fountain pen of strong, durable, and comparatively inexpensive construction equipped with means for holding three different kinds of inks, such as red, green and blue, and capable of ready adjustment to enable a writer to use any one of the three inks.

A further object of the invention is to provide a fountain pen of this character in which there will be no liability of the links accidentally mixing, or the ink of two of the reservoirs leaking while the other reservoir or ink container is feeding ink to the pen point.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and set forth in the claims hereto appended, it being understood that various changes in the form, proportion, and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

In the drawings:

Fig. 1 is a longitudinal sectional view of a fountain pen constructed in accordance with this invention.

Fig. 2 is an elevation of the front portion of the same, the cap being removed.

Fig. 3 is a detail sectional view taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged transverse sectional view taken substantially on the line 4—4 of Fig. 2.

Fig. 5 is an end view of the resilient tube compressing members.

Fig. 6 is an end view of the barrel and the plug member, the ink feeding head being removed.

In the accompanying drawings, in which is illustrated the preferred embodiment of the invention, the fountain pen comprises in its construction a barrel 1 designed to be constructed of hard rubber or any other suitable material and provided at its inner or rear end with a wall 2 which closes one end of the barrel, and the other end of the barrel is interiorly threaded at 3 to receive a plug 4. The plug 4, which may be constructed of hard rubber or any other suitable material, is substantially cylindrical and it has at its inner end a circumferential reduction 5 which is threaded to screw into the open threaded end of the barrel and which also forms a shoulder for abutting against the end of the barrel, as clearly illustrated in Fig. 1 of the drawing.

The intermediate portion 6 of the closure plug is threaded to receive the interiorly threaded end 7 of a cap 8 which is of slightly greater diameter than the barrel, to fit over the closed end of the same when the cap is removed from the plug 4 for exposing for use a pen point 9 which is carried by an ink feeding head 10.

The plug member 4 is provided with longitudinally disposed radially arranged partitions 11 which may be constructed of hard rubber or any other suitable material and may be formed integral with the closure plug 4, as illustrated in the accompanying drawings, or constructed in any other desired manner. The radially arranged partitions 11 extend from the center of the barrel to the inner face of the wall thereof and divide the barrel into three similar compartments 12 for the reception of ink receiving tubes 13 designed to be constructed of soft rubber or other suitable material and preferably substantially semi-cylindrical or segmental in cross section when inflated, as illustrated in Fig. 3 of the drawing. These tubes are closed at their inner or rear ends and are provided at their outer or front ends with cylindrical necks 14, which are fitted on nipples 15 formed integral with the plug member 4 and constituting extensions of ink ducts 16 through which the ink passes to the ink feeding head 10.

The tubes 13 are adapted to be removed with the plug member as a unit and are readily insertible in the barrel, and they are adapted to be compressed for either emptying the ink from the tubes or for expelling

the air to re-fill the fountain pen by means of levers 17 fulcrumed intermediate of their ends at 18 in slots 19 of the barrel and adapted to engage resilient members 20 extending longitudinally of the compartments 12 and preferably consisting of flat springs connected together by radially arranged arms 21 formed integral with one another and located at the inner or rear end of the partitions and preferably secured to the same by a centrally arranged screw 22 or other suitable fastening device. The levers 17 are provided with projecting portions 23 forming lips which overlap the barrel at the rear ends of the slots and are adapted to be readily engaged by the finger for operating the levers 17 in the usual manner. The springs 20 and the connecting arms are adapted to form a cage for the compressible ink reservoir tubes and enable the plug member and the reservoir tubes to be removed as a unit without liability of the tubes becoming accidentally disconnected from the nipples of the plug member. When it is desired to fill the fountain pen, the tube 13 is compressed by the lever 17, and the fountain pen is immersed in the ink while the tube is compressed, after which the tube is permitted to expand and suck in the ink in the usual manner.

The plug member is provided with a tapered front portion 24 circular in cross section and forming a journal or bearing for the feeding head 10, which is provided at its inner end with a tapering socket 25 which fits the tapered front portion of the plug member.

The ink feeding head, which is journalled on the plug member, is tapered outwardly and is provided with a single ink passage or duct 26 which is adapted through the rotary movement of the feeding head to be arranged in register for permitting the ink to flow from a reservoir of the barrel to the pen point 9, which is supported by the projecting front portion 27 of the feeding head. The projecting front portion extends to the nibs of the pen point and is adapted to support the pen point and feed ink to the same in the ordinary manner.

The rotary feeding head 10 is detachably secured on the tapered front journal portion of the plug member by a transversely disposed slidable latch member 28 which engages a headed shank 29 forming a keeper, and preferably consisting of a screw centrally mounted in the front end of the plug member and projecting therefrom a sufficient distance to enable the head of the shank or stem 28 to extend into a central circular opening 30 in the transverse wall of the bearing socket of the ink feeding head 10. The central circular opening or bore 30 of the ink feeding head intersects a transverse slot 31 in which the latch member 28 operates, and the outer end 32 of the slot 31 is enlarged to receive an angularly bent portion or lug 33 of the latch member. The outer end of the latch member 28 is bent at an angle to form a lug which serves as a finger piece for enabling the latch member 28 to be drawn upwardly out of engagement with the headed stem 28 when it is desired to remove the feeding head from the plug member. Any simple means may be employed for limiting the movement of the slidable latch member, if desired, and a suitable packing member may also be employed, if desired, at the abutting faces of the feeding head and the plug member to prevent leakage of the ink, but the tapered journal portion of the plug member and the tapered socket will form a tight connection at the periphery of the plug member and the abutting transverse faces of the two members are adapted to form an air-tight joint.

The plug member is provided with suitable indicating marks 34, and the rotary ink feeding head is provided with an arrow 35 or other indicating mark corresponding with the duct 26 and enabling the operator to turn the feeding head to bring the ink passage thereof into register with any of the ink ducts of the plug member. When the arrow 35 of the rotary head is in line with one of the marks 34 of the plug member, the duct 26 of the head 10 is in register with one of the ducts 16 of the plug member.

What is claimed is:

1. A fountain pen comprising a barrel, a plug member mounted on one end of the barrel and provided with a plurality of ducts and having a tapered front journal portion, an ink feeding head provided at its inner end with a tapered bearing recess fitted on the tapered journal portion of the plug member and adapted to be rotated to carry a duct of the feeding head into register with the ducts of the plug member, a headed shank projecting centrally from the front of the plug member and extending into the ink feeding head, and a slidable latch member mounted on the ink feeding head and provided with a bifurcated inner end straddling the stem and engaging the head thereof for retaining the head on the plug member without interfering with the rotary movement of the head.

2. A fountain pen comprising a barrel, a plug mounted on one end of the barrel and provided with a plurality of ducts and having a front journal portion, an ink-feeding head provided at its inner end with a bearing recess fitting the journal portion of the plug member and adapted to be rotated to carry a duct of the feeding head into register with the ducts of the plug member, and means for detachably retaining the feeding head on the journal portion of the plug member including a fixed projection extending centrally from the plug member, and a latch member movably mounted on the feeding head to engage and disengage the central fixed projection of the plug member.

3. A fountain pen comprising a barrel, a plug member mounted on the barrel, a feeding head rotatably mounted on the plug member, radially arranged partitions extending from and carried by the plug member and dividing the barrel into separate compartments, ink sacks located in the said compartments and mounted on and carried by the plug member and the partitions, and resilient members mounted on the partitions and arranged at the outer sides of the ink sacks adjacent to the same and retaining the ink sacks in position to enable the plug, partitions and ink sacks to be removed as a unit from the barrel.

4. A fountain pen comprising a barrel, a plug member mounted on the barrel and provided with a plurality of ducts, a feeding head carried by the plug member and having a single duct adapted to register with the ducts of the plug member, and radially arranged longitudinal partitions rigid with and carried by the plug member for dividing the barrel into separate compartments, ink sacks mounted on the plug member and located within the compartments between the partitions, and a cage mounted on the partitions and composed of resilient longitudinally disposed members located at the outer sides of the ink sacks and having transverse arms connecting the members with the partitions.

5. A fountain pen comprising a barrel, a plug member mounted on the barrel and having a plurality of ducts, a feeding head mounted for rotary movement on the plug member and provided with a single duct adapted to be carried into communication with the ducts of the plug member by the rotary movement of the feeding head, a plurality of longitudinal partitions extending from and carried by the plug member and dividing the barrel into a plurality of compartments, ink sacks connected with the ducts of the plug member and arranged in the said compartments, and resilient members extending from the inner ends of the partitions along the outer sides of the sacks and retaining the ink sacks between the partitions to permit the plug member, partitions and ink sacks to be removed from the barrel as a unit, said resilient members being also adapted to be forced laterally to compress the ink sacks.

In testimony whereof I have hereunto set my hand this 25th day of March, 1929.

ANTHONY L. DE BIASI.