May 3, 1932. F. MAH 1,857,027

FOUNTAIN WRITING INSTRUMENT

Filed May 20, 1929

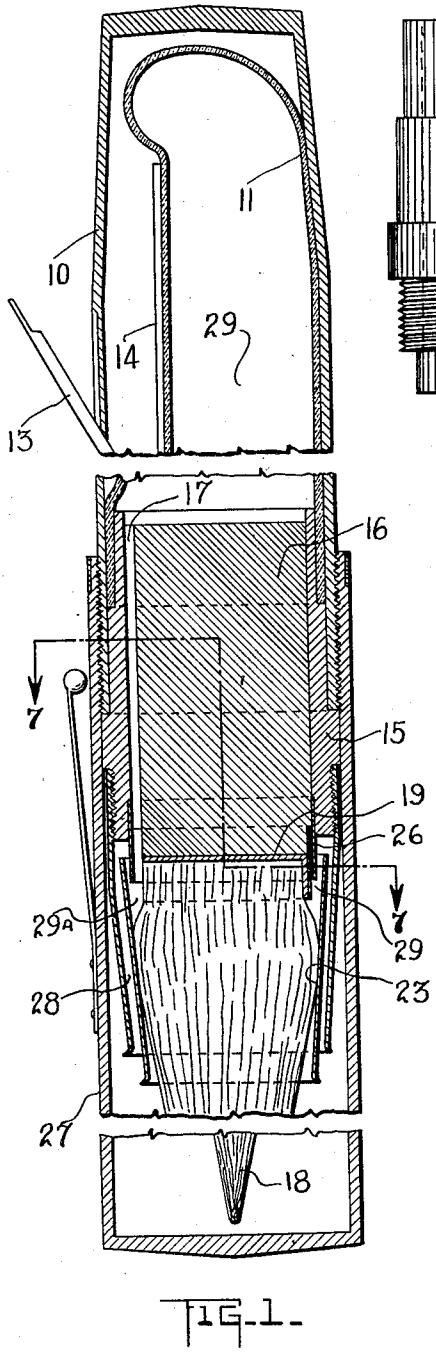

FIG. 1.

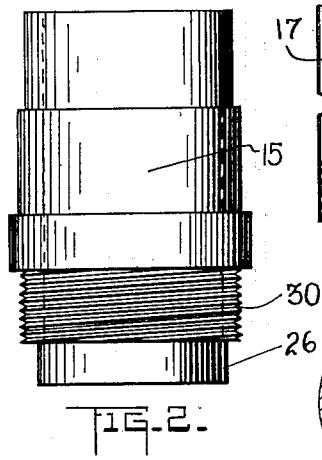

FIG. 2.

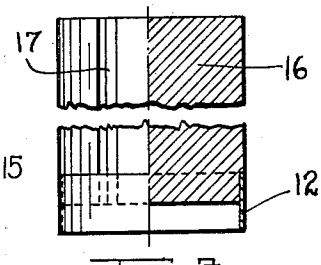

FIG. 3.

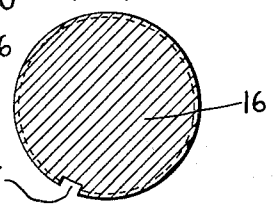

FIG. 4.

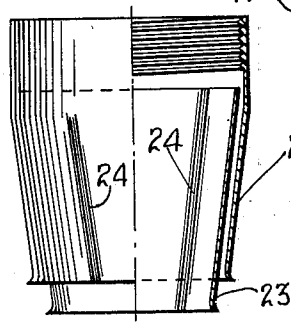

FIG. 5.

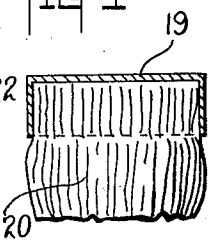

FIG. 6.

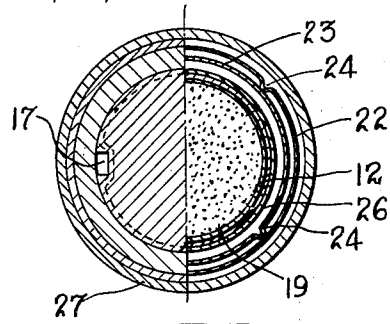

FIG. 7.

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Patented May 3, 1932 1,857,027

UNITED STATES PATENT OFFICE

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FOUNTAIN WRITING INSTRUMENT

Application filed May 20, 1929. Serial No. 364,502.

The invention relates to a fountain writing instrument as described in the present specification and illustrated in the accompanying drawings which form part of the same.

The invention consists essentially of the novel features of construction pointed out broadly and specifically in the claims for novelty following a description containing an explanation in detail of an acceptable form of the invention.

The objects of the invention are to facilitate the art of calligraphy in certain styles, such as in Chinese and Japanese characters; to avoid leakage and overflow of the writing fluid through the bristles; to eliminate the malformation of the characters incidental to some forms of implements in use; to furnish a pen for that particular form of penmanship that shall be the equivalent of the fountain pens used in American, British and European styles of calligraphy; to construct a brush of the fountain type which will be found useful in other arts and generally to provide at moderate cost a fountain brush efficient and serviceable in use as well as durable in regard to its maintenance properties.

In the drawings Figure 1 is a vertical sectional view of the invention.

Figure 2 is an enlarged elevational view of the sleeve supporting the plug.

Figure 3 is the half elevational view right and the half sectional view left of the inner plug and ferrule.

Figure 4 is a sectional view of the end of the inner plug.

Figure 5 is the half elevational view right and the half sectional view left of the outer case of the fountain brush pen.

Figure 6 is a fragmentary sectional view of the brush.

Figure 7 is a cross sectional view on the line A—A in Figure 1.

Like numerals of reference indicate corresponding parts in the various figures.

Referring to the drawings, the instrument casing is indicated by the numeral 10 and is of the usual barrel form containing the rubber bulb reservoir 11 for the ink, indicated by the numeral 29.

The lever 13 of conventional form in fountain pens operates the compressor plate 14.

The flanged ring 15 is inserted in the open end of the barrel casing 10 and the perforated plug 16 is introduced in said flanged ring forming therebetween the fluid channel 17 at one side of the plug.

The bulb 11 is clamped between the barrel 10 and the flanged ring 15, therefore the ink is free to pass in and out of the reservoir through the communicating passage 17, that is to say, in an empty reservoir, by operating the lever 13, the ink from an ink well may be sucked into the reservoir 11 and when said reservoir is charged, the ink is free to flow downwardly through said passage 17.

The ring or ferrule 12 is firmly secured to the outer end of the plug 16 and forms a recess for the back 19 of the brush 18, the bristles 20 being securely set in said back by any of the most suitable processes used in brush making.

The brush back 19 is firmly held in its recess by friction with the ring 12 and the bristles 20 of the brush 18 are trained to a point.

The sleeve 22 of frusta-conical form is screwed on to the thread 30 of the flanged ring 15, and extends outwardly and encircles the brush, and is formed with the vertical ribs 24 or corrugations, these ribs projecting inwardly.

The inner sleeve 23 is also of frusta-conical form and encircles the bristles 20 within the encircling sleeve 22, and directly engages and presses on the bristles bulging from the back 19 thereby training said bristles to a point as aforesaid.

The inner sleeve 23 fits in the outer sleeve and contacts with the ribs 24 and is preferably soldered thereto forming with said sleeve 22 filling openings through which the ink may flow on being drawn into the reservoir.

The ring or ferrule 26 is inserted in the flanged ring 15 at the other end and extends therefrom below the plug 16 and forms an ink seal or trap, this ink seal or trap being made by the projection of the inner sleeve upwardly into the space between the ring 26

and the sleeve 22, consequently this trap insures a tortuous passage for the filling ink flow through the passages 28 to the passage 17 and to the reservoir. Consequently after the charging of the reservoir, the ink cannot find its way past the trap thus formed, but on the other hand the ink may collect in the annular space 29A surrounding the bristles and form a constant supply or ink magazine for the feeding of the brush and it may be pointed out herein that this brush is fed from the outside of the bunch of bristles and not from the centre as is the common practice.

A ferrule 26 is fitted around the inside of the lower portion of the plug 15 and extends therebelow the upper rim of the sleeve 23 little above the ferrule 12 of the plug 16, so that ferrule 12 is projecting below ferrule 26 to allow clearance for brush 20 to expand and to provide space to form the sub-reservoir 29A. The ink descending through the usual channel 17 from tube 11 is thus directed into the sleeve 23 to collect as at 29A, forming in effect a sub-reservoir for the ink and resulting in an adequately saturated brush 18, with which the ring 26 projects below the upper rim of the sleeve 23 as just explained. The descending ink cannot fall into the channels 28 which are formed by the ridges 24 to ultimately leak out even when the device is appreciably tilted, and as the level of the ink in the sub-reservoir rises to the level of the lower rim of the ferrule 26, any air which would usually flow up through the channel 17 to allow the ink in the tube 11 to descend, finds itself cut off and the downward flow of the ink is checked.

It will thus be observed that as the sleeve 22 and therefore sleeve 23 are joined with one another by the ridges 24 so that the inner frusta-conical sleeve will hold the bristles 20 and draw the bristles to a point at 18 and that the brush can be compressed or allowed to expand where engaged by the sleeve 23, to effect the width of the mark.

A cap 27 is provided as usual to seal the device when not used. The sleeve 22 and sleeve 23 can be modified as shown in Figure 5 indicated here by numeral 23 having slanted portions to uniformly engage the brush to the point 18.

What I claim is:

1. A fountain writing instrument comprising a barrel casing, a compressible reservoir contained within said casing, a stopper having a side outlet and inlet passage therethrough and an encircling sleeve forming a binder for securing said compressible reservoir to the stopper, a bunch of bristles secured in a back and firmly held to said stopper beside said passage and a tapered sleeve fixedly secured and embracing said bunch of bristles and extending upwardly to direct the flow in filling the reservoir.

2. A fountain writing instrument comprising a casing containing an ink reservoir having a plug at its open end and outlet therethrough from the reservoir, and a flanged ring supporting said plug and reservoir, a brush receptacle engaging the lower portion of the plug and held in place by a sleeve and supported by an outer sleeve secured to said flanged ring, and bristles secured in said brush receptacle.

3. A fountain writing instrument comprising a casing containing an ink reservoir and having a plug at its open end having longitudinal passages therethrough forming ink outlets from said reservoir, a flanged ring securing the plug to the casing, an outer frusta-conical sleeve secured to said ring and adjustable thereon and supporting an inner frusta-conical sleeve engaging a brush receptacle held adjacent to the plug and bristles projecting therefrom and tapered to the required point by said inner and outer sleeves.

4. In a fountain writing instrument, a barrel casing, a compressible reservoir therein and a brush head and brush head mounting closing said reservoir having a side inlet and outlet passage, tapered double ring sleeves having spacing corrugations forming fluid passages, the inner sleeve extending upwardly to direct the inward flow, said brush being trained to a point by said rings.

Signed at the city of Vancouver, this 30th day of March, 1929.

FRANK MAH.