April 18, 1933. H. FRANK 1,903,965

DRAFTING PEN

Filed June 25, 1932

Fig. 1.

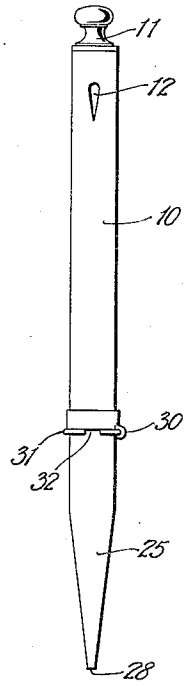


Fig. 2.

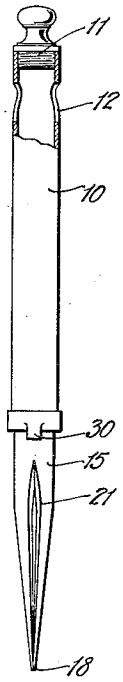


Fig. 3.

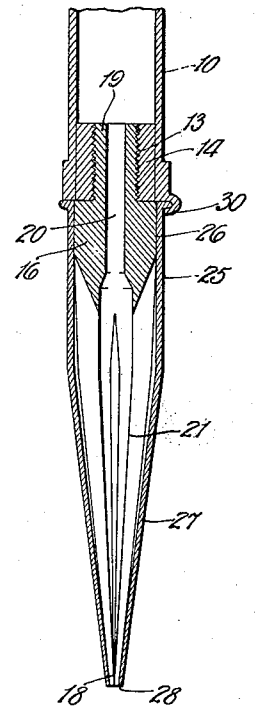


Fig. 4.

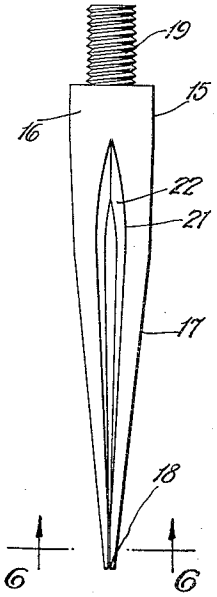


Fig. 5.

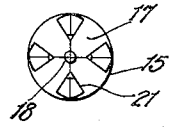


Fig. 6.

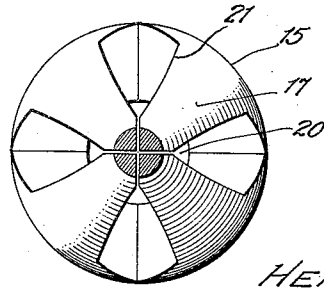
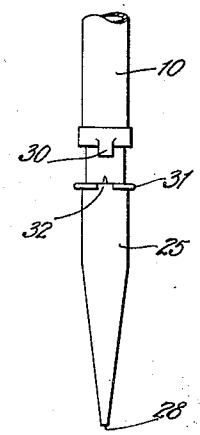


Fig. 7.



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UNITED STATES PATENT OFFICE

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DRAFTING PEN

Application filed June 25, 1932. Serial No. 619,246.

This invention relates to new and useful improvements in writing instruments and more particularly it pertains to pens such as ruling pens and the like.

It is one object of the invention to provide a ruling pen of new and novel construction by means of which clear, sharp and distinct lines may be drawn.

It is a further object of the invention so to construct a device of this character that a sufficient quantity of writing fluid may be carried thereby to provide for use of the pen without necessitating frequent supply of writing fluid thereto.

In ruling pens as generally constructed, it is necessary to wipe off the point or points after the writing fluid has been applied thereto and it is a further object of the present invention, so to construct a ruling pen that this wiping off of the point or points each time the fluid is applied thereto will not be necessary.

Other objects of the invention will appear as the nature thereof is better understood and by reference to the accompanying drawing and the following specification forming a part of this application.

In the drawing,

Figure 1 is a view in elevation of a complete pen constructed in accordance with the present invention,

Figure 2 is a similar view partly in section and with a portion of the pen removed,

Figure 3 is a detail sectional view on an enlarged scale illustrating the construction of the writing head of the pen,

Figure 4 is a plan view of the writing head of the pen,

Figure 5 is an end view of the writing head of the pen,

Figure 6 is a detail sectional view of the writing head taken on the line 6—6 of Figure 4, and;

Figure 7 is a fragmentary view illustrating the manner in which a protecting cap is removed from the pen.

Referring more particularly to the drawing the reference character 10 designates the main body portion of barrel of the pen. This barrel 10 has its one end closed by a plug 11 which may be of any ornamental form and adjacent this end the barrel is provided with a plurality of openings 12 which provide for communication between the interior thereof and atmosphere. The opposite end of the barrel 10 is provided with an internal thread 13. This thread 13 may be formed in a bushing or thickened wall portion 14 as best illustrated in Figure 3.

The reference character 15 designates the writing head. This writing head preferably has a cylindrical body portion 16 and a tapered body portion 17 which latter terminates at its smallest diameter in a furcated writing point or end 18. Projecting from the cylindrical portion 16 there is a reduced threaded extension 19 having a passage 20 which extends therethrough and which has communication with the interior of the writing head 15 which latter is hollow. The reduced screw threaded extension 19 is adapted for threaded engagement with the thread 13 heretofore mentioned, to provide for removably attaching the writing head to the barrel and the passage 20 provides for communication of the interior of the writing head with the atmosphere through the hollow barrel 10 and the openings 12.

The writing head 15 is formed with relatively narrow longitudinal extending elongated recesses 21, the side walls 22 of which are bevelled and which converge in the direction of the furcated end 18 of the writing head the recesses terminating at this end in the spaces between the furcations of said furcated end. These recesses 21 preferably pass entirely through the side walls of the tapered portion 17 of the writing head and in the present embodiment of the invention four such recesses are employed.

At all times, except such times as the pen is being supplied with writing fluid, the writing head is enclosed within a cap. This cap is designated by the reference character 25 in the drawing and conforms generally in shape to the shape of the writing head. The cap is adapted to have frictional engagement with the writing head as designated by the reference numeral 26 and has a tapered portion 27 which corresponds in taper to that of

the writing head 15. The cap 27 has its end of smallest diameter open as indicated at 28 and when in position upon the writing head this open end 28 is adapted to receive the furcations of the furcated end of the writing head as best illustrated in Figure 3.

Means may be provided to insure against accidental displacement of the cap 27 relative to the writing head 15 and in the present embodiment of the invention this means comprises a hook 30 which is carried by the end of the barrel 10. The cap 25 has an annular bead 31 extending around its larger end and this bead has a cut-out portion 32. This cut-out portion 32 is of such dimension as to receive the hook 30 when the cap 25 is positioned upon the writing head. The bead 31 is of such cross-sectional dimension that after the hook 30 has been passed through the cut-out portion 31, a turning of the cap 25 will position a portion of the bead 31 behind the hook 30 and thus prevent accidental displacement of the cap 25.

It is desirable that the cap 25 in addition to being firmly held in position, be readily removable. The reason for this is that a plurality of caps having different sizes of openings 28 are interchangeable with each writing head to provide for scribing of lines of different character as to width, the width of line being determined by the size of opening 28 in the cap 25. From an inspection of Figure 3 of the drawing it will be observed that when the cap 25 is in position the walls thereof cooperate with the writing head 15 to form pockets in the upper ends of the beveled recesses 22. Thus when the pen is not in use and is lying in a horizontal position any ink remaining in the head will be collected in the recesses and cannot work into the barrel through the passage 20 since the lower end of the passage extends below the beveled upper edges of the recesses.

The device operates in the following manner:

To use the pen, it being assumed that the pen has not been used for some time, the cap 25 is removed and the writing head inserted into a suitable container of writing fluid. This insertion of the writing head into the fluid, causes deposit of writing fluid in the several recesses 21 and also within the hollow portion of the writing head 15. The quantity of writing fluid thus picked up by the writing head will be determined by the depth to which the pen is inserted into the writing fluid. After this has been done, the cap, to produce the desired line, is selected and placed upon the writing head and moved to the position in which the hook 30 will pass through the cut-out portion 32 of the annular body 31 after which the cap is turned to secure the same against accidental displacements as heretofore described.

The pen is now ready for use and is manipulated in the ordinary manner, the ink flowing from the furcated end of the writing head as the same is moved in contact with the surface upon which the writing is to be effected. The flow of ink is free by reason of the fact that the interior of the hollow writing head and the several recesses 21 have direct communication with atmosphere through the passage 20, the hollow barrel 10 and the openings 12.

I have found in actual practice that a writing pen constructed in accordance with the present invention is highly satisfactory for the purpose intended and that the supply of the writing fluid which may be handled by the pen is considerably greater than can be handled by ruling pens as generally constructed. Further, I have found that in using a pen such as herein disclosed wiping of the point becomes entirely unnecessary after each application of writing fluid to the pen as distinguished from ruling pens as ordinarily constructed.

The invention has been herein disclosed in a preferred form but it is to be understood that the invention is not to be limited to the specific construction herein shown and that it may be embodied in other forms which rightfully fall within the scope of the appended claims.

Having thus described the invention, what is claimed as new, and what it is desired to secure by Letters-Patent of the United States, is;

1. A writing pen comprising a vented barrel, a hollow writing head carried by the barrel and having a passage providing communication with the barrel, said head also having a furcated writing end and a plurality of openings in its walls, and a closely fitted cap removably carried by the head having a discharge opening adjacent the furcated end of the head, the walls of the cap cooperating with the head to form recesses at the upper edges of the openings, the lower end of the passage terminating below the recesses to prevent the flow of fluid from the head into the barrel.

2. A writing pen comprising a vented barrel, a hollow writing head carried by the barrel, the outer end of the head tapering and terminating in a furcated wiring end, said head having openings in its walls with the edges of the openings beveled and a closely fitted cap removably mounted on the head, the walls of the cap cooperating with the head to form recesses at the upper bevelled edges of the openings to prevent the flow of fluid from the head into the barrel.

3. A writing pen comprising a vented barrel, a hollow writing head carried by the barrel and having its walls tapered and terminating in a furcated writing end, said walls having longitudinal openings communicating with the hollow interior of the

head, the edges of the openings being beveled and converging at one end and terminating in the spaces between the furcations at the furcated end of the head and a closely fitting cap removably secured over the head and having a discharge opening in its end adjacent the furcated end of the head, the walls of the cap cooperating with the beveled edges of the openings to form recesses within which to collect fluid from the head when the pen is not in its writing position.

Signed at New York, New York, this 24th day of June, 1932.

HENRY FRANK.