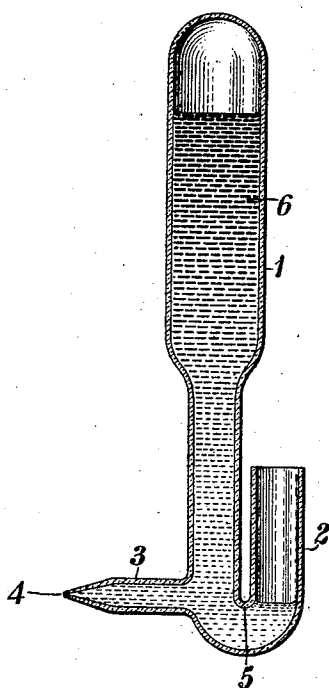


No. 896,193.

PATENTED AUG. 18, 1908.

H. S. BAKER.
RESERVOIR PEN.

APPLICATION FILED MAR. 23, 1908.



WITNESSES:

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HENRY S. BAKER, OF WILKINSBURG, PENNSYLVANIA.

RESERVOIR-PEN.

No. 896,193.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed March 23, 1906. Serial No. 307,740.

To all whom it may concern:

Be it known that I, HENRY S. BAKER, a subject of the King of Great Britain, and a resident of Wilksburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Reservoir-Pens, of which the following is a specification.

My invention relates to pens or marking devices, and particularly to those having reservoir attachments.

One object of my invention is to provide a device of the above specified character which shall insure the issuance from the pen point of just the proper amount of writing fluid at all times, regardless of temperature changes or other variable conditions.

Another object of my invention is to provide a device having such structural characteristics that the removal of foreign substances from the fluid may be effected at a location remote from the pen point, and that shall provide storage capacity for large quantities of fluid.

The single figure of the accompanying drawing is a longitudinal sectional view of a device that is constructed in accordance with my invention.

A substantially hook-shaped tube, the ends of the longer and the shorter portions 1 and 2 of which are closed and open, respectively, is provided with a branch 3 that communicates with the longer portion. The branch 3 is drawn to a very fine point at 4 so that the opening in its end will be very small, the point serving as a pen by means of which a mark or record may be made upon a paper or other material that may be moved while in engagement therewith. The point of the branch 3 is located above the sharp bend at 5 in the tube but below the open end of the shorter portion 2. The longer portion of the tube is enlarged near its upper end in order to form a reservoir for writing fluid 6 with which the tube is filled when in use and the level of which in the shorter portion 2 is preferably below that of the point 4. When the parts are arranged as specified the pressure of the fluid within the branch 3 near the point 4 will be slightly below that exerted by the atmosphere and consequently the fluid may be caused to issue from the point only by capillary action, such as occurs when a strip of paper is moved while in engagement with the point. Since the degree of capillary attraction is diminished when the paper be-

comes wet, as by reason of the overlapping of many marks, the fluid will not issue from the point in sufficient amounts to form drops or blots upon the paper, while the pen will operate regardless of the rate of relative motion of the pen and paper. Escape of fluid from the point 4 and the entrance of air therethrough when the pen is not in service will be prevented by the minuteness of the opening. A very fine line will be made also because of the fineness of the pen point.

With variations of temperature, the volume of air above the fluid in the larger portion of the tube will change, but this will have substantially no effect upon the rate of flow of fluid from the pen because it merely causes the fluid to rise and fall in the shorter portion. As the fluid is used at the point 4, the height to which it rises in the shorter portion 2 of the tube diminishes, and when the level of the fluid therein falls below the bend at 5 air will be admitted to the longer portion, and level of the fluid will fall therein while it will rise in the shorter portion until equilibrium is restored, according to well-known principles.

The operation of the device will not be disturbed by the presence of foreign substances in the fluid because, if such substances are of greater specific gravity than the fluid, they will settle to the bottom of the hook or bend in the tube rather than enter the branch 3, while dust and other impurities that may collect upon the surface of the liquid in the shorter portion of the tube cannot enter the longer portion. The period between the fillings of the tube is greatly increased over pens that have heretofore been provided because of the large reservoir that is provided by the enlargement of the longer portion of the tube.

My invention is especially adapted for use in recording measuring instruments in which it is necessary that the pen employed to record the variations in the values of the forces measured upon a movable strip be absolutely reliable in operation and capable of long use between fillings, but it is not necessarily limited to such specific service.

I claim as my invention:

1. A pen comprising a substantially hook-shaped tube, the ends of the longer and shorter portions of which are respectively closed and open, and a pen point that communicates with the longer portion.
2. A pen comprising a substantially hook-

shaped tube, the ends of the longer and shorter portions of which are respectively closed and open, and a pen point that communicates with the longer portion and is located above the bend in the tube and below the end of the shorter portion.

3. A pen comprising a substantially hook-shaped tube, the ends of the longer and shorter portions of which are respectively closed and open, and a branch communicating with the longer portion and having an opening that is located above the bend in the tube and below the end of the shorter portion.

4. A pen comprising a substantially hook-shaped tube, the ends of the longer and shorter portions of which are respectively closed and open, and a branch that communicates with the longer portion and has a constricted opening.

5. A pen comprising a substantially hook-shaped tube, the ends of the longer and shorter portions of which are closed and open respectively, and the longer portion of which is enlarged to form a receptacle, and a branch that communicates with the longer portion and has an opening that is located above the bend in the tube and below the end of the shorter portion.

6. A pen comprising a substantially hook-shaped tube, the ends of the longer and shorter portions of which are closed and open respectively, and the longer portion of which is enlarged to form a receptacle, and a branch that communicates with the longer portion and has a constricted opening.

7. A substantially hook-shaped tube the ends of the longer and shorter portions of

which are respectively closed and open, and a branch communicating with the longer portion and having a constricted opening, said tube being adapted to contain a body of ink the level of which in the shorter portion is below the opening in the branch.

8. A fountain pen consisting of a glass tube having a body portion closed at one end and provided with two branches at its other end one of which extends alongside the body portion and has a fully open outer end and the other of which projects away from the body portion and has a constricted opening in its outer end.

9. A fountain pen consisting of a glass tube having a body portion closed at one end and provided at its other end with two branches one of which is substantially parallel with it and has a fully open end and the other of which projects at a substantially right angle and has a constricted opening in its outer end.

10. A tubular fountain pen comprising a body portion closed at one end and having two branches at its other end one of which projects toward the closed end of the body portion and has a fully open end and the other of which projects away from the body portion and has a constricted opening in its outer end.

In testimony whereof, I have hereunto subscribed my name this 22nd day of March, 1906.

HENRY S. BAKER.

Witnesses:

WESLEY G. CARR,
OTTO S. SCHAIRER.