No. 854,227. PATENTED MAY 21, 1907.

W. C. LUTHER.

FOUNTAIN PEN.

APPLICATION FILED JAN. 26, 1906.

FIG 1

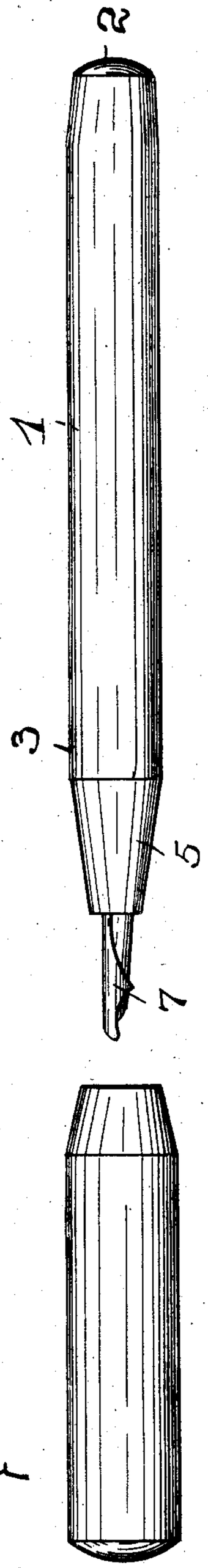


FIG 3

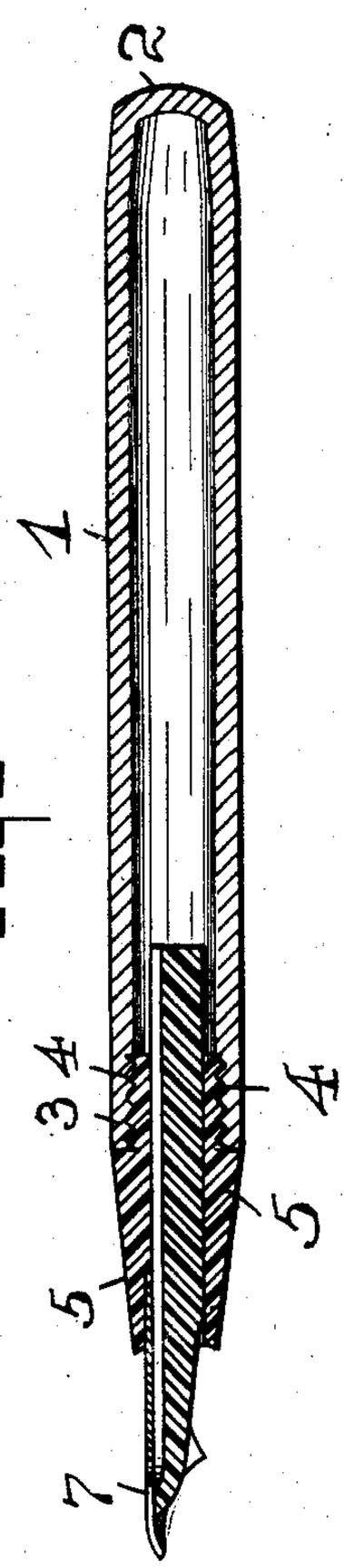
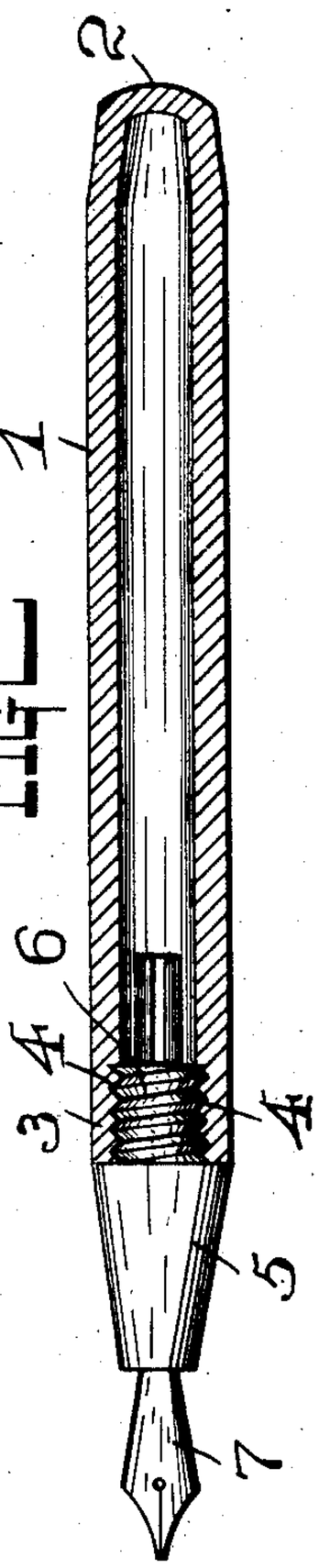


FIG 2



WITNESSES:

Frederick Jamison
Anna F. Alter

INVENTOR:

William C. Luther,

BY

Fred'k C. Fraenkel.

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM C. LUTHER, OF NEWARK, NEW JERSEY.

FOUNTAIN-PEN.

No. 854,227. Specification of Letters Patent. Patented May 21, 1907.

Application filed January 26, 1906. Serial No. 297,944.

To all whom it may concern:

Be it known that I, WILLIAM C. LUTHER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Fountain-Pens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has reference, generally, to improvements in fountain pens; and, the invention relates, more particularly, to a novel construction of fountain pen which will not "sweat" or leak at the joint or connection where the end-portion, usually the pen-retaining member of the holder is detachably and separably connected with the main body or barrel of the holder.

It has been found in practice with the usual forms of "hard-rubber" fountain pens comprising a tubular main body or barrel and detachable end-member or members, when said parts are made of the same material, that with the warmth produced from the body, when carrying the fountain pen in the pocket, the expansion of the connected parts or members will invariably cause the fountain pen to "sweat" or leak at the points of connection of the parts, because of such simultaneous expansion of the said parts; and, thereby cause a great annoyance to the user of the pen-holder, because of the possibility of soiling the fingers or the pocket with the ink upon the outside of the pen-holder.

With this most serious objection in view, it is the principal object of my present invention, to provide a fountain-pen which will not "sweat" or leak, and which, to all appearances, shall be of the same construction as the "hard-rubber" fountain-pen now in general use.

My present invention consists, therefore, in a novel construction of fountain-pen comprising a tubular main body or barrel and a detachable end-member or members, the said parts being made of different materials having different qualities when affected by the heat, namely:—One of the said parts being of one material, such as hard rubber which expands with the heat, while the other part being of another material, such as celluloid, which contracts, owing to shrinkage or contraction due to an evaporation of the solvents contained in the material, with the heat, and thereby results in producing a solid and tight joint at the point of juncture of the said connected parts.

This invention consists furthermore, in the novel construction of fountain pen comprising a main body or barrel of celluloid or other similar plastic material which will shrink or contract, owing to the evaporation of the solvents of the celluloid, with heat, and one or more end-members detachably and separably connected with the said main body or barrel, said end member or members being made of hard-rubber which will expand with heat.

The invention is illustrated in the accompanying drawing, in which:—

Figure 1 is a side view of the fountain pen embodying the principles of my present invention, and Fig. 2 is a longitudinal sectional representation of the main body or barrel and an elevation of the pen-retaining or holding member which is detachably connected with the said main body or barrel, said two parts being made from different materials, the one having contracting properties with heat and the other expanding with heat. Fig. 3 is a longitudinal sectional representation of all the parts of the fountain pen.

Similar characters of reference are employed in the said above described views, to indicate corresponding parts.

Referring now to the said figures of the drawings, the reference-character 1 indicates a tubular holder or barrel, the same being made of celluloid, cellenite, or any other suitable plastic material which contracts with heat, the said main body, holder or barrel 1 being usually closed at its one end, as at 2, and having an open end 3 which is provided with an internally screw-threaded part 4.

The reference character 5 indicates one of the end-members of the fountain pen, the said end-member 5, being made of hard rubber which expands with heat. The said member is provided with a reduced and screw-threaded shank 6, and in this case carries the usual nib or pen 7. The screw-threaded shank 6 is screwed directly into the internally screw-threaded and open end 3 of the hollow or tubular main body or barrel 1 of the fountain pen, so as to be separated from said body or barrel for the purpose of filling said body or barrel with ink.

As has been previously stated, fountain pens, in which the body or barrel and the end-pieces are made of the same material, as soon as they become heated when carried in the pocket, will "sweat" or leak at the juncture of the said parts; but, when the two parts are made of different materials, one of which has the property of contracting when becoming warm, and the other having the property of expanding when it becomes warm, a tight and non-leaking joint will be produced, and a fountain pen which is always clean will be the result.

Referring now again to Fig. 2, it will be clearly evident, that with the heat, while being carried in the pocket, or from the hand while writing, with the expansion of the screw-threaded shank 6 of the member 5, there will be a corresponding contraction of the open end-portion 3 of the body or barrel 1, whereby a tight fit or joint is maintained, and in consequence there will be no oozing or sweating of the ink through the joint formed by the said connected parts.

It is a known fact that the celluloid or other similar material of which the body of the pen-holder is made, while being carried in the pocket as well as when carried in the hand, while in use, does contract owing to the application of the heat from the body of the person, and that the hard rubber end piece or pieces will expand by the application of said heat; and, the celluloid holder or body 1 being screwed upon the hard rubber-piece 5, the greater the shrinkage or contraction of the celluloid and the greater the expansion of the hard rubber, the tighter a joint will be produced. This is an essential and important feature of the invention because thereby a non-sweating or non-leakable joint is achieved. Owing to the fact that the celluloid is of a soft or pliable nature, while vulcanized rubber is hard and brittle, it will be evident, that the screw-threads upon the hard rubber will always cut their way out of the pliable celluloid should the joint become very tight, thus enabling the removal of the end cap when it is desired to refill the tubular body of the pen-holder with a fresh supply of ink.

I claim:—

1. A fountain pen comprising a tubular barrel, and an end-member separately connected with said barrel, said barrel and the end-member being made of different materials, one of said materials having the quality and tendency to contract, with an application of heat thereto, while the other material has the tendency to expand with an application of heat thereto and thereby produce a non-sweating joint where said barrel and the end-member are joined.

2. A fountain pen comprising a tubular barrel, and an end-member separably connected with said barrel, said barrel having the quality and tendency to contract, with an application of heat thereto, while the end-member has the tendency to expand with an application of heat thereto and thereby produce a non-sweating joint where said barrel and end-member are joined.

3. A fountain pen comprising a tubular barrel having an open and internally screw-threaded end, and an end-member provided with a screw-threaded shank adapted to be screwed into said screw-threaded end of said barrel, said barrel and screw-threaded end having the quality and tendency to contract, with an application of heat thereto, while said end-member and its shank have the tendency to expand with an application of heat thereto, all being arranged to produce a non-sweating joint where said barrel and end-member are joined, substantially as and for the purposes set forth.

4. A fountain pen comprising a tubular celluloid barrel, and a hard rubber end-member separably connected with said celluloid barrel, said barrel having the quality and tendency to contract, with an application of heat thereto, while the end-member has the tendency to expand with an application of heat thereto and thereby produce a non-sweating joint where said barrel and end-member are joined.

5. A fountain pen comprising a tubular celluloid barrel, having an open and internally screw-threaded end, and a hard-rubber end-member provided with a screw-threaded shank adapted to be screwed into said internally screw-threaded end of said barrel, said barrel and screw-threaded end having the quality and tendency to contract, with an application of heat thereto, while said hard-rubber end-member and its shank have the tendency to expand with an application of heat thereto, all being arranged to produce a non-sweating joint where said barrel and end-member are joined, substantially as and for the purposes set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 24th day of January, 1906.

WILLIAM C. LUTHER.

Witnesses:
FREDK. C. FRAENTZEL,
FREDERICK JAMISON.