C. I. HALL.

RECORDING STYLUS.

APPLICATION FILED OCT. 30, 1919.

1,405,409. Patented Feb. 7, 1922.

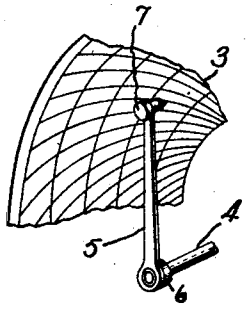

Fig. 1.

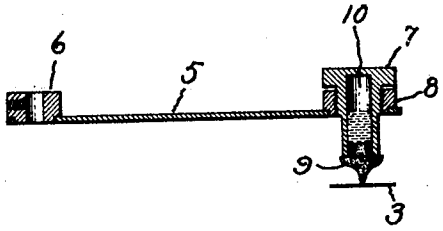

Fig. 2.

Inventor:
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UNITED STATES PATENT OFFICE.

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RECORDING STYLUS.

1,405,409. Specification of Letters Patent. **Patented Feb. 7, 1922.**

Original application filed December 9, 1916, Serial No. 136,005. Divided and this application filed October 30, 1919. Serial No. 334,433.

To all whom it may concern:

Be it known that I, CHESTER I. HALL, a citizen of the United States, residing at Fort Wayne, in the county of Allen, State of Indiana, have invented certain new and useful Improvements in Recording Styli, of which the following is a specification.

This application is a division of my copending application, Serial No. 136,005, filed December 9, 1916, which resulted in Patent No. 1,331,915, issued Feb. 24, 1920.

My invention relates to recorders, and more particularly to the recording stylus or pen used therewith. In previous forms of styli, the line-tracing point was most usually formed of steel or some hard durable material, having a small capillary aperture and adapted to feed the ink as needed.

By means of my invention it is possible to do away with metallic points entirely, and thus cause the stylus to be more durable and less liable to be adversely affected by temperature or atmospheric conditions, which tend to oxidize the metal points hitherto used. The manufacture of the line-tracing point out of metal is also comparatively expensive; my device is relatively inexpensive and extremely simple in construction.

My invention more particularly involves the use of a non-metallic stopper for the ink receptacle on the stylus; such stopper being made of a porous material naturally allowing a small amount of ink to flow therethrough at a uniformly slow rate. The stopper is formed with a line tracing point adapted to apply the ink to a record sheet or other surface and the material of the stopper is rigid to such a degree that the stopper and its point will retain their shape while in use. For the stopper itself, I have found that any material fulfilling the above requirements may be used, but I have found that, for example, bamboo or cane or artificial lava are well adapted for the device shown herewith. The ink receptacle is adapted to be closed by this stopper or porous material, which stopper is so arranged that its pores or fibers extend in the direction of the flow of ink. It has been found that when such a stopper is used the ink is fed at just about the right rate through the stopper on to the record sheet. Oxidization of the ink is effectively obviated, and the stopper is well adapted to produce a uniform mark.

The accompanying drawings show one embodiment of my invention, although it is to be understood that many other forms will suggest themselves to one skilled in the art. In the drawings Figure 1 is a perspective view showing the stylus in use, and Fig. 2 is a detail view in section of the stylus showing how it is constructed.

Referring now more in detail to the drawings, the numeral 3 represents the record sheet which is relatively movable with respect to the stylus. The stylus is shown as supported upon a rod 4, which may be appropriately moved so as to cause the stylus to be actuated. A supporting member 5 carries a collar 6 at one end for a convenient mode of attachment of the stylus to the rod 4; and at the other end carries the ink well 7. The ink well is screw threaded into a collar 8 held rigidly to the member 5 and has a relatively long well or cavity 10 extending practically the full length of the part 7 and having its open end appropriately closed by the stopper 9 formed in the shape of a point, as shown, the stopper 9 with its point being made of some substance which is porous and at the same time rigid to such an extent as to retain its shape while in use. Artificial lava and some kinds of wood, such as bamboo and cane, are well adapted for this purpose. Should the stopper 9 be made of fibrous wood, such as those mentioned, the fibers should run parallel with the walls of the cavity 10, so as to form a plurality of extremely fine capillary tubes from the well to the point of the stopper 9. The ink well 7 is readily adjusted in the collar 8 by means of the screw threads provided therein. Although one particular form of ink well is here shown, it is to be understood that any other configuration may serve for the purpose indicated, so long as one part of it is made of a porous material provided with a point to serve as the point of the stylus.

While I have shown one specific embodiment of my device, I do not wish to be limited thereto, but aim to cover in the appended claims all modifications falling fairly within the scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A stylus comprising a member having a cavity for a marking fluid, at least a portion of said member being made of a material

which is rigid and porous, said portion being shaped to form the point of said stylus.

2. A stylus comprising a well forming member, and a stopper for the well made of a material which is rigid and porous, said stopper being shaped to form the point of the stylus.

3. A stylus comprising a member having a totally enclosed receptacle for a marking fluid, at least a portion of said member being made of a rigid material which has a porous structure in the direction of the flow of the marking fluid, said portion being shaped to form the point of said stylus.

4. A stylus comprising a well forming member, and a stopper for the well made of porous wood, with the pores running in the direction of flow of a marking fluid in the well, said stopper being shaped to form the point of the stylus.

5. A stylus comprising an arm, an ink well supported by said arm, a stopper shaped to form the point of the stylus, said stopper being made of bamboo having its fibers running in the direction of the flow of ink.

In witness whereof, I have hereunto set my hand this 27th day of October, 1919.

CHESTER I. HALL.