C. B. TUCKER.

DERMOPATHIC INSTRUMENTS.

No. 188,082. Patented March 6, 1877.

Fig. 1.

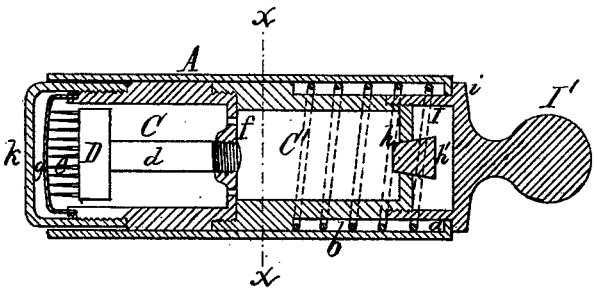


Fig. 2.

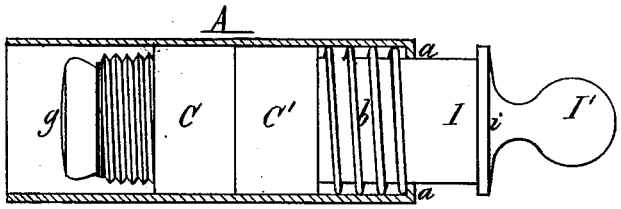
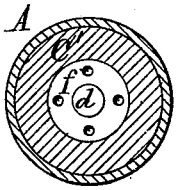


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE

CHARLES B. TUCKER, OF LYONS, NEW YORK.

IMPROVEMENT IN DERMOPATHIC INSTRUMENTS.

Specification forming part of Letters Patent No. **188,082**, dated March 6, 1877; application filed December 6, 1876.

To all whom it may concern:

Be it known that I, CHARLES B. TUCKER, of Lyons, in the county of Wayne and State of New York, have invented certain Improvements in Dermopathic Instruments, which improvements are fully set forth in the following specification and accompanying drawing:

My invention relates to that class of instruments which are designed for the treatment of diseases by puncturing the skin, and which consist, generally, of a series of needles secured in a head formed with a shank screwing into the head of a hollow cylinder, which contains a medicinal preparation.

This hollow cylinder is sometimes arranged in a stationary case, and connected therewith by a spiral spring, so that by raising the cylinder a tension will be produced in the spring, which, upon releasing the cylinder, causes the same to descend, and the needles to puncture the skin.

My invention relates to the particular construction of the instrument, so as to be convenient in handling; and its nature will be fully understood from the following description.

In the accompanying drawing, Figure 1 is a sectional elevation of my improved instrument. Fig. 2 is an elevation, with the outer case in section, showing the hollow cylinder raised and the spiral spring compressed. Fig. 3 is a cross-section in line *x x*, Fig. 1.

A is the outer cylindrical case, provided with a flange, *a*, against which rests the spiral spring *b*. C C′ represent the two parts of the hollow cylinder, screwed together, and arranged in the outer case A, so as to slide therein. D is the metallic disk carrying the needles *e*, and provided with a shank, *d*, screwing into the perforated head *f* of the portion C of the hollow cylinder. *h* is the opening, formed in the end of the portion C′ of the hollow cylinder, and *h′* the plug for closing the same after the cylinder is filled. I is the hollow cap, screwed to the end of the cylinder portion C′, so as to protect the plug *h′*. It is provided with a shoulder, *i*, resting against the shoulder *a* of the outer case, and a handle, I′, by which the cylinder C C′ is raised in applying the instrument. The space between the needles is packed with cotton or other suitable material, which is held in place by a piece of chamois-skin, *g*, stretched over the needle-points, and secured to the end of the portion C, in the usual manner. The needles are preferably so arranged that their points form a slightly-convex surface, highest at the center, whereby all the needles are caused to penetrate the skin to an equal depth. *k* is a cover, screwed on the outer end of the cylinder portion C, to protect the needles when the instrument is not in use.

When the cylinder C C′ is required to be filled, it is raised, as shown in Fig. 2, when the cap I I′ is unscrewed, and the preparation introduced, through the opening *h*, into the portion C′, whence it passes into the portion C through the perforated head *f*, and around the needle-disk D, which is loosely fitted in the hollow cylinder, into the packing material between the needles.

In applying the instrument, the case A is placed with its lower end upon the skin, when, by raising the cylinder C C′ by means of the cap I I′, the spring *b* is compressed. Upon releasing the knob I′ the cylinder descends under the pressure of the spring *b*, and causes the needles to puncture the skin, the flange *i* of the cap I striking against the shoulder *a* of the case A, whereby the movement of the cylinder C C′ is arrested, and the needles prevented from penetrating too far.

The position of the needles with reference to the cylinder C C′ is readily regulated by turning the shank *d* in the head *f*.

The outer case A, besides forming a stop limiting the movement of the hollow cylinder, protects the spiral spring *b* from injury. The needle-shank *d* being reduced in length, and the spring arranged on the outside of the cylinder C C′, the latter is enabled to hold a much larger quantity of liquid than in other instruments of this class without increasing its size.

My improved instrument is readily constructed of hard rubber, the cylinder C C′ being made in two parts, as shown in the drawing, to facilitate the molding and casting thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the outer stationary case A, provided with shoulder *a*, of the inner movable cylinder C C′, provided with needle head and shank D *d*, and perforated head *f*, spring *b* interposed between the outer case and movable cylinder, and cover I I′, secured to the latter, and provided with shoulder *i*, substantially as and for the purpose hereinbefore set forth.

CHAS. B. TUCKER.

Witnesses:
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