(No Model.)

H. N. SIEGENTHALER.

EMBALMING INSTRUMENT.

No. 387,454. Patented Aug. 7, 1888.

Fig. 1

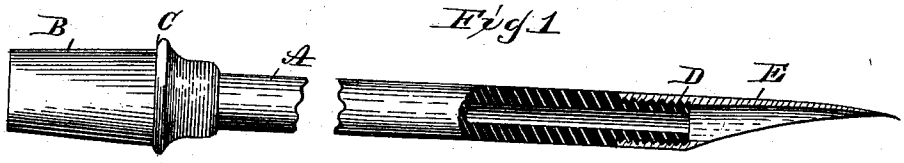
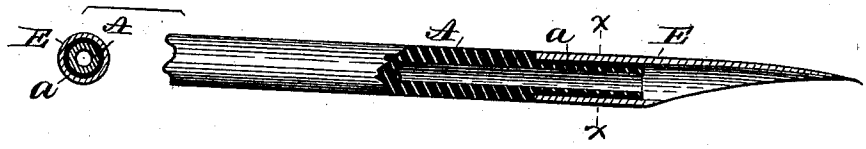


Fig. 2

Fig. 3



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EMBALMING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 387,454, dated August 7, 1888.

Application filed March 19, 1888. Serial No. 267,694. (No model.)

To all whom it may concern:

Be it known that I, HARVEY N. SIEGENTHALER, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Embalming-Instruments, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in instruments for puncturing bodies and conveying embalming liquids into them in the operation of embalming corpses, and are known as "trocars."

The objects of the invention are, first, to provide a non-corrosive tube or nozzle and a sharp keen puncturing-tip; second, to provide a non-corrosive tip or nozzle and a sharp keen removable puncturing-tip, whereby the tips may be renewed when dull and be detached from the tubes for the purpose of cleaning them, and, third, to provide a non-corrosive tube with a reduced end and a metallic tip with a sleeve into which the reduced end is fitted and arranged to occupy the whole of that part of the interior of the sleeve which would be exposed to the action of the embalming-fluid and be difficult of access in cleaning.

In the accompanying drawings, forming a part of this specification, and on which like reference-letters indicate corresponding parts, Figure 1 represents a partial side and partial sectional view of my improved trocar; Fig. 2, a detail perspective view of the tip and adjacent end of the tube; Fig. 3, a similar view to Fig. 1, showing another form of joint between the tube and tip.

The letter A designates a tube of vulcanized rubber, fashioned at one end with an enlargement, B, having a shoulder, C, and adapted to receive and connect with the end of the rubber hose by which the embalming-fluid is conducted from the pumping-syringe to the trocar. At D in Fig. 1 the tube is reduced in diameter and the resulting tenon provided with a screw-thread.

The letter E designates a metallic puncturing-tip, reduced to a sharp thin point at one end, similar to the tool known as a "gouge," and fashioned with special reference to readily puncturing a corpse. At the other end the tip is of tubular form, constituting a sleeve of about the same length as the tenon on the tube, and having, as shown in Fig. 1, a screw-thread, into which the tenon is screwed. The exterior diameter or the surfaces of the tube and sleeve are made flush where they meet, so as to avoid a shoulder or other projection which will interfere with the insertion and removal of a trocar into and from a corpse.

It will be observed that that part of the tip which is difficult of access to clean is lined with the tenon. The embalming-fluids have more or less acidity, or possess ingredients which readily corrode and eat metallic substances. The tip is of metal, preferably of steel, for the purpose of securing a very sharp edge. It is important, therefore, that the tip be so made that it can be thoroughly cleansed from the fluid after each use of it, so as to prevent the destruction of its keen edge and the forming of rough places on it—the result of the acid in the fluid. The sleeve being occupied interiorly by the tenon, is therefore protected from the action of the acid in that part which cannot be reached in cleansing. The result is that the trocar thus constructed lasts very much longer than the usual form of trocars, and is free from the objections of internal corrosion in those portions which are metallic. It is also a fact that the points wear away and become useless long before the tube is impaired, and so it becomes expedient, in order to save the tube, that the tip shall be detachable, so as to supply new ones to an old tube. I prefer the screw-thread joint shown, though I contemplate any other suitable detachable connection.

The screw-thread form is particularly good when the tip is to be detachable. In Fig. 3 the tenon of the tube is left smooth and fitted tightly in the tip, and an adhesive substance, as *a*, may also be used, so as to secure the tip permanently.

The embalming-liquid flows through the tube and out of the tip at its sharpened end.

I am aware that it is old to provide an embalming apparatus with hollow metallic nipples terminating in sharp rounded points and provided with a number of small perforations near the pointed end for the emission of the embalming-fluid. I am also aware that hypo-

dermic syringes have been provided with nozzles or needles having the point cut in an oblique direction, and the other end terminated in a square block or head with an interior screw-threaded head adapted to screw upon a threaded stem projected from the body of the syringe. Such devices cannot accomplish the objects of my invention and are structurally different, and I therefore disclaim them. It will be observed that none of the characteristics described in this specification with reference to my device and brought out in the claims are found in the subject of these disclaimers. The difference between them and my device is readily discernible.

The subject of this application fulfills a want long felt in the art of embalming.

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

1. As an improved article of manufacture, a trocar consisting of a vulcanized rubber tube reduced in size at one end, and of a metallic tip having a sharp keen point at one end and composed of a sleeve at the other end of substantially the same length as the reduced end of the tube and fitted over said end.

2. As an improved article of manufacture, a trocar consisting of a vulcanized rubber tube having one end reduced and exteriorly screw-threaded, and of a metallic tip having one end reduced to a keen sharp point and the other composed of a sleeve of substantially the same length as the reduced end of the tube and screw-threaded to receive said end, whereby the interior of the sleeve is protected by the material of the tube.

In testimony whereof I affix my signature in presence of two witnesses.

HARVEY N. SIEGENTHALER.

Witnesses:
WILBER COLVIN,
JAS. H. MAHAN.