F. A. STOHLMANN & E. PFARRE.

Cauterizer

No. 203,387. Patented May 7, 1878.

Fig. 1.

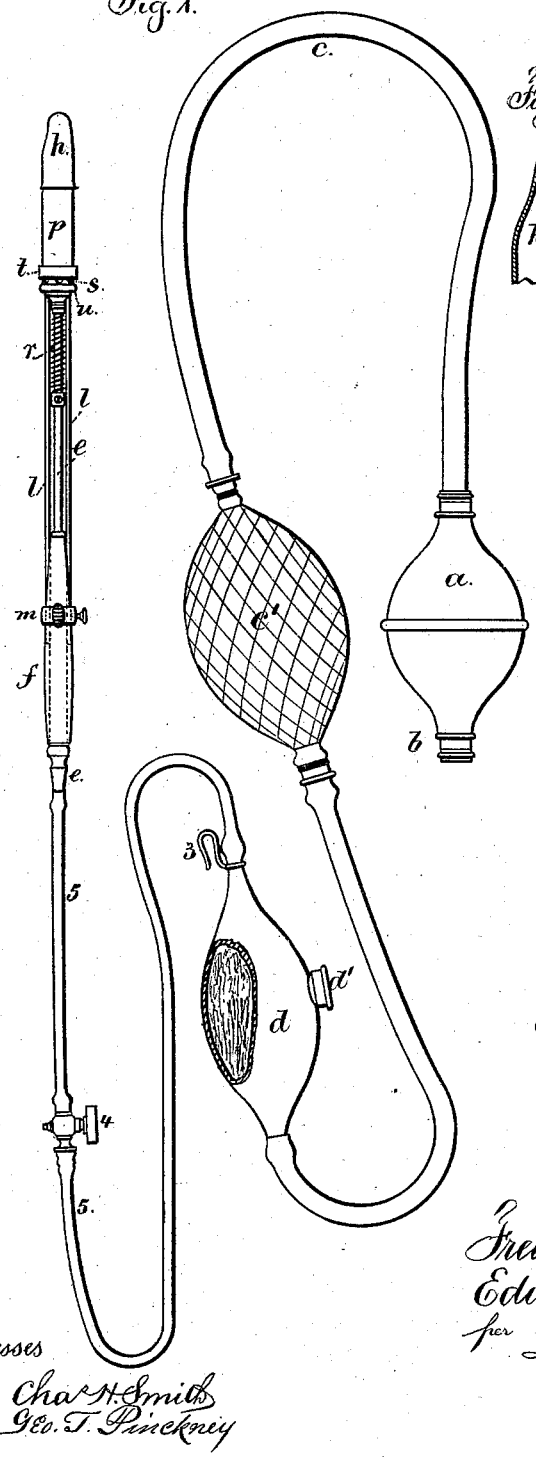

Fig. 3.

Fig. 2.

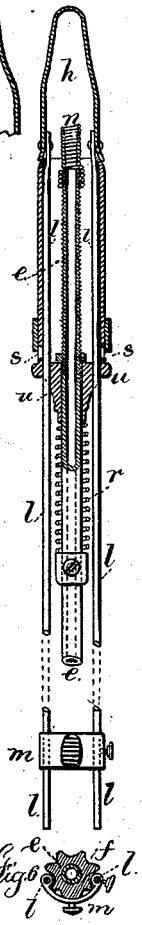

Fig. 6.

Fig. 4.

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK A. STOHLMANN AND EDWARD PFARRE, OF BROOKLYN, N. Y.

IMPROVEMENT IN CAUTERIZERS.

Specification forming part of Letters Patent No. **203,387**, dated May 7, 1878; application filed April 12, 1878.

To all whom it may concern:

Be it known that we, FREDERICK A. STOHLMANN and EDWARD PFARRE, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Cauterizers, of which the following is a specification:

Instruments have been heretofore made of platina and heated by the internal combustion of carbonaceous materials, such instruments being adapted to various surgical operations; but in most instances the internal construction has been complicated and difficult to repair or to keep in proper order.

Our invention relates to an improved vessel for holding alcohol, naphtha, or other vaporizable hydrocarbon, whereby the risk of explosion or of spilling the liquid is avoided. This is of great importance, so as to prevent accident or interruption during the performance of any surgical operation.

We heat the cauterizing-instrument by the direct combustion of the hydrocarbon vapors within platina tip, and said tip is in the form of a flattened teat, a knife, a thimble, or a needle, according to the surgical operation that has to be performed. These cauterizing-instruments are removable, so as to be changed as required, and the heating-jet and its jet-tube are surrounded by a shield that prevents the lateral escape of heat.

In the drawing, Figure 1 is a general view of the instrument. Fig. 2 is a section in larger size of the cauterizer and its jet-tube and shield. Fig. 3 is a section of the cauterizing-tip at right angles to that shown in Fig. 2, and Figs. 4 and 5 are detached views of different-shaped cauterizing-instruments.

The bulb *a* is of usual construction, with an inlet air-valve at *b*, and a tube, *c*, leading to the expansion air-vessel *c'*, of thin india-rubber, protected by a netting, and acting to maintain a nearly-uniform flow of atmospheric air through the carbureter *d*. This vessel *d* is made with an opening at one side, and a screw-cap or plug, *d'*, and it contains cotton or similar fibrous material. The benzine, alcohol, naphtha, or other vaporizable hydrocarbon liquid is introduced into this carbureter *d* only in sufficient quantities to saturate the fibrous material and cause the evaporation of the liquid by the air blown through the same, so as to form a combustible fluid that can be burned within the cauterizer for heating the same. There is a hook, 3, upon the carbureter, so as to suspend the same from the button-hole, and a cock, 4, in the flexible tube 5, that leads to the cauterizing-instrument, by means of which the quantity of the combustible material can be regulated.

The cauterizing-instrument is composed principally of the tube *e*, to which the vapor-tube 5 is connected, the handle *f*, and the cauterizing-tip *h*. At the end of the tube *e* the vapors produced, as aforesaid, issue and are ignited, and burn within the hollow platina cauterizing-tip *h*, and heat the same.

The manner of using the cauterizing-instrument in surgical operations, being known, does not require further description.

We remark that the hollow flattened teat shown in Figs. 1, 2, and 3 is adapted to some operations. The knife, Fig. 4, and the needle, Fig. 5, are available in other operations.

There is, by preference, a coil or helix of platina wire, *n*, at the end of the tube *e*, which becomes intensely heated, and, by contact with the hollow cauterizer, aids in heating the same.

In order to sustain the cauterizing-tip *h*, we make use of the two side rods *l l*, that extend back to the handle *f*, and pass into grooves in the sides of the handle, and are held in place by the clip *m*, that passes partially around the handle. (See Fig. 6.) This clip can be moved endwise of the handle by the thumb applied to the clip, and in so doing the cauterizing-tip can be drawn back against the platina helix *n*, or moved away from the same, to regulate the heat.

The tubular shield *p* is made with a head, *u*, that slides upon the tube *e*, and it is pressed forward by the spring *r*. There are holes *s* for the escape products of combustion near the back end, and there may be a slide-ring, *t*, to regulate the size of the escape-apertures. The forward end of this shield slides within the cauterizing-tip when the latter is drawn back toward the heating-jet, so as to prevent the escape of flame or heated gases in the vicinity of the part that is being cauterized. The side rods *l* of the cauterizing-tip *h* slide through and are guided by this head *u* upon the tube *e*.

It is often desirable to employ, in connection with this cauterizer, a tubular speculum of a non-conducting material, such as soapstone or asbestus.

We claim as our invention—

1. The combination, with the cauterizing-instrument, of a carbureting-vessel containing fibrous material and a vaporizable liquid hydrocarbon and an air-forcing bulb, substantially as set forth.

2. The cauterizing-tip, made hollow, in combination with the jet-pipe *e*, shield *p*, and means for moving the cauterizing-tip toward and from the jet, substantially as set forth.

3. The combination, with the cauterizing-tip, of the helix *n* and jet-pipe *e*, substantially as set forth.

4. The combination, with the cauterizing-tip *h* and the shield *p*, of the spring *r*, to keep the end of the shield in contact with the tip, for the purposes set forth.

5. The changeable cauterizing-tips provided with the side rods *l*, in combination with the handle *f*, tube *e*, and clip *m*, substantially as set forth.

Signed by us this 6th day of April, A. D. 1878.

F. A. STOHLMANN.
EDWARD PFARRE.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.