

(No Model.)

L. WIRSCHING.
THERMOCAUTER.

No. 548,689.

Patented Oct. 29, 1895.

Fig. 1.

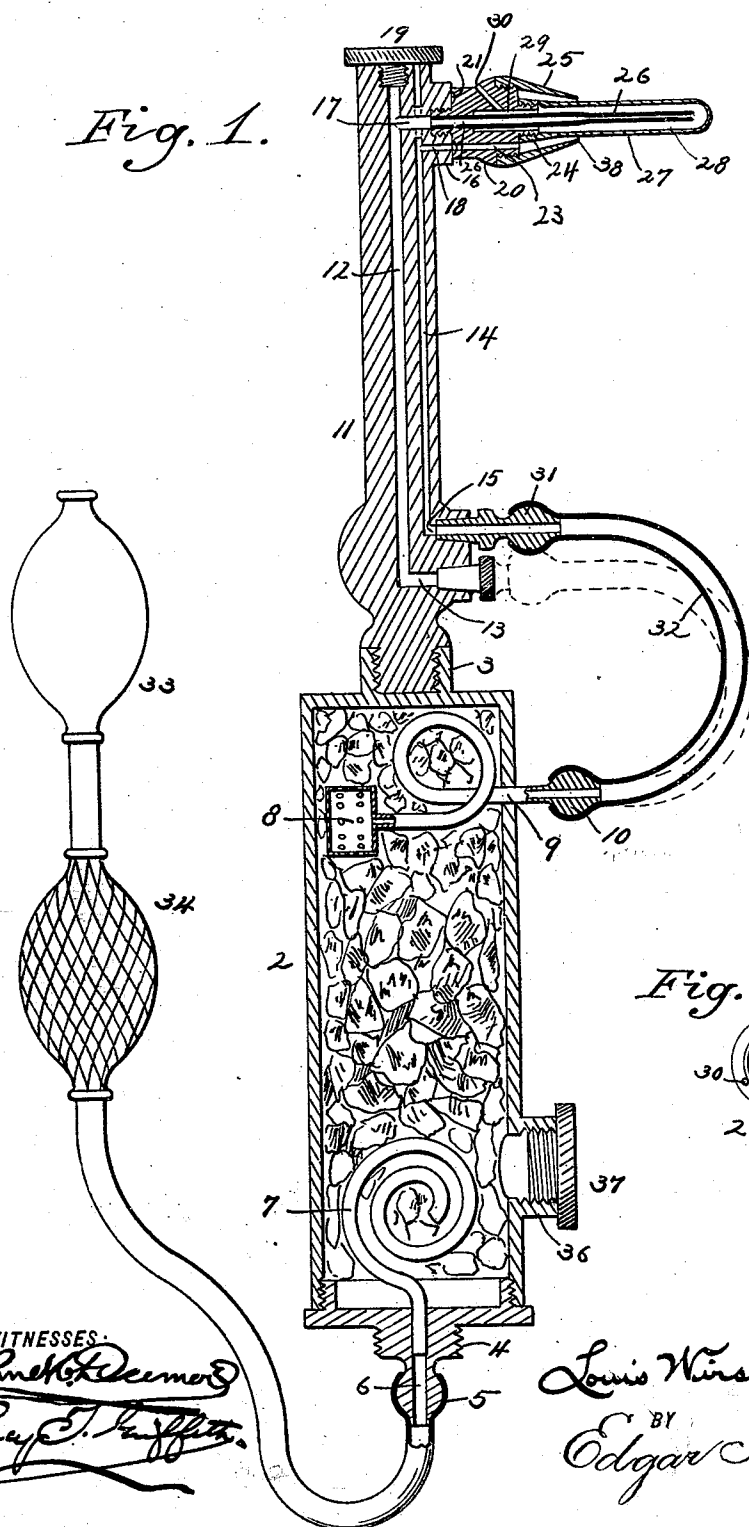


Fig. 2.

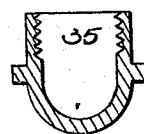
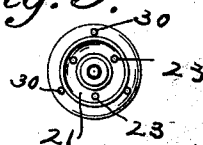


Fig. 3.



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THERMOCAUTER.

SPECIFICATION forming part of Letters Patent No. 548,689, dated October 29, 1895.

Application filed March 9, 1895. Serial No. 541,078. (No model.)

To all whom it may concern:

Be it known that I, LOUIS WIRSCHING, a citizen of the United States, and a resident of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Thermocauters, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts in all the figures.

This invention is an improvement in thermocauters, and the object thereof is to produce a perfectly-efficient instrument of this class which shall involve simplicity in construction and operation, which will fully answer the purposes for which it is intended, which shall not be liable to get out of order or need repairs, and which shall always be in a condition for use. This object I accomplish by means of the construction described in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 represents a central vertical section of my improved thermocauter with an air-forcing apparatus connected therewith, and Figs. 2 and 3 details of the construction which I employ.

Referring to Fig. 1 of the drawings, the numeral 2 designates an air-carburetor, which may be of any desired form or construction, but which is preferably cylindrical in shape, and provided at one end with a tubular projection 3, having a screw-thread on its inner wall, and at the opposite end with a projection 4, having a ball-shaped head or attachment 5, through which and communicating with the interior of the carburetor is a bore or passage 6, with which connects a coiled tube 7, located within the carburetor, as shown in said figure. Within said carburetor is also placed a box or vessel 8, the walls of which are perforated, as shown, which is provided with a tube 9, preferably coiled within the carburetor, and is provided with an enlarged head 10. Secured to the screw-threaded tubular projection 3 at the end of the carburetor is an arm 11, having a central bore 12, provided with a right-angular extension 13, which opens at one side of the said arm at a short distance from the end of the carburetor, and the other end of which extends through and opens at

the opposite end of the arm; also with another bore or passage 14, provided with a right-angular and enlarged extension 15, which opens adjacent to the branch 13 of the bore 12, the branch 13 being also enlarged and adapted to be closed ordinarily by a plug. The end of the arm 11 opposite the carburetor is provided with an upwardly-extending shoulder 16, having a central bore or passage 17, connecting with the central bore 12 of the arm 11, the upper or open end of said passage 17 being enlarged and provided with a screw-thread, and said bore 14 being also provided with a branch 18 through said shoulder 16 and opening into the bore 14 just below the branch 17 of the bore 12; but the bore 14 is not in communication with the branch 17 and the air passing up through the bore 14 cannot enter the branch 17. The outer end of the bore 12 is enlarged and provided with a screw-thread adapted to receive a screw-threaded projection formed on a cap 19, by which the bores 12 and 14 are closed.

Connected with the enlarged end of the bore 17 by means of a screw-threaded projection is the body of the cauterizer, designated by the numeral 20, which is provided with an annular groove 21 in the base thereof, as shown in Figs. 1 and 3, with which the branch passage 18 of the bore 14 communicates when the cauterizer is in position, and from this annular groove extends a series of bores or passages 23, which communicate with an annular conical chamber 24, formed by a hollow conical attachment 25, secured to the body of the cauterizer by means of a screw-thread, as shown.

Connected with the branch 17 of the bore 12 is a tube 26, which extends upward through the body of the cauterizer and is inclosed by a tube 27, the upper end of which is closed and the lower end secured to a screw-threaded projection formed on the body of the cauterizer, the arrangement of these parts being such as to produce an annular chamber 28 within the tube 27 and surrounding the tube 26. An annular chamber 29 is also provided in the body of the cauterizer, with which communicates a number of downwardly-inclined passages 30, the operation of which will be hereinafter described, this annular chamber being also in communication with

the bottom of the chamber 28. The enlarged upwardly-extending branch 15 of the bore 14 is closed by a plug 31, provided with a central bore communicating with the passage or bore 14, and this passage and that in the enlarged head 10, which communicates with pipe 9 in the carburetor, are placed in communication by means of a tube 32.

An ordinary air-forcing device 33 and 34 is connected with the coiled pipe 7 within one end of the carburetor by means of a tube connected therewith and with the enlarged head 5 of the screw-threaded projection 4. This screw-threaded projection 4 is adapted to be closed by a cap 35 (shown in Fig. 2) when the device is not in operation, and a filling orifice or opening 36, communicating with the interior of the carburetor, is also provided and adapted to be closed by a screw-threaded cap 37.

In operation the interior of the carburetor is filled with sponges or similar substances, after which the said sponges are saturated or the chamber of the carburetor filled by some one of the refined products of petroleum, preferably benzine, through the filling-orifice 36, after which air is forced into the carburetor by means of the air-forcing device 33 and 34. This air, in passing through the carburetor and the sponges contained therein or in connection therewith, becomes highly carburated by passing through the refined product of petroleum and entering the perforated box or vessel 8 passes out through the tube 9, tube 32, the bores 14 and 18, into the annular groove 21 in the bottom of the body of the carburetor 2, from which it passes into the annular chamber 24 and is discharged at the nozzle or discharge-orifice 38, where it is ignited and burned until the tube 27 becomes highly heated, preferably to a red heat, after which the plug 31 in passage 14 is withdrawn and placed in the opening of the branch passage 13, thus forming a communication between the carburetor and the bore or passage 12, which is in communication with the central tube 26 of the cauterizer. The carburated air being discharged at the outer end of the pipe 26 is ignited by means of the heat and continues to burn and maintain the tube 27, which constitutes the cauterizer proper, at the high degree of heat as long as it is desired to keep the apparatus in operation. It will thus be seen that the discharge-nozzle 38 at the top of the conical casing 25 constitutes simply an initial burner, which is placed in communication with the carburetor by means of the passage or bore 14 in the handle 11 and its connecting tubes and passages. The object of this burner is to heat the tube 27 to a high degree, preferably at about a red heat, after which the carburated air is directed through the bore or passage 12, as described, and being discharged at the upper end of the pipe 26 burns within the tube 27, thus maintaining said tube at the high degree of heat necessary in the act of cauterization, as is well

understood. During this operation of combustion within the tube 27 the gases and products thereof pass out through said chamber and through the downwardly-inclined radial passages or ports 30 in the body of the cauterizer proper.

Of course the tube 32 may be operated to direct the carburated air through either passage 12 or 14 whenever desired, and it will also be observed that the cap 19 at the end of the arm 11 may be removed and the cauterizer connected with the end of the arm in place of the cap, by which means, as will be seen, the cauterizer will be in line with the arm 11 and carburetor 2, this being a position in which it is frequently necessary that the same should be placed, and when thus placed the ports or openings through the extension or shoulder 16 are closed by means of the cap 19, the cauterizer and this cap being interchangeable. This interchange of the cauterizer from one position to the other and the operation of the device with the cauterizer in either position is rendered possible by the fact that the bores or passages 12 and 14 are in communication with each other by means of the branch passage 17.

The tubes 26 and 27 are preferably made of platinum, this being the best-known material for this purpose, although the construction thereof is not absolutely limited to the use of this material. It will also be observed that the end of the carburetor with which the air-forcing device connects, being secured by means of a screw-thread, may be removed whenever desirable to replace the old sponges with new or to cleanse the interior of the carburetor.

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

1. In a thermocauter, the combination of a carburetor, an air forcing device connected with one end thereof, an arm secured to the other end of the carburetor and having a plurality of air passages therein, one of said passages being in communication with an annular chamber surrounding the cauterizing tube at its base and the other passage communicating with a central tube within the said cauterizing tube, and a flexible tube to connect the carburetor with either of said passages, substantially as described.

2. In a thermocauter, the combination of a carburetor, an air forcing device connected therewith, an arm attached to the end of the carburetor and having two passages therein, a body 20 secured to the upper portion of said arm and provided with an annular groove 21 communicating by a passage 18 with one of the air passages in said arm, a conical attachment 25 forming a chamber 24 communicating with said groove by a series of bores 23, and the tubes 27, 28, substantially as described.

3. In a thermocauter, the combination of an arm provided with passages adapted to com-

5 municate with a carburetor, of a body secured to said arm and provided with passages to communicate with the passages in the arm, a tube 26, a tube 27 inclosing the tube 26, and conical attachment 25, substantially as described.

In testimony that I claim the foregoing as

my invention I have signed my name, in presence of two witnesses, this 5th day of March, 1895.

LOUIS WIRSCHING.

Witnesses:

PERCY T. GRIFFITH,
C. GERST.