

ANTISEPTIC SURGERY.

FIG. 408.—Hank's Antiseptic Spray.

(Extracted from the *Medical Record* of January 18th, 1877, and *American Journal of Obstetrics*, April, 1877, "Transactions of New York Obstetrical Society.")



At my suggestion and direction, Stohlmann, Pfarre & Co., No. 107 East 28th Street, have constructed the apparatus represented in the accompanying cut. The stand, boiler, and lamp correspond in design to the common atomizer, now so generally used for inhalation purposes, but are much larger. The open glass vessel for holding the antiseptic fluid has a capacity of one pint, and is held in position over the boiler in a shallow metal cup. The latter is made to move forward and backward by means of a thumb-screw, which is attached to an erect rod, fastened at the base of the apparatus. The rod in the cut is necessarily concealed from view. There is a small stop-cock arrangement low down at the side of the glass vessel, thus regulating the amount of antiseptic fluid which flows downward to the atomizing points. The long metal arm, into which is fastened in the usual manner the glass or metal spray-producer, is attached to the boiler by a kind of

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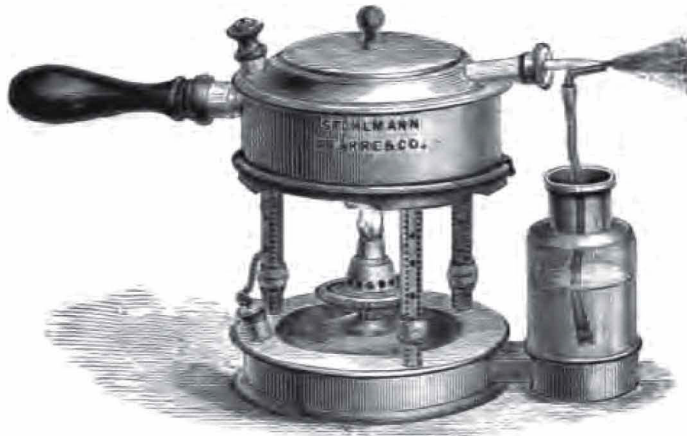
Edward Pfarre.

ANTISEPTIC SURGERY.

elbow-joint, thus enabling the spray to be projected forward at any angle. The alcohol lamp has a large tube for the wick, and over this is a second tube which slides up and down by means of a ratchet. The handle of the ratchet is seen in the cut. It readily controls the size of the blaze, the degree of heat, and the amount of steam produced. Great care should be exercised in selecting a suitable atomizing point. With a proper point a coarse or fine spray may be produced, according to the amount of antiseptic fluid admitted through the stop-cock. The force of the spray will depend upon the *blaze*, and the consequent amount of steam; and the angle of the arm will regulate its direction.

The apparatus thus constructed will supply a suitable spray for two hours' operation, as the antiseptic fluid can be replenished as required. I claim for it its portability, small size, safety, durability, and cheapness. It contrasts favorably in every way with the Lister or Sass apparatus.

FIG. 409.—Weir's Antiseptic Spray.



(The following extract is taken from a paper, read before the New York County Medical Society, on "The Antiseptic Treatment of Wounds," by DR. R. F. WEIR, of this city.)

"The best spray-producer is that devised by Lister himself. It is, however, quite costly, ranging in price from fifty to seventy-five dollars, and it was to meet this objection that the one before you has been constructed. With its diminished cost some of the improvements of Mr. Lister's lamp have been sacrificed. It is, however, essentially the same. Its hollow wick, readily raised or lowered, affords a great and controllable heat. The spray-tube is in this apparatus fixed, an objection which in the majority of cases is of no moment. It will supply spray for over two hours. It therefore requires only that the boiler—containing twenty-two ounces—should be, as well as the lamp, full at the beginning of the operation; and, with this precaution, it has been found practicable to dispense with the expensive and tell-tale windows of glass belonging to the original imported instrument. The accompanying woodcut gives a good representation of this lamp."

Further directions for its use have been supplied us by Dr. Weir, viz.:

"The lamp should be filled with alcohol at the beginning of an operation and the stopper removed from the side opening when the wick is lighted. Prior to filling the boiler with water (preferably hot) it is desirable to ascertain that the spray-tube is free by sucking or blowing through it, and also that the escape-valve works properly. If the latter is stiff, a drop of oil or glycerine should be introduced from above. When the boiler is yet quite full, the spray-tube should not be depressed very much, in order to avoid the exit of hot water. If the spray-tube is too coarse, the end of the rubber tubing immersed in the carbolic acid solution may be plugged with cotton or sponge, or the tubing itself may be narrowed by a thread loosely tied around it. Should the spray-tube become choked during an operation, a small wire, such as comes with a hypodermic syringe, can be resorted to, to clear it."

F. A. Stohlmann.

Edward Pfarre.

ANTISEPTIC SURGERY.



FIG. 410.

Heuel's Antiseptic Spray.

(Extracted from the Medical Record, May 11th, 1878.)

The apparatus represented in the accompanying cut is a modified apparatus for use in antiseptic surgery. The modification consists in the addition of two flexible rubber tubes and a steam-chest to the ordinary atomizing apparatus used for inhalation purposes, and may be readily attached by the physician himself to any

of the atomizers now used. In the annexed figure, 4 is a steam-chest, to the upper part of which is soldered, at 3, the ordinary metal atomizing tubes, and at the side a tube, 1, to which is to be attached a piece of flexible rubber steam tubing, for carrying steam from a boiler; opposite 3 is a wooden handle, 7, for holding the apparatus, and at the lowest part of the chest is a stop-cock, 5. The rubber tube, 2, delivering the medicated fluid, is also furnished with a stop-cock, 6, so that the amount of fluid atomized may be varied at pleasure. The steam and water tubes, 1 and 2, are held together by figure-of-eight pieces of wire, so that they may be handled as if they were but one tube.

As is readily seen, the length of these tubes may be varied to suit the occasion, only remembering that the longer the tubes, the greater the pressure of steam required, and the higher must the vessel containing the medicated fluid be placed, in order to deliver it at the opening of the tube, 2. The steam, which condenses in the tubing and steam-chest, is allowed to escape, when necessary, through the stop-cock, 5, so that the patient is not scalded by a jet of hot water.

The use of long flexible tubes, combined with the steam-chest, permits the boiler of this apparatus to be placed at such a distance that all danger of explosion, when ether is used, is avoided, as well as all interference with the operator. The force, amount and direction of the spray can also be varied at pleasure. In the ordinary atomizers the whole apparatus must be placed unpleasantly close to the patient; in this a very light portion is readily supported and directed by the hand without fatigue.



FIG. 411.—Little's Antiseptic Spray.

This is a Tiemann's Steam Inhaler, altered at my suggestion, so as to give a good spray. It answers well for dressing wounds. For large operations, it is necessary to use the large spray apparatus, this small one answering well for subsequent dressings. Mr. Lister uses a still smaller one for this purpose, which he carries in the pocket. This small one will work for over an hour. The best instrument is the one which makes the finest spray, it wetting and numbing the hands but little, and causing the fluid to last longer, while producing as good an effect upon the tissues. The spray-tube, in order to accomplish this, should be of small calibre. Always be careful to see that the safety-valve is right before you use it.

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