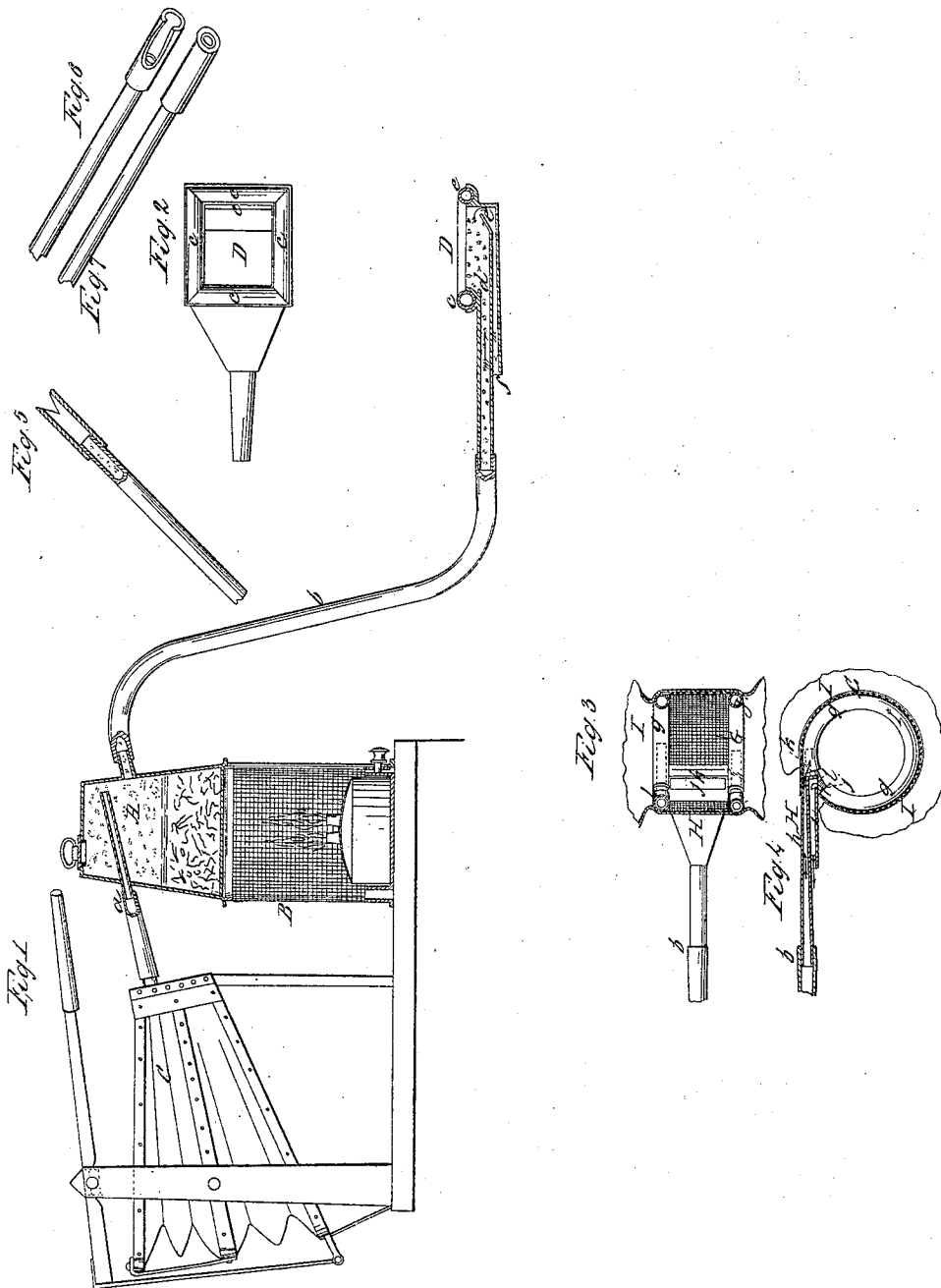


A. F. Rose.

Application of Heat and Cold in Medicine.

N^o 20,896.

Patented July 13, 1858.



UNITED STATES PATENT OFFICE.

A. F. ROSE, OF BROOKLYN, NEW YORK.

MEDICATED-VAPOR APPARATUS.

Specification of Letters Patent No. 20,896, dated July 13, 1858.

To all whom it may concern:

Be it known that I, ALEXANDER FERRIER ROSE, of the city of Brooklyn, in the county of Kings and State of New York, have invented an Apparatus for Making Applications of Heat, Cold, Moisture, Fumes, Vapors, and other Agents in Medicine and Surgery; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is an elevation, partly in section, of the apparatus. Fig. 2, is a face view of what I call the "mask" shown in Fig. 1, which fits to the person to confine the application to that part where it is required. Figs. 3 and 4, are sections taken at right angles to each other of a mask to fit the throat and neck. Figs. 5, 6 and 7, are views of masks suitable for the teeth and gums.

Similar letters of reference indicate corresponding parts wherever they occur in the several figures.

The object of this invention is the application of heat and cold or of fumes or vapors medicated or otherwise as remedial agents to any part of the body which may be the seat of pain or disease.

The apparatus consists of a heater or cooler for heating or cooling air or other gaseous or aeriform body or a generator for generating steam, or other vapor or fume, a bellows or other forcing or suction apparatus and pipes connecting the said heater, cooler or generator with what I term a mask to be directed or applied to any part of the body, for the purpose of bringing hot or cold air or vapor or fume or a mixture of air with any vapor or fume into contact with the body to act as a remedial agent.

My invention relates particularly to the construction of the mask.

To enable others to make and use my invention I will proceed to describe the construction of the apparatus and its operation.

The particular apparatus represented in the drawing is for using a mixture of air and vapor, but will serve to illustrate my invention fully in connection with the description.

A, Fig. 1, is the generator for steam or other vapor or fume placed over a lamp B, which supplies the heat necessary for generating steam from water, or vapor fume

from any other substance placed in the generator.

C, is a bellows, which should be of such construction as to supply a constant stream of air, connected with the generator A, by a pipe *a*, to supply air thereto.

b, is a flexible pipe from the generator A, having attached to it the mask D, which consists of a square box of metal or other material having one side open and having a cushion *c*, of india rubber or other material surrounding the open side for the purpose of enabling it to fit snugly to the part of the body surrounding the seat of pain or disease to which the remedial agent is to be applied, so that the open mouth of the mask may cover it (the seat of disease). This mask has an opening *d*, at one end (see Fig. 1) which extends all across it for the admission of the remedial agent and a similar opening *e*, at the opposite end for its escape through the back of the mask which is made double, as shown in Fig. 1, with an outlet at *f*. This double mask may be arranged so that the steam &c. would enter from a widening orifice above in the center and escape through an orifice or perforations all around the edge below into the double back from whence it is carried by a pipe. The objects of these double masks are to spread the steam, vapors or fumes and give as equal a glow as possible over all the surface operated upon which is certainly assisted by distributing them and conveying them entirely over the said surface in transit of escape. The escape prevents the condensation which would take place were it not provided.

The operation of this apparatus is as follows: When steam or other vapor or fume is generated from the water solution or substance in the generator the bellows is set in operation and the mask applied to the seat of disease. The air forced by the bellows into the generator mixes with the steam, vapor or fume generated therein and carries it along with it through the pipe *b*, to the mask in which it passes in a continuous stream over the surface of the diseased part before escaping through the opening *e*, and hollow back. An important consideration involved in the operation of the apparatus is, that if a simple generator were used in combination with the mask, without an air bellows or its equivalent, and the steam or other vapor or fume left to find its way to the mask by its own pressure, the

temperature would in many cases be so high that it could not be borne by the patient, but the air forced among and along with the vapor or fume by the bellows serves to temper the heat when necessary to such a degree that it can be borne and also serves to drive or convey the vapor or fume to the mask when its own pressure is not above that of the atmosphere. The supply of air can be regulated to control the temperature of the vapor or fume, or to convey it to the mask with greater or less velocity and consequently in greater or less quantity by working the bellows faster or slower. Instead of being used as a generator, the vessel A, described as the generator heated in the same manner may be used merely as a heater for heating air supplied by the bellows, to be conveyed to the mask, or it may be filled with or surrounded by ice or other frigorific agent and used as a cooler to cool air supplied in the same manner.

The bellows may be arranged in the pipe *b*, between the generator heater or cooler and the mask to draw the air into the former through suitable orifices and force the same together with vapors or fumes to the mask, or the steam by its own force coming through a pipe from the generator may be caused to work a blower or screw so as to draw in air to be carried with it in its transit for the purpose of tempering the heat; or the bellows may be applied to the outlet *f*, to draw the air, or air and vapor or fumes through the mask. The effect will be similar in both of these arrangements of the bellows as in the first described arrangement provided all other conditions are the same.

The masks shown in Figs. 5, 6 and 7 consisting of tubes of india rubber having their ends of proper form constitute masks suitable for application to the mouth, teeth and gums to be used in place of the mask D.

The mask shown in Figs. 3 and 4 has not a double back all around. It is made in the form of a band to encircle the neck. Its frame is composed of a strip *G*, of wire gauze of a length sufficient to encircle the neck and of proper width, having a strip of solid india rubber or india rubber tubing attached to each edge to make two cushions *g*, *g*, to fit to the neck and keep the gauze at a short distance therefrom. The connections between the ends of the cushions may be made by tongues *l*, *l*, slipping into the ends thereof. To one end of the strip of gauze is attached a metal box *H*, having a double back *h*, *h*, see Fig. 4, through which the air, steam, vapor, fume or other agent is allowed to enter the space which is included between

the wire gauze, the two cushions and the patient's neck. The said box *H*, has also an escape passage *i*, through which the air, steam, vapor fume or other agent escapes, the entrance *j*, of the said passage *i*, being separated by a screen piece *k*, from the mouth of the hollow back *h*, *h*. The exterior of this mask is enveloped by a sheet *I*, of india rubber or water-proof cloth which is also drawn closely around the neck to confine the air, steam, vapor, or other agent which, when the mask is applied, is compelled to take the course indicated by arrows shown in Fig. 4. A similar mask may be employed to encircle any part of a limb or even of the body, or one may be constructed so as to be capable of extension or diminution in its circumference or breadth to adapt it to different parts.

It is obvious that the masks *D*, or *H*, the former represented with a double the latter with the single back can be made each in either way and of various materials, and that the steam &c., can be applied direct to the part or with the intervention of flannel or other material, also that a simple opening may be substituted for the mask, formed with a contracting or expanding orifice so as to throw a jet or volume of steam &c., on the part, or flannels or india-rubber cloth or other materials may be used as masks, and an arrangement made for tapping the pipes and masks, or sponges used to take off or absorb the water of condensation.

In using fumes they might be generated separately and carried by a funnel tube into the pipe *b*, whence it is conveyed by means of the draft.

Instead of the bellows a fan blower or a pump or any other forcing or suction apparatus may be employed as the full equivalent.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The construction of the mask *D*, with a marginal cushion, a single or double back and passages substantially as described.

2. The construction of masks for encircling the neck or other part in the manner substantially as represented in Figs. 3 and 4, that is to say, with a band of wire cloth or other sufficiently flexible but yet sufficiently stiff material, a marginal cushion *g*, a passage box *H*, and an enveloping cloth *I*, of waterproof material the whole being combined substantially as described.

ALEX. F. ROSE.

Witnesses:

O. D. MUNN,
J. W. COOMBS.