(No Model.)

G. H. HURD.

INHALER FOR ANÆSTHETICS.

No. 294,047. Patented Feb. 26, 1884.

Fig. 1.

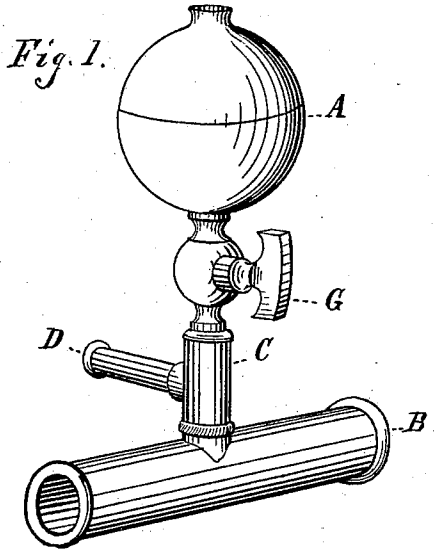


Fig. 2.

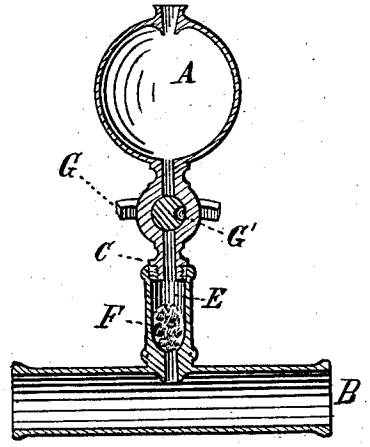
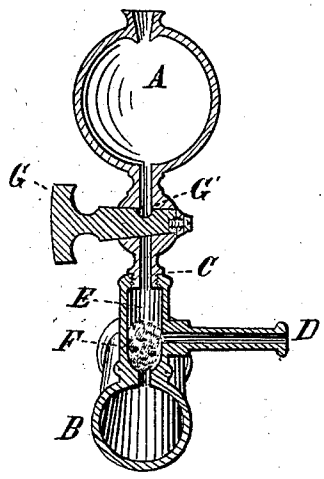


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE H. HURD, OF CLEVELAND, OHIO.

INHALER FOR ANÆSTHETICS.

SPECIFICATION forming part of Letters Patent No. 294,047, dated February 26, 1884.

Application filed March 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HURD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Anæsthetics and Mechanism for Compounding; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to anæsthetics; and it consists in mechanism for compounding the same, as will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a view in perspective, Fig. 2 a view in longitudinal vertical section, and Fig. 3 a view in vertical cross-section, of the mechanism employed.

A is a reservoir for containing chloroform, ether, or any fluid anæsthetic. The reservoir is filled through an opening at its top, which may or may not be corked.

B is a pipe, which communicates with the reservoir A through the pipe C.

D is a nozzle opening exteriorly from the pipe C. The pipe C, at the junction between it and the pipe D, is enlarged or chambered, as shown at E, and in this chamber sponge or any suitable porous substance, F, is placed. Within the communicating-tube C is also placed the charging-cock G, provided with a chamber, G′.

It will appear from the foregoing description that when the reservoir A contains chloroform or other anæsthetic, the chamber G′ of the charging-cock will be filled when it is turned to register with the duct of the reservoir A, and when thus filled and the cock G is turned so that the chamber G′ shall register or communicate with the duct of the chamber E, the contained charge of chloroform within the chamber G′ will be dropped into the chamber E.

At the end or ends of the tube B is coupled or attached any suitable hose or pipe, communicating with a receiving-bag or reservoir for containing my anæsthetic.

The process of operating my mechanism is as follows: After a receiving-bag or reservoir has been connected with the tube B, the chamber A is charged with chloroform, ether, or other liquid anæsthetic. To the tube D is now connected a container, holding liquefied nitrous oxide, which is, as a matter of course, under a great pressure. The outlet to the container holding the liquid nitrous oxide is governed by any suitable valve or stop-cock, and when this valve is open nitrous oxide will escape with great force and enter the nozzle D and pass into the chamber E and through the porous substance F, and enter the tube B in a vaporous or vaporized condition. Meanwhile the cock G has been charged with its liquid anæsthetic, as described, and its charge is dropped into the chamber C, thus becoming thoroughly admixed with the nitrous oxide before it is discharged into the tube B, so that the gas received into the receiving-bag or reservoir will be an admixture of nitrous oxide and chloroform, or other liquid anæsthetic, in any relative proportion desired.

I am aware that in an inhaler a vaporizing-chamber provided with a mouth-piece has been combined with an upper reservoir and means for regulating the flow of a liquid from the reservoir to the vaporizing-chamber, and I do not claim such an apparatus.

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

1. The combination, with a reservoir for ether, chloroform, or other similar substances, and a pipe arranged upon a lower level, and connected with said reservoir by an intermediate pipe, of a stop-cock arranged in said intermediate pipe, and having a cavity in its side, whereby definite quantities of the contents of the reservoir may be transferred therefrom to a position to fall toward the pipe below, substantially as described.

2. The combination, with a reservoir and a pipe arranged adjacent thereto on a lower level, of an intermediate connecting-pipe, and means arranged in said connecting-pipe for transmitting definite quantities of liquid from the reservoir through said connecting-pipe to the lower pipe, substantially as described.

3. The combination, with the upper reser-

voir and lower pipe, of the intermediate connecting-pipe provided with a stop-cock, the plug of which has a cavity formed in one side, and the sponge-chamber arranged below said stop-cock, substantially as described, and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. HURD.

Witnesses:
JNO. CROWELL, Jr.,
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