

UNITED STATES PATENT OFFICE.

EMILE STERNÉ, OF PARIS, FRANCE, ASSIGNOR TO THE COMPRESSED GAS CAPSULE COMPANY, OF NEW JERSEY.

INSTRUMENT FOR INJECTING GAS INTO THE HUMAN BODY.

SPECIFICATION forming part of Letters Patent No. 662,658, dated November 27, 1900.

Application filed January 19, 1900. Serial No. 1,976. (No model.)

To all whom it may concern:

Be it known that I, EMILE STERNÉ, a subject of the Emperor of Austria-Hungary, residing at Paris, in the Republic of France, (post-office address 25 Pine street, New York, N. Y.,) have invented certain new and useful Improvements in Therapeutic Instruments for Injecting Gas into the Human Body, of which the following is a specification.

My invention relates to an improvement in thereapeutic instruments adapted for the purpose of injecting gas or equivalent fluids into the human body for curative, antiseptic, or kindred purposes.

I have illustrated my invention in the accompanying drawings, designating the parts by numerals, referring to like parts by like numerals.

Figure 1 is an elevation, partially in section. Fig. 2 is a vertical section showing a slightly different form of construction of the discharging-chamber.

1 is a chamber adapted to receive a metallic capsule containing gas under pressure.

2 is a horizontal arm secured to the chamber 1.

3 is a lever suitably pivoted to the chamber 1 at 4, the horizontal arm 2 and lever 3 forming the means by which I compress the capsule within the chamber, as hereinafter described.

8 is a piercing instrument having a channel or port through the axis thereof, as at 9. Said piercing instrument is mounted at one end of the chamber 1.

10 is a retaining-nut adapted to secure the piercing instrument in position, and 9^a is a channel leading from the axial channel 9 of the piercing instrument 8.

5 is an annular recess within the chamber 1, adapted to receive the annular collar 6.

11 is a tube leading from the chamber 1 to a reservoir.

12 is a metallic capsule containing gas under pressure introduced within the chamber 1.

The operation of this device is as follows: When the lever 3 and the upright 2 are drawn together, the capsule 12 is forced against the piercing instrument 8 until by such pressure the piercing instrument is introduced into the capsule 12, and the gas contained therein

under pressure is caused to pass through the axial channel 9 of the instrument 8 and through the channel 9^a to a suitable reservoir. A second form of construction of this same instrument is found in Fig. 2. In this construction I provide a receiving-chamber formed of two parts, as at 19 and 22, connected together by a screw-thread 21. I provide one half with the wings 20 and the other half with the wings 23. The piercing instrument 8 is mounted in the part 19 in a manner similar to that above described. In the operation the part 22 is unscrewed from the part 19, the capsule 12 is introduced within the part 22, and the part 22, with the capsule contained therein, is screwed onto the part 19 until the capsule is driven against the piercing instrument 9, and the gas contained in the capsule under pressure is permitted to pass through the piercing instrument to the reservoir.

13 is an elastic reservoir, preferably in the form of a bulb, as indicated, and it may be made of rubber or other elastic material, or this bulb may take the form of a gasometer of any of the well-known forms. I provide this bulb or gasometer with a receiving-channel and an exhaust, the receiving-channel having interposed therein a puppet-valve 14 to permit the gas or fluid to flow into the receiver or bulb; but when the excess of pressure is withdrawn the puppet-valve will prevent the gas within the receiver from exhausting therefrom. I also provide this gasometer or bulb with an exhaust-pipe having interposed therein a valve controlled by hand, as 15. This tube is intended to be connected with a nozzle, as 16. I may interpose in this channel, between the points 17 and 18, a pressure-gage of any convenient form.

The operation of the device is as follows: When the capsule 12 is discharged, the gas contained therein is forced through the channels 9 and 9^a into the bulb 13. The valve 15 being closed, the bulb 13 will expand according to the degree of pressure under which the gas is confined, and as soon as the gas is exhausted from the capsule 12 the valve 14 will be seated and prevent the escape of the gas from the bulb. The nozzle 16 may then be introduced into the part to be affected,

and by the operation of the valve 15 the gas may be permitted to enter the body in suitable quantities.

I am aware that surgical injectors have
5 been made wherein fluids have been pumped into an elastic receiver and thence permitted to pass to a nozzle under the control of a valve, the elasticity of the receiver operating as an injecting force; but in all such cases a
10 pump has been used to charge the receiver.

My present invention involves the idea of combining with such receiver a metallic capsule containing gas under pressure, together with means for discharging the capsule into
15 the receiver, and I intend to limit my claims accordingly.

By the combination of a metallic capsule containing gas under pressure and an elastic receiver I am able to provide an instrument
20 by which gas injections may be administered without the elaborate apparatus which has been heretofore applied. In administering gas when the capsule is discharged it exhausts directly into the receiver without the
25 aid of a pump interposed, and the elasticity of the receiver being a fixed quantity I am enabled to regulate the pressure of the gas without difficulty by employing the valve, which I interpose between the nozzle and the
30 receiver. If the pressure of gas is great, the bulb will be expanded abnormally, and I can relieve such pressure by partially opening the valve interposed between the bulb and the nozzle, thus permitting the escape of gas
35 until it is reduced to a proper pressure.

What I claim is—

1. As a therapeutic instrument, an elastic bulb communicating with a tube, having a
40 nozzle at one end with a valve interposed in said tube in combination with a metal capsule containing gas under pressure, said capsule being contained within a capsule-dis-

charging mechanism, a tubular connection between said capsule-discharging mechanism and said bulb, substantially as described. 45

2. As a therapeutic instrument, an elastic bulb communicating with a tube, having a nozzle at one end with a valve interposed in said tube in combination with a metal capsule containing gas under pressure, said capsule being contained within a capsule-dis-
50 charging mechanism, a tubular connection between said capsule-discharging mechanism and said bulb; said capsule-discharging mechanism consisting of a chamber fitted with a
55 suitable piercing instrument and elastic washers to receive the neck of the capsule with means to force said capsule against said washer and piercing instrument, substantially as described. 60

3. As a therapeutic instrument, an elastic bulb communicating with the tube, having a nozzle at one end with a valve interposed in said tube in combination with a metal capsule containing gas under pressure, said capsule
65 being contained within a capsule-discharging mechanism, a tubular connection between said capsule-discharging mechanism and said bulb; said capsule-discharging mechanism consisting of a chamber fitted with a suitable
70 piercing instrument and elastic washers to receive the neck of the capsule, and a wing-nut internally screw-threaded and having a dome to receive one end of the capsule, the same being adapted to screw over said chamber and when screwed down to force the neck
75 of the capsule against the piercing instrument, substantially as described.

Signed by me at New York, N. Y., this 15th day of January, 1900.

EMILE STERNÉ.

Witnesses:

E. K. VAN BEUREN,
E. W. FINLAYSON.