

(No Model.)

F. WAGNER.
APPARATUS FOR EMBALMING.

No. 383,505.

Patented May 29, 1888.

Fig. 1.

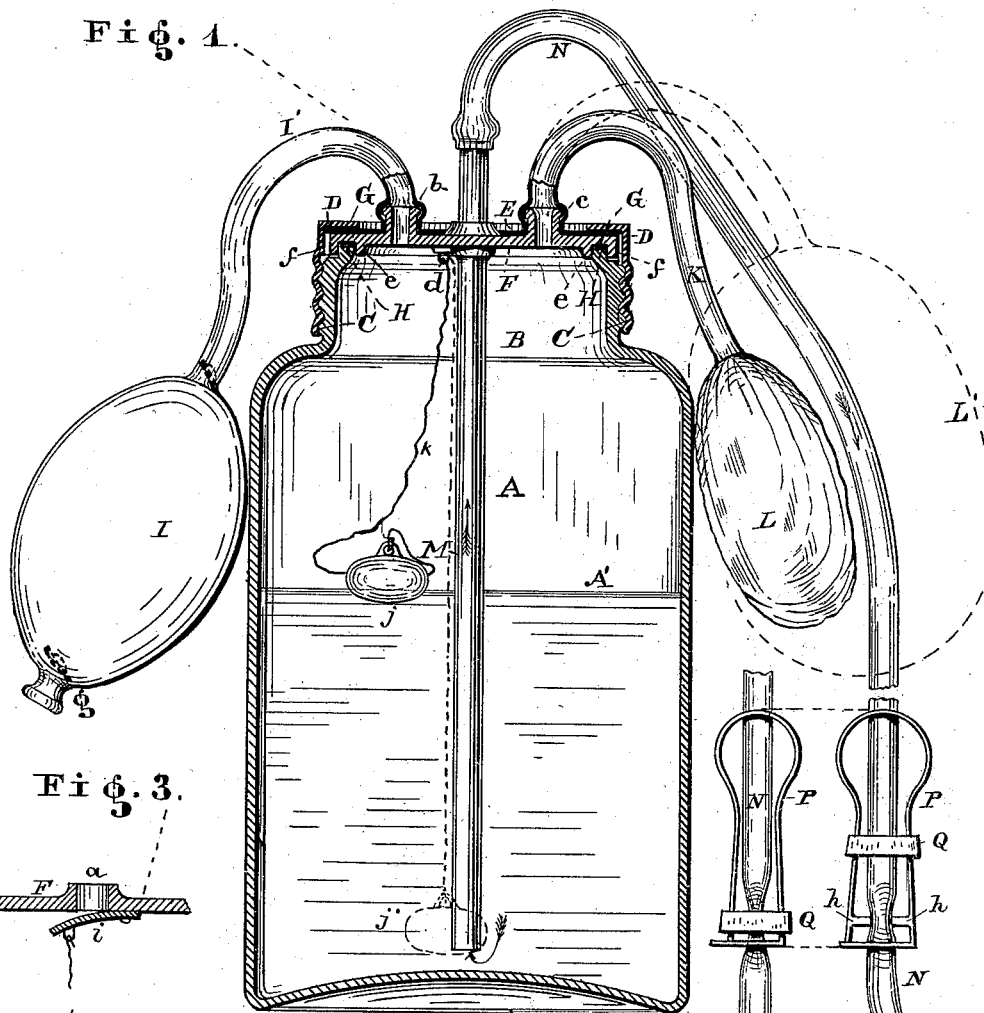


Fig. 3.

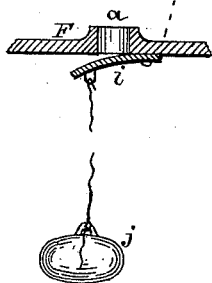
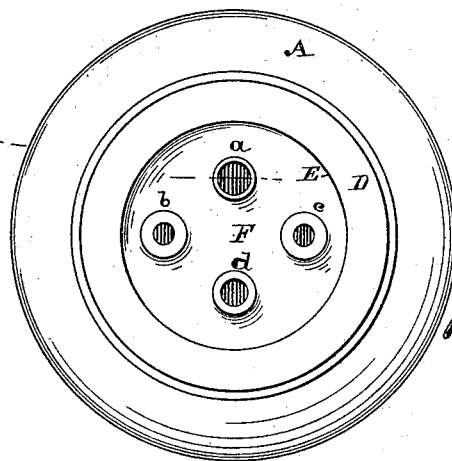


Fig. 2.



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APPARATUS FOR EMBALMING.

SPECIFICATION forming part of Letters Patent No. 383,505, dated May 29, 1888.

Application filed July 18, 1887. Serial No. 244,614. (No model.)

To all whom it may concern:

Be it known that I, FRANK WAGNER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Apparatus for Embalming; and I do hereby declare that the following is a full, clear, and complete description thereof.

The nature of my invention consists of a jar or other suitable vessel containing an antiseptic material in a fluid state, to the cover of which is connected a tube having an air-injector by which the air is forced into the vessel. In open connection with the vessel by means of a tube or pipe is an elastic compressor made to contain a surplus supply of air, which is exhausted into the jar until the fluid therein is discharged into the body of the deceased person. The fluid is forced from the jar through a pipe into the arteries and veins of the body by a continuous operation, as hereinafter shown and described.

Figure 1 is a vertical section in part—viz., jar, cap, and cover. Fig. 2 is a view of the top of the jar, showing the cap and cover having nipples or collars for the attachment. Fig. 3 represents, on the same scale as Figs. 1 and 2, an automatic device for operating the valve of the supply-port in the cover of the jar.

Like letters of reference refer to like parts in the several views.

I am aware that pumps and syringes have been employed for the purpose of injecting fluids into dead bodies for the purpose of embalming and for surgical dissection. It is understood that by such means the arteries and veins are liable to be ruptured by the force exerted; hence the whole effect of the arterial embalming is destroyed. It is also understood in this art that the sudden and successive strokes of a pump or syringe upon the tissues of a corpse cause a bursting of the vesicles, thereby either destroying or rendering the embalming imperfect. The injection of the fluids by a slow, continuous, and uniform pressure is found to produce the best results in preserving the tissues and rendering the embalment the most effective. It is with this view that the said apparatus was designed to deliver the injection only as fast as the arteries and veins will receive it without danger of rupture. Its operation requires no personal attention after being once charged and put in

operation to impregnate the body with a certain quantity of fluid, more or less, as may be required.

The jar or vessel A is preferably of glass and of any suitable form or capacity adapted to the purpose designed. The neck B is made with a screw, C, Fig. 1, and provided with a screw-cap, D, constructed with a central opening, E, through which project the nipples or collars *a b c d* from the cover F, Fig. 2. This cover is preferably made of glass, hard rubber, or an equivalent which will not be acted upon by the antiseptic agent employed in embalming. No one special agent for this purpose is needed for the apparatus, though the chloride of zinc with the borate of soda in a fluid state may be used.

In case the body is designed for dissection, a suitable pigment can be injected through the arteries, veins, and tissues with the said fluid agent, for a purpose understood.

The cover F is made with two circular flanges, *e* and *f*, Fig. 1, which form an annular groove, G. In this groove is received and packed in an air-tight manner the upper end, H, of the neck B. The cap D is threaded upon the screw C, so as to fasten down the cover on the neck of the jar, as shown. Air is forced into the jar by means of the air-injector I, connected with the nipple *b* by the pipe I'. In the injector, at the lower end, *g*, is an induction-valve covering the opening into the interior of the injector. There is also a valve at the outlet into the pipe I', which valves are shown in dotted lines. By means of the valve at the lower end, *g*, air is admitted into the injector; but the air-force closes the outward passage, excepting through the pipe I' into the jar A; hence by the compression and expansion of the injector I air is received and forced therefrom into the jar A. The upper valve-opening to the pipe I' acts as a check-valve to prevent the return-air pressure from the jar and compressor L, but thereby induces greater force to the injection of the fluid into the body. As the jar is charged with air by the injector I, the air passes out through the nipple *c* and tube K into the elastic compressor or receiver L, which expands, as indicated by the dotted lines L'. The air in the jar by this means receives a re-enforcing reserved quantity and compression from the compressor

L. The pipe M passes through the cover F, and is so connected therewith as to form an air-tight joint. Attached to the upper end of the pipe M is an eduction-tube, N, terminating
 5 in connection with the nozzle O, which nozzle is inserted into one of the veins or arteries of the body for charging it with the antiseptic fluid from the jar, which fluid by the pressure of air acting thereon is forced out through the
 10 pipe M, tube N, and nozzle O into the subject.

The nozzle is usually inserted in the jugular, femoral, or brachial arteries, by which the fluid is disseminated through the veins and tissues of the corpse, and as fast as the fluid is
 15 discharged from the jar the air from the compressor L passes in and keeps up the pressure upon the fluid until it is all discharged into the subject.

By this apparatus the pumping or syringe
 20 manipulations are avoided, which manipulations are attended with a very objectionable appearance and requiring personal labor during the successive or intermitting injections. With the use of my improved apparatus all
 25 this is avoided, as the jar A may be charged with sufficient fluid to permeate the corpse, and when subjected to the required pressure and volume of air in the jar and compressor, the nozzle being inserted in the artery, the ap-
 30 paratus acts in part automatically, as the constant air-pressure will force the fluid from the jar into the body until the given quantity in the jar is discharged without any personal at-
 35 tention.

In the use of the apparatus all that is required is to charge the jar with the required amount of fluid, supply the air-pressure, and insert the nozzle, as stated. The operation of the apparatus is continuous and uniform until
 40 the fluid is exhausted in the subject, as before stated.

Connected with the tube N is a spring-regulator, P, with holes in the ends, through which the tube passes. On the inside of the regu-
 45 lator are two lugs, *h h*. On moving the slide Q toward the lugs they are caused to close upon the pipe, so as to stop the flow of the liquid from the jar to the body. By the movement of the slide the flow from the jar is controlled, as the lugs *h h* close up the passage of
 50 the tube N, more or less, according to the position of the slide Q, as shown in the drawings. By this or equivalent means the flow of fluid from the jar to the body is regulated.
 55 The antiseptic fluid is passed into the jar through the port or opening *a*, Figs. 2 and 3, which is provided, preferably, with an elastic

valve, *i*, which is kept normally closed by the air-pressure in the jar and opened by means of the float *j*, connected to the said valve by 60 a cord, *k*, or its equivalent for the purpose. When the jar is charged with fluid, as indicated at A', Fig. 1, the float exerts no pressure upon the valve, which will, as stated, be kept closed by the air-pressure within the vessel; 65 but when the fluid is exhausted, so that the float *j* sinks down to the point *j'*, its weight will open the valve and allow the residue of compressed air to pass outside, thereby preventing the air retained in the jar from follow- 70 ing the course of the fluid into the body.

The purpose of this device for the escape of the compressed air from the jar is to prevent the air from passing into the veins or arteries, as when these are charged with air it will 75 more or less arrest the passage of the fluids by the presence of confined air in the ducts, veins, and arteries.

Permitting the compressed air to escape from the jar as soon as the body has received 80 its injection leaves the passages free and open for the next injection of fluid.

I am aware that in embalming apparatus a float and valve in the discharge-tube have been heretofore known, as well as re-enforcing bulbs 85 and air-forcing apparatus. The valve shown by me is above the liquid and is not liable to be affected thereby, and is cheaper and more certain in its operation than a plug-valve, which must have a metal strip in the tube. 90

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

In combination, the vessel for containing the embalming-fluid, an air-generator, I, connected by a pipe to the interior thereof through the 95 upper part, an air-reservoir, also in connection with the interior upper portion of the vessel, a discharge-tube having a suitable nipple, O, and an extension-tube, M, within the vessel, reaching to near the bottom thereof, said tube 100 having the discharge-opening at its lower portion, a valve, *i*, located at the top of the vessel and controlling an opening, *a*, for the escape of air through the cover of the vessel, said valve being in turn controlled by a float, 105 *j*, and a suitable connection, all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK WAGNER.

Witnesses:

W. H. BURRIDGE,
 C. L. BURRIDGE.