

RULES FOR ARTIFICIAL RESPIRATION IN THE TREATMENT OF THE DROWNED.

RULE I. (Fig. 1).—To Drain and Force Water from the Lungs and Stomach.—Instantly place patient face downward, a hard roll of clothing being placed beneath the pit of the stomach, to raise it as much as possible above the level of the mouth. Put one wrist of the patient under his forehead to raise his mouth off the ground. With hands well spread upon the patient's back, above the roll of clothing, throw upon it your whole weight with a forward motion, and keep up the pressure about three seconds, so as to force all water from the stomach and lungs out of the mouth, ending the pressure with a push which will help to jerk you

FIG 1



back to your upright position. Repeat this once or twice, and then quickly proceed with—

RULE II. (Fig. 2).—To Make the Patient Breathe.—Turn the patient face upward, the same hard roll of clothing being now beneath his back, the shoulders slightly drooping over it. Bend head backward and downward, putting throat on the stretch to the utmost. Place the hands of the patient on top of his head (one twist of a handkerchief or string around the crossed wrists will keep them there). Rip or strip all clothing from waist and neck. Now kneel astride the patient's hips. Grasp the front part of the chest on both sides of the pit of the stomach, your thumbs pointing to patient's chin, and your fingers fitting into the grooves between the short ribs. Fix your elbows firmly, making them one with your sides and hips, and then, firmly pressing the sides of the patient together, and using your knees as a pivot, throw yourself slowly forward for two or three seconds until your face almost touches the face of the patient, and your whole weight presses upon his chest. End this pressure with a short push which suddenly jerks you back again to the upright kneeling position.

Rest three seconds while the ribs spring back; then repeat this bellows-blowing movement as before, gradually increasing the rate from seven to ten times a minute; but take the utmost care, on the occurrence of a natural gasp, not to interrupt it; but, as the ribs fall, gently press them and deepen the gasp into a longer breath. Continue this until the natural breathing, which you are imitating, needs no further assistance. If all fails, keep on, because any moment within an hour's effort you may unexpectedly be rewarded with success.

Avoid impatient vertical pushes; the force must be upward and inward, increased gradually from zero to the maximum the age, sex, etc., may indicate.

If a second person be present and can do it, the tongue should be held out of one corner of the mouth by the thumb

FIG. 2



and finger, armed with a piece of dry cotton or linen rag (Fig. 2, a).

We take our illustrations from the London *Lancet*.

Plantain Leaves in Toothache.

A homeopathic physician states that he has found in the large leaved plantain (*Plantago major*) a sure remedy for toothache. This plant, which is so common in every door yard as to prove a nuisance, was highly esteemed by the ancients, who employed it in hemorrhages (particularly from the lungs), consumption, dysentery, and other complaints. In modern times it has been sometimes used for similar purposes, but is now generally believed to possess very feeble properties. The leaves are saline, bitterish and austere to the taste; the root saline and sweetish.

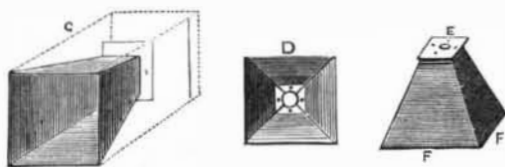
For toothache our authority gathers the plant when the flowering spike has grown to full perfection. The leaves are chopped up finely, closely packed in a bottle, and covered

with strong alcohol for a week. At the end of this time the bright green color of the tincture has changed to brown, and it is fit for use. In using it a piece of cotton wool is saturated with the tincture and inserted in the cavity of the tooth, and four drops of the same put in half a tumbler of water, and a teaspoonful taken for a dose. By rubbing the tincture on the gums, it was found to lessen the pain of infants in the process of teething; when inserted in the ear it is said to be equally efficacious in earache. As there are undoubtedly many plants of whose medicinal virtues we are perfectly ignorant, and as toothache is one of those torments which often baffle all attempts on the part of the physician to cure it, it may, remarks the *Medical Press and Circular*, be worth while to give this reputed remedy a further trial—a trial which need not be delayed in the case of such a common complaint as that of the toothache.

It will be observed that this tincture of plantain leaves is directed to be made with strong alcohol; from the known effects of liquors like brandy and whisky (which are no stronger than dilute alcohol) in relieving the pain of toothache, when held in the mouth for a short time, we are inclined to believe that this "tincture" of plantain would prove equally efficacious with the plantain leaves left out!

A CAMERA IMPROVEMENT.

I forward you a rough sketch of a contrivance I have adopted in all my cameras. It is a certain guard against fog from a bad sliding camera, and I find the pictures sharp-



er and better defined, as the light from the lens is carried evenly on the sensitive plate. There are no shadows from the corners of the camera, nor harbor for dust.

I make the funnel with quarter inch seasoned mahogany to fit inside the sliding body of the camera, and fasten to the front of the camera inside, by four screws. A B is the funnel, just the length of the camera when closed; C is the lens; D shows the funnel looking from the ground glass when focusing with the round hole the size of the lens; the dotted lines show the piece of wood (the funnel is fastened); the four black dots the screw holes to fasten to the end of the camera. E is the funnel (bottom up), showing the piece on the end to screw to the end of the camera; F F must be the exact size of the inside sliding part of the camera; G is the funnel ready to screw into the camera.—*W. Basham in the Photographic News.*

Antiseptic Properties of Borax.

According to the *Lancet*, at a recent meeting of the Academy of Sciences of Lombardy, G. Polli reported the results of numerous experiments in which beer, meat, eggs, blood, and urine were treated with boracic acid and borax for thirty days during the summertime, and were found still to retain their freshness, and to present no traces of fermentation having taken place in them. In experiments, on the other hand, without the addition of the salt, but in some cases with the addition of sulphate of soda, the fluids passed into a state of complete decomposition in the course of fifteen days. The energetic disinfecting power possessed by boracic acid and borax, and the facility with which these substances can be absorbed into the economy, led Polli to recommend their use in diseases in regard to the infectious nature of which no doubt exists, or in which septic conditions readily arise. He adduces several examples in which the febrile conditions of tuberculosis underwent diminution. No benefit was obtained by Professor Visconti from experiments made with these remedies in malaria, though other observers have arrived at a different conclusion. In chronic cystitis, the muco-purulent discharge quickly diminished, and even altogether disappeared in the course of a few days, and rapid improvement occurred in cases of bad suppurating wounds when they were applied externally. The dose recommended by Polli is 75 grains of boracic acid and 150 grains of borax per diem.

Improved Railway Speed.

The regular time tables of the Central of New Jersey and the Pennsylvania Railway show that improvements of their roadbeds have been gradually completed, until now they daily send passenger trains through from Jersey City, opposite New York, to Philadelphia, distance 88 and 89 miles, in one hour and fifty minutes running time, including stops; being 48 miles per hour average speed. If the same speed could be maintained between New York and Washington, the time of transit would be four hours and thirty minutes. It seems to us that the public interests require that this should now be done.

SAFETY OXYGEN APPARATUS.

The chief features in this apparatus are portability, dispensing with the use of gas bags, pressure boards, weights, etc., for lime-light effects and perfect safety.

In the first place, the principle consists in generating oxygen in small quantities at the time of consumption (whereby a continuous supply is maintained) from charges of chlorate of potash and oxide of manganese made into solid cakes of about three inches diameter and five eighths of an inch thick, which are quite easy to produce, clean to handle, and about as hard as a piece of coal. The principle of the retort or generator will be clearly seen from the accompanying engraving, Fig. 1. It consists of two pieces, a flat plate and a bell-shaped cap, supported by a stand, in which is fixed a Bunsen burner of improved construction. The cap has an aperture at the top, in which is screwed a pipe, etc., for conveying away the oxygen when made. In other respects the retort proper consists of two simple iron castings turned and ground to a gas-tight fit.

The fastening consists of a bow, clearly shown in the engraving, at the extremities of which are small spiral springs, so adjusted as to maintain a pressure equal to one and a half pound per square inch, which pressure is far in excess of what is necessary for ordinary lime-light arrangements.

Now it is obvious that, should the passage from the retort be closed (although in this apparatus there is little likelihood of such an occurrence), the pressure in the retort would rise until it had arrived at one and a half pound per square inch, when the gas would escape; and as soon as the passage was clear again the gas would take its right course, relieving the pressure inside the retort, and in virtue of the springs the top would close, resuming its original position. When exhibiting the apparatus at several scientific societies to illustrate its safety qualities, as the gas was coming off rapidly, the outlet pipe was closed (by a tap purposely introduced), and the oxygen, still being generated, escaped through the joint, as intended, with perfect safety. To open the retort for recharging, etc., pull over the wood handle fixed to the top of the bow, and the cap may then be removed by the wood handle fixed thereto; and to close the apparatus reverse these operations. The handles being made of wood prevent the possibility of burning the fingers when in use.

The method of making the cake is as follows: To four parts of chlorate of potash and one part of manganese add sufficient water to moisten, not to wet; after mixing well, fill the mould, using little pressure, smooth off the surplus with the assistance of a dinner knife or spatula, turn over, and the cakes will leave the mould entire. After sufficient cakes are thus made, they are set to dry, either by gentle heat or spontaneously; when dry, the bottoms are coated by dipping into a mixture of manganese and water, about the consistency of cream, when they are ready for use.

This coating of the bottom with plain manganese is to prevent the spent cake sticking to the retort, being the only part in contact with it.

The gas holder is very similar (but with a little modification) to one invented and introduced by Mr. Samuel Highley, in 1862.

By a displacement chamber introduced in the outside casing, the water for luting is reduced to a minimum, about one ordinary bucketful being sufficient.

The displacement chamber, which is always dry, is used for packing apparatus, such as lanterns, slides, screen, etc., and is of sufficient capacity to hold all required for a magic lantern exhibition. The chamber is provided with a lid and suitable

lock-up attachments. When in use, the pressure is applied by placing water in a reservoir provided for that purpose, maintaining one uniform pressure throughout, and can be regulated from a small to a great pressure, according to the quantity of water used. If more convenient, any other substance than water can be used for weighting.

Fig. 2 shows the apparatus used as a stand for the lanterns, in the present case a sciopticon, admirably arranged for the lime light, being adapted.—*W. J. Chadwick in English Mechanic.*

Fig. 1.

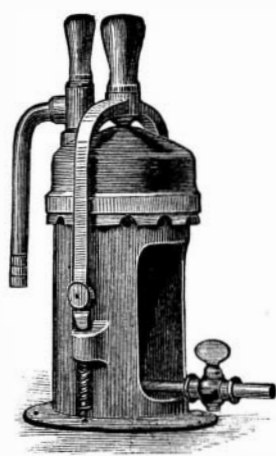


Fig. 2.

