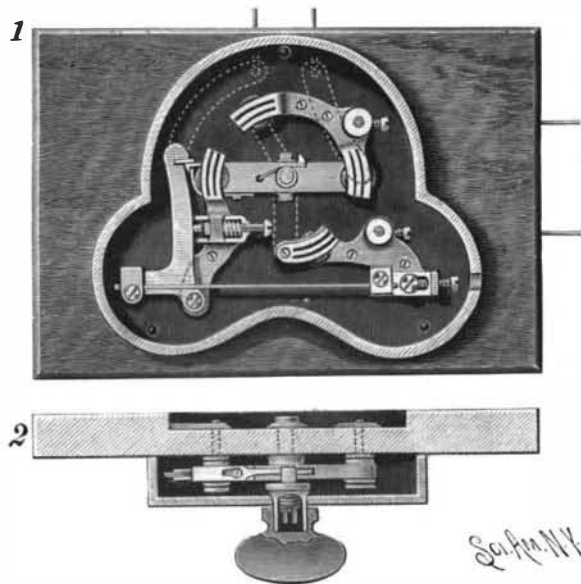


AN IMPROVED ELECTRIC SWITCH.

The illustration represents a simple and effective switch which may be used as an ordinary switch and also as a cut-out for preventing the passage of an excessive current to a particular portion of the circuit. The improvement has been patented by Henry B. Whitehead, of No. 57 Madison Street, Memphis, Tenn.



WHITEHEAD'S ELECTRIC SWITCH.

Fig. 1 represents a vertical and Fig. 2 a horizontal section of the switch, whose base is of insulating material, recessed at the back to receive the electrical connections, while a cover fits over the working parts. On a stud projecting from the base is fulcrumed a spring-actuated switch arm adapted to be engaged by a detent lever, while a spring tends to disengage the detent lever from the arm. An expansion wire, used as a conductor, is arranged to normally hold the detent lever in engagement with the switch arm, but releases the lever when the wire is expanded by heat due to excessive current. A key, having a fork loosely embracing the lever, has a thumbpiece outside the cover, whereby the switch arm may be released from the detent lever and turned by hand.

Keep Your Mouth Shut.

The Family Doctor says that this is the secret of avoiding colds. The man or woman who comes out of an overheated room, especially late at night, and breathes through the mouth, will either catch a bad cold or irritate the lungs sufficiently to cause annoyance and unpleasantness. If people would just keep their mouths shut and breathe through their noses, this difficulty and danger would be avoided. Chills are often the result of people talking freely while out of doors just after leaving a room full of hot air, and theatergoers who discuss and laugh over the play on their way home are inviting illness. It is, in fact, during youth that the greater number of mankind contract habits or inflammation which make their whole life a tissue of disorders.

It is stated that a "Fine Arts and Industrial Exhibition" will be held at Barcelona, beginning on the 23d of April next. An international exhibition will also be held in Brussels in 1897.

AN INSULATOR FOR ELECTRIC WIRES.

To prevent the humming noise caused by the vibrations of electric wires when they are fastened to poles or other supports, the insulator shown in the illustration has been devised and patented by Magin Riera, of Apartado 649, Havana, Cuba. Fig. 1 represents the insulator as attached to a support in use, Figs. 2 and 3 showing its clamping pieces, and Fig. 4 its central elastic insulating portion. The contacting surfaces of the clamping members are concave and convex respectively, or have a wedge-shaped projection and a corresponding recess, and they inclose between them an elastic filling slotted to about its center to receive the wire, the clamping pieces causing the split portion of the filling piece to closely hug the wire.

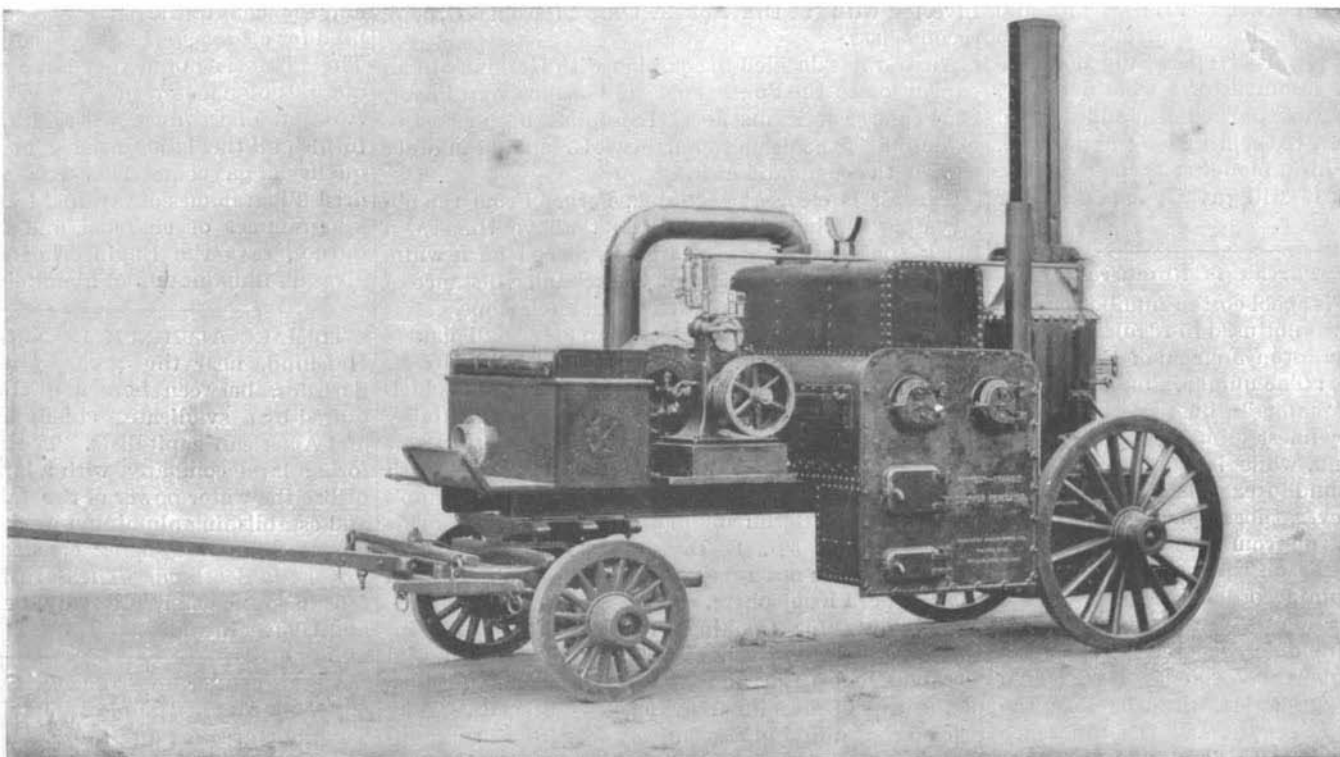
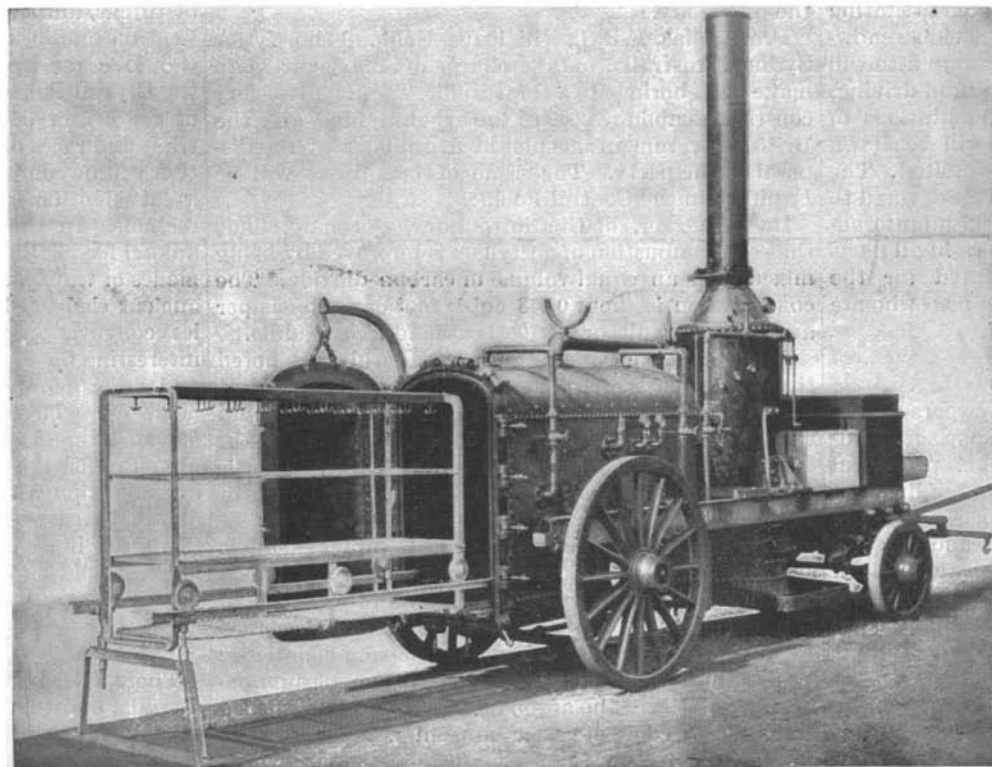
A PORTABLE DISINFECTING PLANT.*

BY W. H. FRANCIS, PHILADELPHIA, PA. (M.A.S.M.E.)

In military science it is an axiom to defeat and destroy an army in detail; this is equally applicable to fighting contagious disease, and is attracting marked attention from sanitarians. It is not the province of the mechanic to discuss or pass upon the microbe theory, calling for disinfecting machines, but to apply practically, for everyday use, the facts which bacteriologists and doctors have proved to be true.

At the December meeting of 1893 was presented a paper on "A Modern Disinfecting Plant," as applied to quarantine stations, to prevent contagion reaching our shores. Supplemental to this article a brief description is now offered of a portable disinfecting plant for destroying epidemic disease in detail, upon its first appearance in our cities. These machines are the outgrowth of a study of the epidemic of yellow fever at Brunswick, Georgia, and the indifferent means the doctors had to improvise to aid them in the fight, although, it is true, these were the best that could be obtained at the time in a city cut off by strict quaran-

* Presented at the Detroit meeting of the American Society of Mechanical Engineers, and forming part of volume xvi of the Transactions.

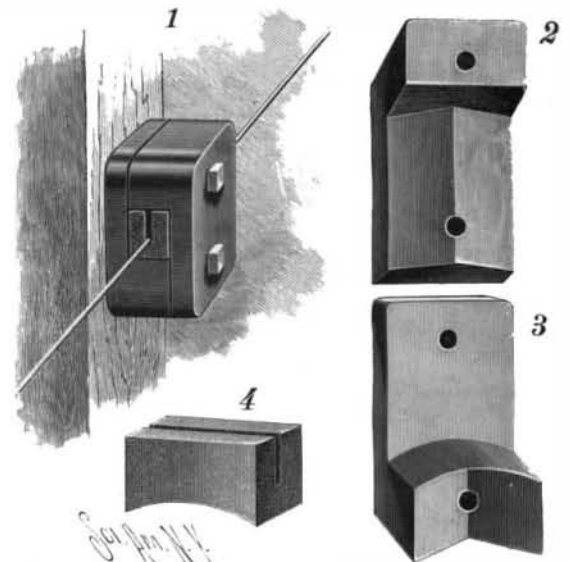


A PORTABLE DISINFECTING PLANT.

time. For instance, a box car on one of the railroads was hastily transformed into a steam chamber, steam being provided by the locomotive, and infected articles carried long distances to and from the car. It is greatly to the doctors' credit that with such means they were able to check the ravages of the fever.

The portable plant comprises two machines:

First, the steam disinfecter, consisting (as seen by



RIERA'S INSULATOR.

examining the upper cut) of a jacketed chamber, car, boiler, and vacuum pump, mounted upon a suitable running gear. Its operation is as follows:

The steam generated in the boiler at high pressure is reduced by proper valve, circulating in the jacket at low pressure during the entire operation. The infected clothes are placed upon screens, or hung on

hooks in the car, which is supported by a portable track, adjustable for irregularities of roadway, the car then being pushed into chamber, and the door, swinging on crane, closed and bolted, made steamtight by a rubber gasket. A thermometer records the temperature, and when the clothes have reached that of the low pressure steam the vacuum pump is started, removing the air (the object of which is twofold, to prevent possibility of life to the microbe and to give steam greater penetrating effect), after which the steam is admitted to the chamber from the jacket, insuring circulation. The incoming steam strikes upon a three-leaf hood, to prevent being forced directly upon the clothes, and any condensation is carried down the sides of the chamber, preventing wetting and consequent shrinkage of woollens. The exposure is continued for varying time, according to the character of the infected articles, after which

the steam in the chamber is discharged through a valve, the door opened, and the car withdrawn.

The car is arranged with removable trays and is open-sided, so as to hold either single or double mattresses, wooden guards of cypress being introduced to prevent them from projecting beyond the sides of the car.

Second, the sulphur fumigator, consisting of a furnace, boiler, engine, and fan, mounted on wheels, as seen in the lower cut. The sulphur furnace is double, with a firebox at