

machines do, and its performance is higher. Finally, its presence has not materially modified the interior arrangement of the morgue.

The question now remains to be answered, How long is it possible with this process to preserve bodies that have not been identified, or that are designed for an autopsy?

The length of time, as shown by the following figures, is, so to speak, indefinite. It has been found possible to preserve bodies that had been first congealed to  $-15^{\circ}$  for six weeks in the Exhibition Hall, and that, too, without the necessity of putting them into the cases again. Just at present there may be



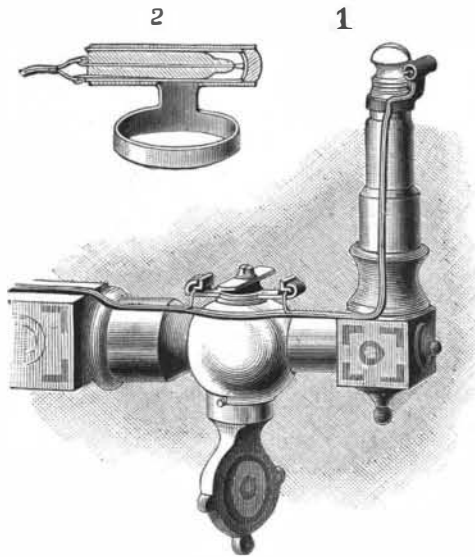
NIFENECKER'S ATTACHMENT FOR COOKING STOVES.

seen lying upon one of the slabs the body of a man who was hanged on the 2d of November last, and whose features have as yet undergone no alteration. In the Pel affair, some bodies treated in this way remained eight months at the disposal of the law. Finally, in a visit made by us to the morgue, we were enabled, thanks to the kindness of the register, Mr. Pierre, to examine the remains of a woman hacked to pieces and a victim of the Montrouge horror, whose author remains unknown. These remains, which were submitted to a temperature of  $-15^{\circ}$  on their arrival (August 4, 1886), have undergone no alteration. They have the aspect of marble or wax, and the skin has become just the least bit brownish.

Owing to the important improvements that we have just described, the number of recognitions has perceptibly increased. Before the apparatus was put in, the average was 66.6 per cent, while now it is 90 and even 92 per cent. We have therefore reached the remarkable result of obtaining an identification of more than nine-tenths of the bodies exhibited.—*La Nature*.

#### ELECTRICAL GAS ALARM.

The object of the invention which we herewith illustrate is to provide a simple and efficient device for establishing an electric circuit when the gas flame is extinguished, and for breaking the circuit and holding it open while the gas is burning. To the burner, near the tip, is fitted a collar, provided with an arm carrying a



McVAY'S ELECTRICAL GAS ALARM.

split sleeve. To the sleeve, which is shown in section in Fig. 2, is fitted a brass tube having its closed end provided with a lining of aluminium or other unoxidizable metal. To this tube is fitted a glass tube in which is sealed a platinum wire, which projects beyond the end of the glass and contacts with the lining when the brass tube is cold. Wires are connected with the platinum and the brass tube. To the smaller end of the gas cock is fitted a plate, projecting equally in opposite directions and arranged parallel with the thumb piece. To the bracket in which the cock is fitted is secured a plate, Fig. 1, the ends of which are turned over toward

each other and bent down upon L-shaped pieces of platinum or copper, with an intervening insulation. These pieces project into the path of the plate, so that when the gas is turned on, the ends of the plate will touch the insulated pieces and establish an electrical connection between them through the plate. The electrical circuit is from the battery, through a wire to one of the angle pieces, the other angle piece being connected by a wire with the brass tube, and the platinum wire being connected by a wire with the bell and battery. When the gas is turned on, the electrical connection from the battery, through the bell, is established through the angle plates and platinum wire; but as soon as the gas is lighted and the brass tube heated, its rate of expansion being greater than that of the glass tube, it carries the aluminium lining away from the platinum wire and breaks the electrical connection. Should the gas be extinguished without turning the cock so as to break the circuit between the angle plates, the cooling down of the brass tube would bring the aluminium lining into contact with the platinum wire, and thus establish the electric circuit, which would cause the ringing of the alarm bell and attract attention to the burner.

This invention, which has been patented by Mr. William McVay, of 184 South 4th Street, Quincy, Ill., is especially adapted for use in hotels and boarding houses, where people unused to gas are liable to blow out the flame, leaving the gas turned on.

#### ATTACHMENT FOR COOKING STOVES.

This attachment is designed for the purpose of carrying off all vapors, odors, and smoke arising in boiling, broiling, and frying. The attachment consists of a hood closed at one end and provided at the other with a door, and of a bottom or grate secured to the hood. A flue is formed on the inside of the hood by a partition extending from end to end on one side of the hood. The grate is provided with two apertures, in which fit lugs attached to the bottom of the frying pan, the handle of which passes through a suitable opening in the door, when the latter is closed. In using the attachment, one or more of the covers are removed from the stove when the attachment is placed on the latter, so as to cover the holes. The frying pan containing the articles to be cooked is then placed on the grate, its lugs fitting in the apertures in the grate and holding it in position. The door is then swung downward and the hood closed. It will be seen that all the vapors arising from the cooking will flow into the flue in the cover, through the stove holes and thence to the chimney, so that no smell or smoke will be perceived in the apartment. The progress of the cooking can any time be observed by opening the door. The grate may be made without the apertures, and a frying pan of the usual form can be used, if desired.

This invention has been patented by Mr. Eugene Nifenecker. Particulars can be obtained from Mr. Henry A. Love, of West New Brighton, Staten Island, N. Y.

#### Impure Ice.

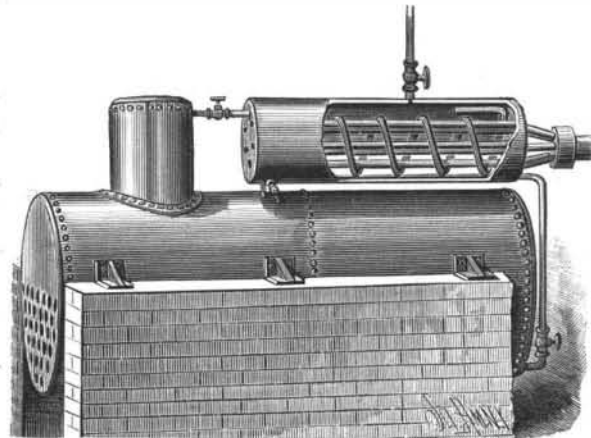
That ice does not purify impure water is a well known fact. In a report made by the State Board of Health of New York, on the purity of ice from Onondaga Lake, this is again conclusively proved. Into this lake is discharged the sewage of the city of Syracuse, amounting to 5,000,000 of gallons a day. At the time the inspection of this lake was made, there was a margin of from 1 to 4 ft. wide of black, putrefying organic matter along the shores. The analyses of the ice from this lake showed that it contained probably from 10 to 12 per cent of the sewage impurities dissolved in the same quantity of unfrozen water of the lake. This ice also showed the presence of bacteria in great abundance, retarded somewhat in their growth by the ice, but not destroyed by it. It is, perhaps, needless to say that this ice was pronounced totally unfit for any purposes where it is liable to come in contact with food or drink.

The report, valuable for what has already been mentioned, is still more so by reason of the numerous references to instances in which impure ice has been the cause of dysentery and other diseases. The earliest of these was that at Rye Beach, N. H., reported by Dr. A. H. Nichols, of Boston, in 1875, in which there broke out among the guests of a large hotel at that place an epidemic of gastro-enteritis, caused by impure ice from a filthy pond. Another instance of sickness caused by impure ice, referred to in the report, is that of an epidemic of dysentery which occurred in 1879 at Washington, Conn., investigated by Dr. Brown, of that place, and by Dr. Raymond, of Brooklyn. The ice had been gathered from a pond which had been used as a wallowing ground by the pigs. Other instances are quoted of the injurious effects of impure ice upon the public health, and sufficient evidence given to show that, in the process of freezing, water does not purify itself. The report, taken as a whole, is a very valuable contribution to this subject, and a complete refutation of the old idea that all ice must of necessity be pure.

#### FEED WATER HEATER.

A pipe leads from the steam dome of a boiler of the usual construction into a tank supported above the water level of the boiler. It is formed into a coil in the tank, and its end opens into the latter at the rear near the top. A pipe, opening into the tank a few inches above its bottom, is connected with the water space of the boiler. A water supply pipe connects with the tank, which is provided with a blow-out valve secured to the bottom. Each of the pipes is furnished with a valve, as shown in the engraving. Arranged longitudinally in the tank is a series of tubes, connected at one end with the exhaust pipe of the engine.

When the tank has been filled, or nearly filled, with water the supply pipe is closed and the steam admitted from the dome. The passage of the steam through the coiled pipe thoroughly heats the water. When it is



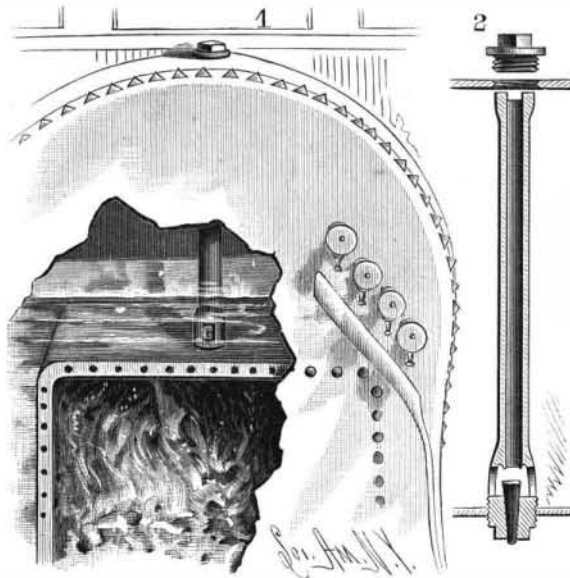
WHITNEY'S FEED WATER HEATER.

desired to charge the boiler, the lower valve is opened to permit the water to flow into the boiler. This empties the tank, when the valve in the pipes leading to the boiler are closed and the tank refilled with fresh water. The water in the tank is also heated by the exhaust steam passing through the longitudinal pipes. As the water in the tank is thus heated to nearly the same temperature as that in the boiler, all impurities will be deposited in the bottom of the tank, from which they can be removed by steam through the blow-off valve. When applied to locomotives, the tank is curved to rest on top of the boiler, and the water is discharged from both sides of the tank by two pipes.

This invention has been patented by Mr. Alexander E. J. Whitney, whose address is box 406, Leadville, Colorado.

#### DEVICE FOR PLACING FUSIBLE PLUGS IN BOILERS.

The object of this invention is to avoid the necessity of entering the fire box or the boiler for the purpose of inserting fusible metal plugs in the crown plate. Within the crown plate is formed a threaded aperture, in which fits a centrally apertured brass plug made integral with an upwardly extending tube, as shown in the sectional view, Fig. 2. In order to provide for the free circulation of the water about the top of the plug, the tube at its lower part is formed with side arms, between which are ports. The upper end of the tube is just below an opening in the upper portion of



GRUBE'S DEVICE FOR PLACING FUSIBLE PLUGS IN BOILERS.

the shell of the boiler, which is normally closed by a plug. This plug is removed when it is desired to insert a fusible plug, which is dropped through the tube into the aperture in the brass plug, after which it may be readily driven to place by means of a ramming rod inserted within the tube, as will be readily understood. The tube can be easily kept cleared of scale by passing a rod through it to the head of the fusible plug.

This invention has been patented by Mr. John A. Grube, of Beaver Creek, Ill., who will furnish any further information.