THE MORGUE AT PARIS.

The morgue has been much written about from an administrative and medical standpoint, but the improvements that have been made in its internal organization, and more especially in the mode of preserving the bodies, are but little known to the public. It is merely known that, by means of cold, it is possible to preserve therein, as long as desirable, the corpses that are exhibited for identification; but, as a general thing, it is not known how the cold is applied, and by what apparatus it is produced. This is what we are now going to explain, without entering into those details which, in a subject of this kind, might seem too repulsive to our readers. We shall merely mention, then, the Hall of Autopsy, with its table after the pattern of those used in the amphitheaters of hospitals. It is here that the eminent Dr. Brouardel delivers his lectures on medical jurisprudence.

All that we shall say of the Court of Justice is, that those who love these kinds of sensations can here read under the seats the names of the celebrated criminals who have sat in them, along with the dates at which they were arraigned, Among other names that we read here are those of Prevost, Moyaux, and Troppmann. We shall likewise pass over the registry and its dependencies, which, in the morgue, constitute a sort of mayoralty for arriving at the most important service—the identification of corpses through public exposure. The improvements introduced into this service were so much the more necessary in that the number of bodies annually exposed follows a progressively ascending scale. In the interesting statistics compiled by Dr. Devergie for the years 1836 to 1846, and since continued, we find these figures:

From 1836 to 1846	3,483	bodies or parts thereof.
" 1846 to 1856	4,236	"
" 1856 to 1866	5,367	"
" 1866 to 1876	7,091	"

Then come, for the six years following:

1876	614	bodies.
1877	629	"
1878	718	"
1879	710	"
1880	807	"
1881	920	"

Finally, the morgue is on the point of annually receiving 1,000 corpses whose identity needs to be established. Before making known the means employed for facilitating the recognition of these by the public, let us cast a rapid glance backward, and one which will allow us to appreciate the progress that has been made. The following is the description that is given us of the primitive morgue organized in 1604 in the jail of the Chatelet:

"It was a damp and dark place, an infectious room whence constantly escaped the most fetid emanations. The corpses, thrown one upon another, awaited the coming of relatives, lantern in hand, to identify them."

The morgue of the Grand Chatelet having been closed by a police ordinance of the 9th Thermidor, year XII., there was built upon the quay of Marche-Neuf, at the angle of St. Michel bridge, a structure having the form of a Greek tomb, which all Parisians will recall. This was the little morgue, into which great improvements were introduced. In 1864, this building was replaced by the present morgue, erected at the point of Notre Dame. This establishment is a unique one, and has no equivalent in any other country, the morgues of other states being located either on boats or in hospitals, and being but little frequented by the public.

The Paris morgue receives not only the corpses of the capital, but also those from Sevres, St. Cloud, and Meudon—localities dependent upon the prefecture of police. Upon their arrival, a detailed description of the bodies is entered in a register. Then an effort is made to ascertain whether this description does not agree with that of some one who has disappeared. After this an effort is made find out the cause of death. The traces of blows or violence are carefully noted. The marks on the linen, rags, clothing, the collar of a coat, the number of a watch, may, in the absence of other things fixing the identity, give valuable information. In case, as often happens, a suicide has desired to destroy every sign that might lead to his identity after death, his case is put into the hands of a special agent, who follows up the slightest clews, and makes in the case of the dead the same researches as the police would do to find a living man. Although the corpse's identity may be undiscovered, it is easy to know in most cases what its calling was. Trades are recognized by the callosity of the hands. The ridge on the index finger reveals the hair cutter, the tailor is known by his knees, the seamstress by her needle-pricked fingers, etc.

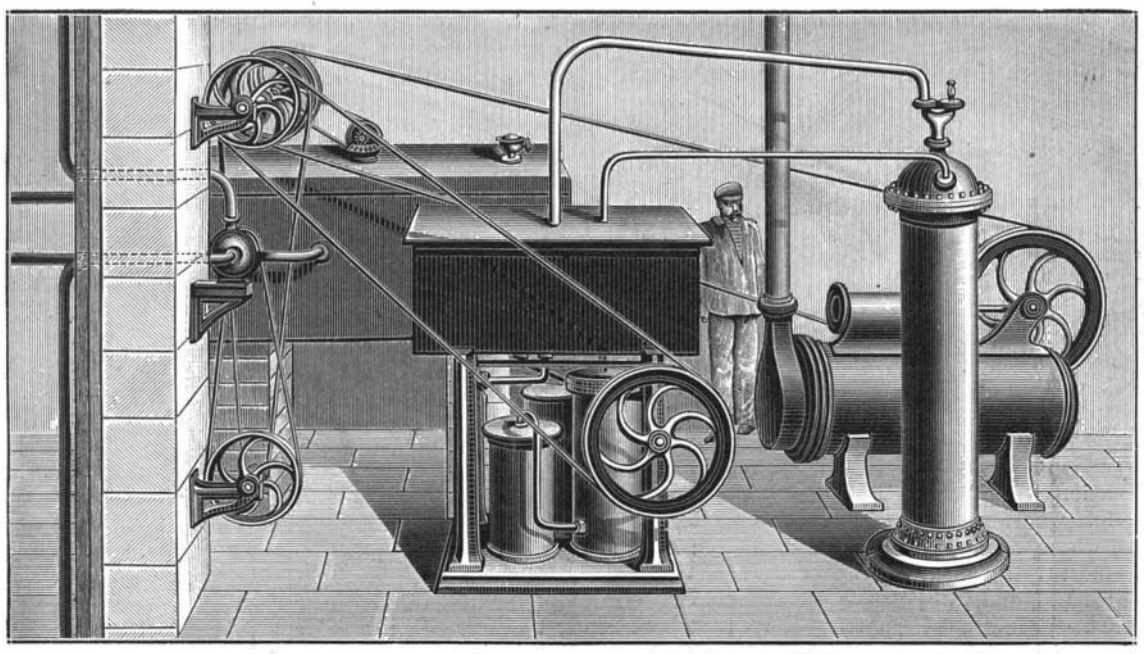


Fig. 1.—COLD AIR MACHINE OF THE PARIS MORGUE.

Before being placed on exhibition, the bodies are photographed. The photographs, which are placed before the eyes of the public upon the partition that hides the bodies from the gaze of passers-by on the street, are preserved for several years, and are capable of aiding in identification after burial.

Twelve black marble slabs are placed in the Exhibition Hall (Fig. 2). This latter is separated from the public by a glazed partition. The bodies are laid out upon these slabs, which slope toward the observer, and the head is raised by a support of special form so as to bring the face well into view. Until recent years, the bodies were shown in a nude state, and were partially covered by a metallic device, but at present they are exhibited with clothes on, thus rendering recognition easier. Moreover, the rules of decency being respected, access to the hall may be accorded to children, who have often been able to render great service in case of difficult recognitions. The clothes, which were formerly suspended from rods, and, after burial, kept before the eyes of the public, are now placed upon osier manikins which render the examination of them easier. As for the length of time that the cadavers were exposed, that was but a few days. It was possible to lengthen the time by but a few hours at the most, by sprinkling the bodies with cold water, or water and carbolic acid. No disinfectant had been found capable of successfully conquering the cadaveric smell, and the presence of venomous flies constituted a perpetual danger.

It is here that we see appear the study of a radical transformation commanded by hygiene and salubrity—the preservation of the corpses by cold. In 1880, on a vote of the Council General of the Seine, the Council of Public Hygiene and Salubrity named a committee which it charged with the duty of examining the various frigorific apparatus and the projects of setting them up proposed by various constructors. According to Dr. Brouardel, the following were the conditions under which the frigoric service was to be introduced into the morgue: (1) The bodies to be preserved were, at the moment of their arrival, to be submitted to a temperature of from —15° to —20°, and (2) then be carried into a hall whose temperature should oscillate between —4° and —1°.

The first condition is imposed by the slowness with which the human body cools, on account of its bad conductivity. Moreover, it results from Dr. Brouardel's researches that when the air is rapidly renewed around a frozen corpse, the skin becomes brown and parchment-like, thus rendering the identification of the individual more difficult. It therefore became necessary that the air surrounding the body should be quiet. Finally, the unstable subsoil of the morgue excluded every process that necessitated a steam engine of some size, and this singularly complicated the problem.

The committee immediately went to work and examined the shops and works in which were being constructed and operated the cold air apparatus that had been submitted to it, and which were capable of being grouped in three classes, viz.: The Giffard and Berger, the Tellier and the Pictet, and the Carre apparatus. The latter were adjudged to best meet the requirements of the case, and so to their constructors, Messrs. Mignon and Rouart, of Paris, was given the order for the entire machinery, which has been operating regularly for five years, and concerning which we shall give a few details.

The problem to be solved was that of keeping the Exhibition Hall beneath, but near, 0°, of cooling four bodies to a temperature of —15°, and of keeping ten bodies at a temperature of —2°. The first question to know was what should be the power of the cold air machine to be used. The constructors found that it would have to produce from ten to twelve thousand heat units per hour, and so adopted the machine known to the trade as the 220 pound one. This machine (shown in Fig. 1) is used for cooling the upper stratum of air in the Exhibition Hall. The colder air descends, while the warmer rises, and there is thus obtained a uniform temperature. This cooling of the air is effected by means of a cold solution of chloride of calcium falling in a shower upon a sort of roof (Fig. 2), and from thence flowing into a gutter that leads it to the refrigerator. Before reaching the upper part of the hall, the cold liquid has circulated through worms arranged at the sides of the compartments designed for cooling the four cadavers to —15°. Finally, before returning to the congealer to be cooled anew, the liquid circulates, through its own weight, in vertical worms that form partitions, and divide the chamber designed to cool ten cadavers to —2° into five compartments.

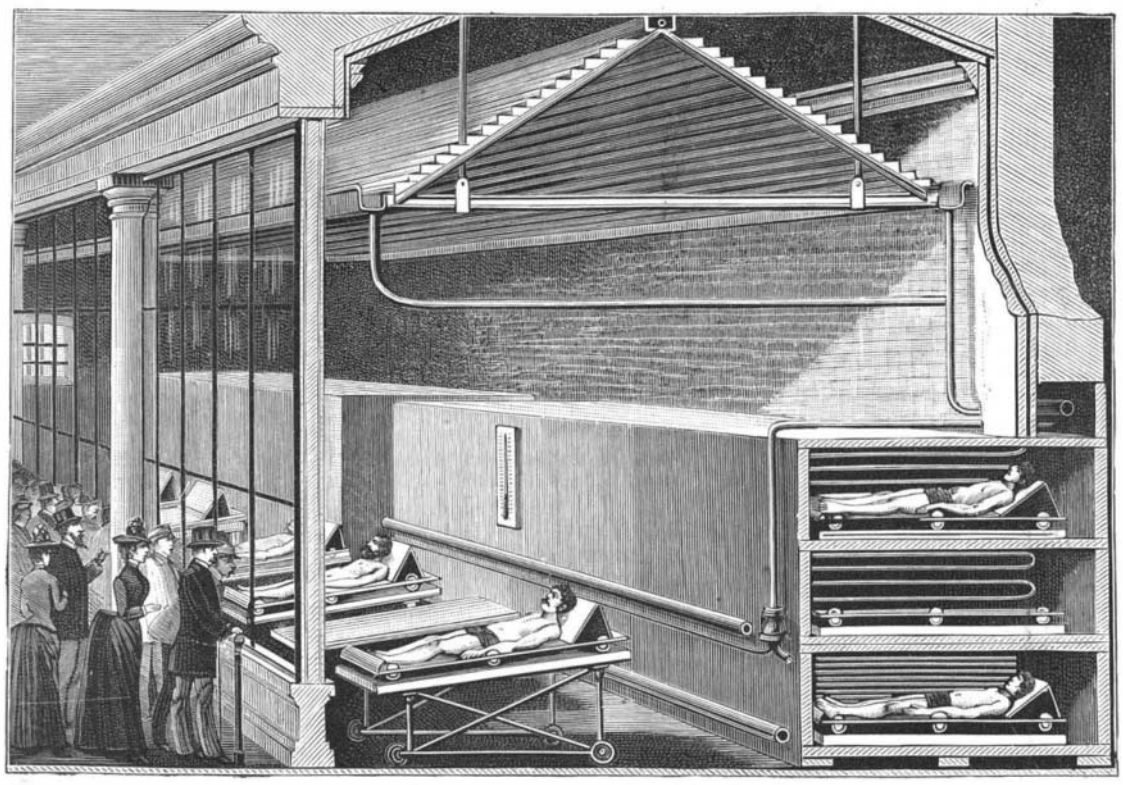


Fig. 2.—HALL OF THE PARIS MORGUE.

The circulation of the liquid is effected through a small centrifugal pump, run by a one horse power engine. The cost of putting in the apparatus was $8,800—a remarkably low figure.

Upon the whole, the advantages of the Carre apparatus are the following: It requires a very low motive power; it takes up but little room; it operates in silence, and gives a lower temperature than other

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° 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

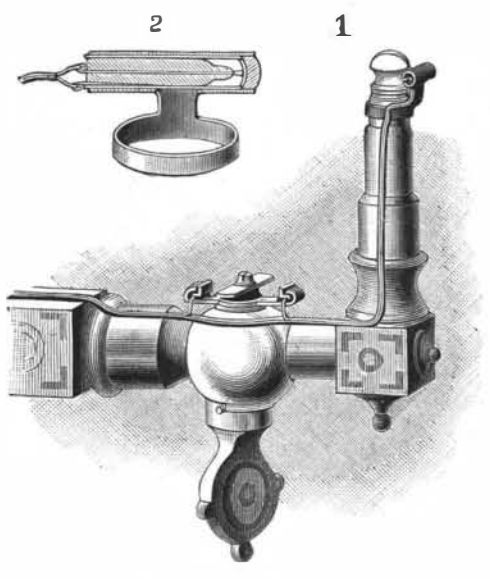
NIFENECKER'S ATTACHMENT FOR COOKING STOVES.

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° 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 unoxidable 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.

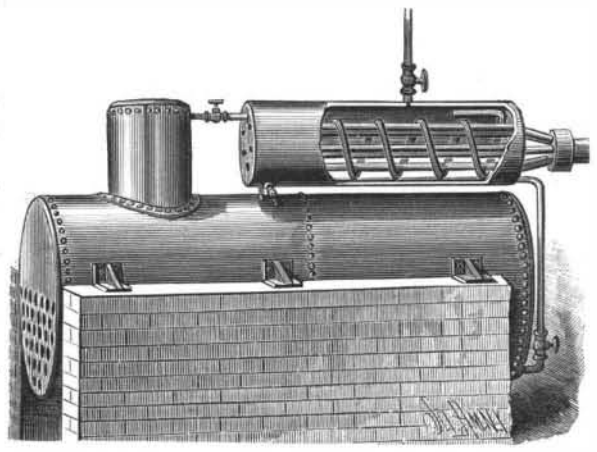
That ice does not purify impure water is a well known fact. In a report made by the State Board of Health of New York, on the purity of ice from Onondaga Lake, this is again conclusively proved. Into this lake is discharged the sewage of the city of Syracuse, amounting to 5,000,000 of gallons a day. 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



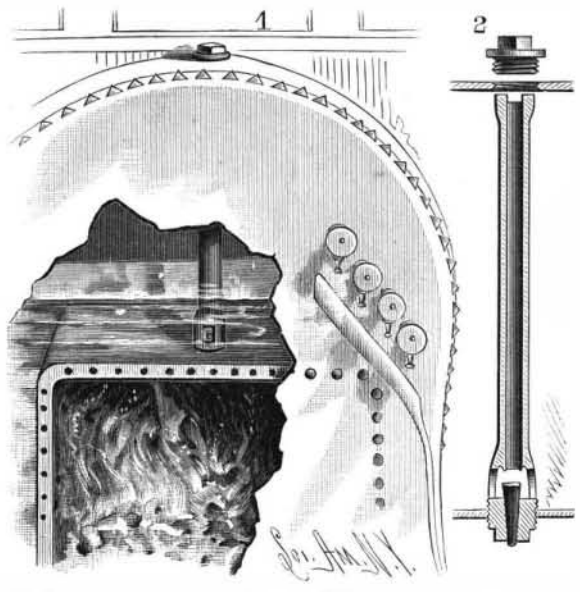
WHITNEY'S FEED WATER HEATER.

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.