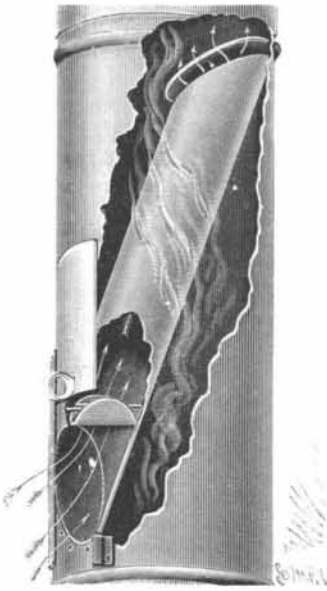


AN INEXPENSIVE STOVEPIPE VENTILATOR.

A ventilator especially designed for use in rooms heated by stoves, and which may be very cheaply made, is shown in the accompanying illustration. The improvement has been patented by Mr. Charles Redpath, of Pembina, North Dakota. Arranged diagonally within the stovepipe is a small pipe or tube, one end of which opens into the pipe, and is covered by a deflector plate, while the other end opens through the



REDPATH'S VENTILATOR.

wall of the pipe into the room. A curved slide or cover, moving in a suitable slideway, is adapted to partially cover the mouth of the tube, when desired, to regulate the amount of air escaping through the ventilator. Near the mouth of the tube is a pair of swinging dampers, whose inward movement is limited by a cross pin in the tube. The natural draught of air, as shown by the arrows, is designed to cause the dampers to swing inward; but with a back draught, occasioned by a puff of wind down the chimney or other cause, the dampers will close, so that

APPARATUS FOR CONGEALING PERFUME EXTRACTS.

The volatile oils and perfumes derived from fragrant flowers may be extracted by two methods—maceration and enfleurage.

As its name indicates, the first method consists in macerating the petals of flowers or any other fragrant part of the plant in a solvent capable of absorbing the essential oil that furnishes the perfume. Such solvent may be alcohol, sulphide of carbon, chloride of methyl, oil, or fat. When it is a question of very volatile solvents, such as alcohol or sulphide of carbon, a simple distillation suffices to separate it from the essential oil. Such is no longer the case when the operation is performed with the aid of a fatty body.

In maceration we begin by steeping the flowers in a methodical manner in a bath of very fine olive oil or of fat heated to 65°.

This bath is formed of a box divided into compartments, in which the fatty matter flows from compartment to compartment, and in which it meets with baskets of wire gauze that contain the flowers. If the flow of the fatty matter is from left to right, the baskets, on the contrary, move from right to left, so as to progressively enrich the solvent and to completely exhaust the flowers of the essential principle sought. But all flowers cannot, without a sudden alteration, withstand the action of fat at 65°. Such is the case with the tuberose and the jasmine, for example, and it is then that enfleurage is applied. In this process there are employed a series of wooden frames, of a surface of about one square meter, that receive, in lieu of cover, a glass plate that divides the frame into two equal parts in the direction of the height. All the frames may be superposed, forming so many hermetically closed receptacles. In order to mount the apparatus, the glass is covered with a layer of fat of the consistency of pomade, and the flowers are spread out thereon. Then the apparatus is left at rest for forty-eight or seventy-two hours, after which the flowers are removed and replaced by new ones; and this operation is repeated thirty or forty times. When it is finished, there is obtained a fatty matter, saturated with perfume.

The maceration and enfleurage, therefore, finally give a perfumed fatty matter. To obtain the extract from this, it is treated with 90° alcohol, which mechanically

removes the essential oil without touching the grease. The separation of these two products is effected through decantation.

The advantages of these processes are that they give very fine perfumes, and, moreover, furnish them in the state in which they are to be afterward used, that is to say, in the form of perfumed alcohol. But they present one great inconvenience. It is wrong, in fact, to suppose that the alcohol does not act upon the fatty matter, for it always dissolves a certain quantity of it; and, consequently, the essences thus prepared become turbid. Moreover, in the long run, the fatty matter oxidizes and rapidly communicates a rancid odor to the prepared perfume.

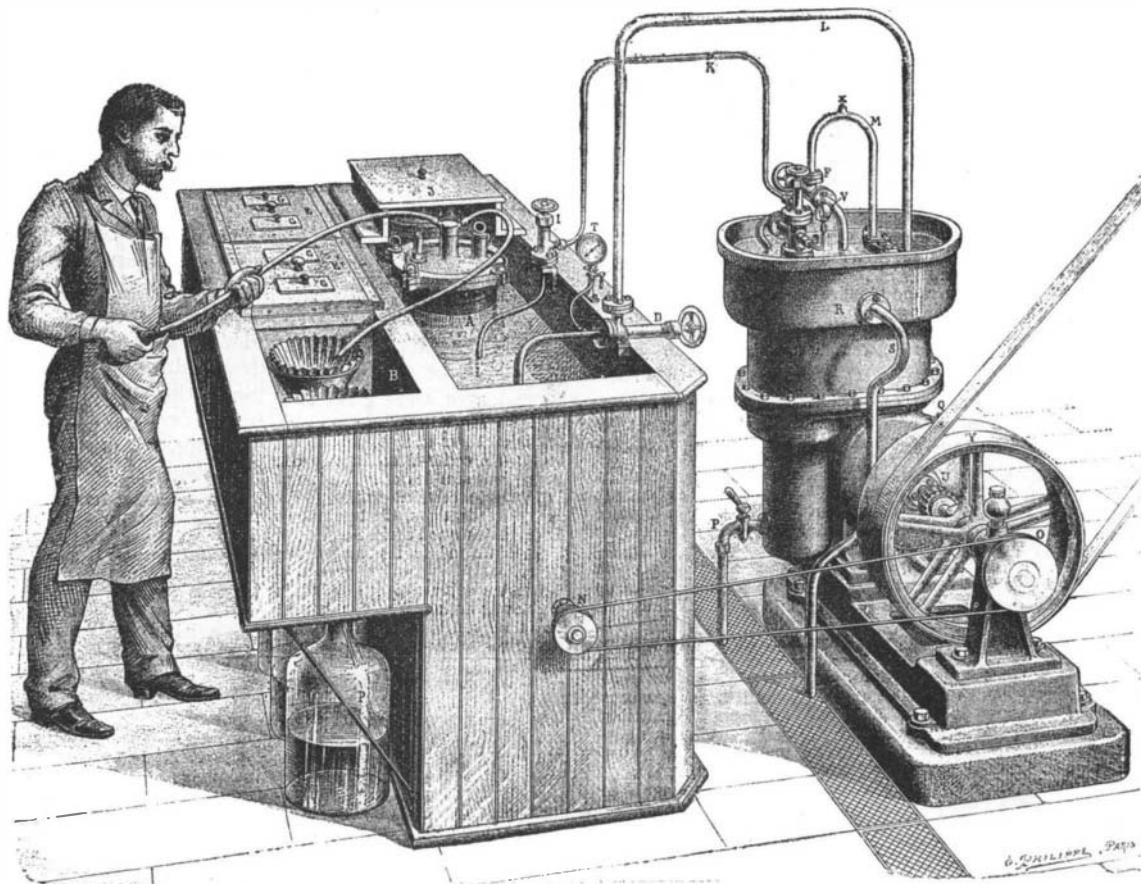
Manufacturers have, for a long time, been endeavoring to completely remove every trace of grease by cooling the essences, either by taking advantage of the low temperatures of winter or by cooling them by means of ice. These two methods are not always easy to put into practice. The first, in fact, is within reach of such manufacturers only as are located in a region where there is a certainty of having the necessary cold every year. Such is not the case with the large manufacturers of essential oils of the Mediterranean coast. The second method obliges the producer to purchase ice, often at a very high figure, and then he cannot regulate the temperature at his will. Finally, neither of these processes permits of an absolute continuity in the manufacture.

It was to obviate these different inconveniences that Mr. Douane, of Paris, devised the apparatus that we are about to briefly describe. To tell the truth, it is only a variant of the apparatus that he has for a long time been constructing for the production of ice through chloride of methyl, but it is applied with remarkable ingenuity to the particular case that occupies us.

The apparatus consists of two distinct parts; one, which is common to all frigorific apparatus of this kind, and which serves to convert the vapors of chloride of methyl into a liquid, and the other, which is the frigorific, in which the cold is produced by these vapors and in which is effected the congelation and the filtering of the extract.

These two parts are connected by an external piping.

The chloride of methyl, in a liquid state, is introduced through the cock, I, into a small copper boiler placed in the frigorific. In this boiler the chloride of methyl enters into ebullition when the apparatus is set in operation. The ebullition produces an intense cold. The vapors are sucked by the pump in passing through the cock, D, and the pipe, L, and are then compressed and forced through the pipe, M, into a liquefying apparatus composed of a worm placed in



APPARATUS FOR CONGEALING PERFUME EXTRACTS

a receptacle, R, which at the same time incloses the chamber of the compression pump.

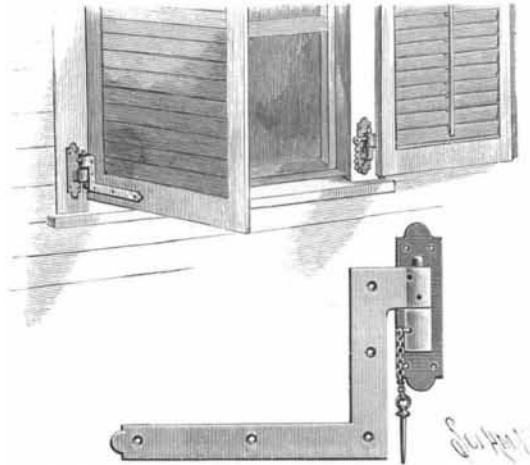
A current of water entering through the cock, P, and making its exit through a waste pipe, S, cools the vapors, which then become liquefied. The liquid, thus regenerated, enters a vertical cylinder placed in the center of the worm. It is from this cylinder that, through the pipe, K, and the cock, I, is effected a continuous flow of the liquid into the small copper boiler above mentioned.

It will be seen that it is always the same chloride of methyl that is made use of, and all the joints and

packings of the cocks are so constructed as to prevent leakages.

The movement of the compression pump is inclosed in a tight drum into which glycerine is introduced through the plug, Q, so that the stuffing box, U, through which the motor shaft runs, has merely to stop the flow of a liquid that forms a hydraulic stopper which prevents losses of chloride of methyl.

A simple examination of the figure shows how the apparatus has been arranged for effecting the congelation of the extract, the decanting of it under pres-



DEARING'S LOCK HINGE FOR SHUTTERS.

sure, and the cold filtering of it. A portion of the wooden covers, J and E, are supposed to be removed in order to allow to be seen the copper cylinders, A, in which the extracts are placed, and the filtering chamber, B.

The refrigeratory consists of a rectangular reservoir of iron plate perfectly isolated upon three faces. Upon the fourth are placed the filter chambers, which are cooled by the non-isolated side of the reservoir. In this latter, in front and on a level with the agitator, the pulley of which is seen at N, is the small copper boiler of which we have spoken. In the rear are the cylinders, A, containing the extracts. Under the action of the agitator the incongealable liquid that fills the apparatus cools the cylinders and becomes cooled itself in contact with the small boiler in which the chloride of methyl is in ebullition at a very low temperature, say from 25 to 30° below zero.

It is evident that the extract cylinders have a capacity variable with the power of the machine. They are closed by a disk with a tight joint that carries several tubulures. One serves to give exit to the extract, another to connect the apparatus furnishing the air pressure for drawing off the extract, and another for the adapting of a thermometer to show the temperature.

This apparatus gives excellent results and furnishes perfumed alcohols free from all traces of fatty bodies.—*Le Genie Civil*.

AN IMPROVED LOCK HINGE.

By the employment of the lock hinge shown in the illustration, the shutter to which the hinge is attached may be held in a fully open or in an intermediate or bowed position, the locking device being conveniently managed from inside the window. The improvement has been patented by Mr. James W. Dearing, of No. 467 Hicks Street, Brooklyn, N. Y. A strong and simple hinge of the ordinary pattern is preferably employed, but in its knuckle are two apertures extending through from side to side, one of the apertures being

in a central and the other in a side portion of the knuckle, as shown in the detail view. There are corresponding apertures in the pintle section of the hinge, and a pin adapted to be passed through the registering apertures is suspended by a short length of chain from the lower part of the pintle section. By passing the pin through one pair of the registering apertures, the shutters will be held in a bowed or partially closed position, while by the other adjustment the shutters will be held in a fully open position, and the latches usually employed to lock the shutters in wide open position are not needed.