

Frozen Fish.

The notice of frozen fish in the *SCIENTIFIC AMERICAN* of March 20 recalls a similar occurrence under my own observation. Several winters ago I purchased in one of the Hartford, Conn., fish markets three frozen pickarel, and carried them home at night. They were frozen perfectly hard and stiff. I placed them in a large tin pan, and filled it with cold water. In the morning my attention was attracted by a flopping at the pan, and I found one of the fish was splashing about as lively as when he first took the bait.

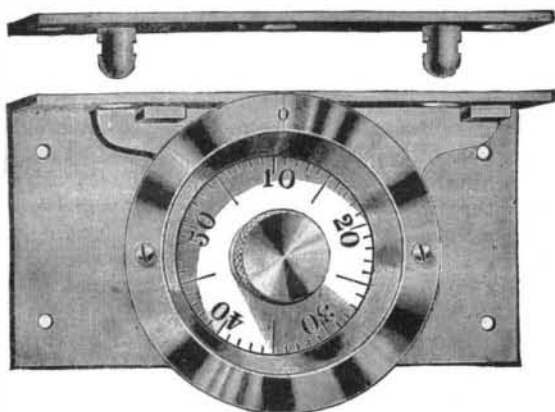
J. H. L.

STEAM DISINFECTER FOR USE IN HOSPITALS.

The importance of having efficient means at command when an epidemic of contagious disorders breaks out in a populous place has been so abundantly proved in this and other countries that great attention has been drawn to the subject, with the view of securing



DIAL OF THE CHAMPION DOOR LOCK.



CHAMPION FLUSH DIAL CHEST LOCK.

the best disinfectant. It has been found by high scientific authorities, says the *Universal Engineer*, that heat alone, without the aid of dangerous chemicals, is sufficient to destroy all the germs of disease, all forms of insect life and low organisms, etc.; and the introduction of steam under regulated pressure into a properly constructed apparatus appears the safest and best method for hospital authorities, etc., to adopt.

Washington Lyon's patent steam disinfecter, as made by Manlove, Alliott, Fryer & Co., of Nottingham, appears to offer a thoroughly practical and efficient means of dealing with bedding, carpets, clothes, etc., without any injury to the fabric and no material damage to colors, as letters and papers can be disinfected without risk of damage. As will be seen from the engraving, the apparatus consists of a large and strong iron chamber, with double walls of boiler plate, provided at each end with a steam-tight door. The chamber is made elliptical in section, to enable large spring mattresses, couches, or bulky articles to be inserted without requiring to be doubled up. Steam from a boiler is admitted into the hollow casing to heat the walls of the chamber. While this is going on, the articles to be disinfected are placed in the traveling cage and rolled into the chamber, the door secured by screw clamps round the edge, and the steam by another pipe admitted to the interior of the chamber at 20 lb. pressure.

The temperature and pressure are regulated by valves and gauges outside, the degrees of temperature corresponding to the several pressures marked on the dial. By employing a higher pressure of steam on the outer casing than in the interior chamber the steam in the latter can be superheated, and consequently dried, preventing the condensation of moisture in the articles while being disinfected. The most approved method of fixing is to place the apparatus midway between two chambers; goods received in one chamber after disinfection are taken out into another chamber, to wholly prevent any contact between the infected and disinfected articles. For rural districts a portable apparatus, with boiler attached, can be made, but a fixed machine in a central position of a

district is the best way. The apparatus has been definitely adopted by the Government, by the Metropolitan Asylums Board, many corporations, and the Government of China have ordered one to be sent to Hong Kong, so that it has successfully passed the experimental stage, and is an acknowledged method of disinfection.

THE "CHAMPION" KEYLESS LOCKS.

Our usual expression for security is that we have placed valuables "under lock and key," but as the lock may be picked and the key lost, this does not always describe the best fastenings. In some of the improved "Champion" locks there is neither key nor key hole. Doors provided with them may be opened from either side, the "Open Sesame" being a knowledge of the combination of figures by which the knob may be made to turn and the door open.

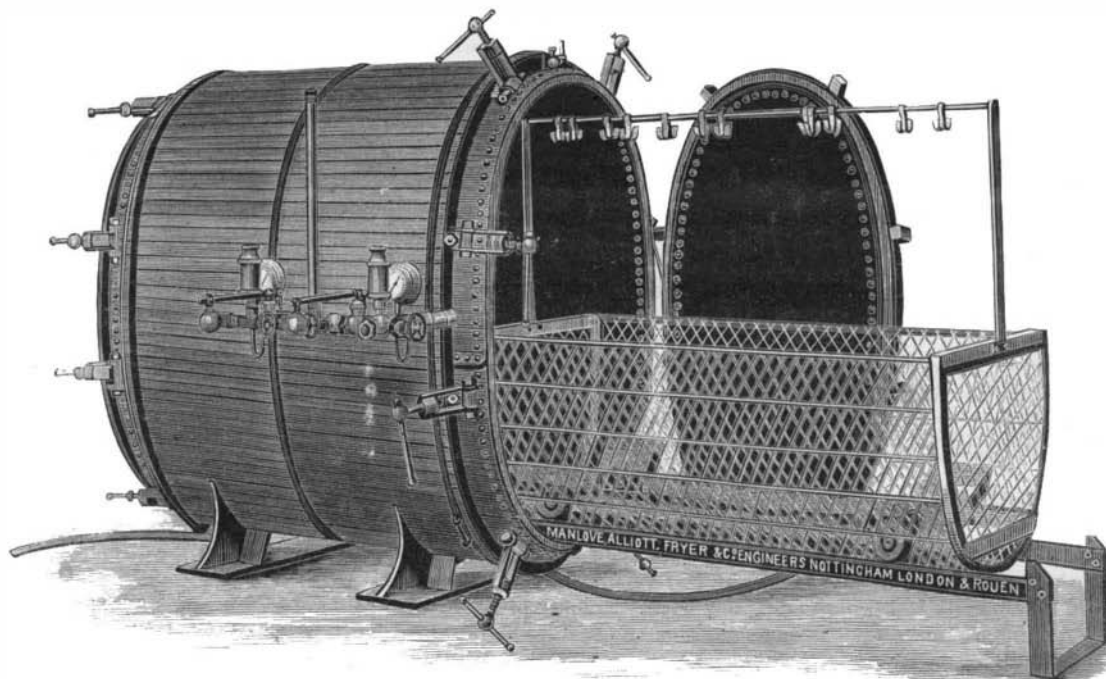
Several forms of these keyless locks are manufactured, the shapes varying according to the purpose for which they are to be used. We illustrate the two forms which will be of more particular interest to builders. The first, known as the "Champion" flush dial chest lock, will be found of much value in protecting a fine set of tools or other shop valuables from theft or the inconvenient curiosity of visitors or borrowing by associates.

As its name implies, the lock is let in flush with the woodwork, that it may not be exposed to injury. It is made entirely of brass, with the dials nickel plated. To open a chest so fastened, it is necessary to know the three numbers which make up the combination. As the possible combinations are almost infinite, there is no chance of the secret being discovered. The numbers may be changed at pleasure, so that, should the combination become known to any undesirable person, it is a simple matter to change it. In construction, the lock is strong and reliable, and being so much more simple, it can be opened in much less time than an ordinary safe.

Perhaps it may be feared that the combination might be forgotten, but it must be remembered that a key is not only liable to be left behind, but as well to be lost or duplicated. The combination necessary for the unlocking of a keyless lock may be recorded in any number of places, and in such a way that detection would be impossible. The beveled form of the numbered dial is considered preferable for a great many purposes, but these minor details are susceptible of a large variety of designs.

The second lock illustrated, the "Champion" keyless door lock, is, we believe, the first keyless dial lock applied to a wooden passage door. We show it in section, and also the outside and interior parts, which are visible when it has been applied to a door. The difficulty heretofore has been to control the fastening from both sides. As now arranged, the door may be opened from either side, and the lock may be put in place with little trouble. The section shows its construction.

The smaller part of the cylinder, A, is screwed into the ring, R, on the outer face of the door. The spindle is then put in, and the under plate, U, of the bolt case is laid against the inner face of the door. The screws, CC, secure this plate to the cylinder, A. The lock is adjustable to any door. The mechanism by which the dial piece, D, operates the bolt is connected with the bar, B. Before the case is put on, the combination is to be set, in a manner described in the directions accompanying each lock.



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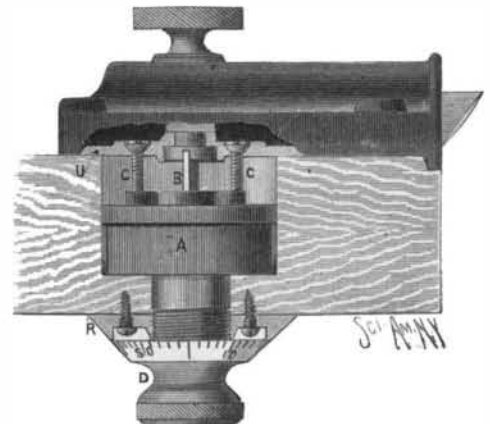
By means of the latch shown on the inner side of the case, the bolt may be "thrown off," as in ordinary night latches. But a single revolution is required preliminary to unlocking, and the combination is made

directly by turning at once to each of the three numbers. The simplicity and strength of the lock adapt it for use in the best houses. The dial, shown full size in our illustration, may be either nickel plated or bronze.

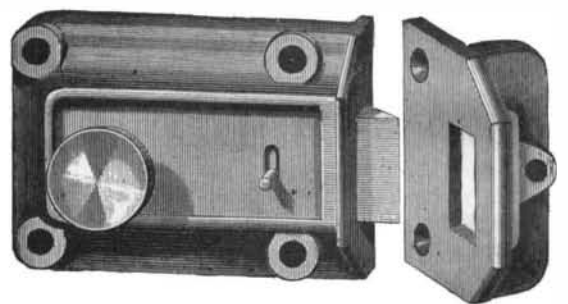
The Champion locks are, for the most part, the invention of Milton Jackson, now Manager and Treasurer of the Miller Lock Co., of Philadelphia, who are the sole manufacturers, and to whom all further inquiries should be addressed.

The Fattening Effect of Chewing Gum.

A Southern paper (*Macon (Ga.) Messenger*) says: "Twenty years ago the rule was that Southern women



CROSS SECTION OF CHAMPION KEYLESS DOOR LOCK.



INSIDE LATCH OF CHAMPION DOOR LOCK.

were thin and delicate; it is not the rule now. Southern women are not physically equaled in all North America. Any physician who is as well informed as he ought to be will tell you that this is true. This change is due to the habit of chewing gum. You may smile, you may even laugh, if you please, but I am telling you a plain fact. As to Southern men, they are as thin and gaunt as they ever were, and so they will remain until they cease to chew tobacco and begin to chew gum."

Liquid Carbonic Acid.

A patent recently taken out proposes to produce the carbon dioxide gas for liquefaction by having a solution of sodium bisulphate in a leaden container, and running into it some carbonate or bicarbonate, dissolved or suspended in water, the evolved carbon dioxide being drawn off over a drying mixture into a gasometer, from which it is drawn for liquefaction by compression. Liquid carbonic acid, equal to 500 liters of gas at ordinary pressure, can be supplied for one shilling. In using this for various purposes, it is proposed to pass the gas that escapes after using over moist sodium carbonate, which is thus converted into bicarbonate, which can be again used as a source of supply of the carbon dioxide. There is a bore hole near the village of Burgbrohl, on the Rhine, which yields a constant supply of very pure carbon dioxide. This village is near to the Lake of Larch and the interesting volcanic district surrounding it, where there are a very large number of mineral springs and exhalations of carbon dioxide. This bore hole was sunk some two years ago, and has given a constant supply of gas amounting to about 2,160 cubic meters per twenty-four hours. Apparatus has been erected for liquefaction of the dioxide, and this is now regularly carried on close to the bore hole. The water which rises with the gas is very cool, and is employed to cool the

compressing apparatus. About 500 liters of gas are compressed per minute into about one liter of liquid. This is sent away in wrought iron vessels containing about eight liters,