

BEE PROTECTOR.

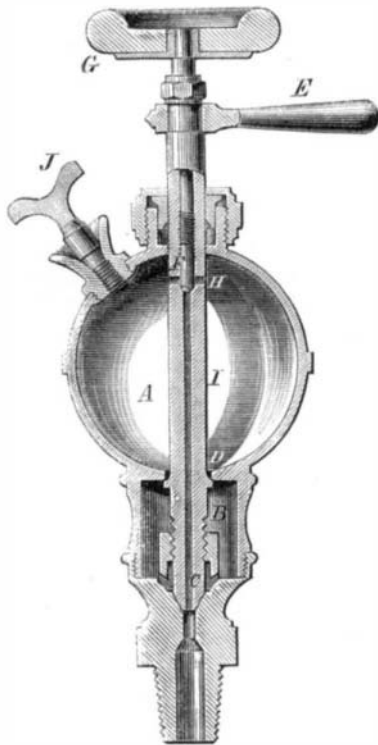
The ingenious inventor of this device, before putting his ideas into practical shape, doubtless became convinced of the immutable truth of these facts: First, the busy bee improves only "shining hours," and gathers honey from opening flowers only by day; second, the bee moth has a predilection for stealing honey under cover of the night; and, third, chickens retire to their roosts at twilight, and are aroused by the "shrill clarions" of the masculine portion of their population at an excessively early matutinal hour. To utilize these propositions to compass the desired end, was the problem: how it has been solved, we proceed to show. The bees are expected to enter their domiciles a little before dark. After they are all in, the period for the roosting of the chickens arrives. The latter, alighting on their perches, operate machinery which closes the hive gates and shuts the bees in. The bee moth, on attempting his burglarious operation, finds himself barred out, and as the mechanism of the device is beyond his comprehension, it is to be inferred that he retires in disgust. Meanwhile the chickens repose until the early village cock proclaims the morn, when they abandon their perches to resume their geological investigations into the surface of the adjacent soil, and thus return the bees, their honey all safe, to the airs of heaven and flowers of earth. For the benefit of all who may be interested in this strikingly novel application of the force of gravity through the medium of chickens, we append the following detailed description of the mechanism, a patent on which was granted June 28, 1870, to Jeremiah Cory, of Holden, Mo.:

A is a horizontal rock shaft, secured in suitable bearings and provided with three arms, B, C, and D. The arm, B, within the house supports a vertical sliding post which is held in guides, and bears the perches. The arm, C, carries an adjustable weight, sufficiently heavy to overbalance the post and keep it elevated when the roosts are unoccupied. The upright arm, D, is connected as shown by the dotted line with the rods, E E, attached to the gates of the hives. Suitable weights, F, are arranged in connection with the rods, E, so as to hold the gates open.

As the fowls mount upon the roost their weight depresses the post, and it, in turn, presses down the arm, B, and thereby rocks shaft, B, and its arm, D. The latter, operating the rods, E, closes all the hives. As soon as the roost is vacated, the weights bring the parts to their original positions. The advantages claimed are the regularity and certainty with which the hives will be closed and opened, and the fact that any number of hives may be connected with the device and simultaneously operated.

BREWSTER'S PATENT COMBINATION TALLOW CUP.

The object of the invention herewith illustrated is a steady

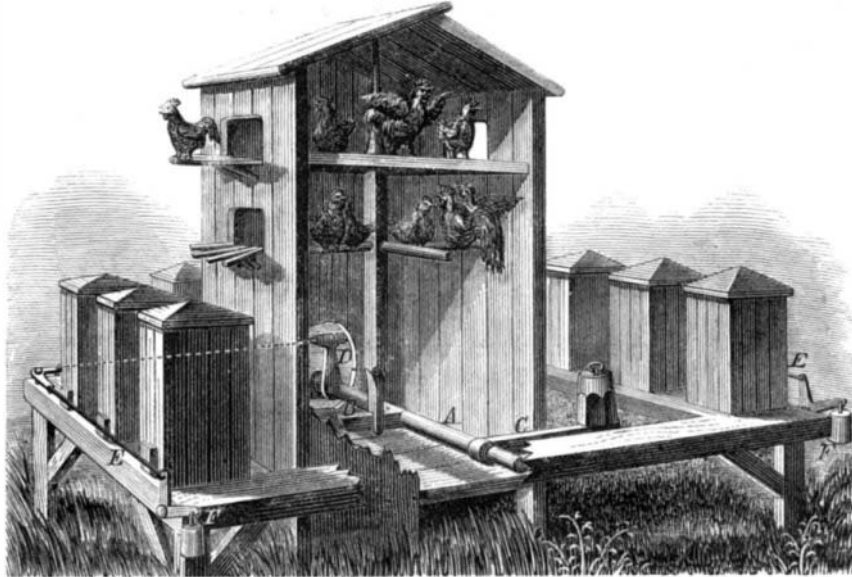


or continuous lubrication of the cylinder and slide valves of a steam engine, thus preventing all wear of the working parts and economizing power without the usual waste of lubricating material. It consists in a combination tallow cup, and is claimed to be equally well adapted to marine, stationary, and locomotive engines, and also to have afforded results in every way satisfactory, during the period in which it has been in use.

In the sectional view annexed, A is the main reservoir and B an auxiliary reservoir or charger, containing one tenth the quantity of material that the former receptacle is capable of holding. C is the main valve connecting directly with the cylinder, and D is a secondary valve closing communication with the reservoirs, A and B. These valves are operated by the handle, E. F is the feeding valve, closed when the main valve, C, is opened and actuated by the wheel, G, serving to regulate the openings, H, in the stem, I. J is the inlet fun-

nel with valve-seated plug. The main valve, C, being closed by means of the handle, E, the plug, J, is unscrewed, and the reservoir, A, is filled with tallow to the openings, H, when the plug is replaced and the valve, F, is closed. By opening the valve, C, and closing D, the tallow in the charger, B, is allowed to pass into the cylinder, when the valves are brought back into position. Nothing further is required until the supply of tallow thus afforded is exhausted, when the same operation is repeated and the contents of the charger again allowed to escape.

To render the action of the apparatus continuous, the valve, F, is opened, when the steam, passing up through the stem, I, into the reservoir, A, condenses and falls to the bot-



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tom, raising the tallow to a level with the openings, H, from which it is sucked into the cylinder by every stroke of the piston as long as the supply of tallow remains. The reservoir is left filled with distilled water, which is let through the cylinder after stopping the engine, by removing the plug, J, and opening valves C and D. In case of any foreign substance entering the reservoir, it may be blown out while the engine is in motion by allowing the steam to rush through the plug funnel.

Among the other advantages claimed may be noted strength and cleanliness, together with beauty and simplicity of construction; it is also stated that the device is steam-tight, precluding leakage, and thus dispenses with the usual means employed to absorb the waste. It may be used as an injector at stated intervals or, by arranging the valves as above described, as a self feeder, as desired. The cup requires filling but once a day, feeds regularly, has no cocks or similar mechanism to get out of order, and is economical in its expenditure of lubricant.

The manufacturers state that it has elicited favorable testimonials from many leading engineers and master mechanics, and that its efficiency has been, in every respect, demonstrated. For further particulars address Messrs. Davis & DuBois, southwest corner Leopard and Otter streets, Philadelphia, Pa.

SOLDELING TOOL.

Mr. John C. Tauber, of Ridgeville, Ind., proposes to do away with the present rather inconvenient method of handling a stick of solder and the heated iron, by the use of the device illustrated herewith, for which he has recently ob-



tained a patent. It consists in a metallic vessel, in the form of an inverted cone having a minute aperture at the bottom. It is provided with a flanged rim and socket to receive a handle; and around its lower part is placed an annular bowl or trough. The conical vessel is filled with solder and flux, and the trough, with cotton cloth or wick saturated with kerosine. The latter, being ignited, melts the solder, which, flowing from the hole, can be distributed uniformly upon the work, in greater or less quantities, as may be desired.

BOYNTON'S REVOLVING EVAPORATOR.

The invention represented in the accompanying engraving is a portable revolving evaporator, by means of which it is claimed that fruit, vegetables, meat, fish, and similar perishable substances can be dried, each forming an excellent preserve which, while compact in bulk, retains all the value of the fresh product and can be kept and transported in any climate.

The material to be treated is spread upon the shelves of netted wire shown in the foreground of the illustration. A number of these when filled are placed upon the projecting rails, A, which line the sides of the eight compartments into

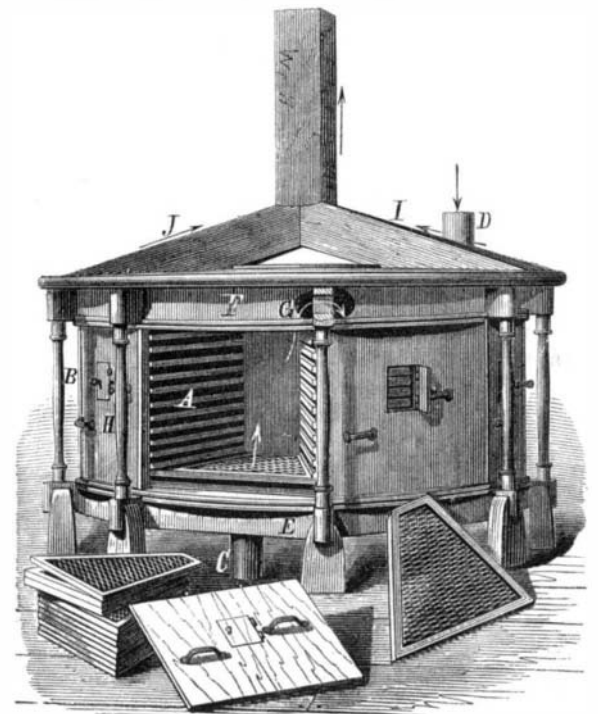
which the rotary portion, B, of the apparatus is divided. Ho air passes through these chambers entering from the pipes C and D, in the manner hereafter to be described.

The hollow fixed base, E, and also the similar upper portion, F, are, by radiating partitions, divided into inclosed sectors to correspond and coincide with the compartments in the rotating part above and below. All of these partitions, with the exception of those which form, as it were, the prolongation of the walls of one chamber, are provided with apertures, as shown in section at G. The solid partitions just alluded to are securely packed with felt, so that when, by the rotation of the revolving portion, B, any one compartment is turned so that its walls correspond with them, such compartment is completely cut off from all communication with the rest of the device, and hence from any supply of heated air. The object of this is to enable each chamber to be filled in succession without allowing of the escape of the heat during the operation. From this it will be observed that, of the eight compartments, one is always ready for filling, and consequently the evaporating process is restricted to the remaining seven.

Let it be supposed that a chamber has received its supply when in the position, H, and that the machine has been revolved to the right, and the compartment opened as shown. The heated air then enters from below by the pipe, C, passes in the direction of the arrow up through the material on the shelves, thence through the orifice, G, down through the next chamber, thence under the right hand wall of the latter through the perforated partition, up again through the following compartment, and finally makes its exit through the conduit, I. In the remaining four compartments the heated air proceeds down from the pipe, D, through the first division, up through the second, and so on through all the chambers, at last escaping through the chimney, J.

When the material is over the pipe, C, it is acted upon by air heated to 220°; when under the pipe, D, the temperature is 180°; and in the last compartment from which it is finally withdrawn, the heat is 120°. The windows shown in the covers of the chambers afford admission to the shelves for examination; and at any time the rotary portion can be set in motion, carrying any desired compartment to the filling door.

It is hardly necessary to point out the advantages of this device for preparing vegetables and articles of similar nature for transportation or for naval and military purposes. The inventor states that, during the past year, apples, peaches, pears, strawberries, raspberries, grapes, potatoes, corn, and, in fact, almost every variety of fruit and vegetable, have been successfully treated, producing preserves equal to the best canned articles. For fruit growers, who during the coming season may suffer through overstocked markets, an excellent means of utilizing their produce, which might otherwise prove a total loss, is here afforded. The apparatus can be seen in operation and in all its various sizes at the factory of the Vineland Dehydrating Company, Vineland, N. J., or fur-



ther particulars may be obtained from the manufacturers, Messrs. C. A. Boynton & Co., at same address. Patented April 23, 1872.

PUTTING SCREWS IN PLASTER WALLS.—It often becomes desirable to insert screws in plaster walls, without attaching them to any woodwork; but when we turn them in, the plaster gives way and our effort is vain. And yet a screw may be inserted in plaster, so as to hold light pictures, etc., very firmly. The best plan is to enlarge the hole to about twice the diameter of the screw, fill it with plaster of Paris, such as is used for fastening the tops of lamps, etc., and bed the screw in the soft plaster. When the plaster has set, the screw will be held very strongly.

Robert Marsden Latham, Secretary of the Inventors' Institute of London, and editor of the *Scientific and Literary Review*, died recently at Hampstead, England. *at. 38.*