C. A. DEAN.

STERILIZING CABINET.

APPLICATION FILED JAN. 21, 1911.

1,007,274. Patented Oct. 31, 1911.

FIG. 1.

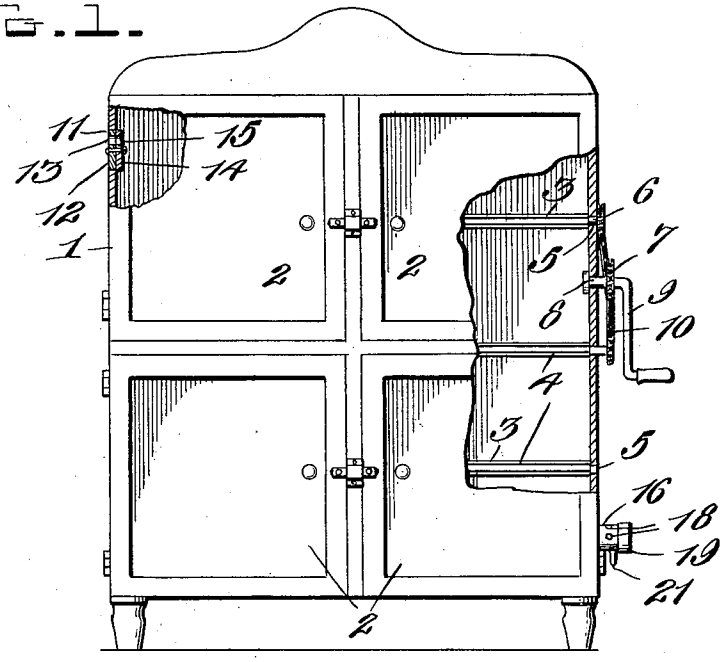


FIG. 2.

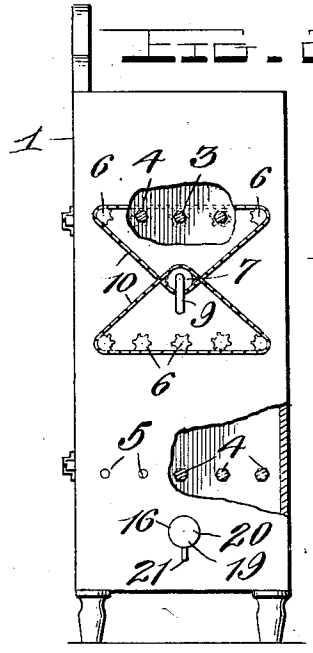


FIG. 4.

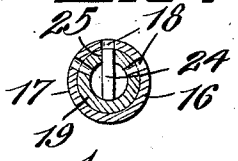
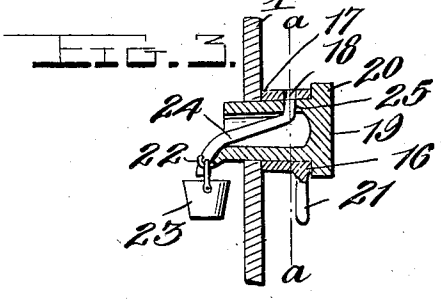


FIG. 3.



Witnesses

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STERILIZING-CABINET.

1,007,274. Specification of Letters Patent. Patented Oct. 31, 1911.

Application filed January 21, 1911. Serial No. 603,917.

To all whom it may concern:

Be it known that I, CHARLES A. DEAN, a citizen of the United States, residing at Tama, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in Sterilizing-Cabinets, of which the following is a specification, reference being had to the accompanying drawings.

This invention is an improved sterilizing cabinet especially adapted for sterilizing books, bank notes, papers or other articles by the fumes of formaldehyde, the object of the invention being to provide an improved device of this character which is extremely cheap and simple, is entirely efficient, and may be readily operated by inexperienced persons.

The invention consists in the construction, combination and arrangement of devices, hereinafter described and claimed.

In the accompanying drawings—Figure 1 is partly a front elevation and partly a vertical sectional view of the sterilizing cabinet constructed in accordance with my invention. Fig. 2 is an end elevation of the same partly in section. Fig. 3 is a detail perspective sectional view of the draft pipe. Fig. 4 is a detail sectional view on the plane indicated by the line *a*—*a* of Fig. 3.

The cabinet or casing 1, may be of any suitable size and shape, and may be made of any suitable material. A convenient size for ordinary purposes is five feet by five feet, by two feet, so as to provide a cubic content of fifty square feet for convenience in estimating the quantity of sterilizing material to be employed.

The cabinet is here shown as provided in its front side with hinged doors 2. Shelves 3 are arranged in the cabinet at suitable distances apart, one above another, and extend from end to end of the cabinet. Each of these shelves comprises a plurality of revoluble bars 4. The said bars are preferably corrugated or polygonal in cross section, and are provided at their ends with cylindrical spindles 5 which have their bearings in openings in which the end walls of the cabinet are provided. Each of the said shelf bars is provided at one end with a sprocket wheel 6. On one end wall of the cabinet at a point between two of the shelves is an operating sprocket wheel 7, which is mounted on a suitable stub shaft 8 and is provided with a crank handle 9 whereby it may be readily turned. Endless sprocket chains 10 engage opposite sides of the said sprocket wheel, and each of the said chains also engages the sprocket wheels 6 of one series of shelf bars so that when the said sprocket wheel 7 is turned, the said sprocket chains and the said sprocket wheels of the said shelf bars cause the shelf bars of two of the shelves to be rotated, and hence articles which are placed on the said shelf bars will be moved thereon, and all portions of the surfaces of said articles will be exposed to the action of the disinfecting agent in the cabinet.

The cabinet is provided at one side at an elevated point with an escape opening 11 which in practice may be connected with an air shaft or may be disposed opposite the upper sash of a window or any opening which leads to the outer air. In the escape opening is a diaphragm 12 which has an opening 13, and is also provided with a shutter 14 having an opening 15 which may be moved into or out of coincidence with the opening of the said diaphragm so that the said shutter may be employed to close or open the escape opening. At one end of the cabinet, near the lower end thereof, is a feed and air inlet pipe 16. This comprises an outer member 17 which projects outwardly from the cabinet, and is provided with a series of openings 18 and an inner member 19, which is seated in the outer member and has a head 20. The member 17 may be turned on the member 19 and has a handle 21, and the member 19 is provided at its inner end with a hook 22 to support a vessel 23 and also has a tube 24, the inner end of which discharges into the vessel, and the outer end of which extends to one side of the member 19, and may be brought into or out of coincidence with one of the openings 18 by appropriately turning the member 17. When the formalin has been introduced to the vessel 23 through the tube 24, the outer member 17 is then turned sufficiently to cause the openings 18 to get out of alinement with the openings 25 of the inner member 19 and hence cause said member 17 to close said openings 25.

The formula for the disinfectant for a cabinet of 1000 cubic feet capacity is formalin 40%, 11 ounces, water 11 ounces, permanganate of potassium, fine crystals, 9 ounces.

In the operation of my invention, the articles to be sterilized or disinfected are placed

on the shelf bars and a suitable quantity of permanganate of potassium, or potassium crystals is placed in the vessel under the spout of the draft pipe. The doors are then closed, and the shutter or valve of the escape opening is closed. A suitable quantity of a solution of formaldehyde is then poured through the spout into the vessel containing the potassium permanganate crystals, thereby causing the formaldehyde gas to be generated, which fills the cabinet and effectually disinfects and sterilizes the articles therein. From time to time the shelf bars are turned by the means hereinbefore described, so as to cause the articles to be moved on the shelf bars, and hence cause all portions of the surface of the said articles to be exposed to the action of the gas. The cabinet should be kept closed and the articles therein exposed to the action of the disinfectant, for a period of from three to eight hours, at the expiration of which time, the escape opening and draft opening should be opened, so as to permit the escape of the fumes from the cabinet. In about fifteen or twenty minutes thereafter, one of the cabinet doors may be opened. If the fumes of the formaldehyde remain in the cabinet, a little ammonia water should be sprinkled on the floor of the cabinet to neutralize the formaldehyde, and the articles can be then removed from the cabinet.

I claim:—

A sterilizing cabinet having a valved escape opening at its upper side and provided at its lower side with a feed and air inlet pipe embodying a fixed inner member, closed at its outer end, open at its inner end and provided with radial openings and a revoluble outer member on the inner member and provided with radial openings movable across those of the inner member, the said inner member being provided at its inner end with a supporting element for a receiving vessel and being also provided with a feed tube to discharge into the said receiving vessel.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CHARLES A. DEAN.

Witnesses:
I. T. WILLIAMSON,
B. L. CLUTIER.