No. 636,651. Patented Nov. 7, 1899.

J. C. FLEMING.

AIR PURIFIER FOR REFRIGERATORS.

(Application filed Sept. 26, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

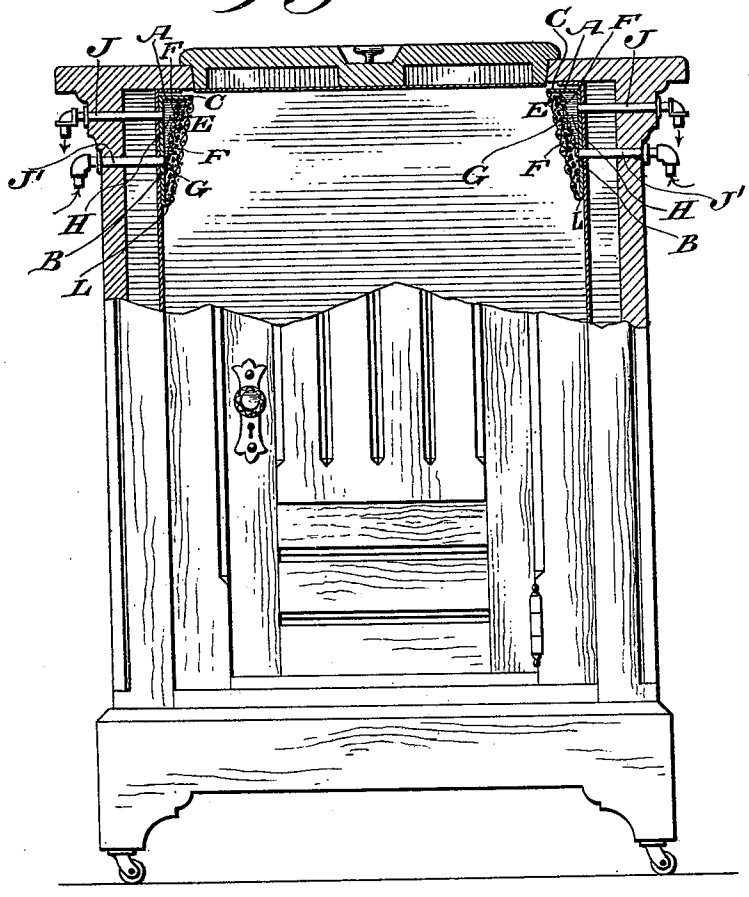

Fig. 2.

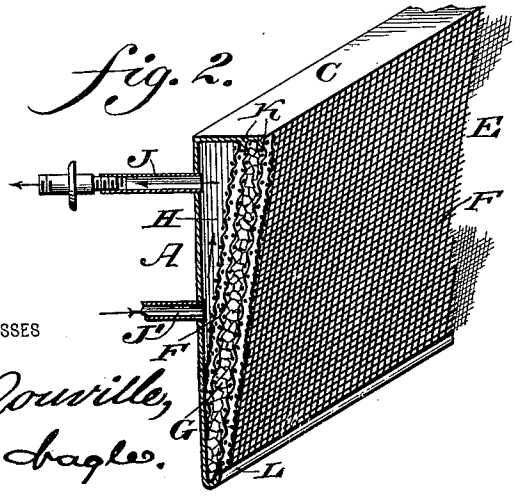

Fig. 3.

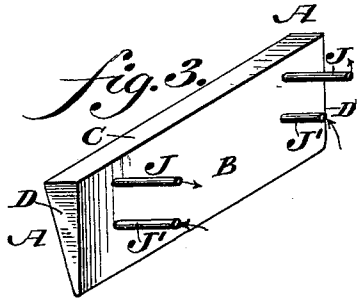

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fig. 4.

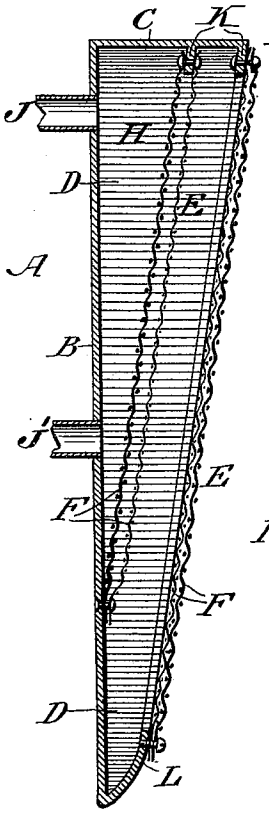
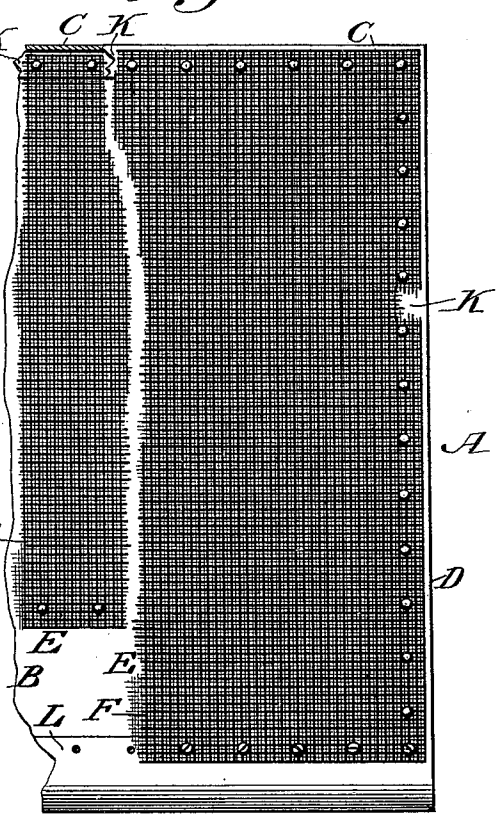


fig. 5.



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UNITED STATES PATENT OFFICE.

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AIR-PURIFIER FOR REFRIGERATORS.

SPECIFICATION forming part of Letters Patent No. 636,651, dated November 7, 1899.

Application filed September 26, 1898. Serial No. 691,845. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. FLEMING, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Air-Purifiers for Refrigerators, &c., which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in stationary refrigerators intended for family use and small dealers; and it consists of a box or casing constructed of tin, iron, or other metal and of triangular or other shape, the same constituting an air-purifier and being located in the present instance in the upper corners of the refrigerator, said purifier being adjusted or supported in the refrigerator by the connection of pipes from the exterior leading to the interior thereof. By making the purifier of triangular shape I am enabled to fit the same closely to the inner corners of the refrigerator and to expose a comparatively large surface of charcoal or other air-purifying material to the interior of the refrigerator, said charcoal being retained between wire screens, while the angular portion of each purifier can be readily fitted into the corners of the refrigerator. The air-chamber in the interior of the purifier communicates with the exterior of the refrigerator by means of a plurality of pipes or conduits, one of which conducts air from the exterior to the surface of the charcoal on the inside of the purifier, said air being afterward discharged from the upper portion of said purifier, whereby the charcoal is kept in a healthy condition without permitting any of the external air to enter the interior of the refrigerator, which latter action would raise the temperature and destroy the advantageous results sought to be attained.

My invention further consists in novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims that follow the specification.

Figure 1 represents a vertical section of an air-purifier embodying my invention and a refrigerator to which the same is applicable. Fig. 2 represents a perspective view, in vertical section, of the air-purifier in detached position. Fig. 3 represents a perspective view taken from the side opposite to Fig. 2. Fig. 4 represents, on an enlarged scale, a vertical sectional view showing the preferred manner of securing the screens in position. Fig. 5 represents a front elevation of Fig. 4, partly broken away, showing the manner of securing the inner and outer screens in position.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a casing which constitutes a purifier and has a closed rear wall or back B, a closed top wall C, and closed side walls D, said casing in vertical section being in the present instance of triangular form. The side of the casing which faces the interior of the refrigerator is occupied by a foraminous wall E, consisting of the diaphragms F, of netting, gauze, screen or open work, or perforated plates, between which is sustained a mass of charcoal or other purifying material, as at G, it being noticed that said wall E inclines from the inner end of the top wall C of the casing to the bottom of the vertical wall B thereof, said wall E being separated from said wall B, so as to leave between them the air-receiving chamber H.

J′ designates inlet-pipes which conduct air into the lower portion of the chamber H of the purifier, said air being conducted therefrom through the pipe J, whereby it will be seen that a body of pure air is always contained within the purifier in the air-chamber H, whereby the charcoal is kept in a perfect and healthy condition, it being further apparent that said charcoal or other purifying material between the foraminous diaphragms F will effectually absorb and neutralize the noxious gases which may exist within the refrigerator. It will also be seen that the pipes J and J′ are adapted to support the casing and attachments within the refrigerator, the walls of the latter having formed in them simply openings to receive said pipes, whose inner ends are connected with the walls B and their outer ends communicate with the atmosphere, so that the device is applicable to refrigerators in use as already constructed without necessarily constructing new refrigerators therefor.

In order to connect the foraminous dia-

phragms with the walls of the casing A, said walls are formed with lips K and L to engage the ends of said diaphragms, the same being secured to said lips by screws or rivets, whereby the charcoal can be effectively supported between said diaphragms.

In practice I make the wire screen next to the charcoal on either side of fine wire, and next to the latter I place screens of coarser wire, the latter serving to support and give strength to said fine wire.

It will be evident that other fastening devices or means may be employed for securing the wire screens in position, and I do not therefore desire to be limited in every instance to the exact construction I have herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an air-purifier, a casing having an outer closed top, rear wall, and sides and internal screens having charcoal therebetween joining said top, sides and the lower portion of said casing, in combination with an air-chamber located in the space between the rear of said screens, and said rear wall and top.

2. An air-purifier for a refrigerator consisting of a casing having a closed top, sides and back, said sides being narrowest at their lower portions, and an inclined wall common to said top, side and back and formed of foraminous diaphragms having between them purifying material.

3. An air-purifier for a refrigerator consisting of a casing having a closed top, sides and back, and an inner inclined wall formed of foraminous diaphragms having between them purifying material, said casing having between its outer and inner walls an air-chamber which is in communication with the atmosphere through the air-conducting pipe, and with the interior of the body of the refrigerator through said diaphragms and material.

4. In an air-purifier for a refrigerator, a casing having a top wall and an inclined wall formed of foraminous diaphragms, purifying material between said diaphragms, and the top wall of said casing being provided with lips which are engaged by the upper ends of said diaphragms, the lower ends of the latter being secured to the lower portion of said casing.

5. In an air-purifier, a closed casing having foraminous walls, an air-chamber formed between said casing and one of said walls, charcoal supported between the latter, and inlet and outlet pipes extending from said casing and communicating with said air-chamber, said pipes being adapted to support said casing and its adjuncts.

6. In an air-purifier, a triangular-shaped casing having its longest side composed of screens having charcoal therebetween, an air-chamber formed between said charcoal and the angular portion of said casing, and inlet and outlet pipes for said chamber, said pipes serving as a support for said casing.

7. An angular-shaped casing, a wall of charcoal bridging the space between the top and sides of said casing, a fine-wire screen on either side of said charcoal, coarse-wire screens adjacent each fine-wire screen, an air-chamber located between said wall of charcoal and the angular portion of said casing and inlet and outlet pipes for said air-chamber.

8. In an air-purifier, the combination of a refrigerator, a casing located within the latter and having foraminous walls, an air-chamber formed between said casing and one of said walls, charcoal supported between the latter, and inlet and outlet pipes extending from said casing through the sides of said refrigerator and communicating with said air-chamber, said pipes serving to support said casing within said refrigerator.

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