May 8, 1928. 1,668,762

E. O. DE CAMP

CLOTHES DRIER

Filed Aug. 11, 1922 4 Sheets-Sheet 1

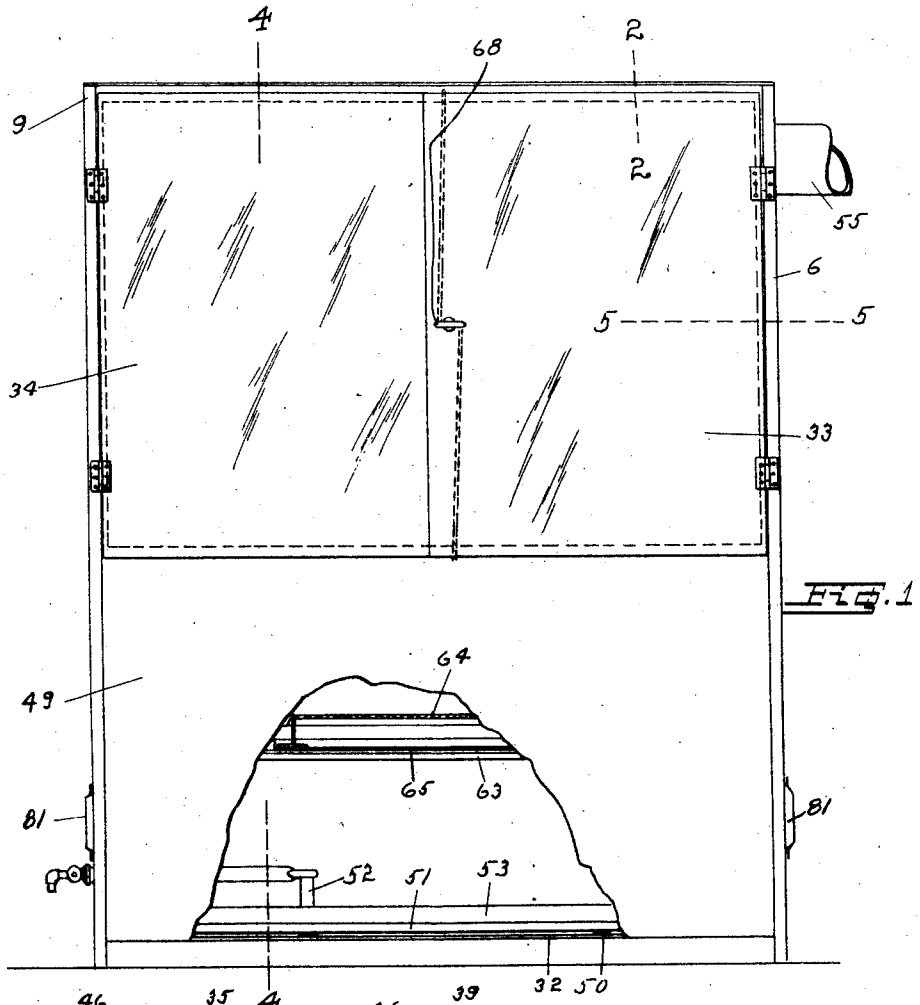


FIG. 1

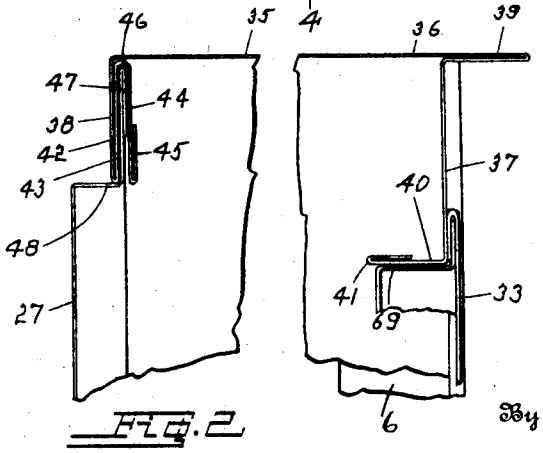


FIG. 2

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Filed Aug. 11, 1922 4 Sheets-Sheet 2

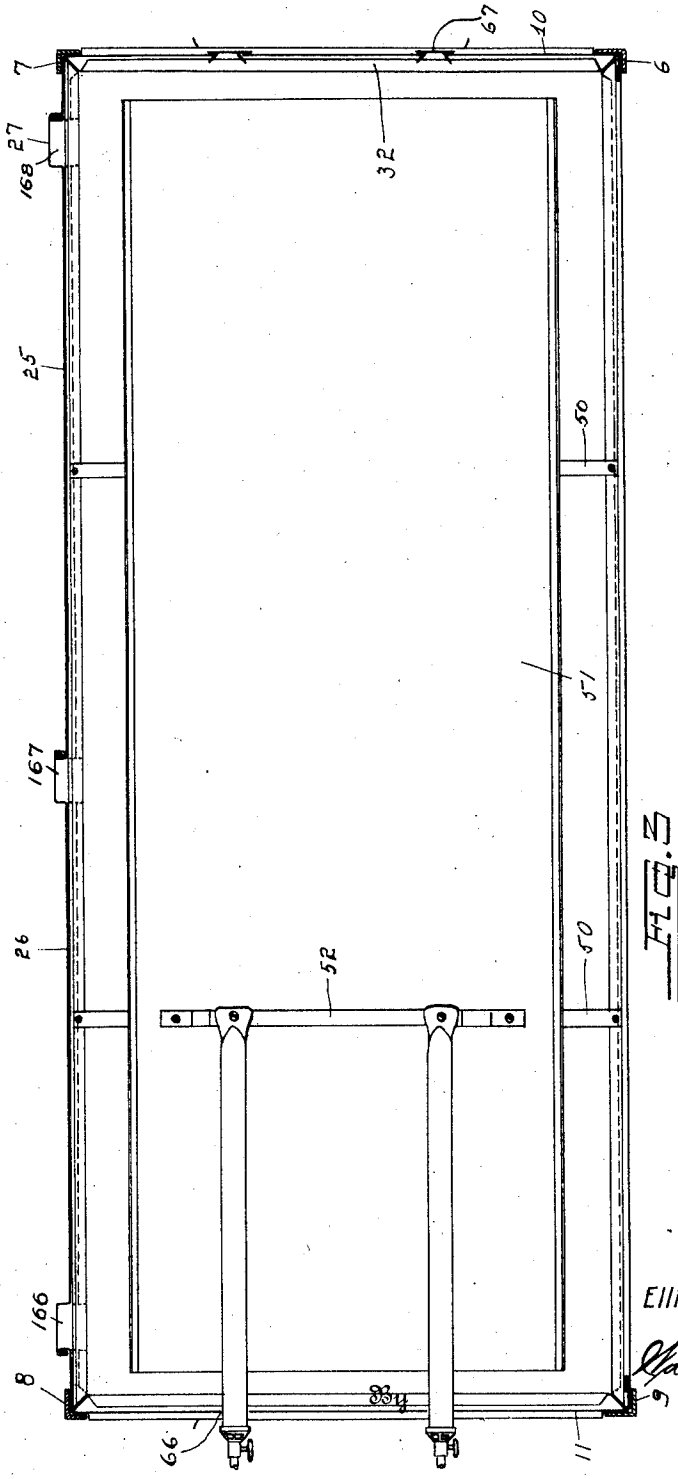


FIG. 2

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Filed Aug. 11, 1922 4 Sheets-Sheet 3

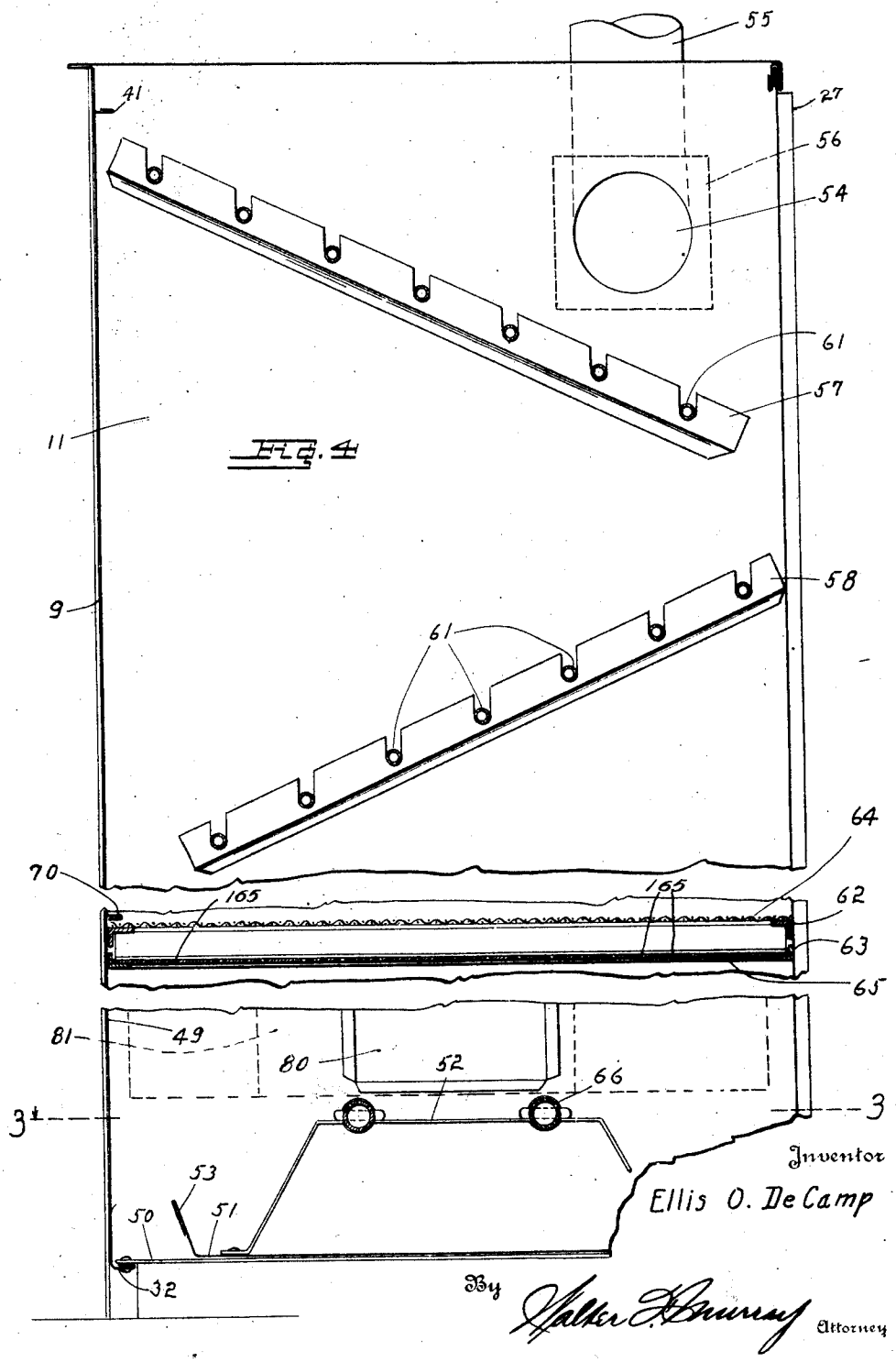


Fig. 4

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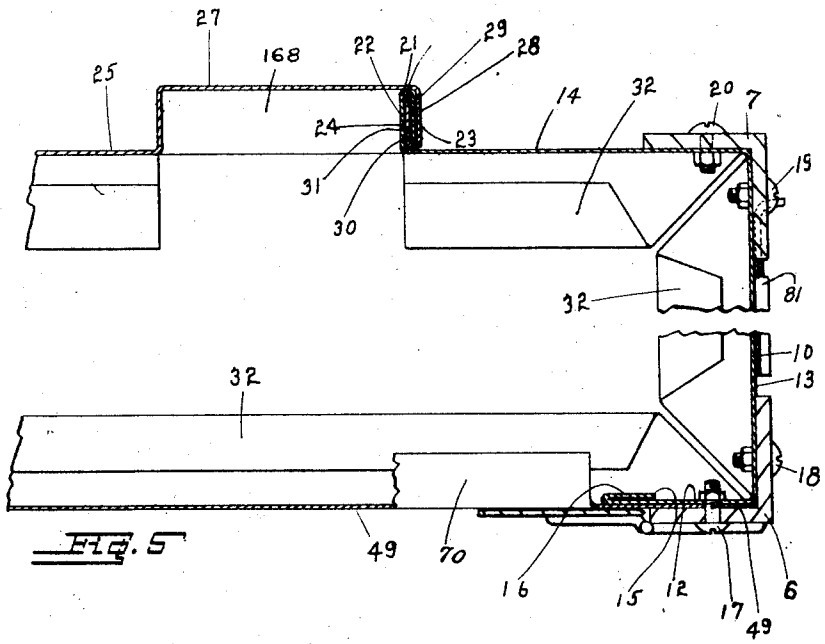


Fig. 5

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Patented May 8, 1928. 1,668,762

UNITED STATES PATENT OFFICE.

ELLIS O. DE CAMP, OF CINCINNATI, OHIO, ASSIGNOR TO THE WILLIAMSON HEATER COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

CLOTHES DRIER.

Application filed August 11, 1922. Serial No. 581,068.

An object of my invention is to provide a simple clothes drier which may be readily set up and taken down.

Another object of my invention is to provide a drier wherein a minimum of labor and effort is necessary to produce the device, and wherein the waste of material is reduced to a minimum.

Another object of my invention is to provide a device which will require a minimum of mechanical ability for the assembling and taking down thereof.

These and other objects are attained by means described herein and disclosed in the accompanying drawing in which:

Fig. 1 is a front elevation of a device embodying my invention, parts being broken away.

Fig. 2 is an enlarged sectional view on line 2—2 of Fig. 1.

Fig. 3 is a sectional view on line 3—3 of Fig. 4.

Fig. 4 is a transverse sectional view of a device embodying my invention taken on line 4—4 of Fig. 1.

Fig. 5 is an enlarged sectional view, on line 5—5 of Fig. 1.

Angle bars 6, 7, 8 and 9 are disposed at the four corners of the rectangular casing which comprises the drier. Between the angle irons or corner irons extend metallic sheets, the sheets enclosing the sides and forming the side walls of the drier. The side walls 10 and 11 are substantially similar, and each comprises a forward section 12, an intermediate or side section 13 and a back section 14. The edge 15 formed on the forward section 12 is turned upon itself whereby to form a vertical flange 16. From the flange 16, the side section extends to the corner plate 6 and is secured thereto by suitable bolts 17 and 18. The side section then extends from the angle plate 6 to the angle plate 7, and is secured to the angle plate 7 by suitable bolts 19 and 20. The back section 14 extends away from the angle plate 7 and is turned outwardly upon itself whereby to form a substantially U-shaped flange 21 having branches 22 and 23 between which is formed a groove 24. The back plates 25 and 26 are provided with U-shaped ribs 27, and having formed along their vertical edges inturned U-shaped flanges 28, the flanges comprising arms 29 and 30 having formed between them a groove 31. The flanges formed on the end plates and on the back plates are complementary, whereby the arm 30 may slidably engage in the groove 24 in the side plates, and the arm 23 may slidably engage in the groove 31 in the back plate. The ribs 27 give stability to the device and also re-enforce the device and the plates. It should be observed that in the structure disclosed and described there are no sharp edges formed along the side and back plates, whereby to cut or damage articles disposed within the drier. It should be noted that the corners formed upon the side plates, and formed at the inter-locking of the side plates and back plates, are rounded and continuous. The lower ends of the side and back plates are turned inwardly whereby to form flanges 32. The flanges 32 are spaced at a distance from the lower ends of the angle bars, which lower ends of the angle bars serve as supports or legs for the device. Doors 33 and 34 are hingedly mounted upon the angle plates 6 and 9. Referring to Fig. 2 the top structure is disclosed as comprising a lid or cover 35 having an intermediate portion 36 from which extends the forward end 37 and the rear end 38. The forward end 37 is turned upon the intermediate portion whereby to form an outwardly extending flange 39, from which the forward portion 37 extends downwardly at a distance from the extreme forward edge of the intermediate portion 36. The lower end 40 of the forward portion 37 is turned inwardly upon itself, and the extreme end of the forward portion is turned upon the portion 40, whereby to provide a rounded edge 41 upon the forward portion 37. The rear portion of the top 35 is turned upon itself whereby to form a substantially U shape spring frame comprising pairs of arms 42, 43 and 44, 45 which pairs of arms have formed between them a groove 46 adapted to accommodate the upper ends of the back and side plates, which upper ends are turned upon themselves as shown at 47. The ribs 27 formed in the back plates have their upper edges turned inwardly as shown at 48, whereby to attain the structure disclosed in Fig. 2 over which structure 47 the lid may be mounted. It should be observed that the lower edge of the arms 42 and 43 form a closure for the inner end of the upper portion 48 of the rib 47. The flanges 32, formed on the lower ends of the back plates and

front plate 49, carry cross bars 50 supporting a bottom 51, and spaced burner supports 52. An aperture is formed between the bottom 51 and the sides providing upwardly extending flanges 53, as shown in Fig. 4. The sides have suitable apertures 54 formed in them which may communicate with a suitable pipe or vent 55. The pipe 55 may be mounted upon either of the sides, and cover plates 56 are removably mounted on the sides and serve to function as closures for the apertures in the side plates. Suitable braces 57 and 58, are mounted upon the side plates and removably support suitable cross bars 61 upon which the articles to be dried may be hung. Brackets 63 are carried by the outer walls and support a deflector plate 65. The deflector plate is provided with openings, 165, through which heated air may pass from the heating chamber to the drying chamber. It should be noted that the burners extend about one third the width of the cabinet and that the ways, 166, 167 and 168, formed by the development of the U-shaped ribs, permit heated air to pass from the heating chamber to the drying chamber. Whereas the ways 167 and 168 are disposed at a distance from the burners as distinguished from the single way 166, immediately adjacent the burners, there is provided adjacent the burners a relatively small flow of heated air from the heating chamber to the drying chamber as distinguished from the larger flow of heated air between said chambers remote from the burners. This same result may be accomplished in various ways such as modifying the number, size and position of openings 165 in the deflector plate, for example, as shown in my application, Ser. No. 581,067, filed of even date, and showing a modified form of deflector plate provided with openings such as 165, that increase in number as the plate recedes from the burners. Transverse inverted T bars are placed upon the deflector and support a screen 64 in parallelism and at a distance form the deflector plate. The screen and the deflector plate are removably mounted on the brackets, thereby cooperating toward the knock down features heretofore referred to. The side plates are provided with suitable apertures 66 thru which the burners may be inserted into the space between the deflector plate and the bottom, and suitable closures 67 are provided whereby either of the sides may be sealed when the burners are inserted thru the opposite side. An opening 80 is provided in each of the sides above the burner apertures 66 and through which access may be had to the burners for lighting same. Suitable sliding doors 81 are provided for closing the openings 80. The doors are provided with a suitable catch 68 whereby they may be locked in a closed relation. The doors are provided with inwardly projecting panels 69 which may engage flanges 40 formed on the forward portion of the top, whereby to effect an efficient seal, and to reenforce the door. The panel also engages the flange 70 formed along the upper edge of the front plate 49.

The device is set up by bolting the side plates to the angle plates forming the corners of the device, and the back plates are slid into position, the cooperating U-shaped flanges formed at the vertical ends of the back and side plates effecting a casing as previously described.

The flanges 53 preclude the light rays from the burners from falling upon the floor, thereby avoiding heating of the floor, consequently minimizing the fire hazard. This structure also precludes scorching of the floor, which results in unsightly spots on the floor and blistering of paint etc., applied to the floor.

What I claim is:

1. In a device of the class described a casing comprising vertical angle bars disposed at its four corners, side plates having a substantially U shape, each mounted upon a pair of angle bars, back plates, the side plates and back plates being provided with means whereby the back plates may be slidably mounted upon the side plates whereby to join the side plates, a front plate connecting the side plates at the front of the casing, a cover for the casing having downward turned flanges adapted to removably engage the upper edges of the side plates and the back plate, the casing having an opening intermediate the front plate and the cover, and doors whereby to effect a closure between the cover and the front plate.

2. In a device of the class described a casing comprising vertical angle bars disposed at its four corners, side plates having a substantially U shape, each mounted upon a pair of angle bars, back plates, the side plates and back plates being provided with means whereby the back plates may be slidably mounted upon the side plates whereby to join the side plates, a front plate connecting the side plates at the front of the casing, a cover for the casing having downward turned flanges adapted to removably engage the upper edges of the side plates and the back plate, the casing having an opening intermediate the cover and the front plate, doors whereby to effect a closure between the cover and the front plate, a deflector plate and a screen removably contained within the casing, a bottom plate extending between the lower ends of the side plates, the back plate and the front plate, and a burner removably extending into the space between the bottom plate and the deflector plate.

3. In a device of the class described the combination of a casing, a bottom for the

casing having its side edges spaced from the casing, burners mounted in the casing above the bottom, and flanges extending from the side edges of the bottom adapted to intercept light rays radiating from the burner toward the space between the bottom and the casing.

4. In a device of the class described the combination of a casing having a drying chamber and comprising side walls, burners mounted on the casing at the bottom of the drying chamber and adjacent one side wall and a pipe communicating with the top of the drying chamber thru the opposite side wall.

5. In a device of the class described the combination with a casing having a drying chamber and comprising sides each having an aperture at its top for a flue connection, a second aperture at its bottom for a burner connection and a third aperture above the second aperture controlling access to burners in the casing and means for sealing the apertures.

6. In a device of the class described the combination of a casing having a drying chamber therein and comprising sides each having an aperture adjacent its top and bottom, a burner for mounting in the casing at the bottom of the drying chamber and adjacent the lower opening in either side, a pipe for communicating with the drying chamber thru the upper opening in either side, and means for sealing the unused openings.

7. In a device of the class described the combination of a casing having substantially vertical walls and a top for the walls, the top having its edge turned upon itself for providing a substantially U-shape groove extending at substantially a right angle to the remainder of the top, the groove receiving the upper edge of the vertical walls and providing therewith an effective joint for sealing the walls and the top at their junction.

8. In a device of the class described the combination of a casing comprising a top, back and side walls, and a door for the front thereof, the top having its front edge turned inward and downward for providing a stop for engagement by the door and the rear and side edges of the top being bent upon themselves for providing a peripheral downwardly extending U-shape groove for the reception of the upper edges of the back and side walls of the casing.

9. In a device of the class described the combination of a casing having a drying chamber and a heating chamber therein, a perforated deflector plate separating the chambers, a burner in the heating chamber below one end of the deflector plate and a vent communicating with the drying chamber above the opposite end of the deflector plate.

10. In a device of the class described, the combination of a casing having a heating chamber and drying chamber therein, a deflector plate between the chamber, and extending entirely across the drying chamber, a heater in the heating chamber and a screen in the drying chamber above the deflector plate.

11. In a device of the class described, the combination of a casing having a heating chamber and drying chamber therein, a deflector plate between the chambers, a heater in the heating chamber and a vent leading from the drying chamber at the top thereof.

12. In a device of the class described, the combination of a casing having a heating chamber and a drying chamber therein, a perforated deflector plate separating the chambers, a screen in the heating chamber above the deflector plate and a burner in the heating chamber below the deflector plate.

13. In a device of the class described, the combination of a casing, having walls and having a heating chamber and drying chamber, a plate between the chambers, a burner in the heating chamber, extending under part of the plate, the plate and the casing walls being arranged to provide a relatively small flow of heated gas from the heating chamber to the drying chamber adjacent the burner, and to provide a relatively large flow of heated gas from the heating chamber to the drying chamber remote from the burner.

In testimony whereof, I have hereunto subscribed my name this 8th day of August, 1922.

ELLIS O. DE CAMP.

CERTIFICATE OF CORRECTION.

Patent No. 1,668,762. Granted May 8, 1928, to

ELLIS O. DE CAMP.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, line 68, claim 10, before the syllable "de-" insert the word "perforated", and line 69, for the word "chamber" read "chambers"; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 19th day of June, A. D. 1928.

M. J. Moore,
Acting Commissioner of Patents.

(Seal)