

E. W. MITCHEL.

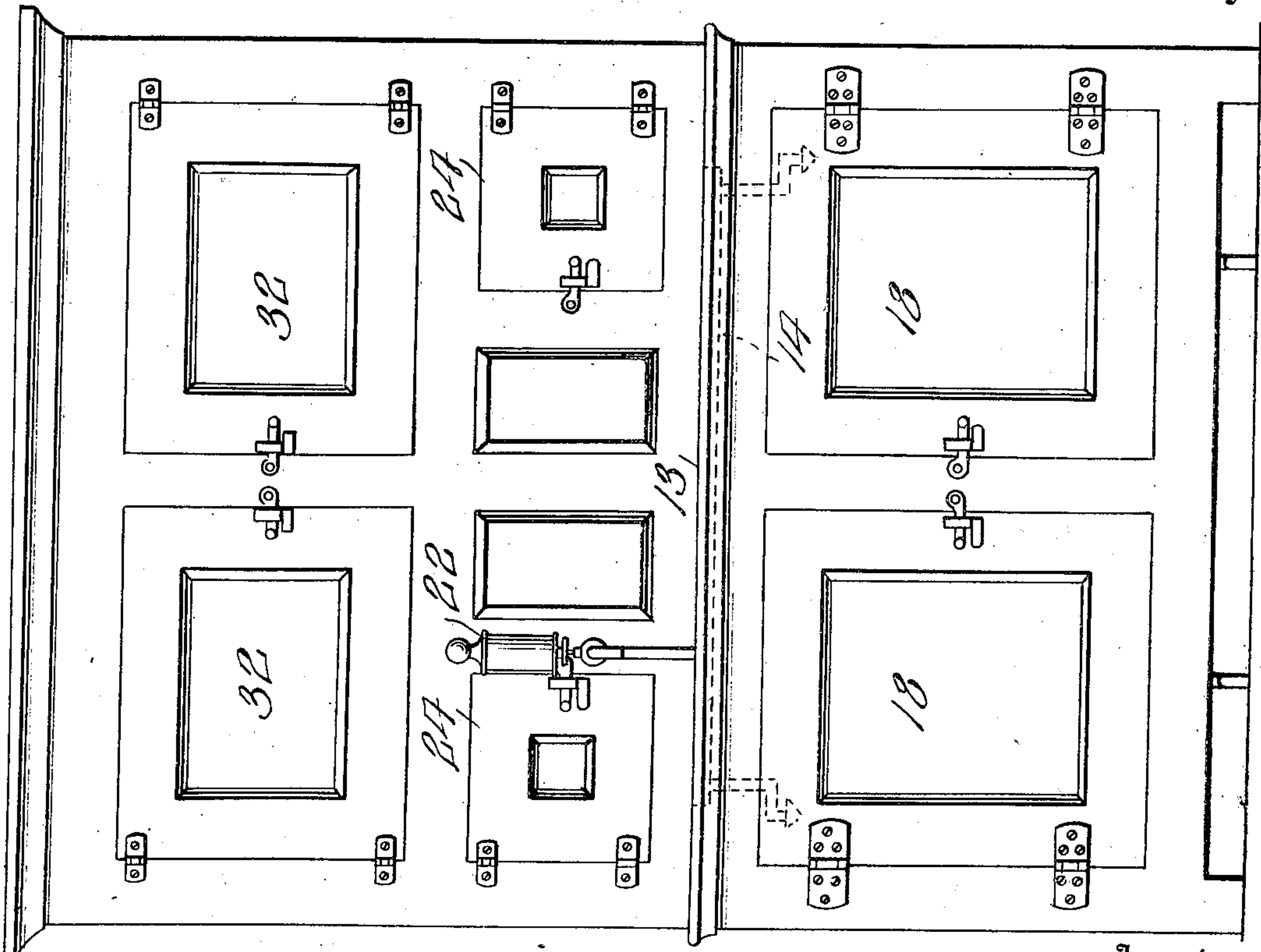
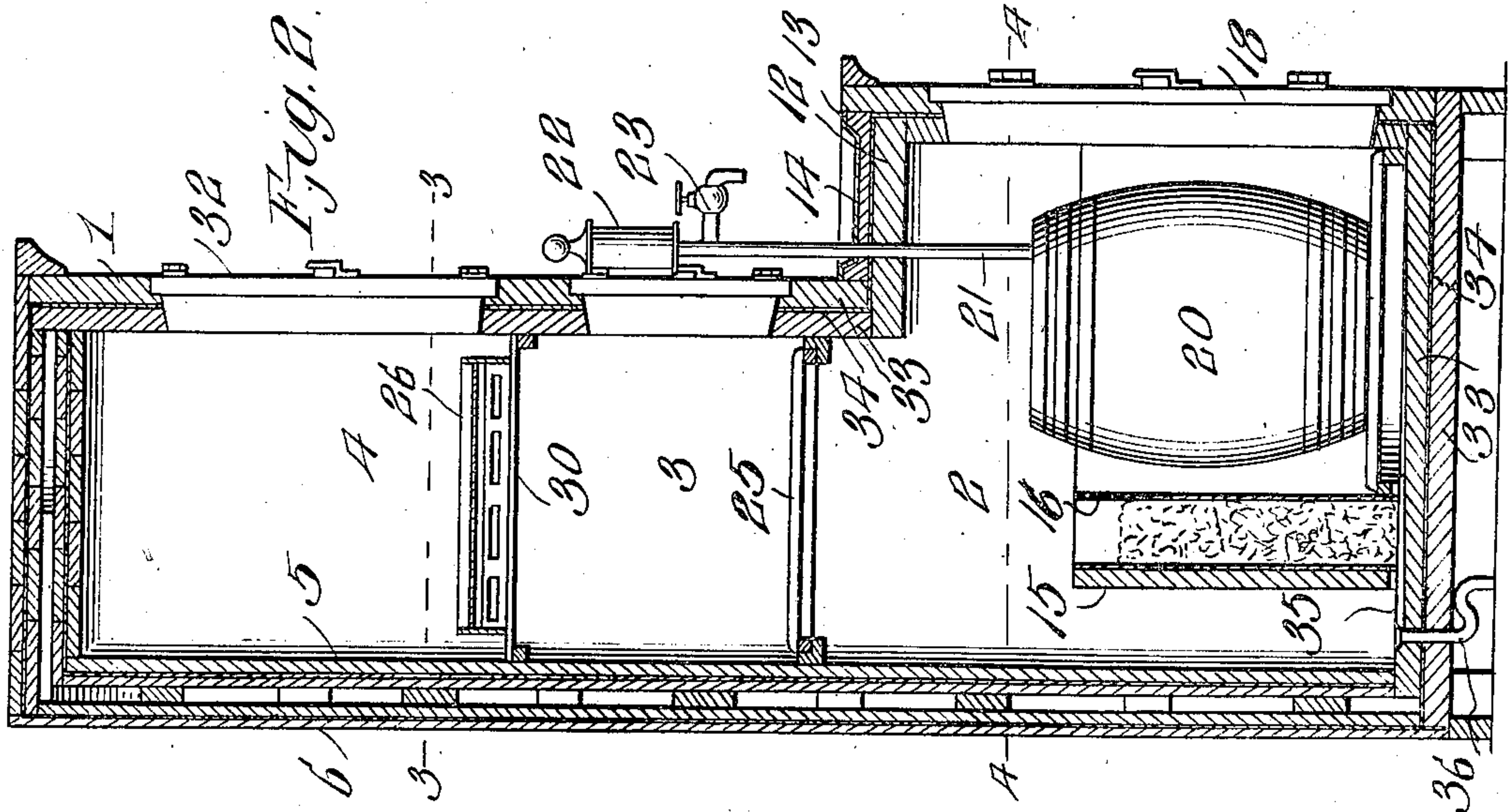
REFRIGERATOR.

APPLICATION FILED MAR. 7, 1908.

944,369.

Patented Dec. 28, 1909.

2 SHEETS—SHEET 1.



Witnesses
Frank Hough
Q. W. Gould

Fig. 1

E. W. Mitchel, Inventor

Victor J. Evans, Attorney

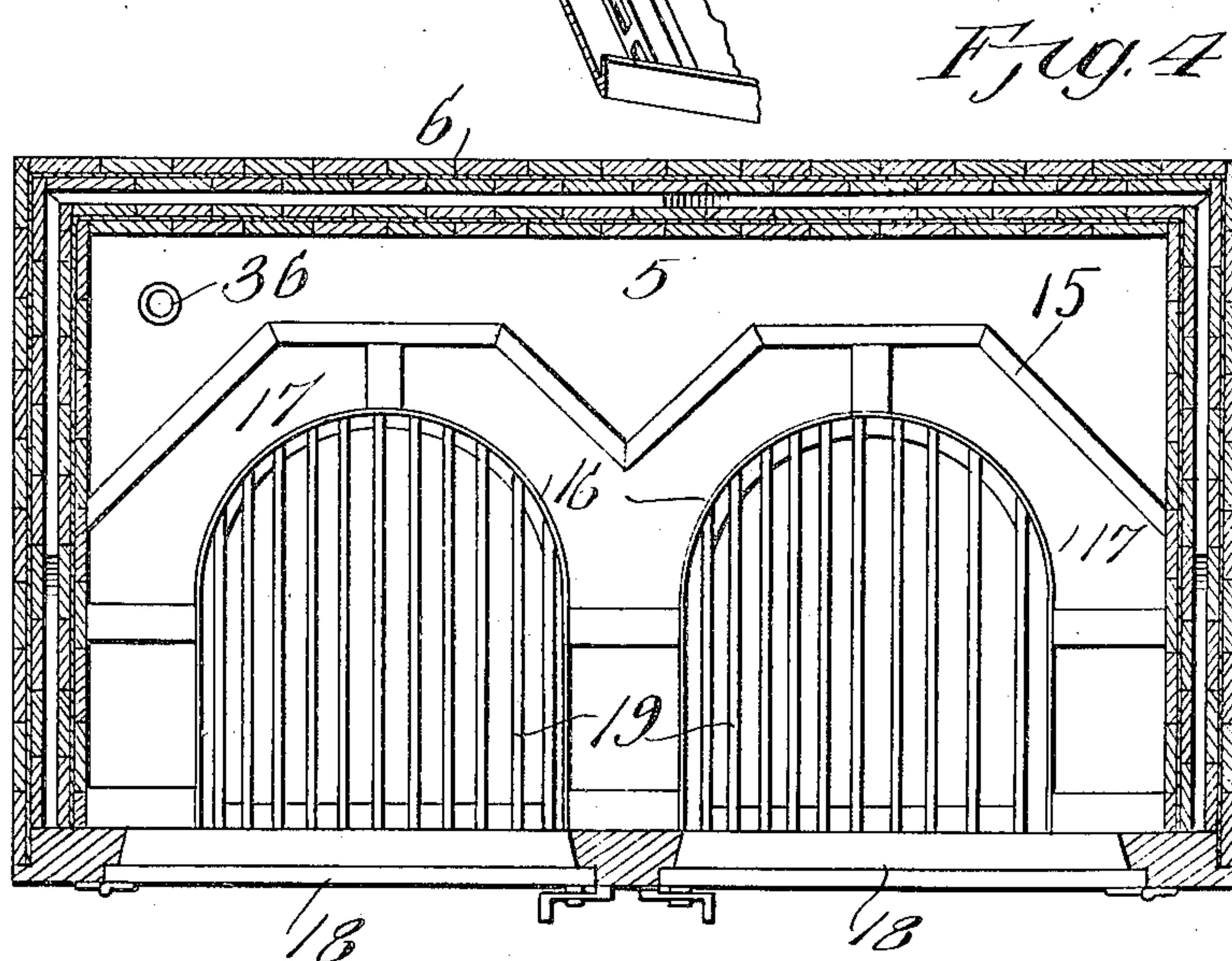
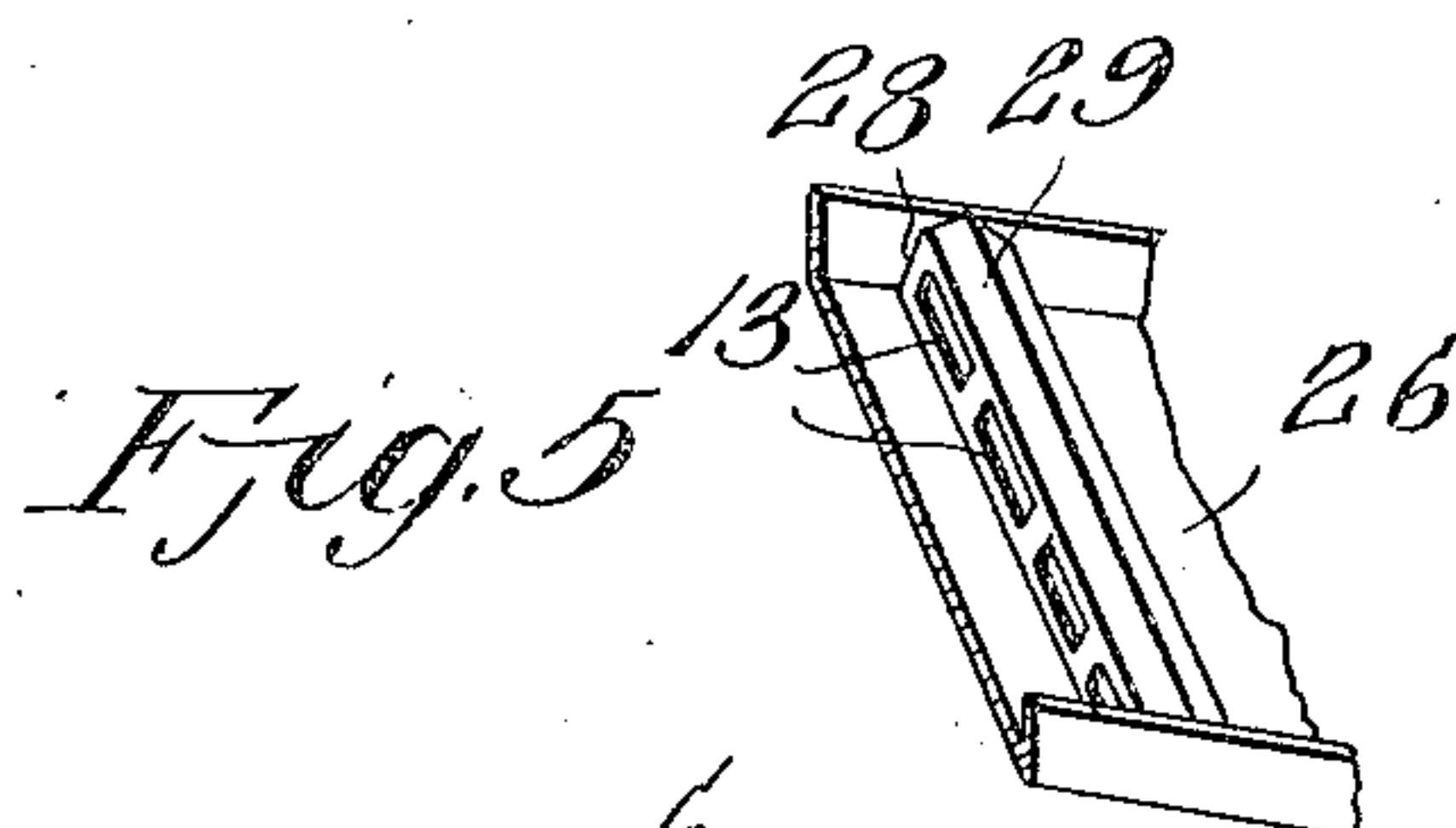
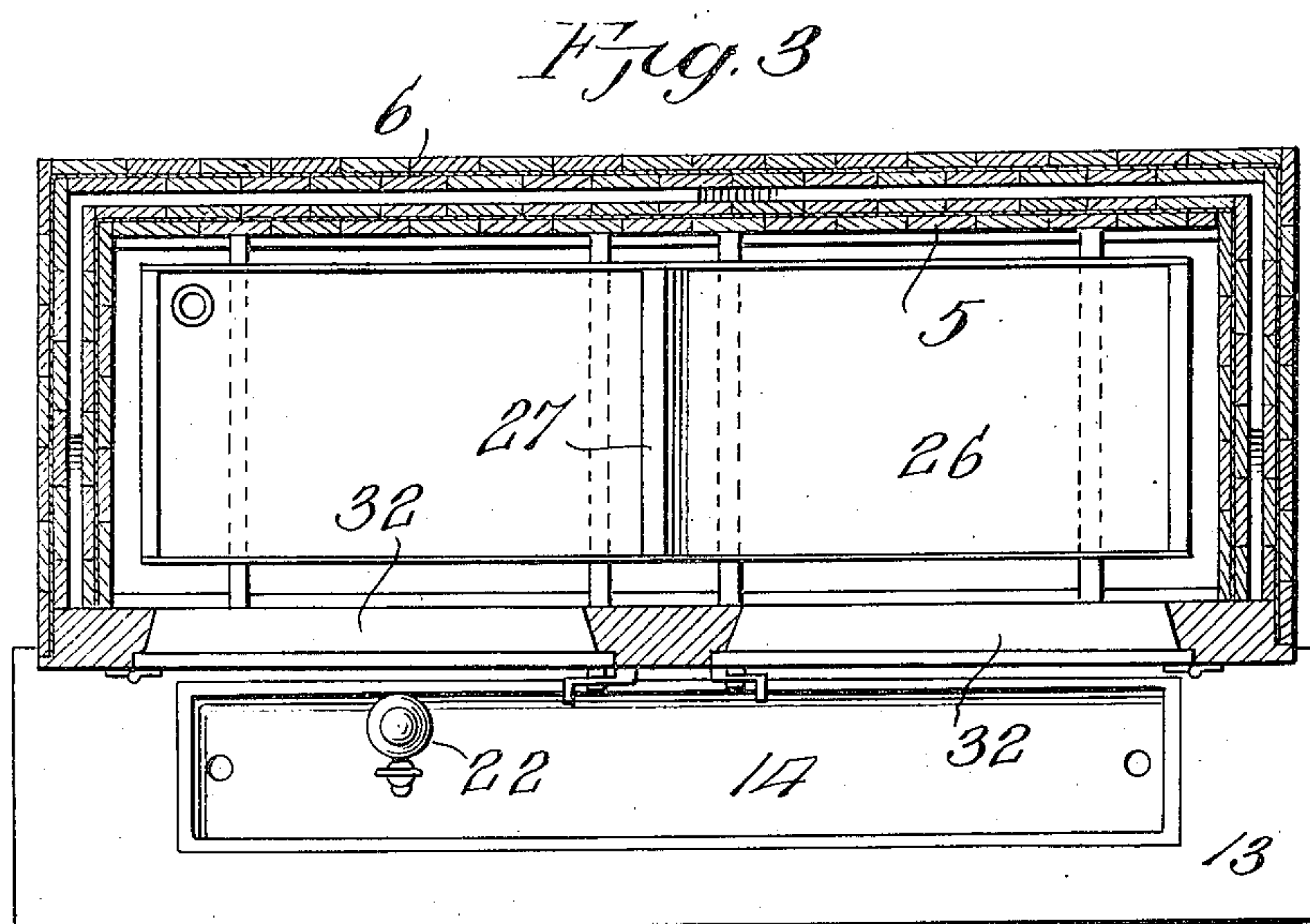
Attorney

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UNITED STATES PATENT OFFICE.

ELIAS WALTER MITCHEL, OF BEAUMONT, TEXAS.

REFRIGERATOR.

944,369.

Specification of Letters Patent. Patented Dec. 28, 1909.

Application filed March 7, 1908. Serial No. 419,702.

To all whom it may concern:

Be it known that I, ELIAS W. MITCHEL, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented new and useful Improvements in Refrigerators, of which the following is a specification.

The invention relates to an improvement in refrigerators adapted for commercial or domestic uses, and is particularly directed to a construction by which the interior of the refrigerator may be maintained at a low temperature through the use of comparatively small quantities of ice or other refrigerating medium.

The main object of the present invention is the construction of a refrigerator of double wall construction, each wall being non-conductive and the walls being so connected as to permit an uninterrupted current of air between the walls throughout the length and breadth of the refrigerator.

Another object of the invention is the provision of an individual ice compartment in the lower portion of the refrigerator in which the ice may be stored in a manner to cool the interior of the refrigerator and also directly cool any article or articles placed in the ice compartment.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in front elevation of a refrigerator constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section through the same, a portion of the refrigerator being shown in elevation. Fig. 3 is a horizontal section on line 3—3 of Fig. 2. Fig. 4 is a horizontal section on line 4—4 of Fig. 2. Fig. 5 is a broken perspective of the central portion of the upper ice tray.

Referring particularly to the drawings, my improved refrigerator comprises a body 1, which may be of any size and is preferably formed to interiorly provide a lower or main compartment 2, a central compartment 3, and an upper compartment 4. The rear and side walls of the refrigerator body are made up of spaced walls, as an inner wall 5 and an outer wall 6.

In the form of refrigerator illustrated in Figs. 1 to 5 inclusive, which is more particu-

larly adapted for commercial purposes, the excess width of the main compartment 2 over the central and upper compartments provides a forwardly projecting ledge 12 on the top of the main compartment beyond the forward wall of the upper and central compartments. In the commercial type of refrigerator this ledge 12, which is, of course, of substantial proportions, is recessed at 13 for the reception of a drip pan 14, which is seated in the recess with its upper edge flush with the top of the ledge. The main or lower compartment is provided with an ice chamber formed by an outer wall 15 secured to the bottom of the refrigerator and extending vertically therefrom. Within the wall 15 are arranged inner walls 16, each of which projects vertically from the bottom of the refrigerator and is centrally rounded adjacent the main wall 15, the side portions of each wall 16 projecting from the rounded rear end toward the forward wall of the main compartment. Walls 16 are arranged side by side within the space inclosed by the wall 15, and are spaced apart and from the wall 15 to provide ice spaces 17. The forward wall of the main compartment is provided with doors 18 which communicate with the space within the walls 16, and said space, may, if desired, be provided with racks 19. The wall 15 is preferably zinc lined, while the walls 16 are preferably entirely of thin sheet metal, thereby affording comparatively free conduction of the cold from the refrigerating medium stored between the walls to the space within the walls 16. In the use of the commercial form of the refrigerator the receiving space included within the walls 16 may be used for the reception of beer kegs, as 20, from which a delivery pipe 21 may extend to a pump 22 of any ordinary construction and secured upon the forward wall of the central compartment, a faucet 23 being connected to the pipe for delivery of the material. In this arrangement of parts it is to be noted that the faucet overlies the drip pan 14, whereby any drippings from the faucet or glass are caught and conveyed to any desired point of discharge. The forward wall of the central compartment is provided with doors 24 providing access to such compartment, and within the compartment may be arranged any desired form of article supporting racks

25, removably secured to the walls of the compartment in any preferred manner. The upper compartment 4 is also an ice compartment, and for this purpose is provided interiorly with a removable ice tray 26.

As it is of essential importance to have a free circulation of air through all the compartments within the refrigerator I have devised a peculiar form of tray in which the air circulation is provided for. This tray, which is more particularly seen in Figs. 3 and 5, is a rectangular body of less width and length than the similar dimensions of the upper compartment. The tray, which is more properly a pan, having side and end walls, is centrally formed with a transverse ventilator, by which the air striking the bottom portion of the tray may be directed through the same and into close contact with the ice supported in the tray. This ventilator comprises an elongated casing 27 including spaced side walls 28 and top walls 29, the side walls being secured to the upper surface of the tray bottom and bridging an opening 30 cut in said bottom commensurate with the space between the side walls 28. Each of the walls 28 is formed with a series of openings 31, whereby the air may pass through the opening in the bottom of the tray and out through the openings 31 in the side walls of the ventilator casing, being thereby directed into contact with the ice supported in the tray on the respective sides of the casing. The upper compartment is formed in its front wall with openings having door closures 32.

The front wall of the compartments and the bottom of the refrigerator are formed of sections or layers 33, between which is secured a layer of heat nonconducting material 34. The air space formed in the remaining walls is not necessary in the front walls of the compartments, and hence the layers 33 and the interposed nonconducting layer are secured together in close contact. The bottom of the refrigerator underlying the ice storage space in the lower compartment is channeled at 35 to form rearwardly inclined troughs leading to a discharge pipe 36, whereby the water and other refuse is discharged from the body of the refrigerator. The doors are also of partially hollow construction to provide intervening air spaces, as shown at 37 in Fig. 7.

A refrigerator constructed as described will be maintained cool through the use of a comparatively small quantity of ice due primarily to a complete air circulation between the walls of the refrigerator. By this circulation there is maintained a uniform temperature for if one side of the body should be exposed to more heat than another the interior temperature will not be affected as readily as in other refrigerators as the air on the heat side will naturally start in

circulation about the refrigerator and consequently reduce or equalize the temperature of such air. Furthermore, the ice compartments on opposite sides of the article compartment tend to a more effective cooling of the refrigerator as the air entering the lower compartment will contact with the ice and be partially chilled, rising therefrom to contact with the ice in the upper compartment and be sufficiently chilled to fall again to the lower compartment, the air being thus maintained in constant circulation in the refrigerator at both extremes of the path of circulation.

The material of the refrigerator is not important in the present invention, and I contemplate such other structural changes and arrangements of parts as may fall within the scope of the appended claims.

Having thus described the invention what is claimed as new, is:—

1. A refrigerator having a rear wall, side walls, bottom wall, and a front wall to form a compartment, the front wall being formed with a door opening, the bottom wall being provided within the compartment with an upwardly extending wall arranged in spaced relation to the rear wall of the compartment, the ends of said upwardly extending wall being secured to the side walls of the compartment, and a wall arranged in spaced relation to and in advance of the upwardly extending wall, the ends of said advanced wall being secured to the front wall adjacent the door opening.

2. A refrigerator including a compartment inclosed by the walls of the refrigerator, one of said refrigerator walls being formed with means providing access to the compartment, an ice chamber arranged within the compartment and including spaced walls, one of said walls being arranged in spaced relation to the rear wall of the compartment with its ends connected to the side walls thereof, the other of said walls being arranged in advance of and in spaced relation to the first mentioned wall with its ends secured to the front wall of the compartment, the space included within the latter wall forming a provision chamber and the space included between the walls forming an ice chamber.

3. A refrigerator including bottom, sides, front and rear walls to inclose a compartment, said front wall being formed with a plurality of openings to provide access to the compartment, an ice chamber formed in the compartment and including spaced walls projecting vertically from the bottom of the compartment, one of said walls being arranged in spaced relation to the rear wall of the compartment with its ends secured to the side walls thereof, the remaining walls being arranged in spaced relation to each other and in advance of the first mentioned

5 wall, said remaining walls being of duplicate construction and extending vertically from the bottom of the compartment with their ends secured respectively to the front wall adjacent the openings therein, whereby to provide an ice chamber between said remaining walls and between said walls and the first mentioned wall, and to provide a

provision chamber within each of said remaining walls. 10

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

ELIAS WALTER MITCHEL.

Witnesses:

J. H. WILLIAMSON,
L. C. SCURLOCK.