

No. 808,607.

F. HAMMOND.
STOVE.

PATENTED DEC. 26, 1905.

APPLICATION FILED JUNE 24, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

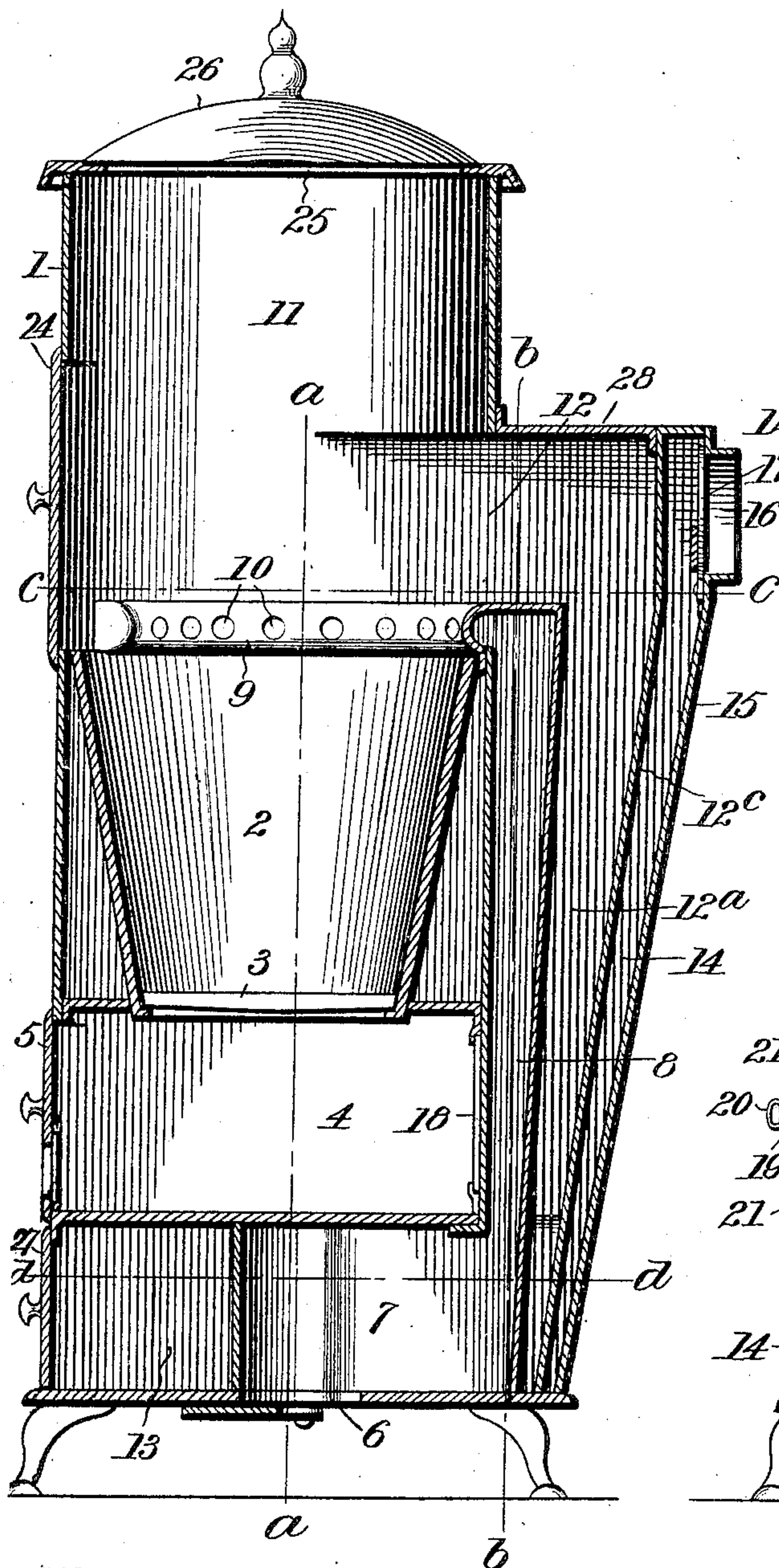
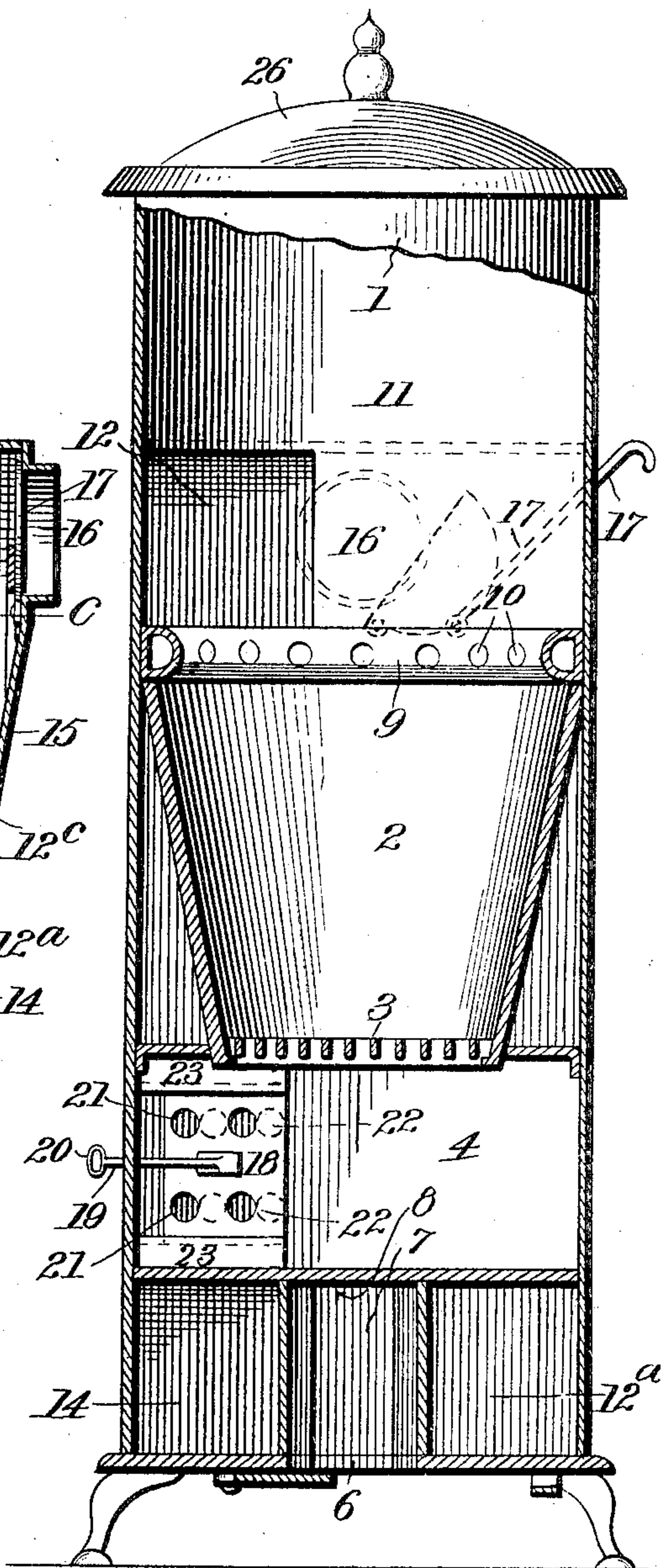


Fig. 2.



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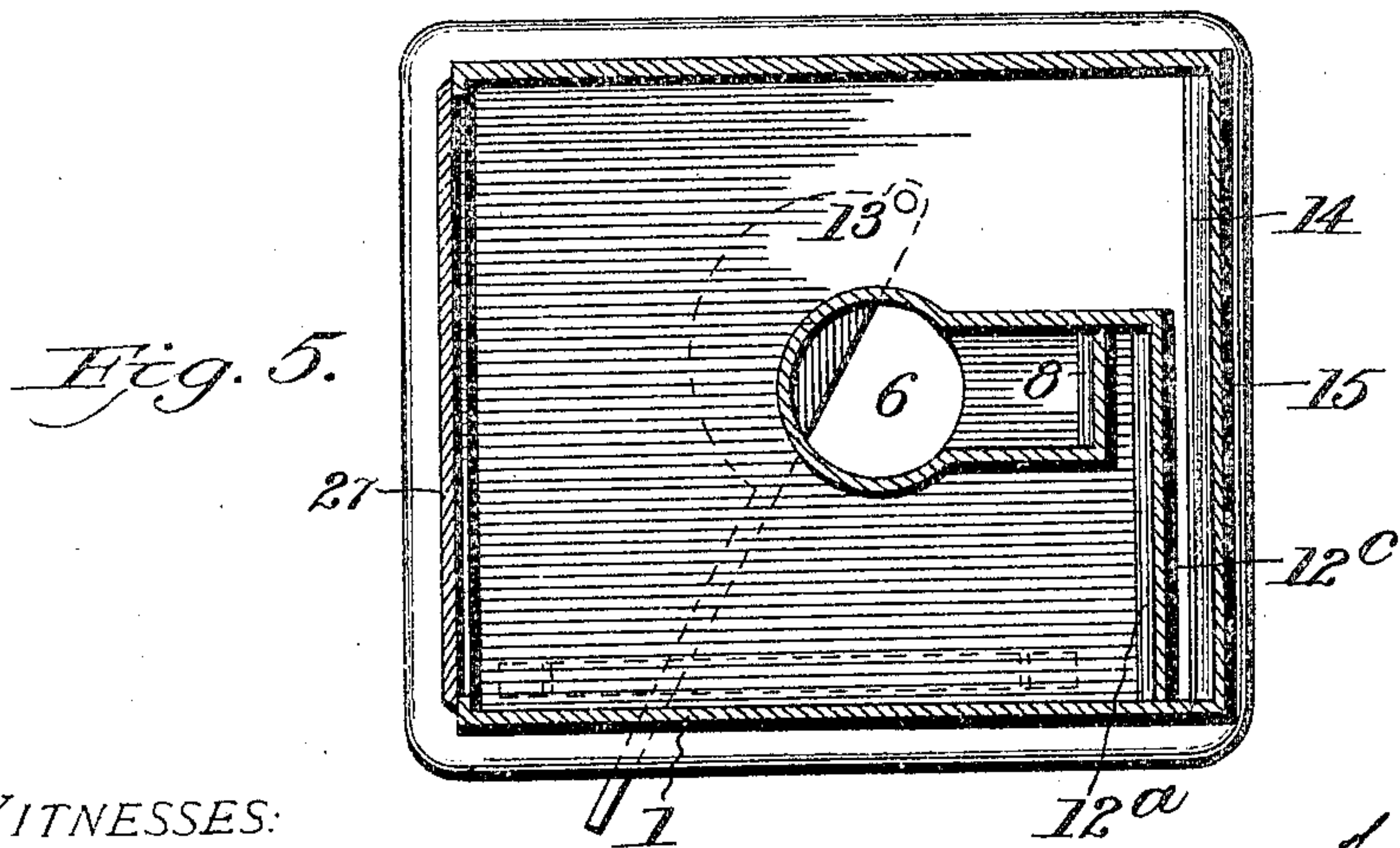
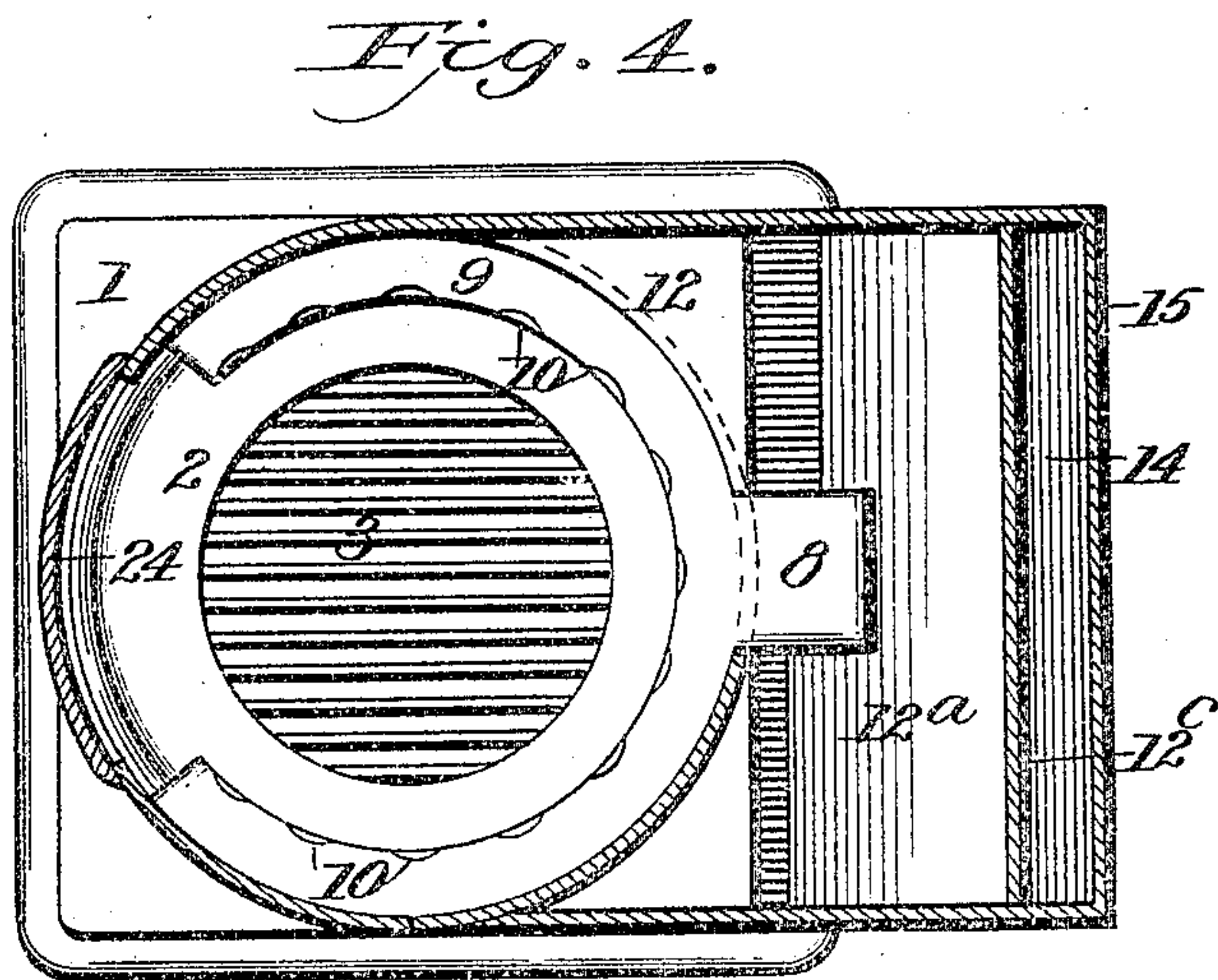
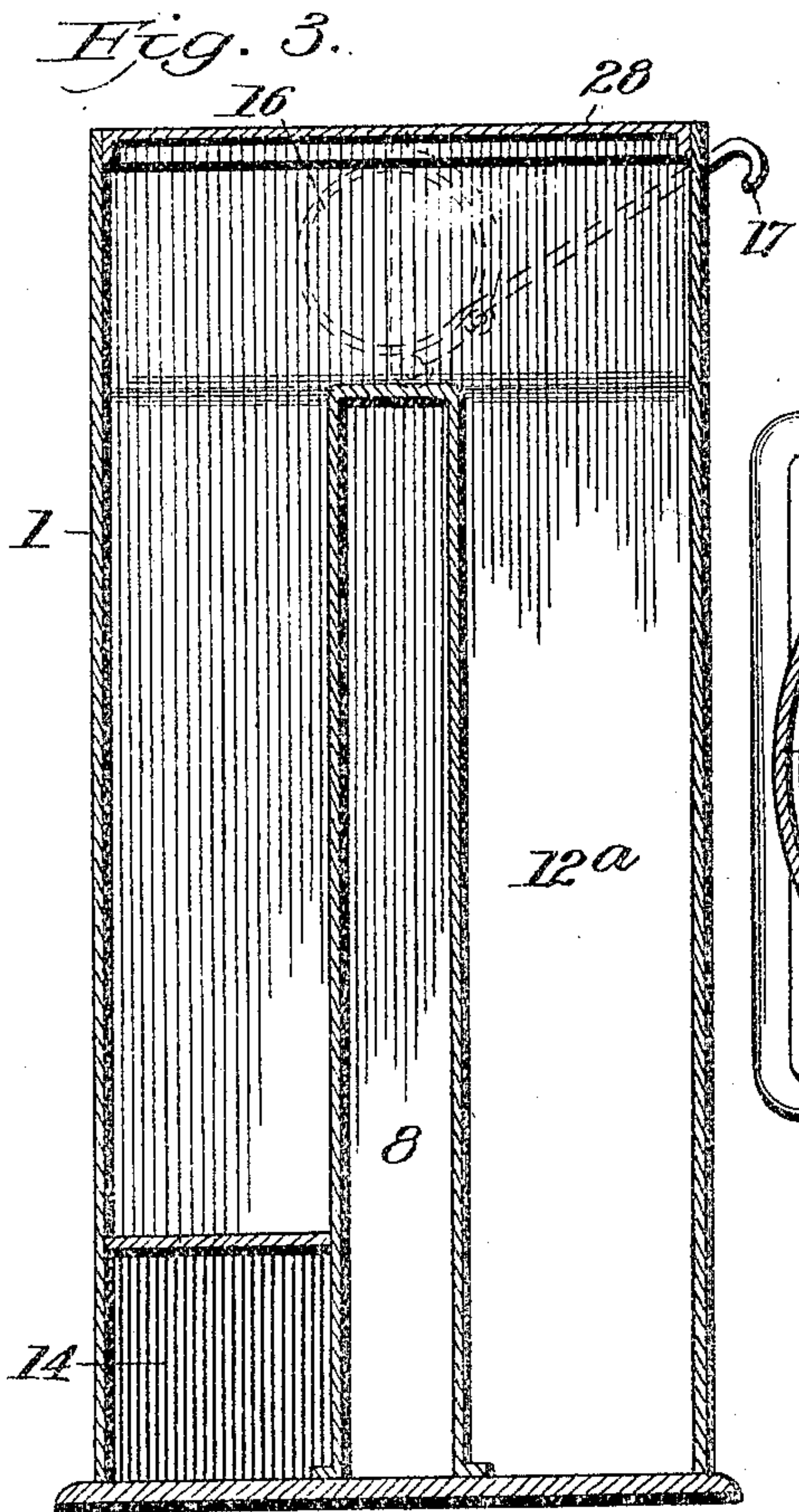
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FRANK HAMMOND, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF TO
GEORGE T. BROWN, OF BATTLECREEK, MICHIGAN.

STOVE.

No. 808,607.

Specification of Letters Patent.

Patented Dec. 26, 1905.

Application filed June 24, 1904. Serial No. 214,004.

To all whom it may concern:

Be it known that I, FRANK HAMMOND, a citizen of the United States, residing in the city of Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

My invention relates to heating-stoves, one object residing in the arrangement and construction whereby the products of combustion take a circuitous course, thereby providing for the efficient combustion of fuel and effectually utilizing the heat derived therefrom.

Another object of the invention resides in the construction and arrangement of the stove wherein the fire chamber or pot is surrounded by a semi-annular air-distributing chamber having direct communication with the exterior of the stove-casing.

Another object of the invention resides in the formation of air chambers, ducts, flues, or passage-ways for conducting the air into and around the fire pot or chamber, thereby giving an extended amount of radiating-surface to the heated air in its passage through the stove to the smoke-flue.

It is still further contemplated to provide for the proper consumption and combustion of the fuel through the medium of direct and indirect air-currents.

With these and other objects in view the present invention consists in the combination and arrangements of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a vertical sectional view of the stove embodying my improvements. Fig. 2 is a vertical sectional view on the line *a a* of Fig. 1 looking from the front toward the rear of the stove. Fig. 3 is a vertical sectional view on the line *b b* of Fig. 1. Fig. 4 is a horizontal sectional view on the line *c c* of Fig. 1, and Fig. 5 is a horizontal sectional view through the base of the stove on the line *d d* of Fig. 1.

Referring now more particularly to the accompanying drawings, the reference character 1 designates the usual casing of the stove,

formed, as usual, of sheet metal or any other suitable material. Arranged within the body of the stove is the fire-pot 2, whose walls converge downwardly, terminating in suitable shoulders for the reception and support of the grate 3, the reference character 4 designating the ash chamber or pit having the usual draft-regulator door 5. Formed centrally in the bottom of the stove-casing is an opening 6, leading into the air-chamber 7, having communication with the elongated air-chamber or passage-way 8, which latter terminates in a semi-annular air-distributing chamber 9, arranged with relation to the upper part of the fuel-chamber 2, the air-distributing chamber 9 being provided with a number of perforations 10, permitting the atmospheric air, which has become more or less superheated in its passage to the air-distributing chamber, to enter the fuel-chamber and aid in the combustion of the fuel contained within the latter. When the draft-regulator door 5 is closed or otherwise manipulated to shut off the direct draft, the atmospheric air passing upwardly through the chamber 8, through the air-distributing chamber 9 and into the ash chamber or pit 4, and through the openings 10 is strongly drawn downwardly into and among the evolving gases and the smoke from the burning fuel below in such manner as to cause and continue the combustion of said gases or smoke so arising above the said fuel.

The products of combustion arising from the fire chamber or pot 2 obviously rise upwardly into the reverting chamber or dome 11 of the stove, finding exit through the flue 12, having the downwardly-directed extension 12^a, the extension 12^a being formed and arranged in the rear of the elongated air-chamber 8, with its rear wall 12^c inclined forwardly and extending toward one side only of the casing of the stove, whereby the products of combustion are conducted downwardly in the rear of the said chamber 8 and caused to circulate around the last-mentioned chamber in the chamber 13, finding way into the flue 14, whose rear wall 15 is arranged substantially parallel with the inclination of the wall 12^c, the said flue communicating with the outlet or chimney-flue connection 16, which latter is controlled in the usual manner and for the usual purpose by the valve, door, or shutter 17, all of which is clearly shown in the accompanying drawings.

From the foregoing it will be understood that air may pass through draft-door 5 into the ash-pit 4 and through the fuel-chamber 2 and from thence downwardly through the flue 12 12^a and upwardly through the flue 14 to the chimney connections, and by reference to the drawings it will be seen that atmospheric air entering the chamber 7 through the opening 6 in the bottom of the stove may be led directly into the rear of the ash-pit 4 and through the fire chamber or pot 2 and thence over the same course as that stated in connection with a current entering the draft-door 5. The door 18 is provided with a suitable arm 19, piercing the casing 1, and provided with a suitable handle 20, whereby the perforations 21 may be brought into and out of alinement with the perforations 22 in the rear wall of the ash-pit to shut off or permit the entrance of air into the ash-pit, the door being slidably mounted in the guideways 23, as clearly shown in Figs. 1 and 2 of the drawings. It will also be understood from the foregoing that the air entering the bottom of the stove may pass upwardly through the chamber 8 and enter the fire-pot 2 by way of the distributing-chamber 9 and that the air-current following this course may be divided, some of the air passing into the rear of the ash-pit and upwardly through the fire-pot and the other portion of the current passing upwardly into and through the air-distributing chamber 9.

It will be understood that the fuel may be supplied either through the door 24 or downwardly through the reverting chamber or dome 11 through the opening 25, closed by the cover 26. All soot or other foreign matter finding its way into the bottom of the stove may be removed by entrance through the door 27.

The peculiar construction and formation of the respective parts of my improved stove are such as to present a shoulder 28 in the rear of the stove, upon which may be placed liquids, articles, or the like for heating or warming purposes, as well understood.

Pivoted by means of a pivot-pin, bolt, or the like 29 is a damper 30, the handle 31 of which projects outwardly toward the front of the stove and arranged for swinging movement upon the rack or support 32, as clearly shown in the accompanying drawings. This damper is designed to regulate the admission of atmospheric air at the bottom of the stove.

I claim—

1. A stove comprising a casing, including an offset portion extending throughout its width, the casing having an opening in its bottom; a fuel-chamber and an ash-pit; a perforated air-chamber arranged at the top of the fuel-chamber; a passage communicating with the opening in the bottom of the stove for conveying air to the perforated air-chamber, said passage being confined within the casing; a slid-

able door in the rear of the ash-pit, whereby air may be directed from the said passage into the bottom of the fuel-chamber, said door being confined within the casing; and means constructed and arranged to convey the products of combustion downwardly over a course in the rear of the casing and upon one side thereof, then around the interior part of the casing and finally upwardly over a course in the rear of the aforesaid downward course and throughout the width of the casing, the said means being confined within the casing.

2. A stove, comprising a casing, including an offset portion having an inclined back, the casing having an opening in its bottom; a fuel-chamber and an ash-pit; a passage arranged between the said opening and top of the fuel-chamber; a second passage for conveying the products of combustion from the fuel-chamber downwardly in the rear of the latter, the second passage opening throughout one of its sides, and a third passage in the rear of the second passage for conveying the products of combustion upwardly toward the top of the casing, all of the passages being confined within the casing.

3. A stove comprising a casing having an opening in its bottom, a fuel-chamber and an ash-pit, an air-passage between the said opening and the fuel-chamber; a passage in the rear of the first passage for conveying products of combustion downwardly from the fuel-chamber, and a third passage in the rear of the second passage for conveying the products of combustion upwardly, all of the said passages being confined within the casing.

4. A stove comprising a casing, including an offset portion; a fuel-chamber and an ash-pit, said casing having an opening in its bottom, and its upper portion above the fuel-chamber being free of obstructions; an air-passage between said opening and the fuel-chamber; a second passage in the rear of the first passage for conveying the products of combustion downwardly, said second passage being open throughout one of its sides; and a third passage in the rear of the second passage and of greater width than the latter, all of said passages being confined within the casing.

5. A stove comprising a casing, a fuel-chamber and an ash-pit; an air-passage in the rear of the fuel-chamber and in communication therewith, said passage being of less width than the casing; a second passage in the rear of the first passage for conveying the products of combustion downwardly, the second passage being of greater width than the first passage; a third passage in the rear of the second passage for conveying the products of combustion upwardly, the third passage being of greater width than the second passage; and a door in the ash-pit for directing air from the first passage into the ash-pit, said door having a handle piercing one side of the

casing, all of the passages being confined within the casing.

5 6. A stove comprising a casing having an opening in its bottom and an offset rear portion extending throughout its width; a fuel-chamber and an ash-pit, an air-passage between the said opening and the fuel-chamber; a second passage in the rear of the first passage for conveying the products of combustion downwardly; and a third passage in the rear of the second passage for conveying the products of combustion upwardly, all of the passages being confined within the casing and its offset portion, the latter being non-perforate.

15 7. A stove comprising a casing, a fuel-chamber and an ash-pit; an air-passage leading to

the fuel-chamber, said passage being of less width than the casing; a second passage in the rear of the first passage for conveying the products of combustion downwardly, the second passage being of greater width than the first passage; and a third passage in the rear of the second passage for conveying the products of combustion upwardly, the third passage being of greater width than the second passage.

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

FRANK HAMMOND.

Witnesses:

JOHN WALKER,

WM. C. CROWE.