

No. 827,424.

PATENTED JULY 31, 1906.

B. B. & F. R. CUTLER & J. D. JOHNSTON.
STOVE.

APPLICATION FILED APR. 4, 1905.

3 SHEETS—SHEET 1.

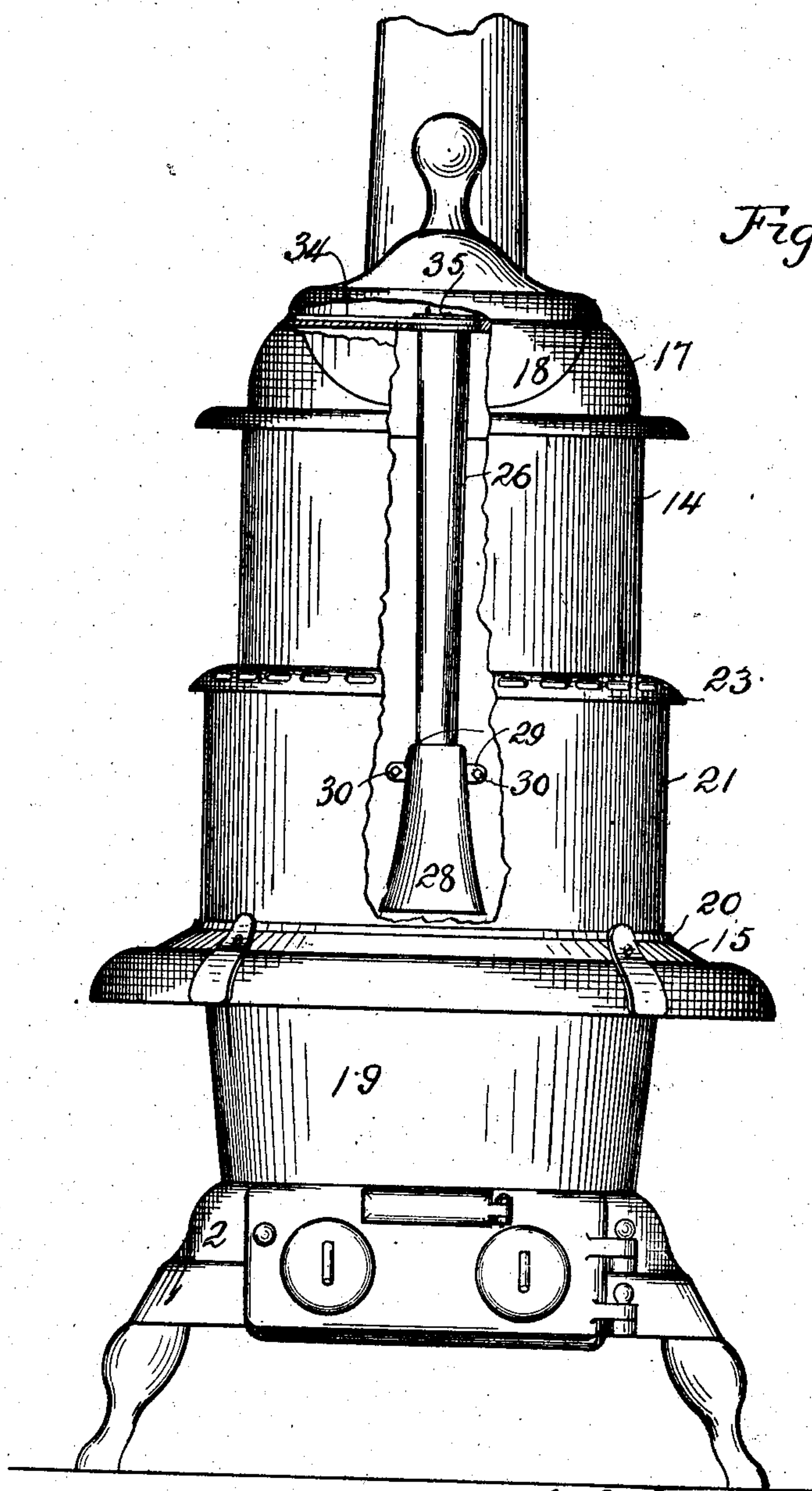


Fig 1

Inventors

Witnesses:
R. C. Hamilton
W. C. Single

B. B. Cutler
F. R. Cutler
By *J. D. Johnston*
Warren L. House Their Attorney

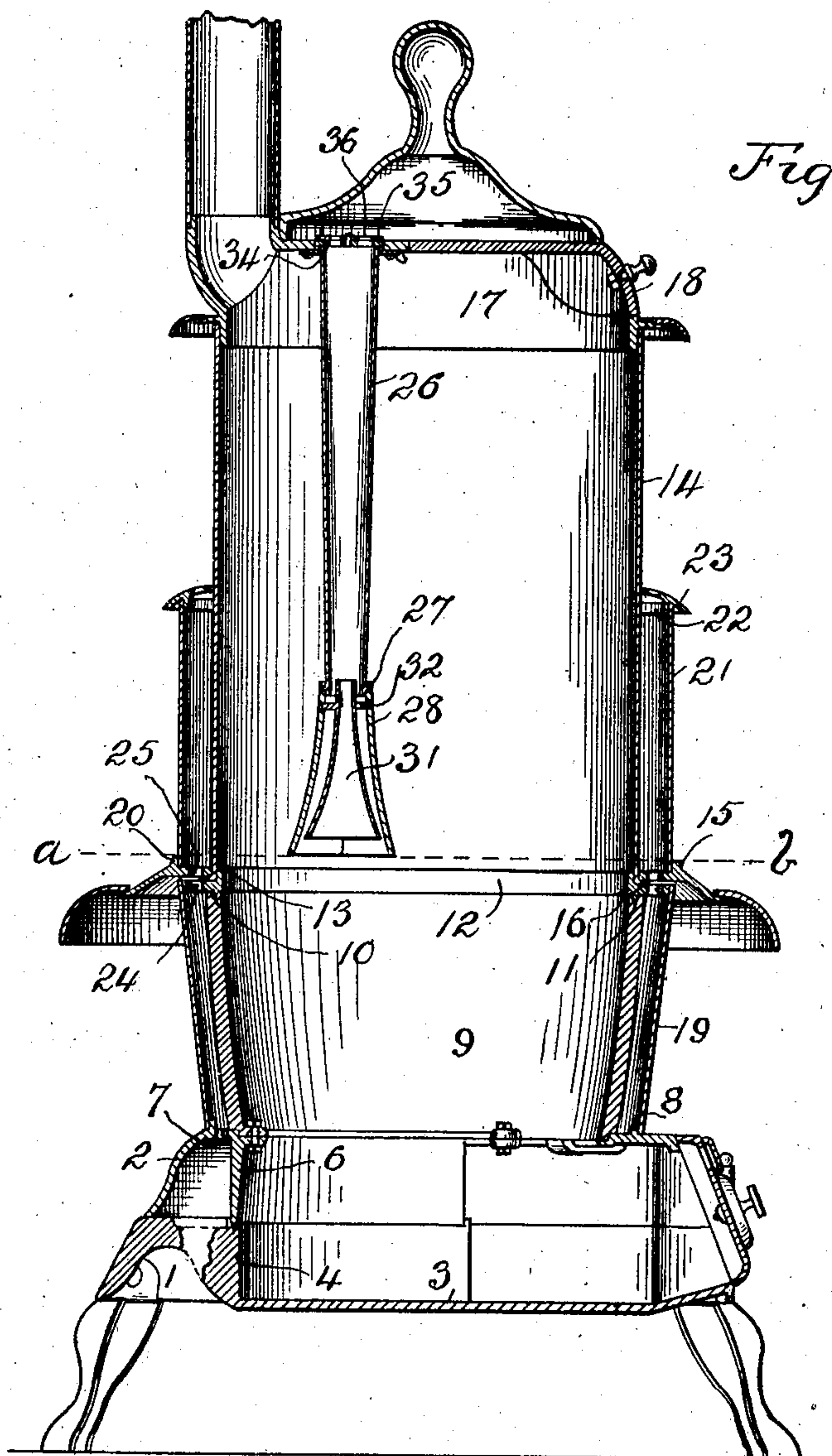
No. 827,424.

PATENTED JULY 31, 1906.

B. B. & F. R. CUTLER & J. D. JOHNSTON.
STOVE.

APPLICATION FILED APR. 4, 1905.

3 SHEETS—SHEET 2.



Inventors

Witnesses:
R. L. Hamilton.
W. A. Single.

B. B. Cutler,
F. R. Cutler
By *J. D. Johnston*
Warren O. House Their Attorney

No. 827,424.

PATENTED JULY 31, 1906.

B. B. & F. R. CUTLER & J. D. JOHNSTON.

STOVE.

APPLICATION FILED APR. 4, 1905.

3 SHEETS—SHEET 3.

Fig 3

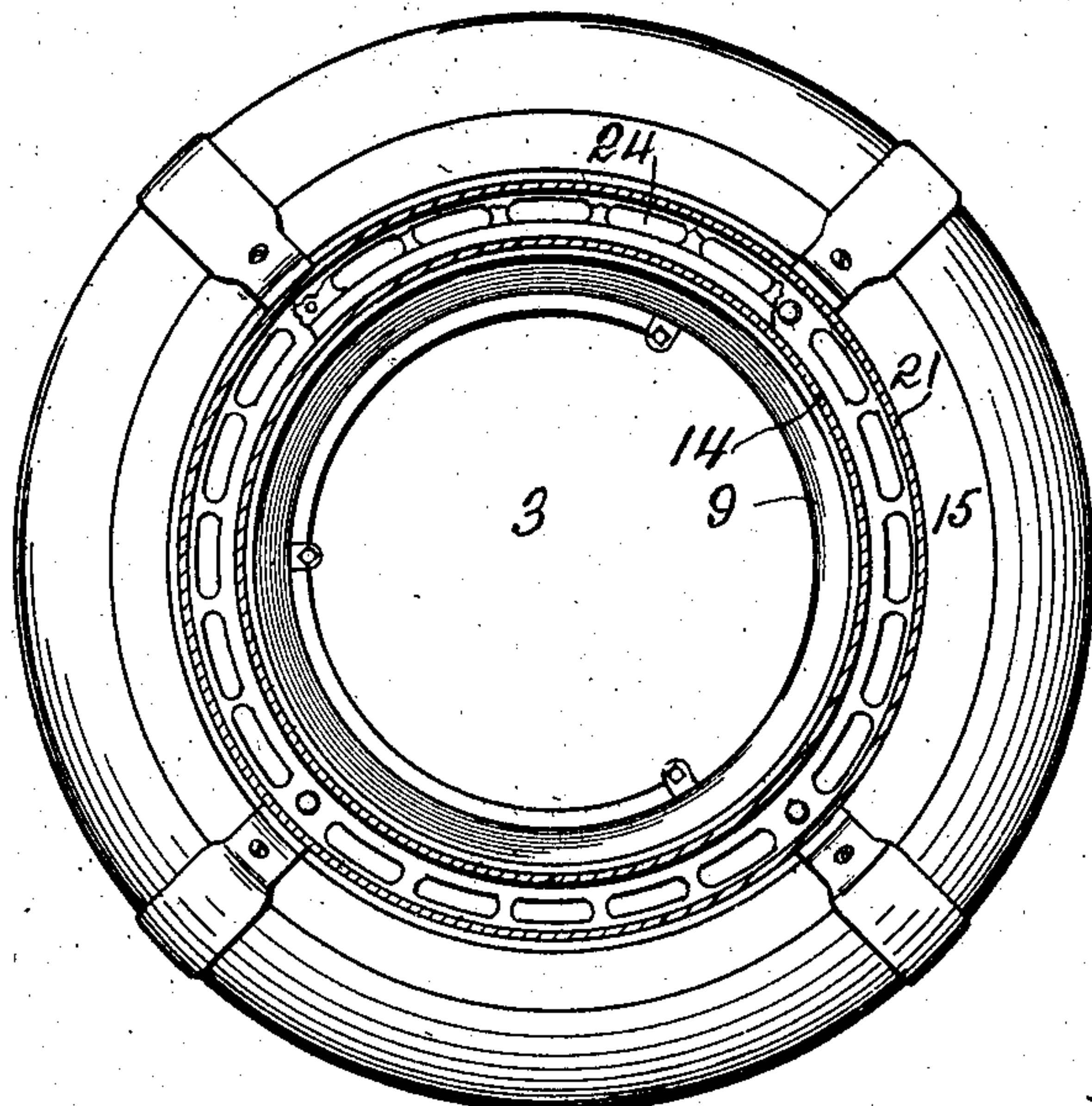


Fig 4

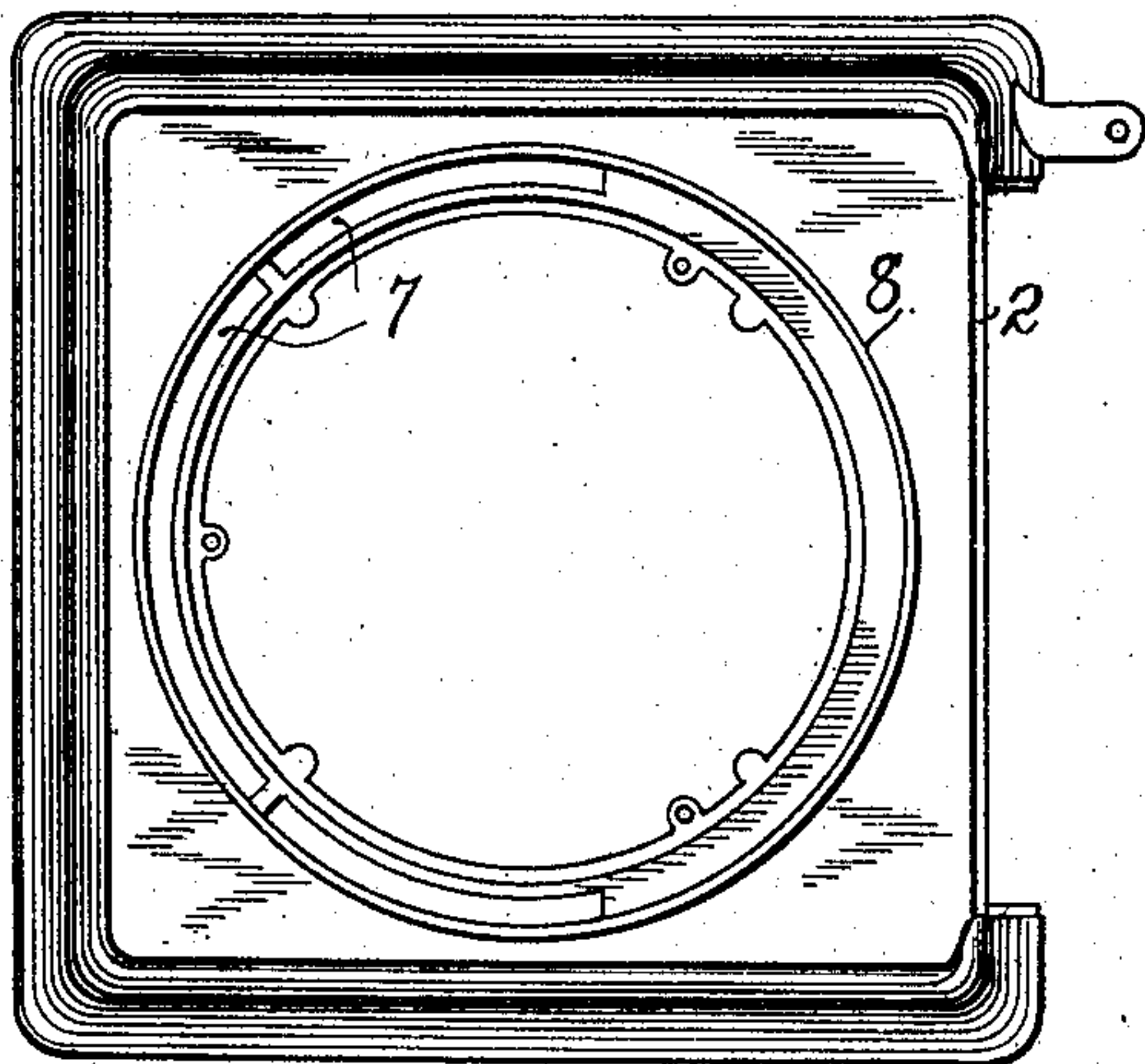


Fig 5

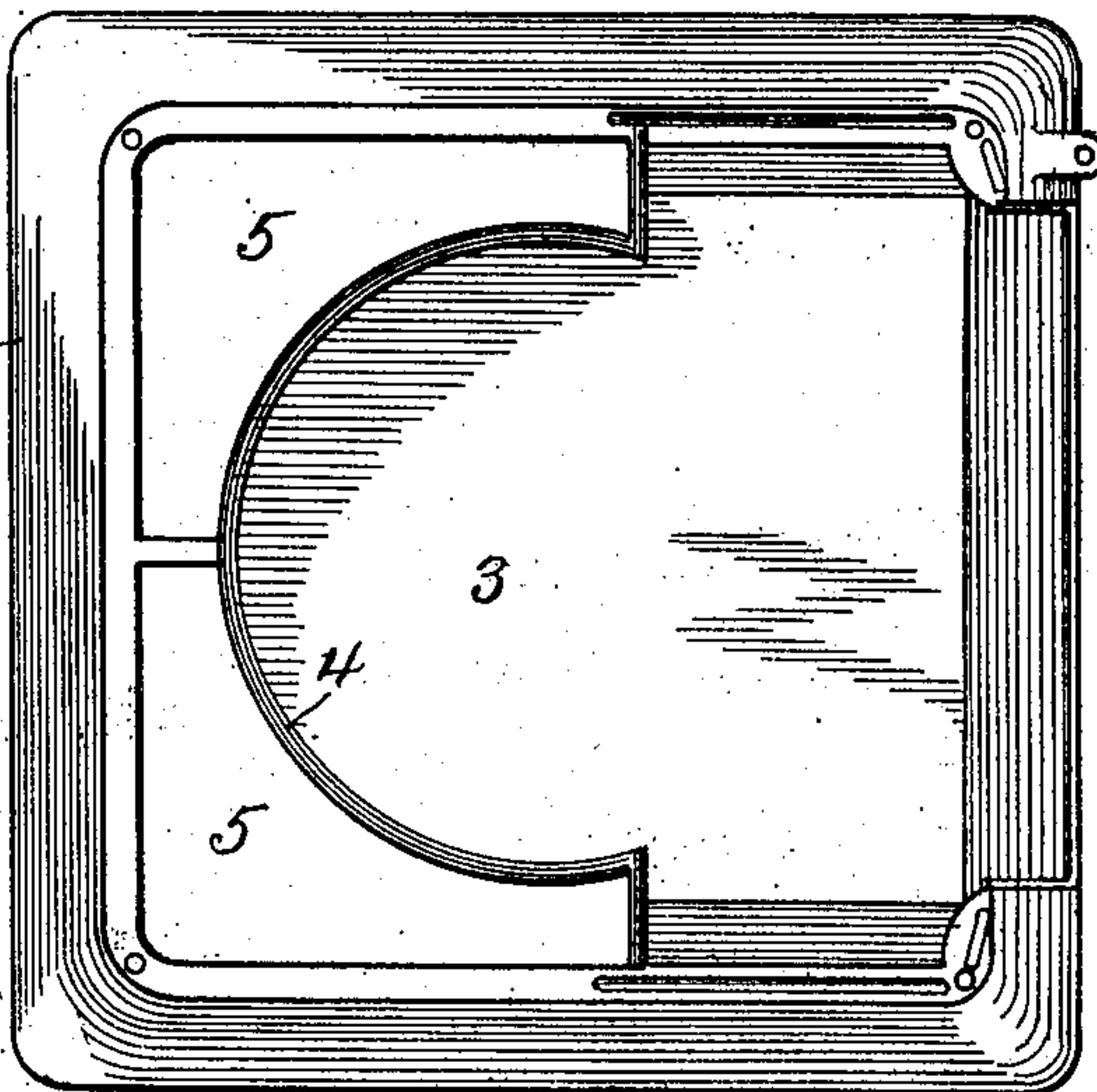


Fig 6

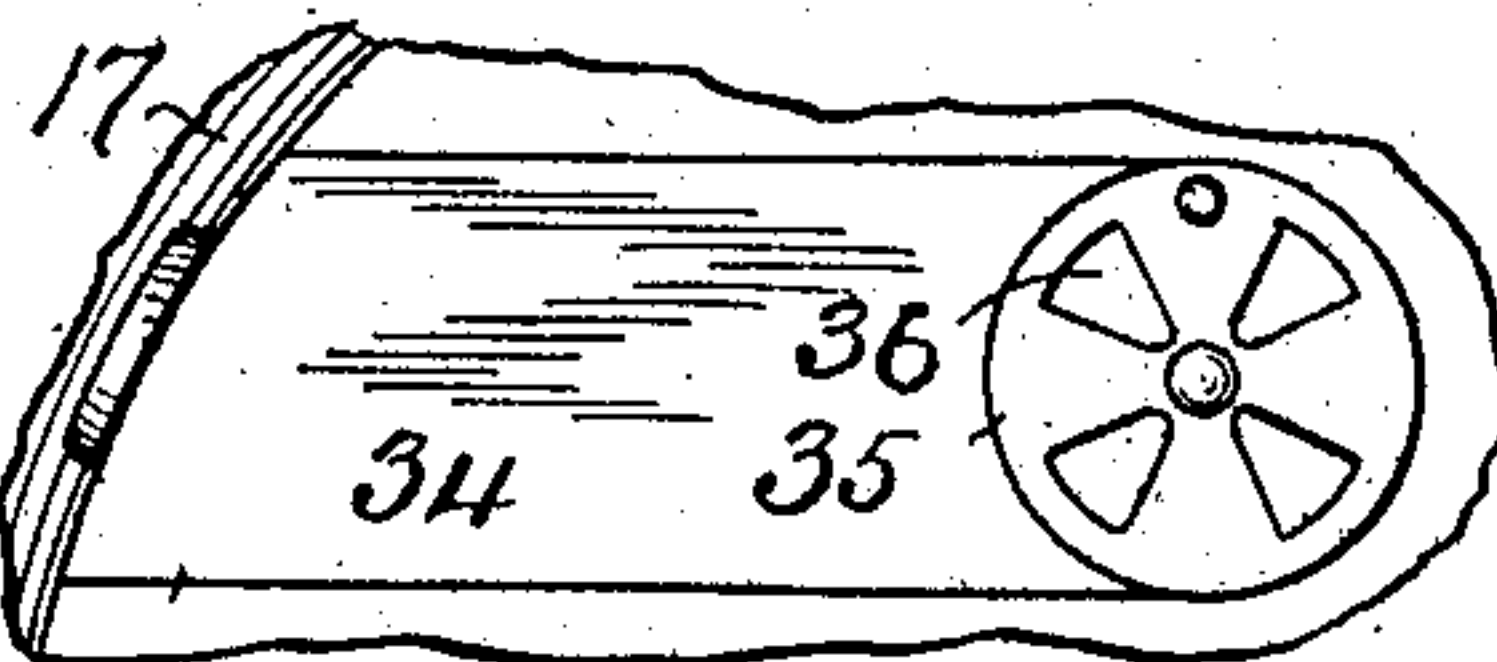
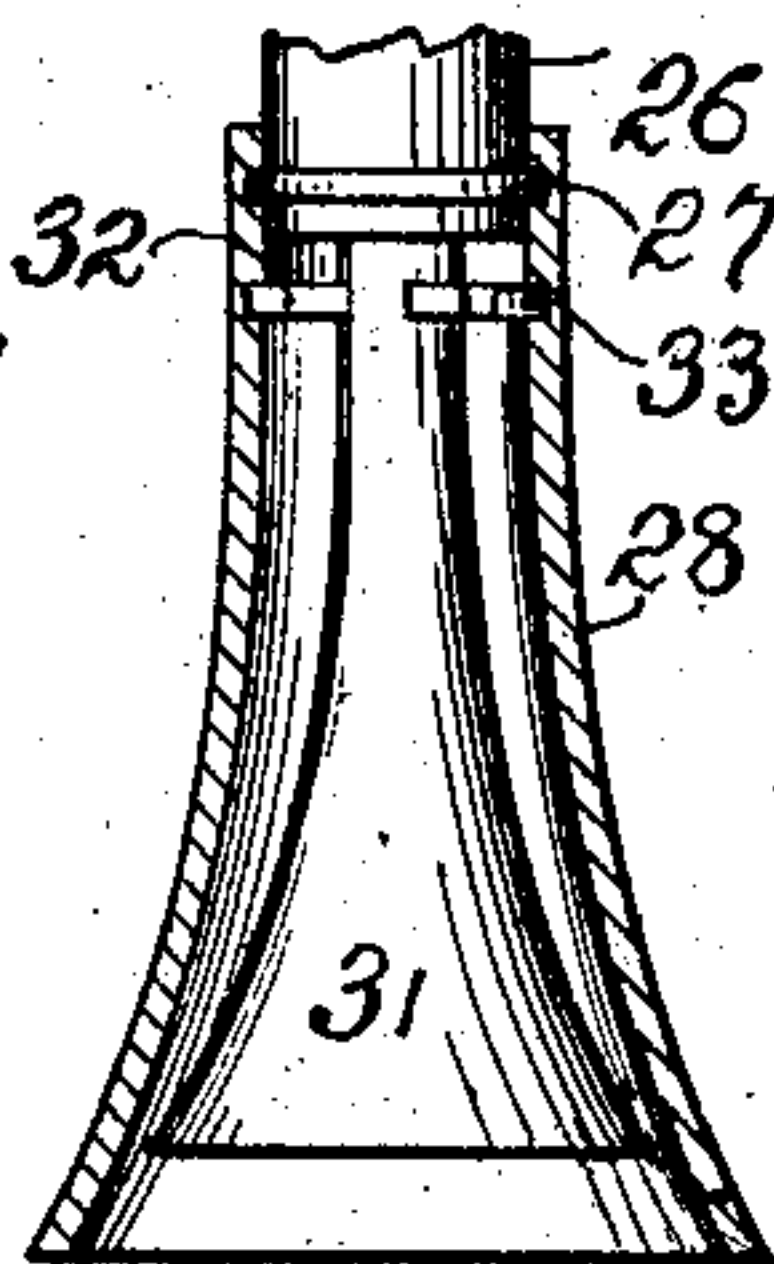


Fig 7

Witnesses:
R. C. Hamilton.
W. A. Single.

Inventors
B. B. Cutler, F. R. Cutler
J. D. Johnston
By Warren D. House
Their Attorney

UNITED STATES PATENT OFFICE.

BURNAM B. CUTLER, FRED R. CUTLER, AND JAMES D. JOHNSTON, OF
KANSAS CITY, MISSOURI.

STOVE.

No. 827,424.

Specification of Letters Patent.

Patented July 31, 1908.

Application filed April 4, 1905. Serial No. 253,836.

To all whom it may concern:

Be it known that we, BURNAM B. CUTLER, FRED R. CUTLER, and JAMES D. JOHNSTON, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

Our invention relates to improvements in stoves.

The object of our invention is to provide a construction of stove having novel means for conducting air from adjacent the floor upwardly in contact with the exterior of the fire-pot and drum.

Our invention provides, further, a novel form of covering encircling the fire-pot and drum by which the air from adjacent the floor is conveyed from the base of the stove upwardly in contact with the fire-pot and drum and then discharged heated into the room.

Our invention provides, further, a novel means for securing the drum to the fire-pot.

Our invention provides, further, a novel construction of hot-air blast by means of which the air is heated and then deflected evenly over the burning fuel.

Our invention provides, still further, novel means for regulating the admission of air into the stove through the air-blast mechanism.

Other novel features are hereinafter fully described and claimed.

In the accompanying drawings, illustrative of our invention, Figure 1 is a front elevation of the stove, parts being broken away to show the hot-air-blast mechanism. Fig. 2 is a vertical sectional view of the stove. Fig. 3 is a horizontal sectional view taken on the dotted line *a b* of Fig. 2. Fig. 4 is a top view of the upper half of the base. Fig. 5 is a top view of the lower half of the base. Fig. 6 is a view showing the bell-shaped member of the air-blast in vertical central section and showing the deflector and lower end of the hot-air tube in elevation. Fig. 7 is a top view of a portion of the cap and the slide which regulates the admission of air into the hot-air tube.

Similar characters of reference denote similar parts.

The base of the stove comprises lower and upper halves 1 and 2, respectively, the lower

half having a bottom portion 3, which forms the bottom of the ash-box, and a vertical transverse flange 4, which forms a portion of the back of the ash-box. Vertical openings 5 are provided in the lower half of the base to the rear of the flange or partition 4 for the passage upwardly of air. The upper half of the base is secured to the upper side of the lower half and is provided with a curved transverse partition 6, which registers with and abuts against the partition 4 and forms the remainder of the back of the ash-box.

Through the top of the half 2 to the rear of the partition 6 are provided one or more openings 7. The upper side of the upper half of the base is provided outside the openings 7 with an annular flange 8. Mounted on the upper half of the base above the ash-box is the fire-pot 9, in the upper end of which is provided an annular groove 10, in which is fitted the annular vertical flange 11, projecting downward from the under side of a horizontal lower ring 12, the upper side of which is provided with a vertical annular flange 13, over which is fitted the lower end of a vertical tubular drum 14. Upon the ring 12 is clamped an upper ring 15, between which and the ring 12 is disposed a horizontal peripheral flange 16, provided on the lower end of the drum 14. The drum 14 has fitted into its upper end a horizontal cap 17, provided with an ordinary feed-door 18. A lower tubular jacket 19 has its lower end fitted over the flange 8 of the base, the upper end of the jacket being fitted over the periphery of the ring 12.

The openings 7 communicate with the annular space provided between the jacket 19 and the fire-pot 9, which the jacket encircles. The upper side of the ring 15 is provided with a vertical annular flange 20, in which is fitted the lower end of an upper tubular jacket 21, the upper end of which is fitted over a vertical annular flange 22, provided on the lower side of a horizontal ring 23, which encircles the drum 14. The ring 12 is provided outside the fire-pot 9 and inside the jacket 19 with one or more openings 24, which communicate with the annular space between the fire-pot 9 and jacket 19. The ring 15 is provided between the drum 14 and jacket 21 with one or more openings 25, which register with the openings 24 and communicate with the annular space provided between the jacket 21 and the drum

14. Air adjacent the floor will pass upwardly through the base by means of openings 5 and 7 into the annular space between the fire-pot 9 and jacket 19, thence upwardly through
 5 openings 24 and 25 into the annular space between the drum 14 and jacket 21, and thence into the room through openings provided vertically through the ring 23, at which time the air has become highly heated by
 10 contact with the exterior of the fire-pot 9 and drum 14.

The cap 17 is provided at the rear of the door 18 with a vertical opening registering with the opening in a vertical air-tube 26, the
 15 upper end of which is secured to the under side of the cap 17 and the lower end of which is provided with a horizontal peripheral flange 27, fitted in an annular groove provided on the inner side of the upper end of a bell-
 20 shaped member 28, which comprises, preferably, two vertical halves, each having oppositely-disposed lateral lugs 29, secured to the oppositely-disposed lugs of the other half by bolts 30. Within the member 28 is mounted
 25 a vertical tubular bell-shaped deflector 31, having an outside diameter less than the inside diameter of the member 28. The deflector 31 has a plurality of radial arms 32, which rest in an annular groove 33, provided
 30 in the inner wall of the member 28. The lower end of the member 28 is disposed above the fuel placed in the fire-pot 9. Air passing downward through the tube 26 will pass through the member 28, part going inside the
 35 deflector 31 and a part passing outside the deflector. The air will thus be diffused evenly over the fuel. To have the air pass out of the member 28 with considerable force, the annular space between the outside the de-
 40 flector and the member 28 may be narrower at the lower than at its upper end.

Upon the upper side of the cap 17 is slidably mounted a plate 34, adapted when properly positioned to have its inner end cover
 45 the opening in the top of the cap over the tube 26. The plate 34 is provided with one or more vertical holes where the plate covers the opening in the cap 17 to permit the passage of air through the plate and into the air-
 50 tube 26. To the upper side of the plate 34 is pivoted a horizontal plate 35, provided with one or more openings 36, adapted to register with the holes in the plate 34. To fully uncover the upper end of the tube 26, the plate
 55 34 is pulled outward the proper distance. If it is desired to vary the amount of air entering the tube 26 by turning the plate 35, this may be done instead of withdrawing the plate 34.

60 Our invention may be modified in many ways without departing from its spirit.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

65 1. The combination with the fire-pot pro-

vided in its upper edge with an annular groove, of the lower ring having an annular flange disposed in said groove and provided on its upper side with a vertical annular flange, of the upper ring encircling said vertical
 70 flange and clamped upon the top of the first ring, and the vertical tubular drum extending through the upper ring and encircling said vertical flange and provided with a horizontal peripheral flange disposed between
 75 said rings.

2. The combination with the fire-pot, of a horizontal ring mounted upon the upper end thereof and provided with one or more vertical
 80 holes, the second ring superposed on the first and provided with one or more vertical holes registering with the holes in the first ring, a lower jacket encircling the fire-pot and the lower ring outside the openings there-
 85 through, a vertical tubular drum having at its lower end a peripheral horizontal flange clamped between the two rings, and an upper jacket encircling the drum mounted upon the second ring, the openings in the rings connecting the annular spaces between the fire-
 90 pot and the lower jacket and the drum and the upper jacket respectively.

3. The combination with the fire-pot, of a horizontal lower ring provided on its lower side with a vertical annular flange fitted into
 95 a corresponding groove provided in the upper end of the fire-pot, provided on its upper side with a vertical annular flange and having one or more vertical openings disposed outside the vertical flange and the fire-pot, a
 100 second horizontal ring clamped to the upper side of the first ring, encircling the vertical flange and having one or more openings registering with the holes in the lower ring, a
 105 vertical tubular drum encircling said vertical flange, extending through the upper ring and provided with a horizontal peripheral flange disposed between said two rings, a lower jacket encircling the fire-pot and the lower
 110 ring, and an upper jacket mounted on the second ring and encircling the drum, the openings in the rings communicating with the annular spaces between the fire-pot and the lower jacket and the drum and the upper jacket respectively.
 115

4. The combination with the base provided with the ash-box and having an air-space leading from the bottom of the base through the top thereof outside the ash-box, of a fire-pot mounted upon the base above
 120 the ash-box, a horizontal lower ring mounted on the fire-pot and provided with one or more openings extending vertically there-through outside the fire-pot, an upper horizontal ring clamped upon the lower ring and
 125 provided with one or more openings registering with the openings in the lower ring, a vertical tubular drum extending through the upper ring and provided with a peripheral horizontal flange disposed between the two
 130

rings, a lower jacket encircling the fire-pot and the lower ring outside the openings there-through, and an upper jacket mounted on the upper ring and encircling the drum, the
 5 air-space in the base communicating with the annular space between the fire-pot and the lower jacket and the vertical openings in the rings communicating with said annular space and the annular space between the upper
 10 jacket and the drum.

5. The combination with the base provided with an ash-box and having one or more openings leading vertically through the base outside the ash-box, of a fire-pot mounted on the base above the ash-box and having
 15 an annular groove in its upper end, a horizontal ring fitted to said groove, having one or more vertical openings therethrough outside the fire-pot, an upper horizontal ring mounted upon the lower ring, clamped there-
 20 to and provided with one or more vertical openings registering with the openings in the lower ring, a lower jacket encircling the fire-pot and the lower ring and mounted upon the
 25 base, a vertical tubular drum extending through the upper ring and provided with a horizontal peripheral flange disposed between the two rings, an upper jacket encircling the drum and supported by the upper
 30 ring, and a third ring mounted on the upper end of the upper jacket, encircling the drum and provided with one or more vertical openings therethrough communicating with the annular space between the upper jacket and
 35 drum, the openings through the base communicating with the annular space between the fire-pot and lower jacket, and the openings in the said upper and lower rings communicating with the annular spaces between
 40 the fire-pot and lower jacket and the drum and upper jacket respectively.

6. A hot-air blast comprising a vertical tube open at both ends, a tubular bell-shaped member fitted to the lower end of said tube,
 45 and a tubular bell-shaped deflector having a longitudinal passage therethrough and mounted vertically within said bell-shaped member an air-space being provided between the deflector and the bell-shaped mem-
 50 ber through which the air may pass from the said tube.

7. In a hot-air blast, the combination with the vertical tube open at both ends and provided at its lower end with a peripheral hori-
 55 zontal flange, of a vertical tubular bell-shaped member having an inner annular groove in which said flange is fitted and provided with an inner second annular groove, and a bell-shaped deflector having an out-
 60 side diameter smaller than the inside diameter of the bell-shaped member and provided with one or more horizontal radial arms supported at their outer ends in said second groove.

65 8. In a hot-air blast, the combination with

a vertical air-tube provided at its lower end with a horizontal peripheral flange, of a bell-shaped member provided with an inner annular groove to which said flange is fitted and provided with a second inner annular groove,
 70 said bell-shaped member being vertically divided into two parts provided with means by which they are clamped together, and a bell-shaped tubular deflector open vertically
 75 throughout its length, located within said bell-shaped member, having an outer diameter smaller than the inner diameter of the bell-shaped member and provided with one or more radial arms supported in said second
 80 annular groove.

9. The combination with the stove-cap provided with a vertical opening there-through, of a vertical air-tube secured to the under side of said cap in alinement with said
 85 opening, a tubular bell-shaped member secured to the lower end of said air-tube, and a tubular bell-shaped deflector located within said bell-shaped member and having a longitudinal passage therethrough, an air-space
 90 being provided between said member and the deflector.

10. The combination with the stove-cap provided with the vertical opening there-through, of a movable slide for regulating the
 95 passage of air through said opening, a vertical air-tube secured to the lower side of the cap and registering with said opening, a bell-shaped member mounted on the lower end of the air-tube and through which the air from
 100 the tube passes, and a tubular bell-shaped deflector mounted in the bell-shaped member and having a longitudinal passage there-through, an air-space being provided between said deflector and said bell-shaped
 105 member.

11. The combination with the cap provided with a vertical hole therethrough, of a slide mounted on the cap and movable to and from a position in which it will cover said
 110 opening, the slide being provided with one or more vertical openings adapted, when the slide is properly positioned, to register with said opening in the cap, a plate pivotally mounted on the slide for closing the openings
 115 therethrough and provided with one or more openings adapted to register with the openings in the slide when the plate is properly positioned.

12. The combination with the cap provided with a vertical opening therethrough,
 120 of a slide mounted on the cap and movable to and from a position in which it will cover said opening, the slide being provided with one or more vertical openings adapted, when the slide is properly positioned, to register
 125 with the opening in the cap, a plate pivotally mounted on the slide for closing the openings therethrough and provided with one or more openings adapted to register with the openings in the slide when the plate is properly
 130 positioned.

positioned, a vertical air-tube secured to the under side of the cap and having its opening register with the opening in the cap, a bell-shaped tubular member secured to the lower end of the air-tube, and a bell-shaped deflector mounted in the bell-shaped tubular member, an air-space being provided between said deflector and the bell-shaped member.

10 13. The combination with the base, of the fire-pot, mounted thereon, a horizontal ring mounted on the fire-pot and provided with one or more vertical openings disposed outside the fire-pot, a second ring mounted on

15 the first and secured thereto and having one or more openings registering with the openings in the lower ring, a vertical tubular drum extending through the upper ring and having a horizontal peripheral flange disposed between the two rings, a cap mounted

20 on the top of the drum and having a vertical

opening therethrough, a vertical air-tube secured to the under side of the cap and registering with the opening in the cap, a tubular bell-shaped member secured to the lower end of the air-tube, a bell-shaped tubular deflector mounted in the bell-shaped member, an outer jacket encircling the fire-pot and the lower ring, and an upper jacket encircling the drum, the openings in the rings communicating with the annular spaces between the fire-pot and lower jacket and the drum and upper jacket respectively.

25 30

In testimony whereof we affix our signatures in presence of two witnesses.

BURNAM B. CUTLER.
FRED R. CUTLER.
JAMES D. JOHNSTON.

Witnesses:

WARREN D. HOUSE,
CHARLES L. HAGAN.