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PATENTED FEB. 3, 1903.

J. B. EHRLICH.
HOT BLAST FOR RANGES, STOVES, OR FURNACES.

APPLICATION FILED MAY 1, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

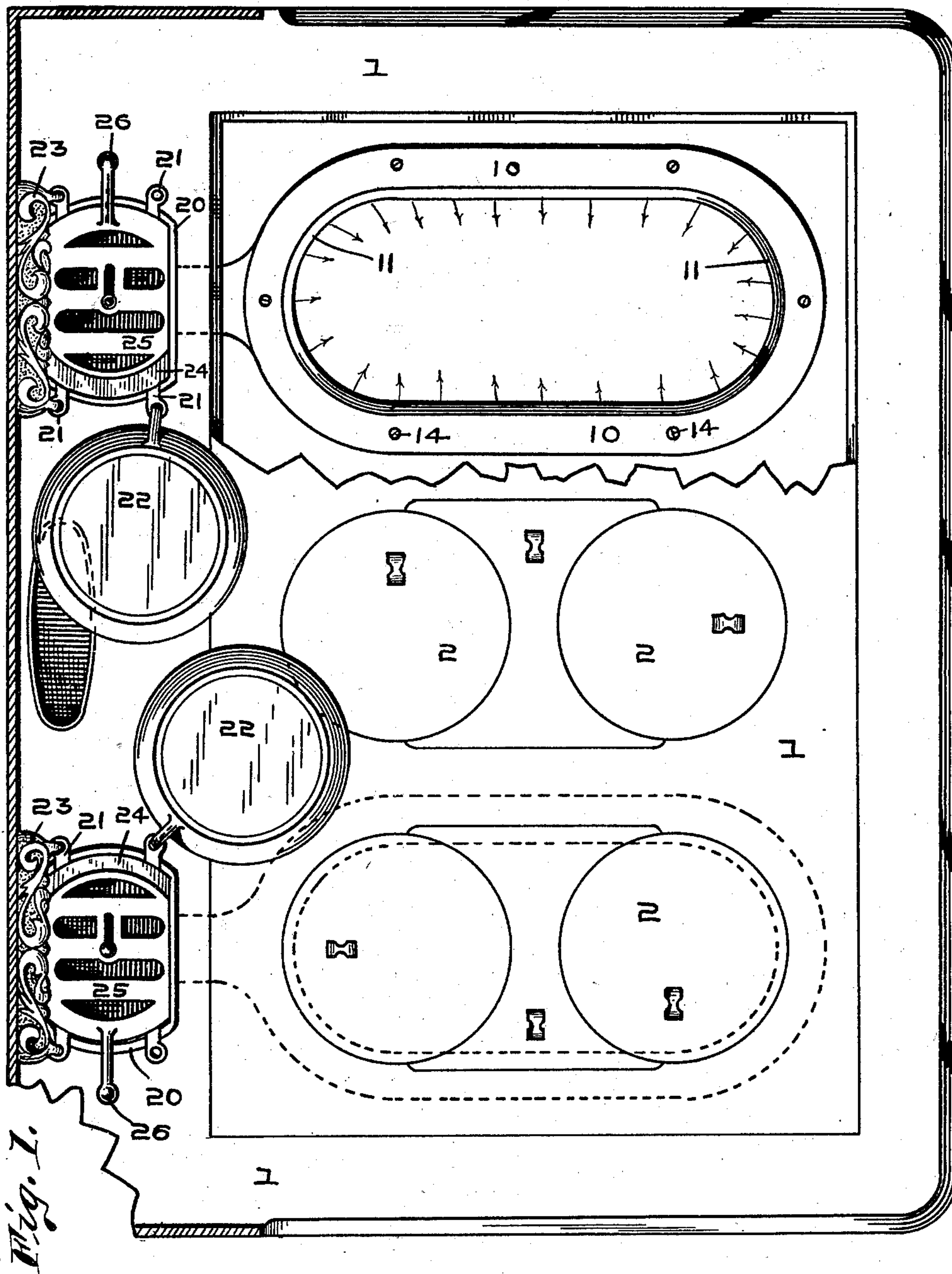


Fig. 1.

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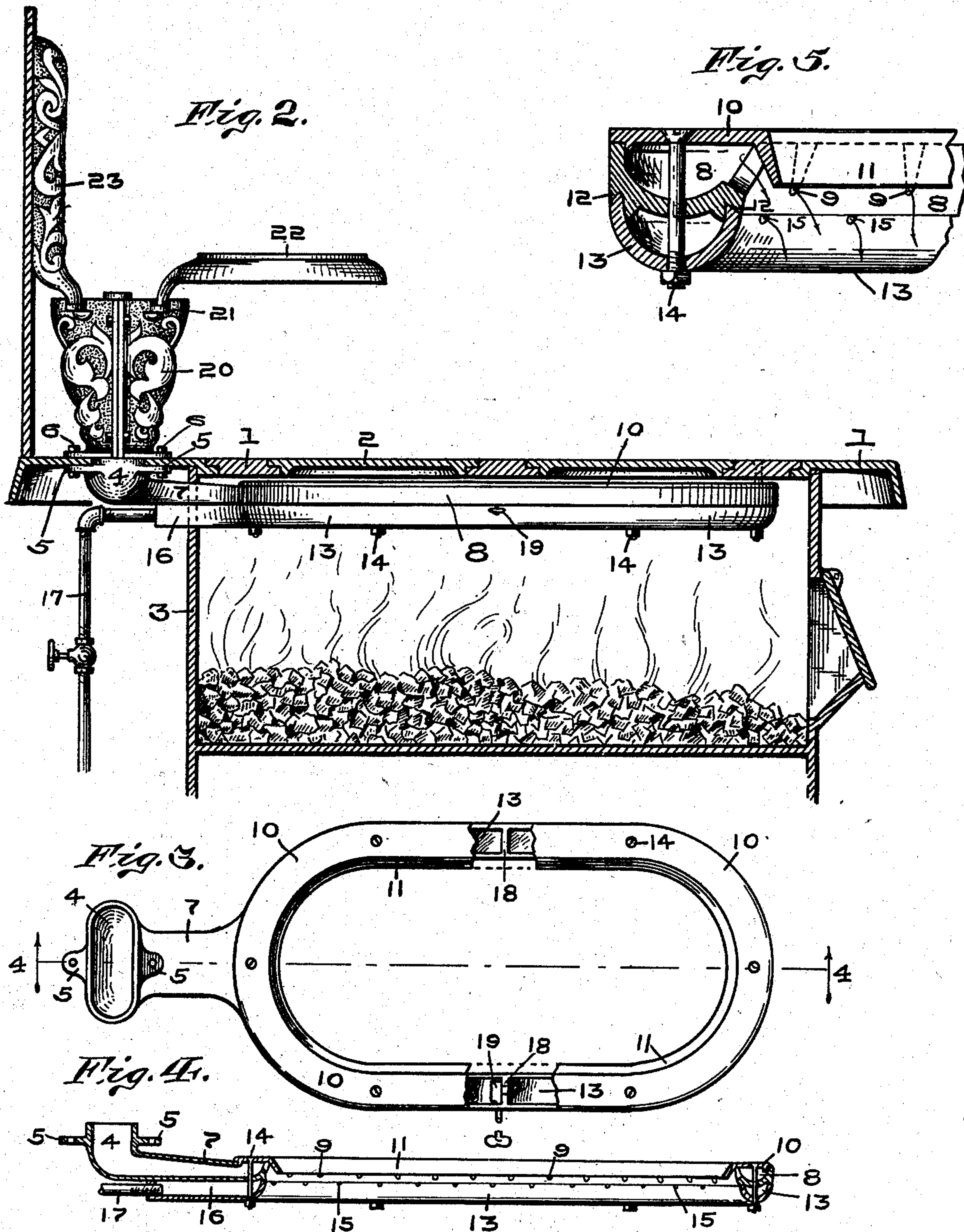
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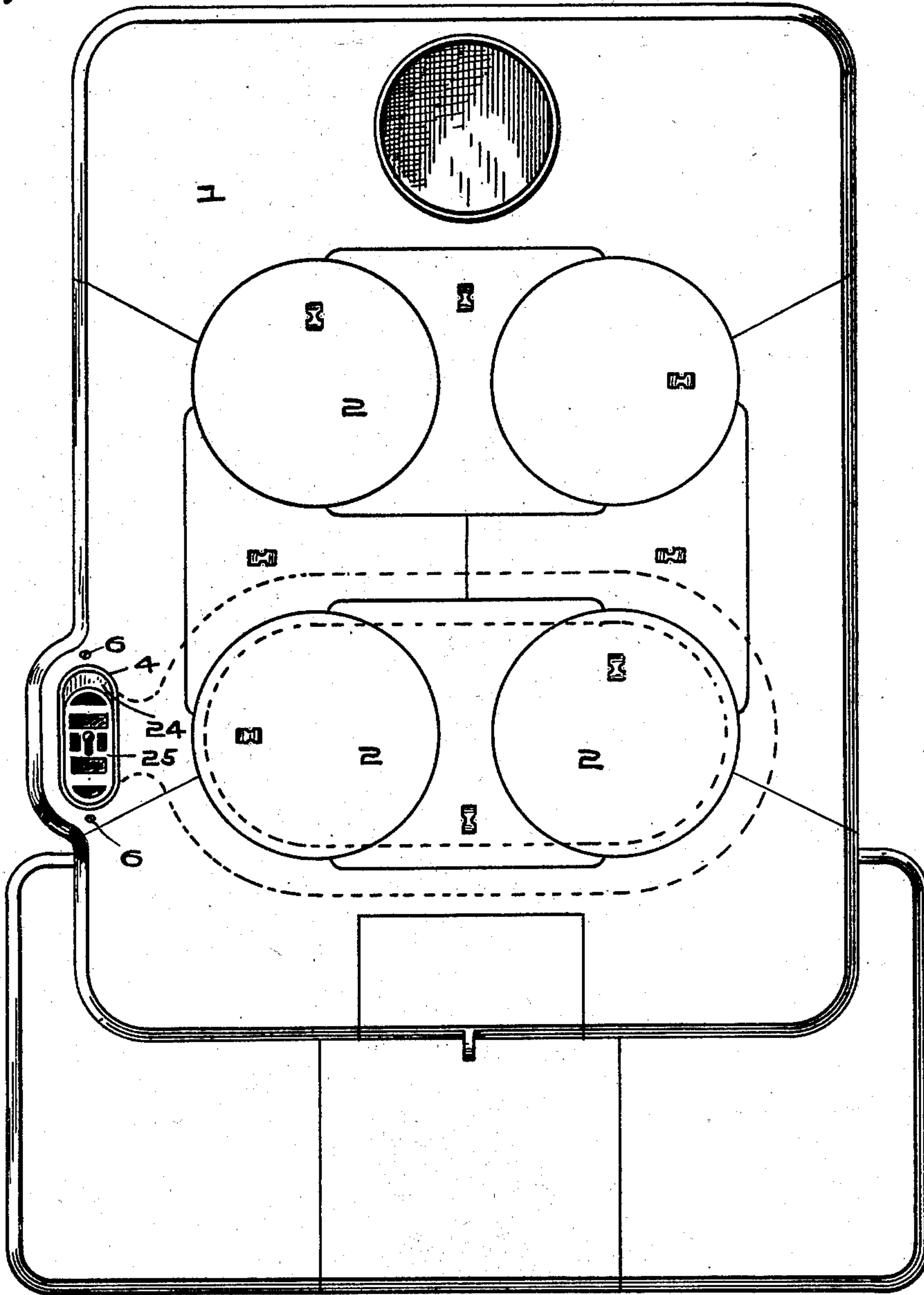
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4 SHEETS—SHEET 3.

Fig. 6.



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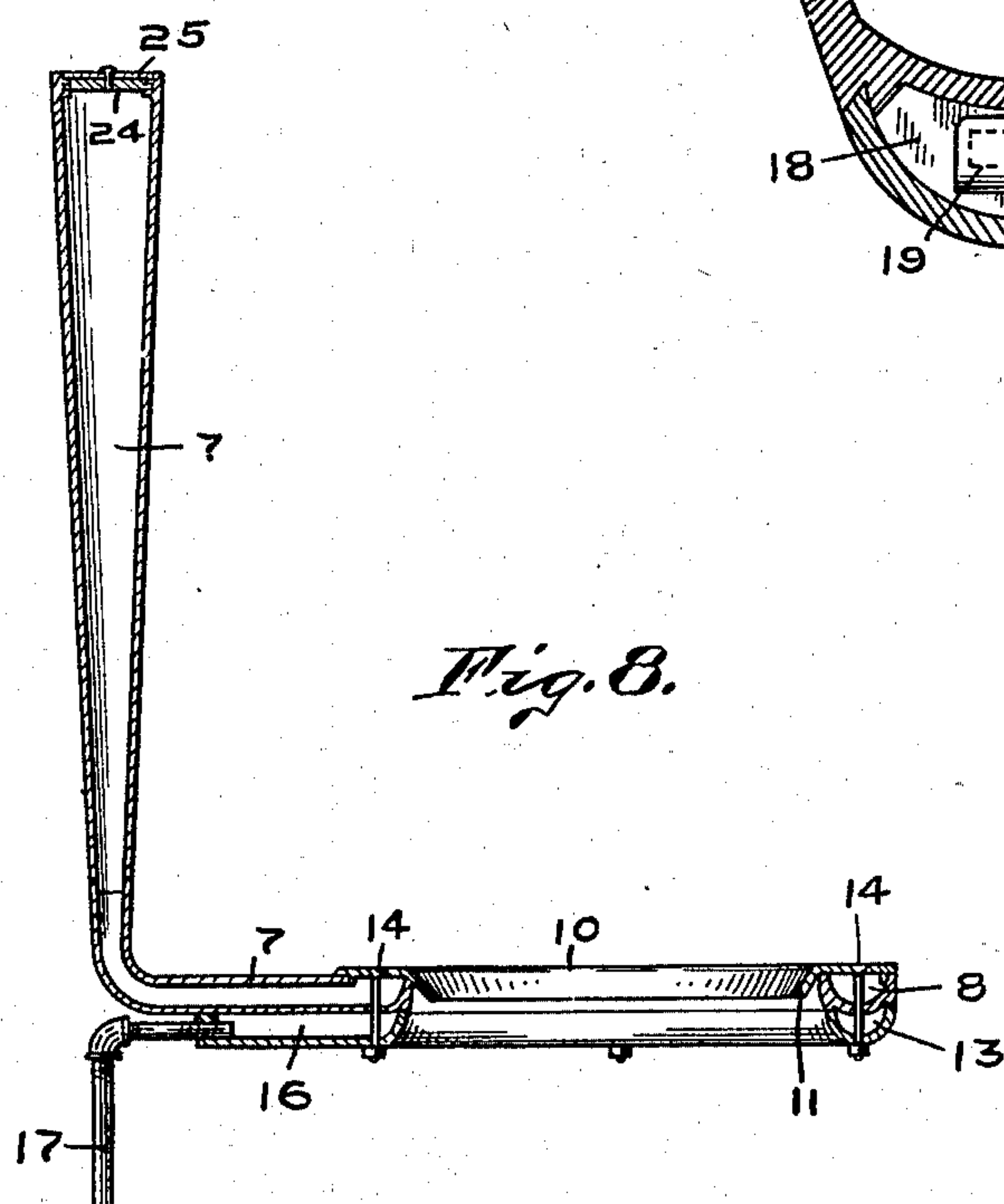
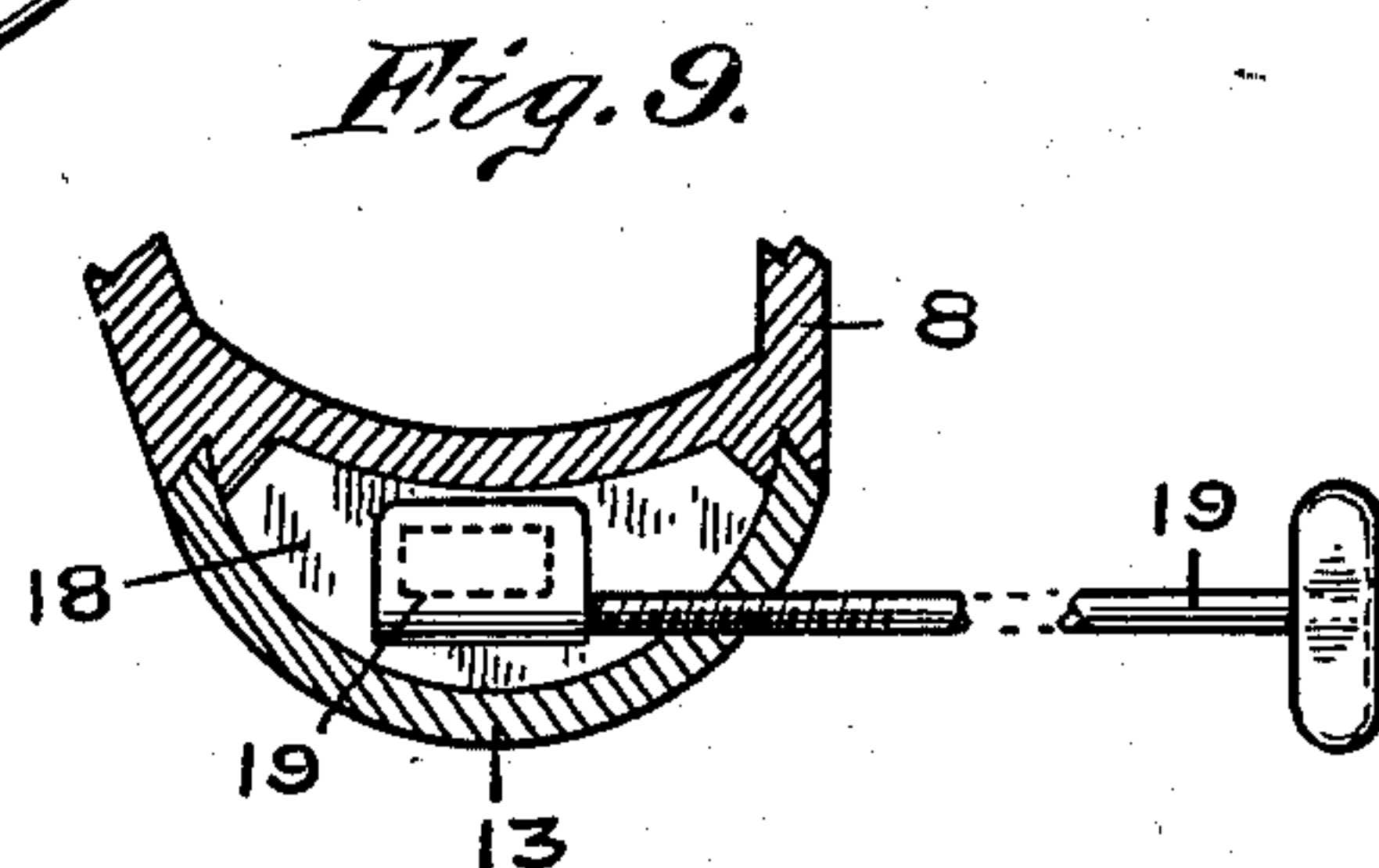
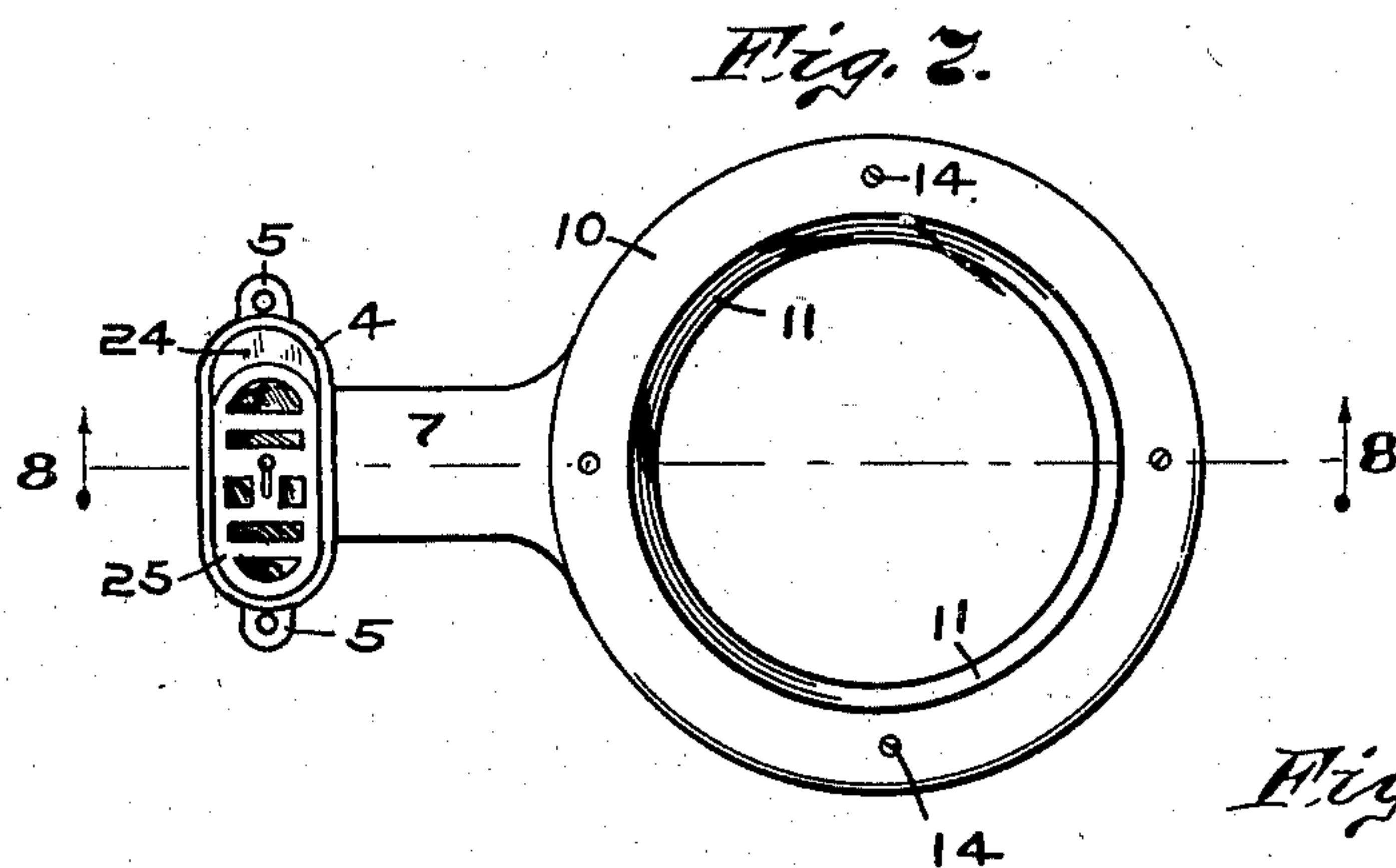
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

JOHN B. EHRLICH, OF INDIANAPOLIS, INDIANA.

HOT BLAST FOR RANGES, STOVES, OR FURNACES.

SPECIFICATION forming part of Letters Patent No. 719,767, dated February 3, 1903.

Application filed May 1, 1902. Serial No. 105,513. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. EHRLICH, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Hot Blasts for Ranges, Stoves, or Furnaces, of which the following is a specification.

The object of my invention is to provide a hot blast for ranges, cooking, and heating stoves, and furnaces, and is particularly adapted to be used where gas is employed as a fuel. My hot blast, however, can be used in conjunction with other fuel.

The object consists, further, in procuring the air for my hot blast at the top of the stove, range, or furnace through ingress-bowls which terminate in pipes which bifurcate in endless oblong bodies having apertures on the inner sides, through which the air is discharged into the fire-pot. The formation of my air-conveying pipe having a central opening leaves the space immediately below the stove-plates free from obstruction and overcomes any objection that might be made from a centrally-located pipe, as shown and described in my former patent, No. 698,478, dated April 29, 1902. Corresponding with the contour of the air-conveying pipe and secured to the under side thereof is a pipe, semicircular in form, which conveys the gas. The gas-conveying pipe or chamber is connected with a pipe that leads to the gas-main and through which the gas-supply is procured. The gas-chamber carries a series of apertures on the inner side, which are situated midway to the air-discharging apertures in the air-chamber, so that when the gas is discharged a thorough mixing with the air is procured.

The object consists, further, in providing the air-conveying chamber with a suitable cover having a downward-extending inclined flange on the inner side. The flange projects over the major portion of the slots or apertures through which the air is discharged and whereby said discharged air is deflected and forced to cross the path of the discharging gas. There are other features, and the construction and arrangement of the several parts will be hereinafter more particularly described and then pointed out in the claims.

Referring to the accompanying drawings,

which are made a part hereof and on which similar numerals of reference indicate similar parts, Figure 1 is a top or plan view of a range of which a part of the top is broken away and shows the hot blast in position. Fig. 2 is a vertical section of a range and shows the ingress-bowl, hot blast, and burner in side elevation. Fig. 3 is a plan view of the hot blast in which the range is omitted. Fig. 4 is a central section of Fig. 3 as seen when looking in the direction indicated by the arrows on the line 4 4 in Fig. 3. Fig. 5 is a fragmentary detail in cross-section of the hot blast and burner on a considerably-enlarged scale. Fig. 6 is a top or plan view of a cooking-stove and shows my combined hot blast and gas-burner in position. In this figure the ingress-bowl is omitted. Fig. 7 is a plan view of my combined hot blast and gas-burner as employed in conjunction with a heating stove or furnace and shows my hot blast and burner as used in a circular fire-pot. Fig. 8 is a central vertical section of the construction shown in Fig. 7 as seen when looking in the direction indicated by the arrows on the line 8 8 in Fig. 7, and Fig. 9 is a transverse section of the gas-conveying chamber in which the transverse wall and valve are shown.

In the drawings, 1 is the top of the range or stove; 2, the lids; 3, the back. The top 1 in range construction is provided at the rear and near the side edges with an elongated aperture, the contour of which registers with the ingress-bowls of my hot blast. The bowls 4 are supplied with the integral ears 5, which carry apertures through which the bolts 6 pass and by which the bowls are secured to the top 1. The bowls 4 terminate in the pipes 7, which pipes terminate in oblong circular bodies or rings which carry apertures on the inner sides. These rings form a conveyer for conveying the air and distributing the same throughout the length of the fire-pot. The air-conveying chamber 8 is semicircular in form and is open at the top. The air-chamber 8, however, is supplied with a cover 10, which has an integral annular downward-extending flange 11 on the inner side. The flange 11 projects over the greater portion of the apertures 9 in the air-conveying chamber 8 and deflects the course of the discharged air across the path of the discharging gas. The air-cham-

ber 8 is provided with the annular lips 12 on the bottom, which form a recess for the gas-conveying chamber 13, which is secured to the under side of the chamber 8 by the bolts 14. The bolts 14 pass through the chamber 8 and the cover 10, whereby said cover is secured to the said body, and which construction is plainly shown in Fig. 5.

The gas-chamber 13 is supplied with a series of apertures 15 on the inner side and which are located between the apertures 9 in the air-chamber 8, so that a thorough distribution and mixing of the air and gas is procured before ignition. The gas-chamber 13 terminates at the rear in a neck 16, which is tapped and to which a pipe 17 is secured which supplies the gas. The chambers 8 and 13 are supported at the outer end by passing one of the tying-bolts 14 through the top 1.

The gas-chamber 13 is separated into a front and rear compartment by the transverse walls 18. One of the walls 18 is supplied with an aperture through which the gas passes into the front compartment. A valve 19 regulates and controls the gas that passes through the aperture in the wall 18, and by the use of this construction only a portion of the burner may be used, thus adding economy in the consumption of gas.

Situated on the upper surface of the top 1 and over the elongated apertures which form the mouth to the bowls 4 are the secondary ornamental ingress-bowls 20. These bowls are more particularly applicable to ranges. Still they may be used on cooking-stoves. As ranges are provided with brackets at the rear on which to set dishes of prepared food, I make further use of the ornamental ingress-bowl 20 by letting it serve as a stand or base for the swinging brackets 22. The bowls 20 carry the ears 21, which have an aperture through which the stem of the brackets 22 pass. The brackets 22 may be changed to either side of the bowls, as circumstances permit, and as they are pivotally mounted they can be swung around from over the top of the bowls 20 to the heated portion of the stove or range top.

The rear ears 21 on the bowls 20 are also provided with an aperture which forms a bearing for an ornamental back 23, and by this arrangement the backs 23 can be removed for cleaning purposes.

The ornamental ingress-bowls 20 are supplied with slotted plates 24, which are rigidly secured therein at the top. A second slotted plate 25, provided with a handle 26, is adjustably secured to the under plate 24.

These two plates form a damper which controls the ingoing air that feeds the blast.

In Fig. 6 of the drawings I have shown my hot blast and gas-burner connected to a cooking-stove, in which case the ornamental ingress-bowl 20 is omitted. In this case the damper-plates 24 and 25 are "let" into the top 1 of the stove. The ingress-bowls 20 can be used, however, in connection with a cooking-stove,

although it is more particularly adapted to ranges, as the fire-pot in a cooking-stove runs transversely therein and in which instance the bowl 20 would be an impediment. This remains optional, however, with the buyer.

In Figs. 7 and 8 I have shown my hot blast and gas-burner in connection with a heating stove or furnace in which a circular fire-pot exists. To meet this requirement, I construct my blast and burner on a circle to conform with the said pot. The same principle, however, is involved as in the elongated burner.

When applying my hot blast and burner to a heating-stove, the pipe 7 is simply lengthened to meet the additional depth of that style of stove or furnace. The manner of placing or locating my hot blast in the range, stove, or furnace, whether it be down on the grate-bars or above them—say about on a level with the fire-brick lining—will depend entirely on local conditions. If in a community where gas is abundant, my blast is usually placed on the grate-bars, while in localities where a shortage of gas is experienced, so that other fuel must be substituted, it is preferable to place the blast a sufficient height above the grate-bars to permit other fuel to be placed in the fire-pot, for my hot blast operates equally as well with other fuel.

Having thus fully described my said invention, what I desire to secure by Letters Patent is—

1. In a hot blast for ranges, stoves and furnaces, bowls secured to the under side of the top that form the ingress for the blast, the said bowls terminating in a pipe which bifurcates in oblong endless bodies, the said bodies forming the air-chambers for the blast, apertures on the inner side of the chambers for discharging the air, covers on said chambers having downward-extending flanges which deflect the discharged air, secondary ingress-bowls secured to the upper side of the top of the range or stove, ears on the bowls which carry apertures, bolts passing through the said apertures and the top, slotted plates rigidly secured in the upper ends of the bowls, secondary slotted plates adjustably secured to the rigid plates, the combined plates forming a damper for regulating the inflowing air into the blast, substantially as shown and described.

2. In a hot blast for ranges, stoves and furnaces, ingress-bowls secured to and registering with apertures in the range, stove or furnace top, the said bowls terminating in pipes which bifurcate in oblong endless bodies, covers on the bodies having integral downward-extending flanges on the inner sides, apertures on the inner sides of the bodies for discharging the air, secondary chambers which follow the contour of the air-conveying chambers and secured to the bottom thereof by means of bolts, the said secondary chamber adapted to supply the gas, apertures on the inner sides of the gas-chamber for discharging the gas, the said gas pipes or chamber

terminating at one end in a neck, pipes secured to said necks which supplies the gas to the gas-chambers, substantially as shown and described.

- 5 3. In a hot blast for ranges, stoves and furnaces, ingress-bowls secured to the top, the said bowls terminating in pipes which pipes terminate in oblong endless bodies for conveying the air and having apertures for dis-
10 charging the same, secondary chambers secured to the under side of the air-chambers which convey the gas, the said chambers having apertures for discharging the gas, walls

running transversely through the conveying-channels of the gas-chambers, an aperture in 15 one of said walls, a valve suitably mounted in said channel which regulates the flow of gas through said aperture, substantially as described and for the purposes set forth.

In witness whereof I have hereunto set my 20 hand and seal, at Indianapolis, Indiana, this 22d day of April, A. D. 1902.

JOHN B. EHRLICH. [L. S.]

Witnesses:

C. C. TOPP,

F. W. WOERNER.