

No. 631,049.

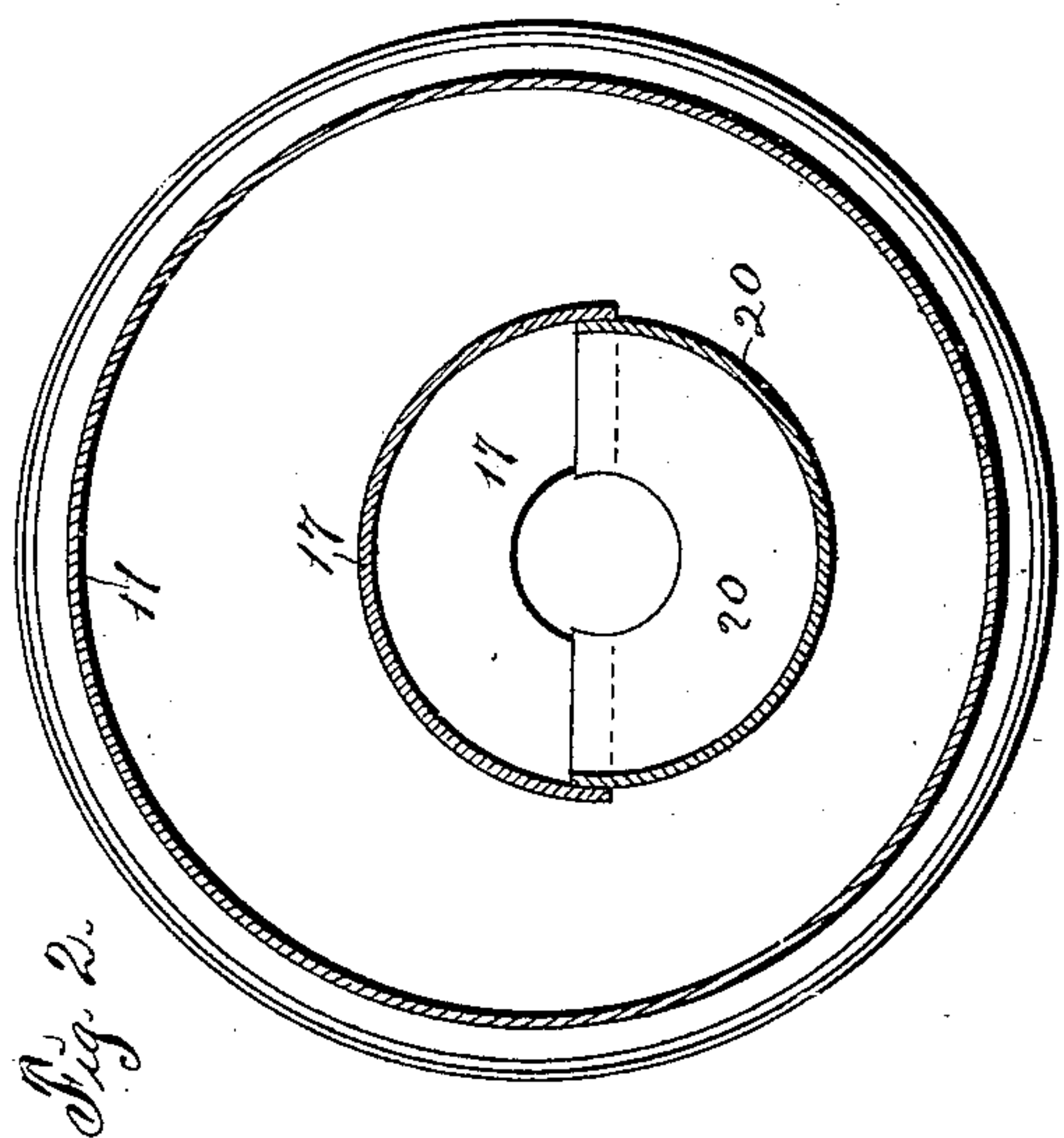
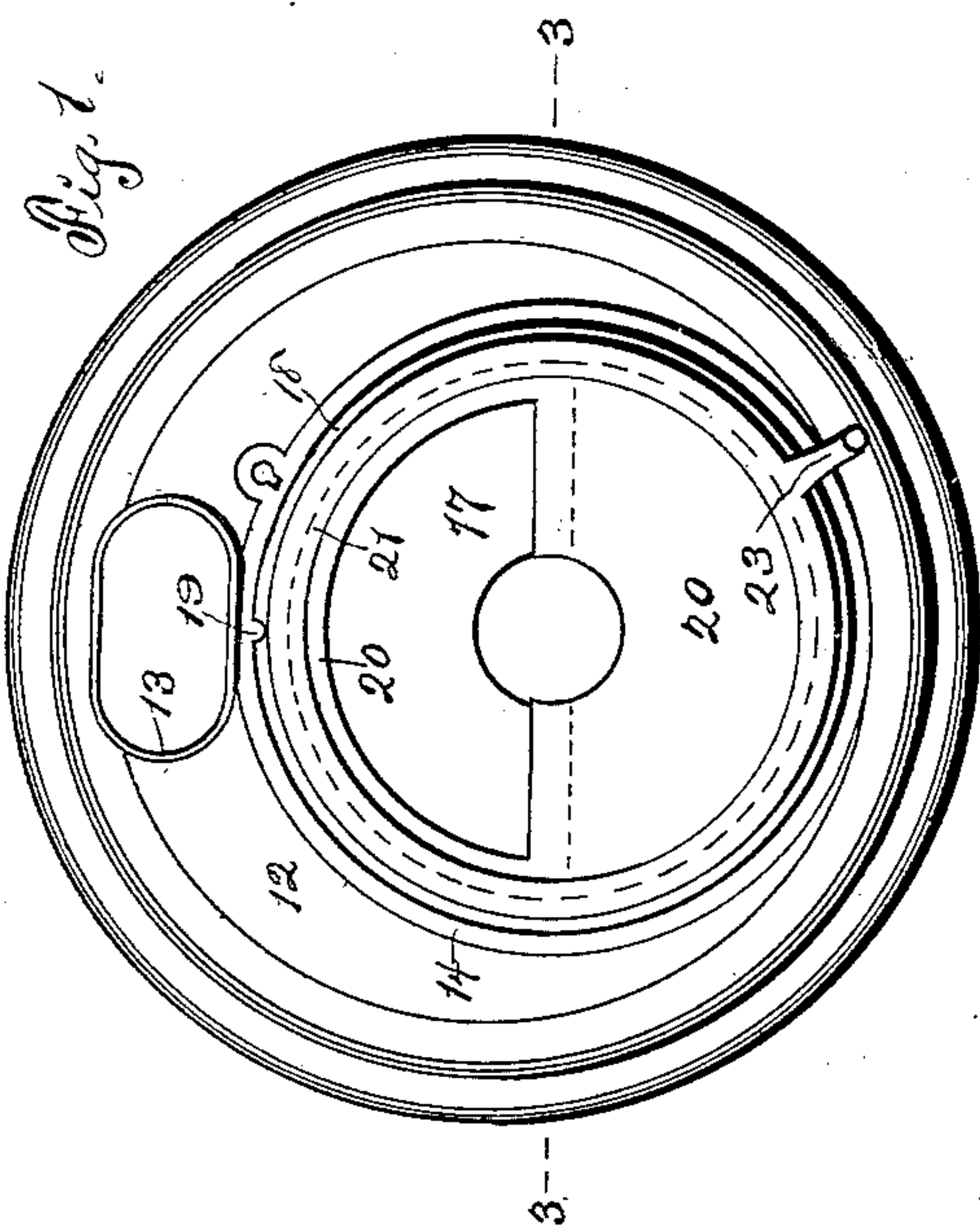
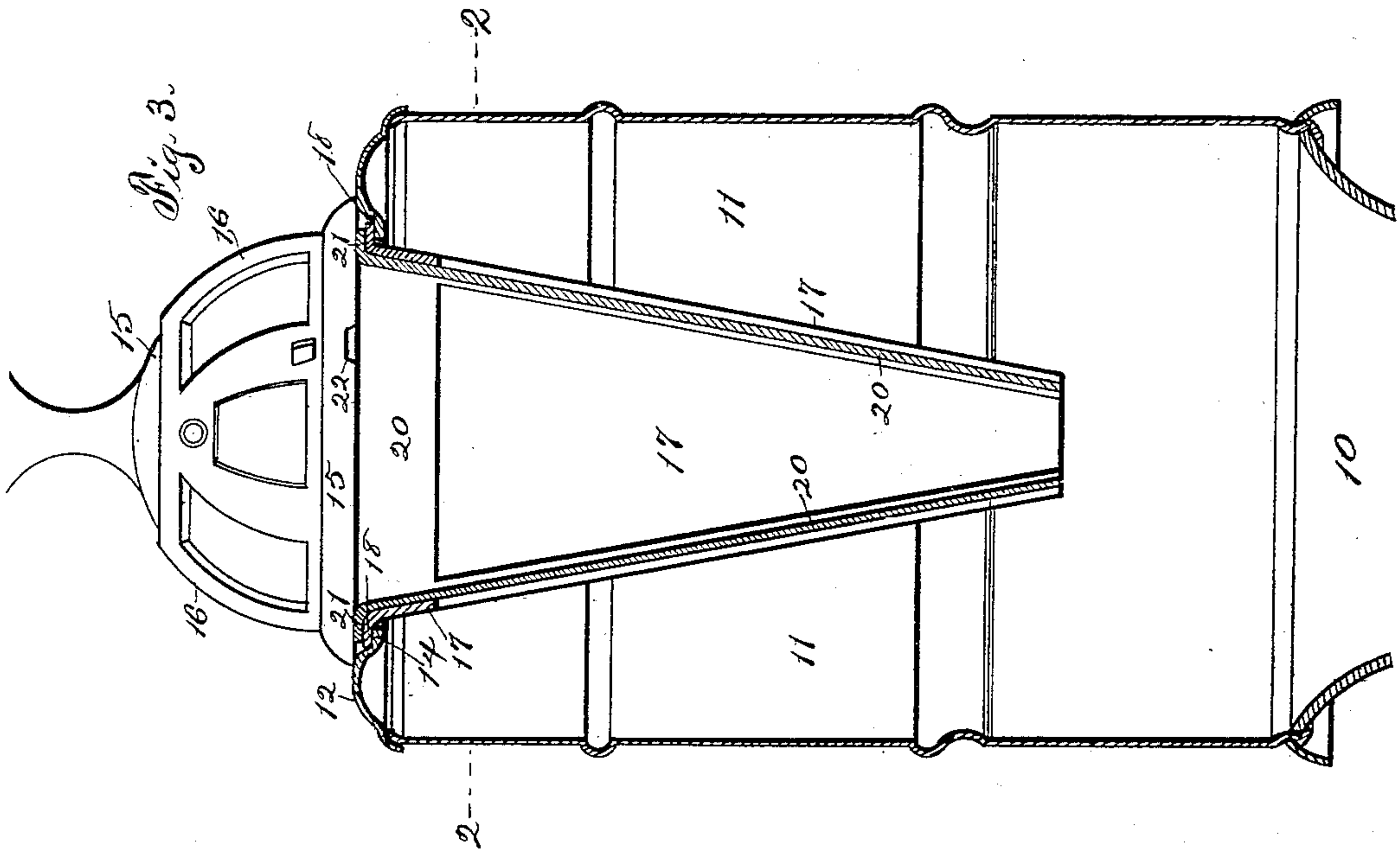
Patented Aug. 15, 1899.

C. T. MCCARROLL.
HOT BLAST STOVE.

(Application filed Feb. 2, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Attest:
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Inventor,
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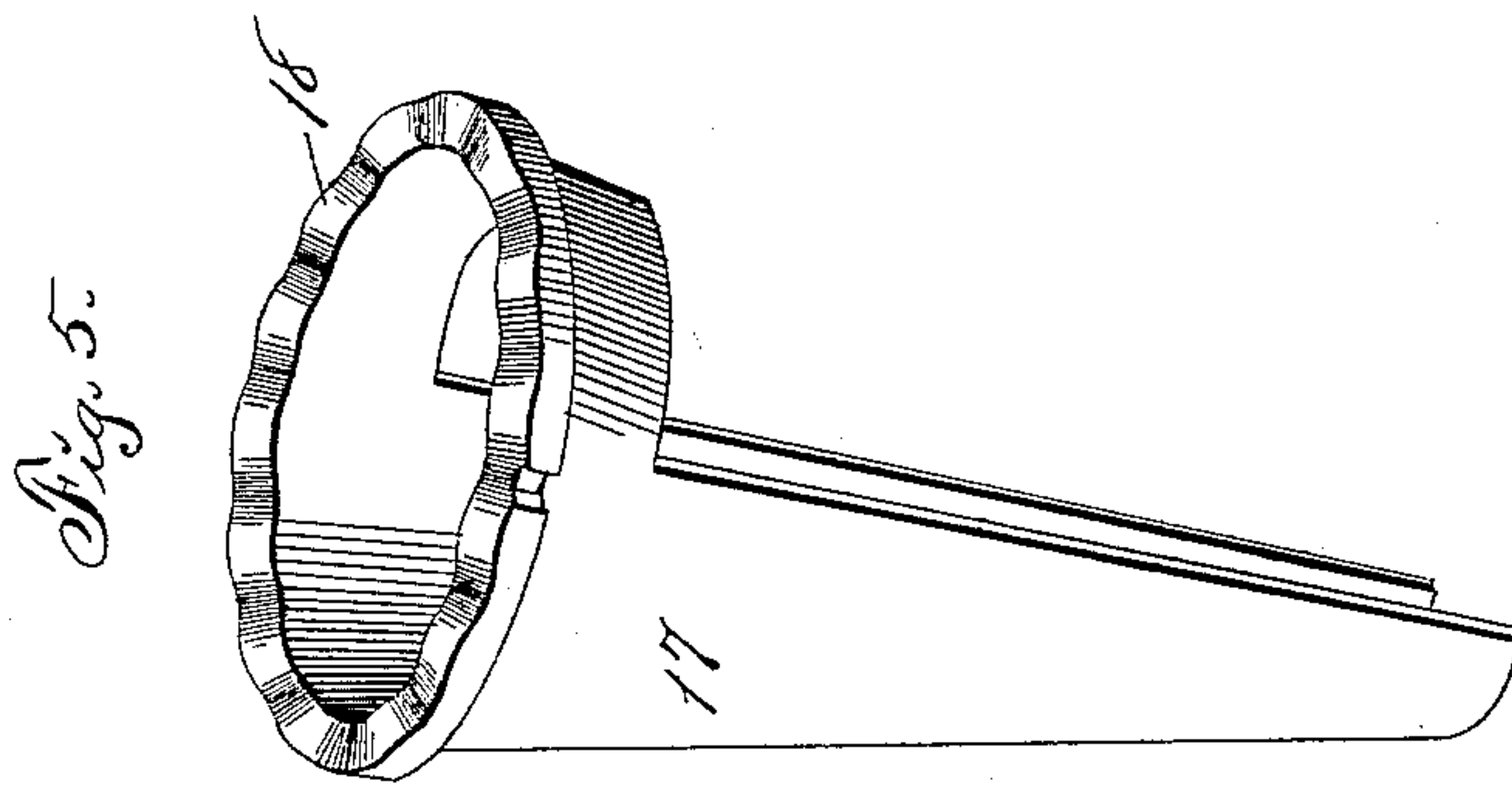
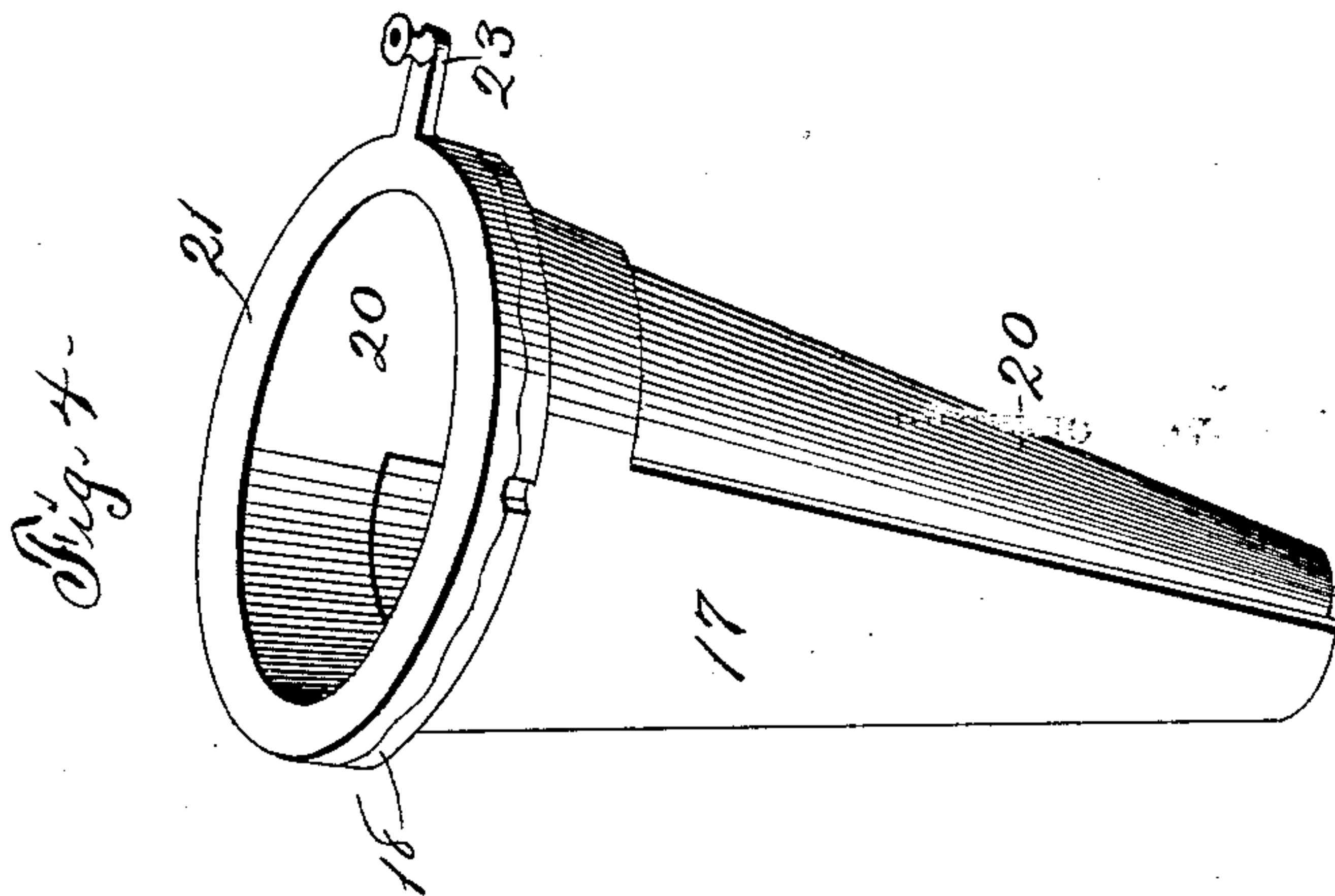
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

CHARLES T. MCCARROLL, OF OTTUMWA, IOWA.

HOT-BLAST STOVE.

SPECIFICATION forming part of Letters Patent No. 631,049, dated August 15, 1899.

Application filed February 2, 1899. Serial No. 704,323. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. MCCARROLL, a citizen of the United States of America, and a resident of Ottumwa, Wapello county, Iowa, have invented certain new and useful Improvements in Hot Blast Stoves, of which the following is a specification.

The object of this invention is to provide improved means for applying a hot blast to a stove especially formed for the burning of bituminous coal.

My invention consists in the combination of a stove provided with a grate and bottom draft of common form, a tapering draft-pipe mounted in the upper portion of the stove and open to the top thereof, means for controlling the draft through said pipe, and means for opening the pipe for the admission of fuel to the grate.

My invention consists, further, in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a plan or top view of the stove, the cover-urn being removed. Fig. 2 is a cross-section of the stove on the indicated line 2 2 of Fig. 3. Fig. 3 is an elevation, partly in section, of the stove or so much thereof as involves my invention, the section being taken on the indicated line 3 3 of Fig. 1. Fig. 4 is a perspective of the draft-tube removed from the stove and in closed position. Fig. 5 is a perspective of one of the members of the draft-tube.

In the construction of the stove, as shown, the numeral 10 designates the bowl, 11 the shell, and 12 the top plate, of a stove of ordinary form for the burning of bituminous coal, the bowl being provided with a grate and bottom draft of any desired shape. (Not shown.) The top plate 12 of the stove is formed with a smoke-aperture in its rear portion and a stove pipe thimble or collar 13, rising from the plate and surrounding the smoke-aperture. A circular opening is formed in the top plate 12 between the collar 13 and the front edge of the plate, and a depressed flange 14 is formed on or fixed to the top plate surrounding said opening. A cover-urn 15 is mounted on and pivoted to the top plate 12 and is arranged and so shaped as to cover the

opening in the plate when desired. Draft-openings are formed in the lower portion of the cover-urn, and an annular damper or valve 16, also provided with draft-openings, is mounted for revolution on the cover-urn and arranged and so shaped as to close the draft-openings of the urn when desired, the damper 16 being adjusted by manual operation or movement circumferentially of the urn. A draft-pipe section 17, formed with a circumferential flange 18 on its upper end, is mounted in the opening in the top plate 12 with its flange resting upon the flange 14. The draft-pipe section 17 is of inverted-frustum shape and open at both ends and is cut away on one side from a line near its upper end to the bottom thereof and nearly to its transverse center, thus forming the section as a flanged supporting-collar and a depending approximately semicircular wing, the whole depending from the top plate nearly to the top of the fuel in the stove. A notch is formed in the flange 18, and a lug 19 on the flange 14 of the top plate engages in said notch and limits and determines the movement of rotation of the draft-pipe section 17. A draft-pipe section 20, formed with a circumferential flange 21 on its upper end, is mounted in the draft-pipe section 17 with its flange resting on the upper face of the flange 18. The upper face of the flange 18 and the lower face of the flange 21 may be formed with corresponding and mating undulations in order that the section 20 will not bind in the section 17, but rather will rise and release therefrom when rotated, as hereinafter set forth.

The draft-pipe section 20 is of inverted-frustum shape and open at both ends and is cut away on one side from a line near its upper end to its lower end and nearly to its transverse center, thus forming the section as a counterpart on a slightly-smaller scale of the draft-pipe section 17, within which it is mounted. The edges of the depending portions of the draft-pipe sections overlap, as illustrated, and form a complete tapering pipe from the top of the stove-chamber nearly to the top of the fuel within said stove. A notch 22 is formed in the lower edge of the cover-urn 15, and a stem 23 is formed on and extends radially from the flange 21 through said notch, by means of which stem manual force may

be applied to rotate the draft-pipe section 20 and concentrically parallel the depending portions of the said sections as required to open the same to admit of fuel being placed in the stove therethrough. The positioning of the sections relatively as just described provides a large and convenient opening for the admission of fuel.

In the provision of the tapering draft-pipe leading from the top of the stove nearly to the fuel therein a constant hot blast is insured having great force, whereby ordinary bituminous coal may be burned at a white heat and caused to give off a white and smokeless flame, whereby the entire consumption and combustion of the fuel elements of the coal is attained with material economy in the use of the stove.

It is to be understood that the cover-urn is swung laterally whenever the draft-pipe sections are adjusted to admit fuel to the stove and that the draft of the hot blast is controlled entirely by the damper or valve 16.

I claim as my invention—

1. The combination of a stove having a top plate provided with an aperture and a flange surrounding said aperture, a tapering draft-pipe having a flange on its upper end resting on the flange of the top plate, a tapering draft-pipe having a flange on its upper end resting on the flange of the first said pipe, the contacting faces of the flanges on said pipes being undulated and portions of both draft-pipes being cut away to provide a fuel-opening, means for retaining the outer pipe against rotation and means, arranged for manual actuation, for rotating the inner pipe, together

with means for controlling the flow of air through said pipe.

2. In a stove of the class described, the draft-pipe formed of two concentric sections, flanges on the upper ends of said sections and contacting with each other, the contacting faces of said flanges being undulated and the depending portions of the sections being formed with notches or openings laterally thereof, one of the flanges being provided with a handle whereby one of the sections may be revolved relative to the remaining section to register the notches or openings of the depending portions for the admission of fuel to a stove.

3. A draft-pipe comprising the section 17 formed of a ring and a depending semifrustum-shaped body and a peripheral flange on the ring formed with a radial notch and an upper undulating surface, and a section 20 formed of a ring arranged for rotation in the ring of the section 17, and a semifrustum-shaped body depending from the ring and arranged for rotation within the depending body of the section 17, a peripheral flange on the ring formed with a lower undulating surface arranged for contact with the upper undulating surface of the flange on the section 17 and a stem or handle radially mounted on the flange of the section 20.

Signed by me at Ottumwa, Iowa, this 4th day of January, 1899.

CHARLES T. MCCARROLL.

Witnesses:

CHAS. ALEX. SMITH,
ALICE CAMPBELL.