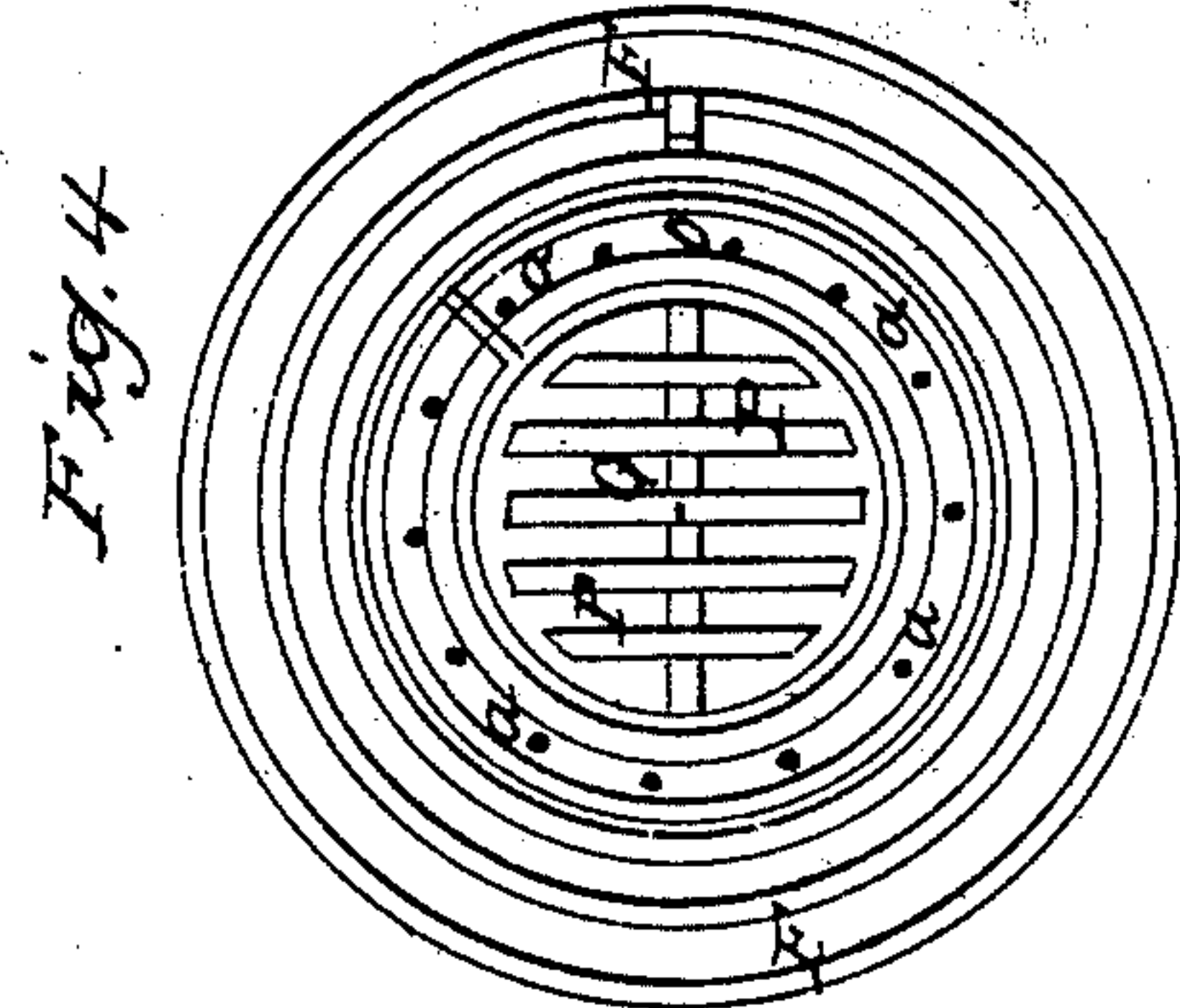
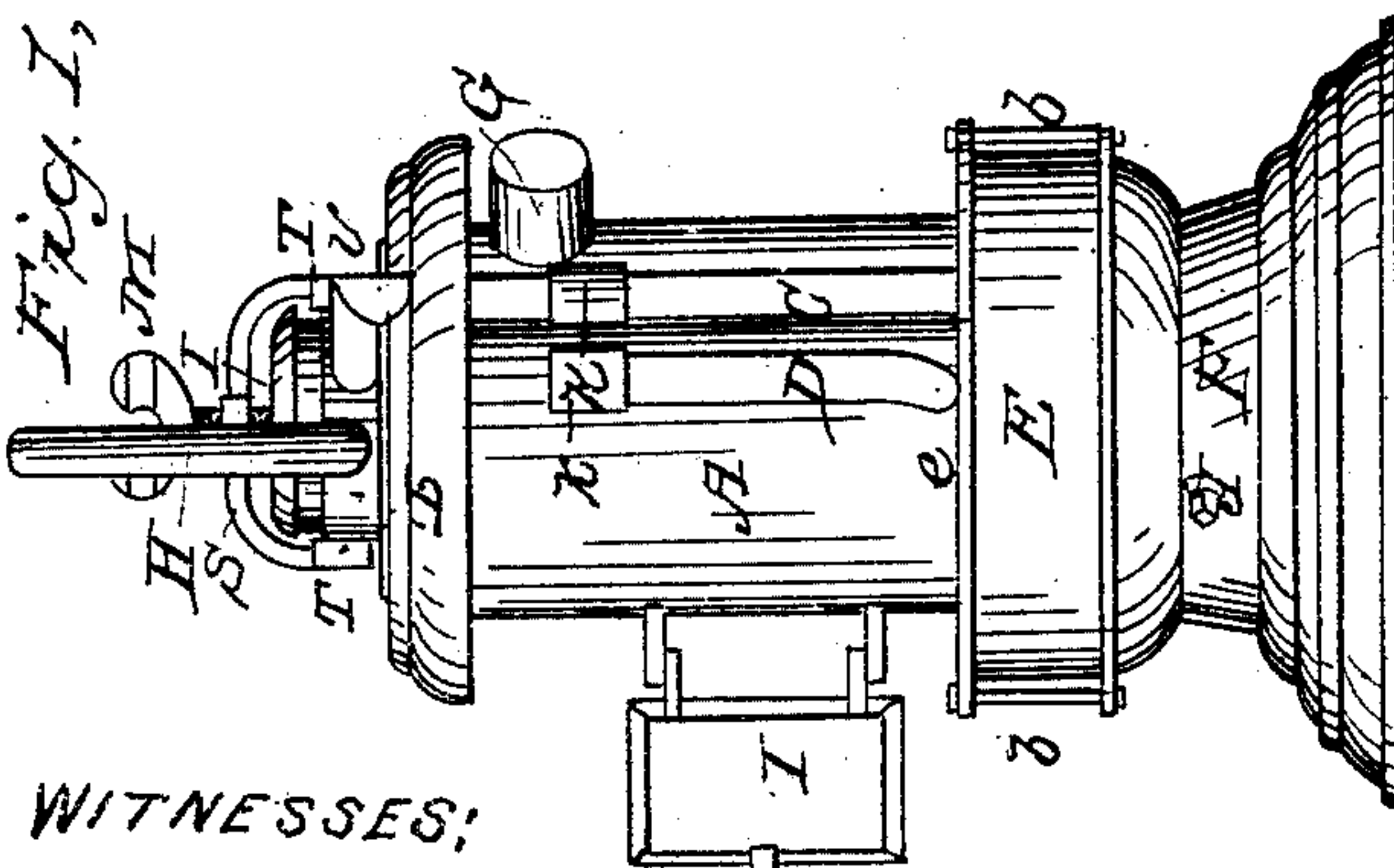
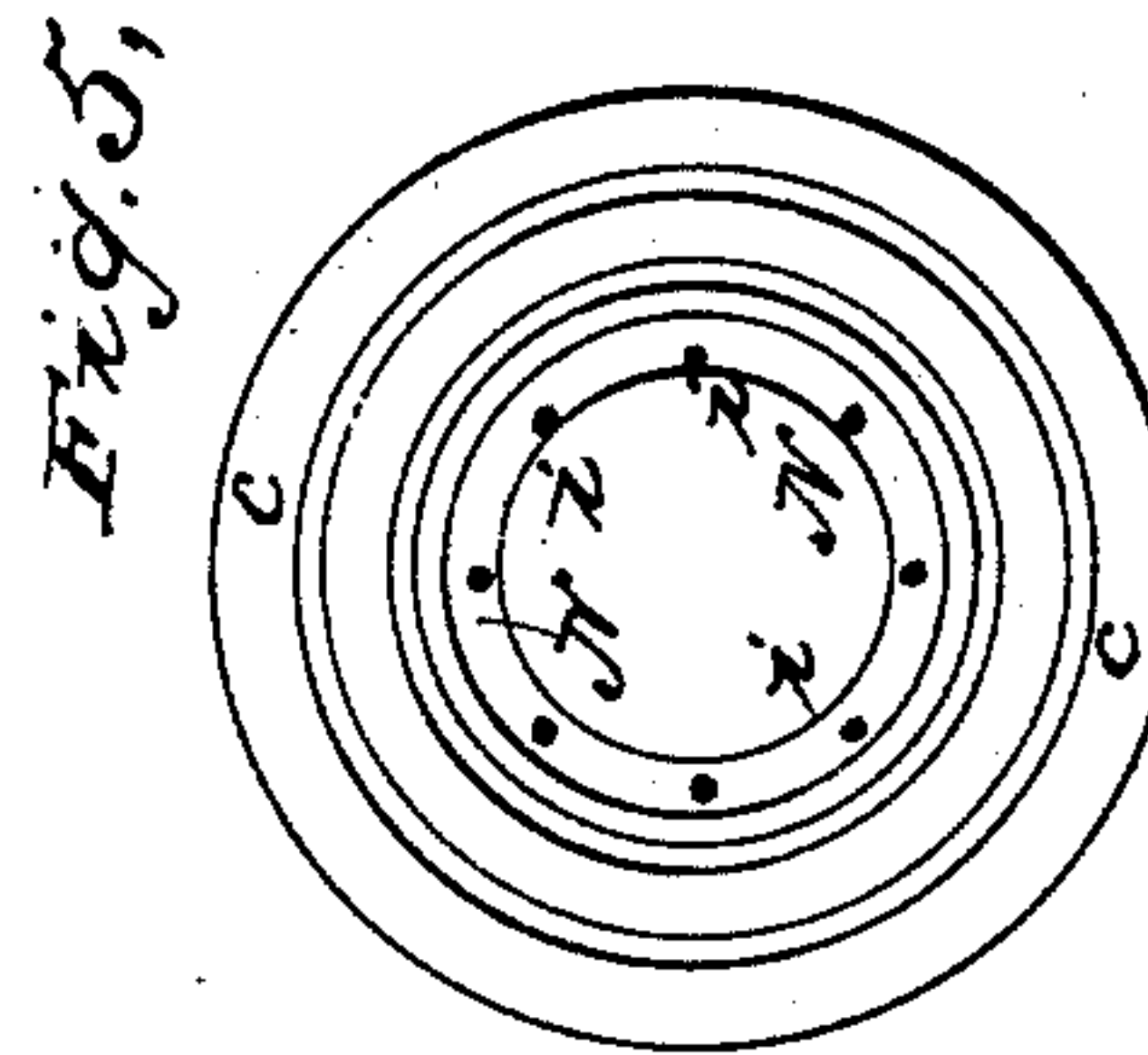
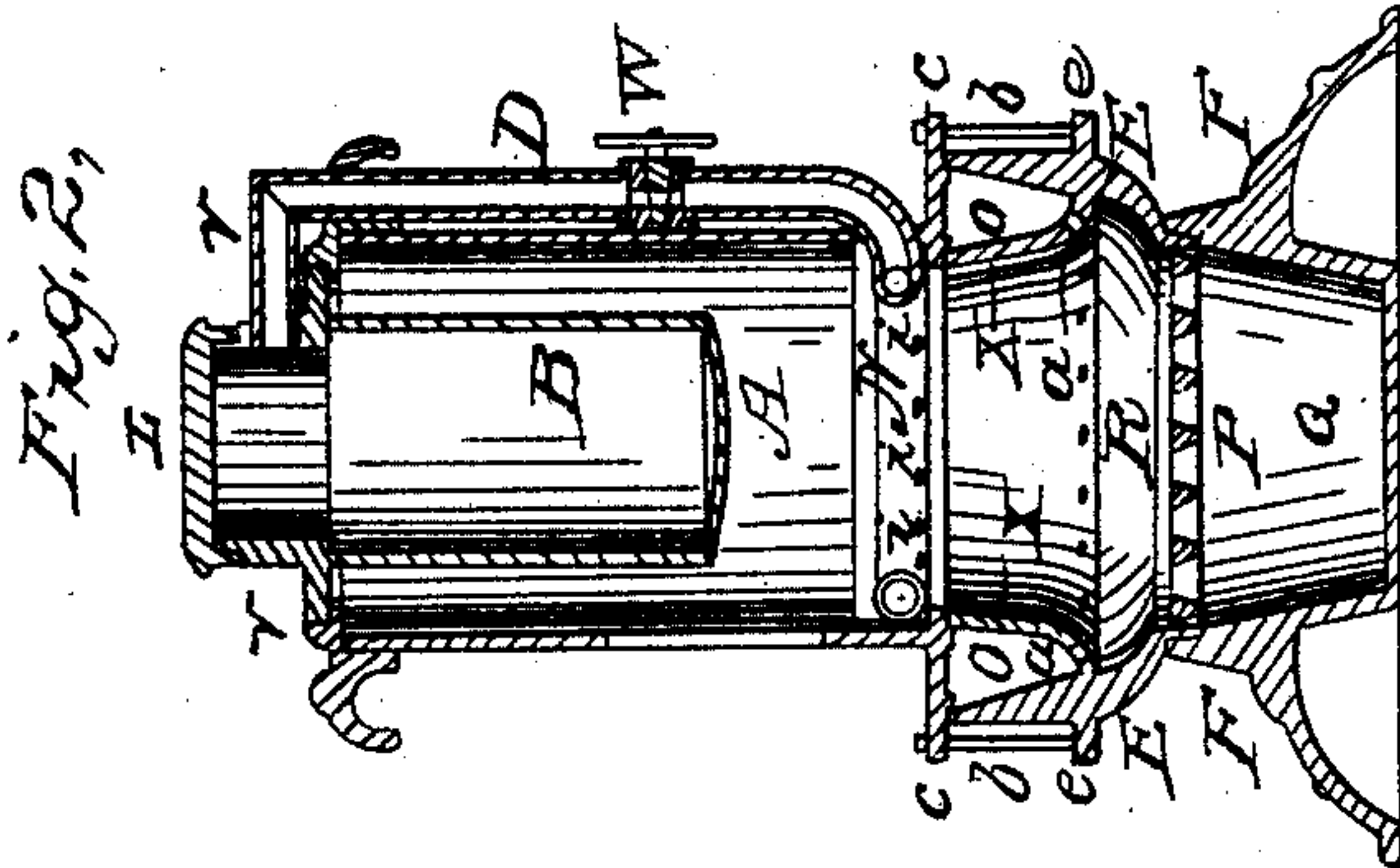
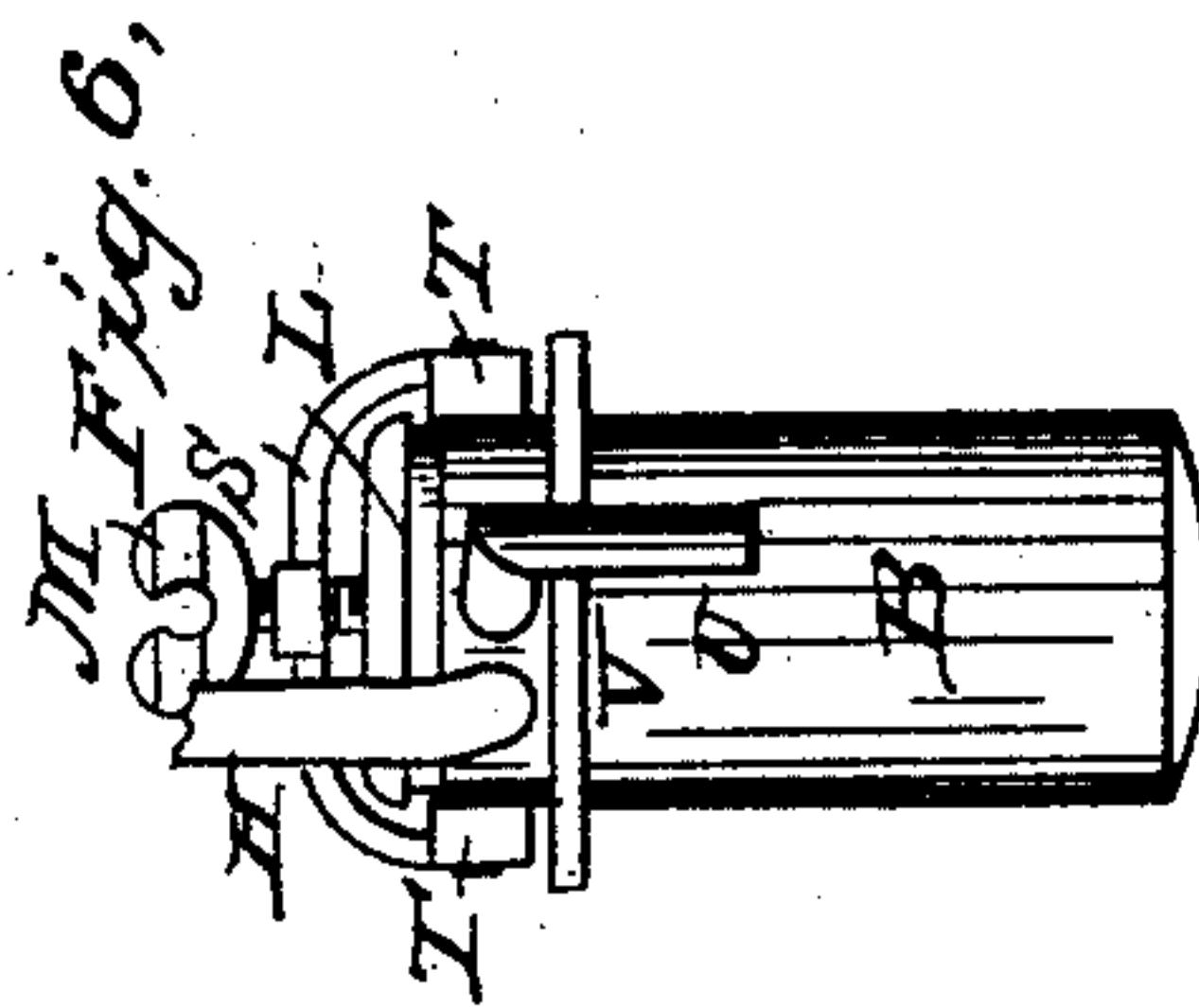
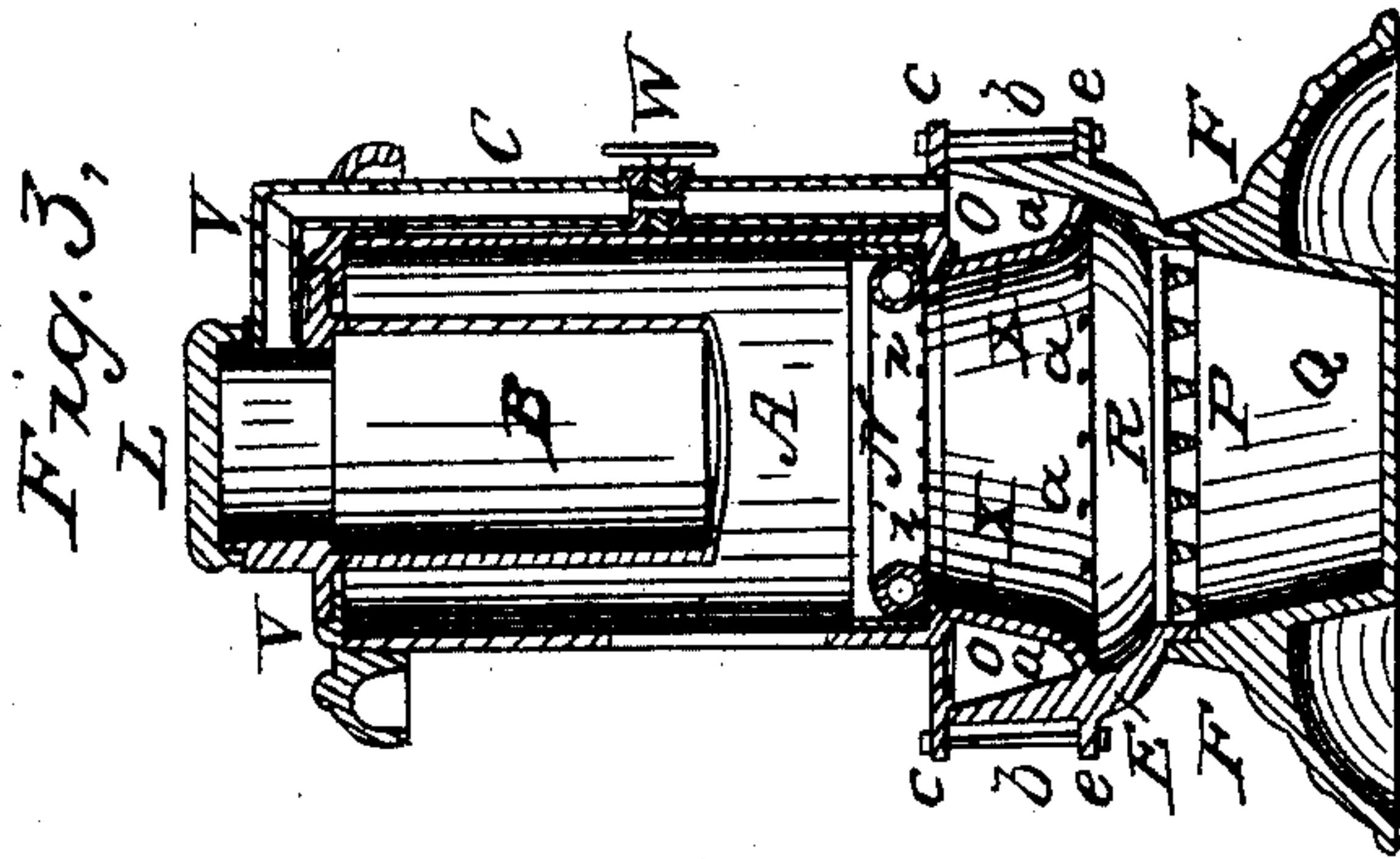


S. GROOM.
Heating Stove.

No. 34,929.

Patented April 8, 1862.



WITNESSES:
Franklin Scott
Marcus P. Norton

INVENTOR:
S. Groom

UNITED STATES PATENT OFFICE.

SMITH GROOM, OF TROY, NEW YORK, ASSIGNOR TO HIMSELF, JACOB SHAVOR,
AND LEWIS POTTER, OF SAME PLACE.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. 34,929, dated April 8, 1862.

To all whom it may concern:

Be it known that I, SMITH GROOM, of the city of Troy, county of Rensselaer, and State of New York, have invented new and useful Improvements in Heating and Cooking Stoves, which I denominate "Water and Coal or Wood Burner;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Like letters represent like and corresponding parts.

Figure 1 is an elevation of a stove for burning coal, wood, or other combustible material in connection with the use of steam. Fig. 2 is a sectional view through the steam-pipe D, perpendicular with the same and the stove; and Fig. 3 is a sectional view through the steam-pipe C, perpendicular with the same and with the stove; and Fig. 4 is a transverse section over the top of the fire-grate P, and showing apertures through the partition between the fire-chamber and annular steam-chamber, hereinafter described, for the purpose of admitting steam to the under side of the combustible material in the fire-chamber. Fig. 5 is a transverse section over the top of the fire-chamber, showing the circular steam-pipe through which steam is admitted by apertures in said pipe into the fire-chamber over the fire or combustible material therein. Fig. 6 shows the apparatus by which steam is generated to supply combustion to aid and facilitate the same in the fire-chamber.

The nature of my improvements, described in this specification, consists in the introduction of steam into the fire-chamber and combustible material therein in the manner and by means and combination of the several parts hereinafter described and set forth.

To enable others skilled in the art to which my invention relates to construct and use the same, I will here proceed to describe the same, which is as follows, to wit:

I construct the base, as seen at F, Figs. 2 and 3, with an ash-chamber Q therein. On the top of this base F, I construct the outside wall E of the fire-chamber R. This wall may be of any desired height and thickness. On the inside of this wall E, I construct another wall X, which unites with the said wall E at

or a short distance above the said fire-grate P, and which extends upward to the same height of the said wall E, forming thereby the annular steam-chamber O, Figs. 2 and 3, which said annular chamber is completed by the cap or plate C, same figures, which plate is securely fastened thereon and thereto by the use of rods or bolts b, same figures, passing through said plate and through the projection e, cast on the wall E. There may be used as many of such bolts as required to hold the pressure of the steam in the said annular chamber O. Through the lower part of said inside wall of said annular steam-chamber I construct apertures a, Figs. 2, 3, and 4, through which I admit steam in the lower part of the fire and fire-chamber R, which steam thus admitted passes up and through the material on fire in the said fire-chamber R, aiding thereby combustion. On the top of this fire-chamber thus formed I construct the cylinder the A, Figs. 1, 2, and 3, which may extend upward to any height desired. At the bottom of said upper cylinder A, I construct an annular steam-tube N, which steam-tube is securely fastened to said cylinder and immediately over and above the said fire-chamber R. The fire-chamber R communicates with the said cylinder A through the inside of the said annular steam-tube N. Through the under side of this steam-tube, projecting over the said fire-chamber R, I construct apertures i, Figs. 1, 2, and 5, through which the steam in said annular pipe is admitted over the fire or combustible material in the said fire-chamber, aiding thereby the consumption of the products of combustion which arise from the fire below. The heat thus made arises in the said cylinder A.

B, Figs. 1, 2, 3, and 6, is the boiler or reservoir for the water making the steam used in the said chambers, hereinbefore described. This boiler or reservoir passes through the top of the said cylinder A and downward therein to any distance required. The ring or projection V, Figs. 2, 3, and 6, holds the said boiler in its proper position thereon and therein.

T, Fig. 6, are pins upon which the bail S turn when it is desired for any purpose to remove from said boiler B the cap or top L, Figs. 1, 2, 3, and 6, by means of which the said

boiler or reservoir B may be supplied with water.

M, Figs. 1 and 6, is a screw passing through the said bail, so as to securely fasten down the said cap or top L while the steam is being generated in said boiler.

D, Figs. 1 and 2, is a pipe, of any desired diameter and capacity, firmly connected to and with said boiler B and with the said annular steam-pipe N, Figs. 2, 3, and 5, through which steam from said boiler is admitted to said annular steam-pipe. The quantity of steam to be admitted to the said fire-chamber over the fire therein is regulated by means of the stop-cock W, Fig. 2.

C, Figs. 1 and 3, is also a pipe of construction like the said pipe D. This pipe is securely fastened to and with the said boiler B, at the upper part thereof, and is connected to and with the said annular steam-chamber O. The quantity of steam to be admitted to said annular steam-chamber is also regulated by means of a stop-cock W which of course regulates the quantity of steam admitted to the fire through apertures *a*, Figs. 2, 3, and 4.

G, Fig. 1, is the exit for conducting-pipe. The ashes falling from the fire-grate P into the ash pan or chamber Q are taken therefrom through an opening in said base made for that purpose and for the purpose of admitting air to start the fire or combustion, which, when done, is closed air-tight by any means which will accomplish the same, as air is not used in or in any wise admitted to this stove to aid

or facilitate the combustion of material or the products of combustion, or for any other purpose than as aforesaid, for combustion is carried on by the use of steam, as aforesaid, and not by the use of air.

The door I, Fig. 1, is used for supplying the fire-chamber with combustible material, which, when done, is also closed perfectly air-tight, so that no air is then admitted.

The entire stove is made air-tight.

Any kind of combustible material may be used in the stove with a good result and with complete success.

These improvements may be applied to furnaces, steam and locomotive engines, and to all kinds of stoves.

Having thus described my improvements, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the annular steam-chamber O with the fire-chamber R and the outside wall E, substantially as and for the purpose herein described and set forth.

2. The combination of the annular chamber O and the annular steam-pipe N with the boiler B, by means of the pipes D C, substantially as and for the purpose herein described and set forth.

In testimony whereof I have on this 17th day of February, 1862, hereunto set my hand.

SMITH GROOM.

Witnesses:

CHARLES EDDY,
MARCUS P. NORTON.