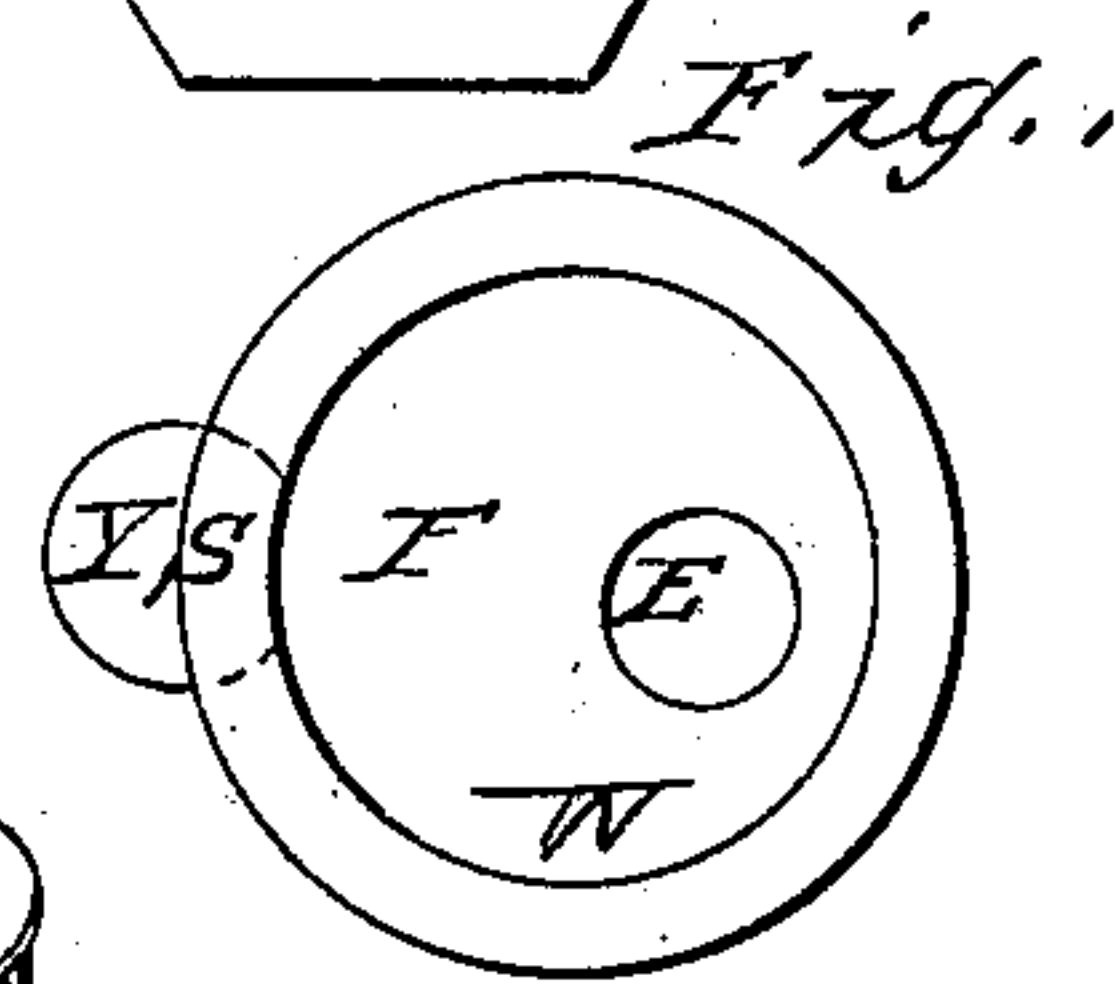
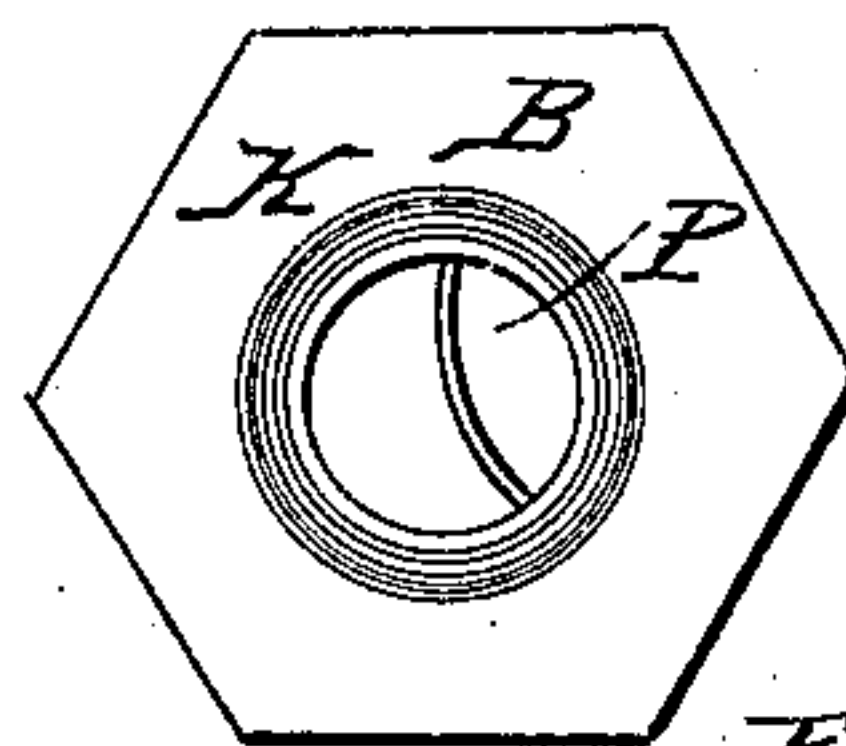
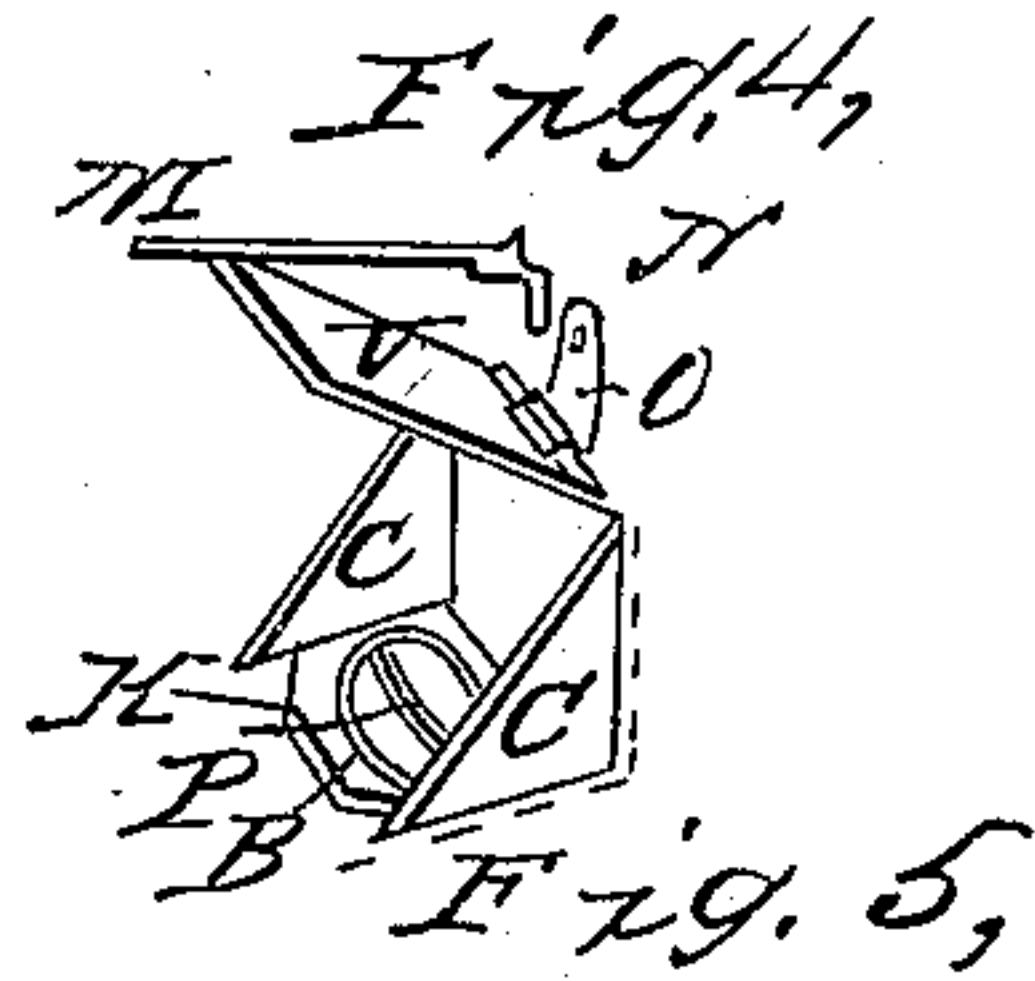
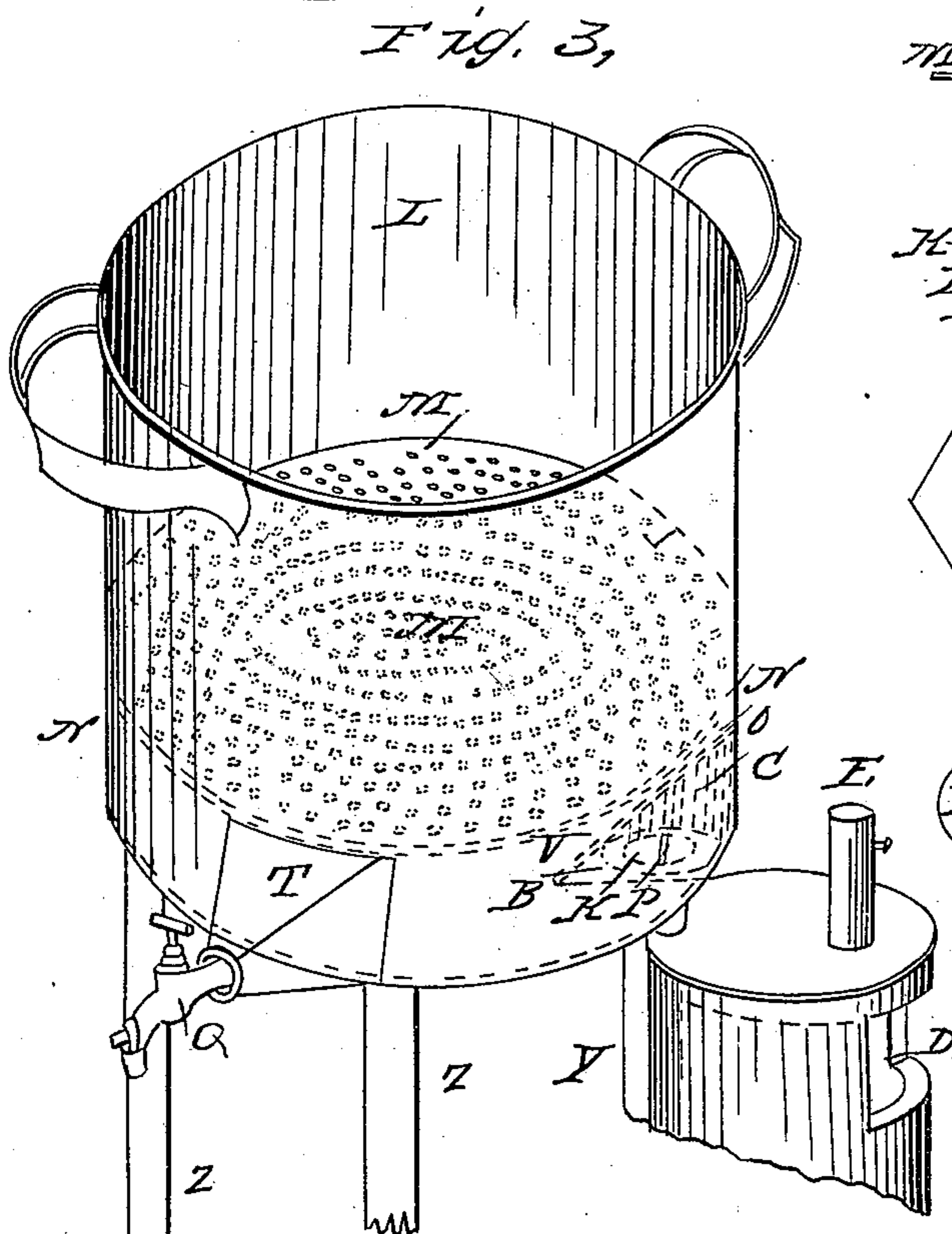
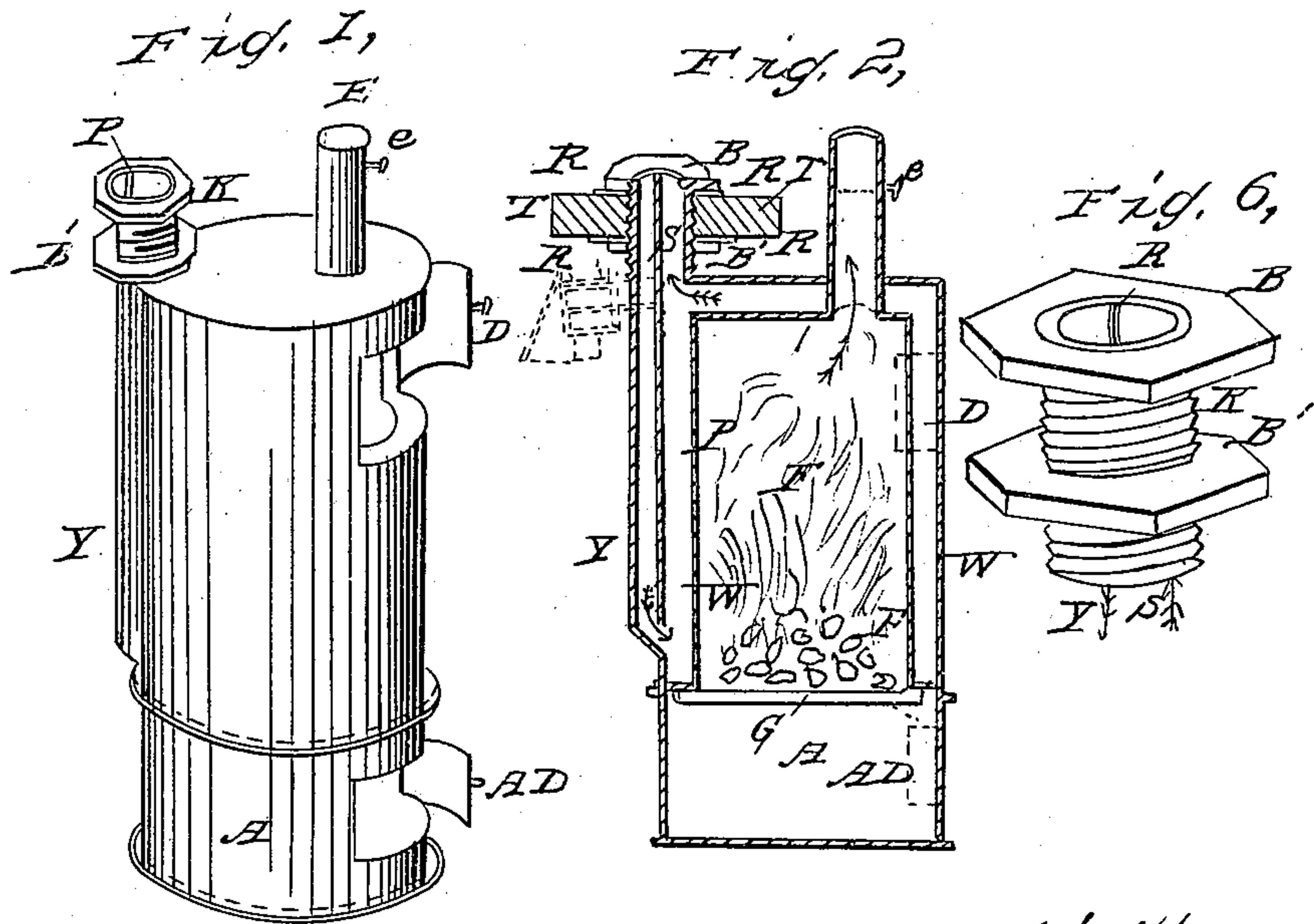


H. HUMPHVILLE, Jr.

Hot Water Apparatus.

No. 29,267.

Patented July 24, 1860.



WITNESSES:

J. G. Collins
Jacob Huffer

INVENTOR:

Henry Humphville Jr

UNITED STATES PATENT OFFICE.

HENRY HUMPHREVILLE, JR., OF STRASBURG, PENNSYLVANIA.

HOT-WATER APPARATUS.

Specification of Letters Patent No. 29,267, dated July 24, 1860.

To all whom it may concern:

Be it known that I, HENRY HUMPHREVILLE, Jr., of the borough of Strasburg, in the county of Lancaster and State of Pennsylvania, have invented a new and useful improvement on hot-water or steam generating furnaces, for steaming vegetables, cloths, &c., and for boiling and heating purposes; and I do hereby declare that the following is a full, clear, and exact description of the construction and application of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a perspective view of the furnace, with the double chambered tubular screw K, (Fig. 6,) affixed. This tubular screw, with its movable adjusting burs B, B', is for the purpose of connecting the furnace, with a vessel, containing the material to be boiled or steamed. Fig. 2, is a vertical section of the same showing the fire chamber F, surrounded from the grate upward and over the top, around the pipe E, with a water box W, closed beneath, and opening below into the external prolongation or passage Y, of the tube K, and above into the inner chamber or passage S of said tube K. The walls of the furnace can be made out of boiler or common sheet-iron or tin plate, with an opening through the water box for a feed door D, as shown in Fig. 1, grate G, and ash box and door A, D. Fig. 3, illustrates a large vessel L, attached to the furnace (shown in part). This vessel is provided with a movable galvanized sheet-iron bottom or partition M, perforated for the transmission of steam entering through the tubular attachment K, over which there is a valve V, hinged at O, to the inside of the vessel, which valve rests on the side pieces C, (Fig. 4) beneath said bottom M. There is also a draining spout and faucet T, Q, attached to the true bottom of the vessel. Fig. 5, shows the top of one of the burs B, around the double chambered tube. Fig. 7, shows the top of the furnace and the outer passage Y of the tube K.

The drawings clearly illustrate the structure and connection of this furnace.

T, Fig. 2, represents the bottom of the vessel, fixed over the tube between the adjustable burs B, B', having pieces R, of leather or gum elastic intervening to secure a water tight joint.

The tube K, may be inserted or affixed to

the furnace horizontally as well as perpendicularly for certain purposes; and vessels of wood or tin attached in like manner, as shown by the dotted lines.

The uses to which this apparatus is applicable are various, such as steaming vegetables, cloths, yarns, wood, &c., and also heating water, and boiling. As it is requisite that the vessels L, for containing such different substances or articles to be steamed or boiled, be made of different sizes and of different materials, (such as tin or wood,) and consequently of different thicknesses of bottom to be attached to the tube K, it is necessary, in order that said tube shall not project farther up in the vessel than is desirable, that the lower bur B', which forms the bed or support for said vessel on the tubular screw, be made adjustable, up and down, to accommodate such difference in thickness of the vessels' bottoms. It is also desirable in various uses of the apparatus, to heat the bottom of the vessel L, as little as possible, especially in steaming such substances or articles as require the vessel to be made of wood. This arrangement of the adjustable burs on the tubular screw, enables the vessel to be so raised from the top of the furnace, as to avoid contact with it, and to receive but little heat therefrom. To avoid heat from the furnace still further, it will be seen that the tube K, enters the vessel near one side, the greater portion of the vessel being thrown back from the furnace.

The perforations of the removable, galvanized partition, or bottom, M, of the vessel L, may be made sufficiently large to allow the water a free action through them when it is desirable to boil, instead of steam, the substance or articles placed on said partition. This partition being situated above the true bottom of the vessel L, prevents the substance thereon from coming in contact with the sediment gathered below; and also prevents said substance from clogging or choking the mouth of the tube K, which it would do if the partition were not used. The mouth of the tube being always a little raised above the bottom of the vessel, effectually prevents the sediment gathered on said bottom from running into the tube; but in removing the partition, or bottom, M, from the vessel, with vegetable or other substance on it, it is necessary to protect the mouth of the tube by the valve V, to prevent such substance from falling in.

Thus, it will be seen that a very cheap, effective, simple, and convenient arrangement is provided, which may not only be used for steaming purposes, but, without
5 any alteration whatever, be used in the same manner for boiling; the only difference being, that in boiling, a greater amount of water is poured into the vessel. In steaming, a thin depth of water, only, is kept in
10 the bottom of the vessel L.

I am aware that various furnaces and boilers for steaming and boiling purposes, exhibiting somewhat the general features of my arrangement, have before been known;
15 but so far as I am aware, my method of attaching vessels of different thicknesses of bottom to the furnace and adjusting the same up or down by means of the tubular screw K, and its adjustable burs B, B', is

new. Also, so far as I am aware, no vessel 20 attached directly to the furnace, and adapted both to steaming and boiling purposes, equivalent to mine, has ever before been known.

What I claim as my invention and desire 25 to secure by Letters Patent, is—

The vessel L, provided with a removable, perforated partition M, and valve V, combined with, and secured to, the furnace, by means of the tubular screw K, and adjust- 30 able burs B, B', on said furnace, substantially as and for the purposes herein specified.

HENRY HUMPHREVILLE, JR.

Witnesses:

S. G. MUSSER,
JACOB STAUFFER.