

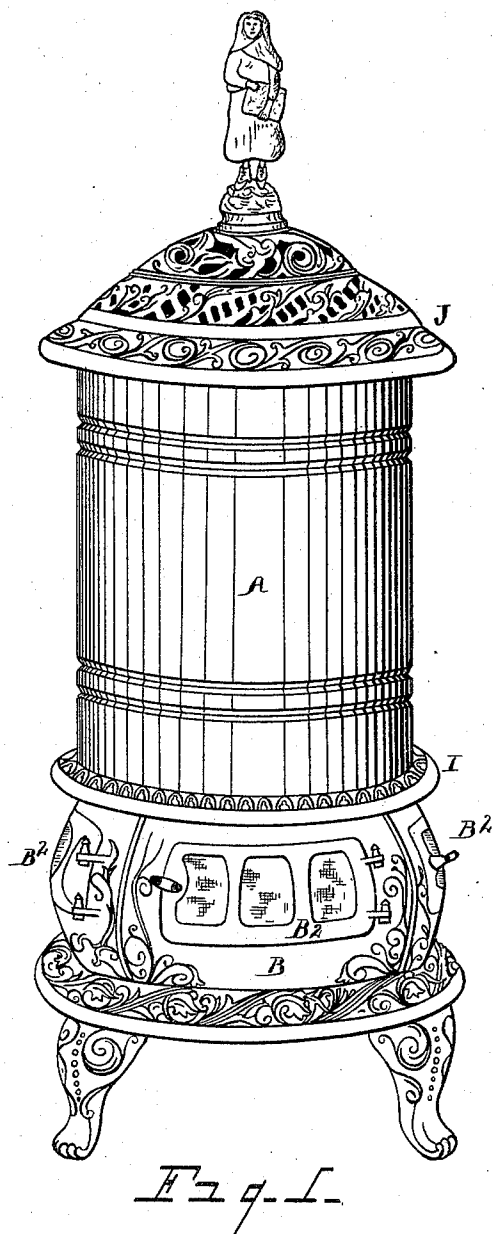
(No Model.)

3 Sheets—Sheet 1.

E. S. HOYT.
GAS STOVE.

No. 537,641.

Patented Apr. 16, 1895.



Witnesses

O. B. Baerger

M. A. Martin

E. S. Hoyt Inventor

By Attorney
Newell S. Wright

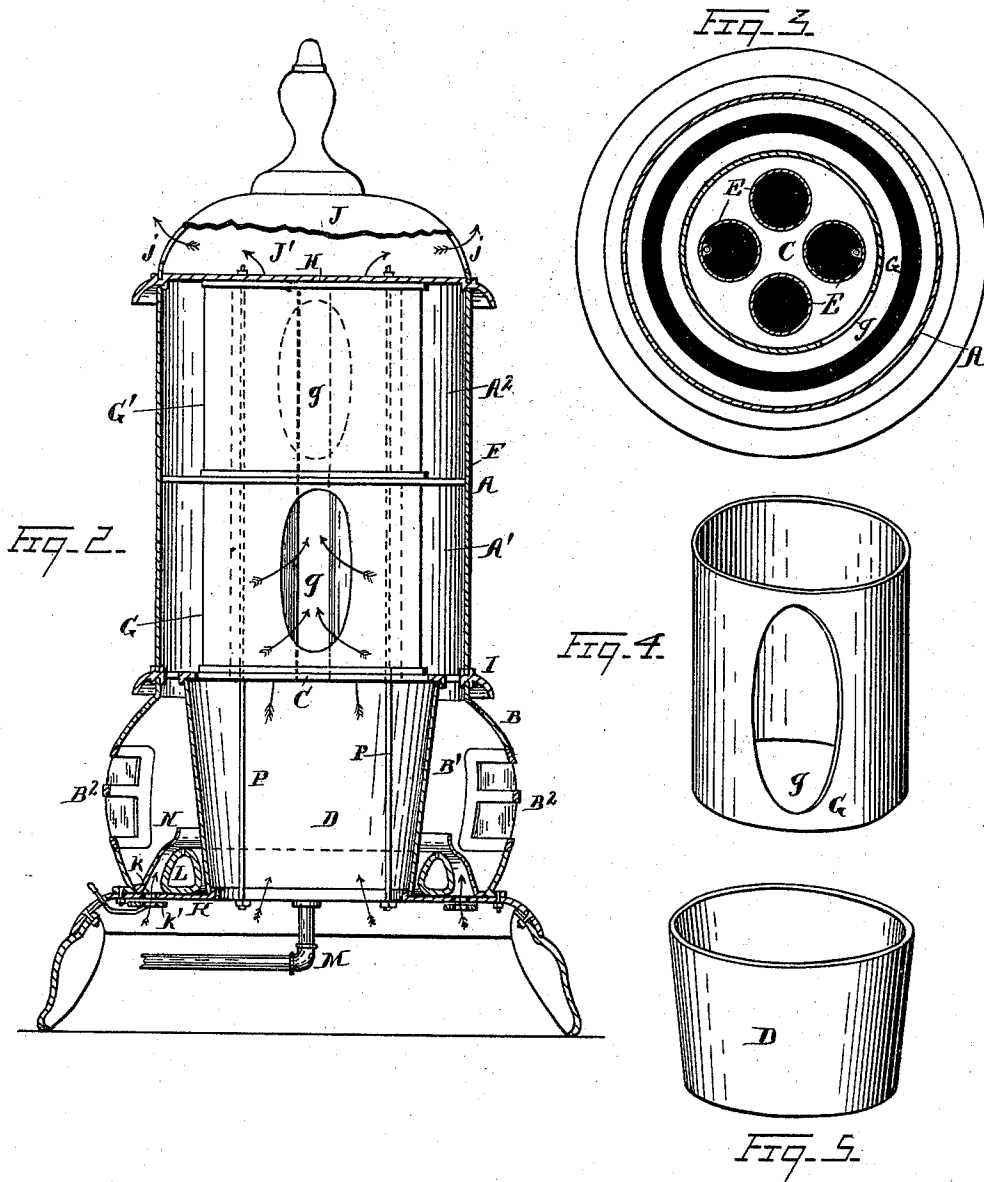
(No Model.)

3 Sheets—Sheet 2.

E. S. HOYT.
GAS STOVE.

No. 537,641.

Patented Apr. 16, 1895.



Witnesses

P. Baenziger

M. A. Martin

Ezra S. Hoyt

Inventor

By Attorney

Newell S. Wright

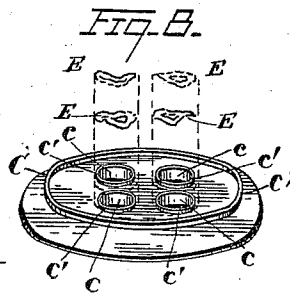
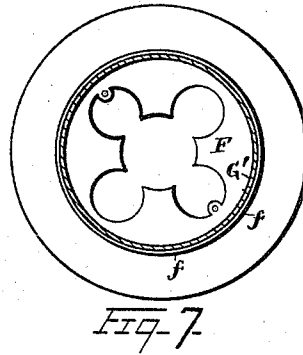
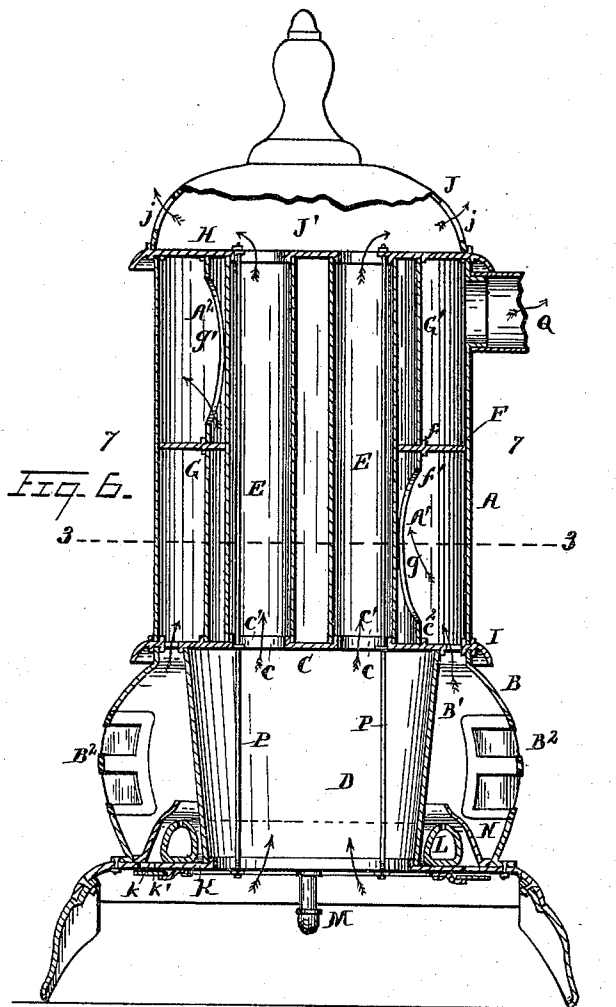
(No Model.)

3 Sheets—Sheet 3.

E. S. HOYT.
GAS STOVE.

No. 537,641.

Patented Apr. 16, 1895.



Witnesses

O. B. Baumgardner

M. A. Martin

E. S. Hoyt Inventor

By Attorney

Newell S. Wright

UNITED STATES PATENT OFFICE.

EZRA S. HOYT, OF DETROIT, MICHIGAN.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 537,641, dated April 16, 1895.

Application filed March 17, 1894. Renewed March 18, 1895. Serial No. 542,224. (No model.)

To all whom it may concern:

Be it known that I, EZRA S. HOYT, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Gas-Stoves; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in gas stoves for heating purposes, and it consists of the construction, combination and arrangement of devices and appliances hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation illustrating my invention. Fig. 2 is a vertical section. Fig. 3 is a horizontal section on the line 3—3, Fig. 6. Fig. 4 is a detail view in perspective of one of the interior cylinders within the drum. Fig. 5 is a detail view of the lower cylinder within the combustion chamber. Fig. 6 is a vertical section at right angles to that shown in Fig. 2. Fig. 7 is a horizontal section on the line 7—7, Fig. 6. Fig. 8 is a detail view of the plate at the base of the drum.

I carry out my invention as follows:

A represents the drum of my improved gas stove.

B denotes the walls of the combustion chamber B' provided with suitable doors B².

Between the combustion chamber and the interior of the drum is located an annular plate C.

Within the combustion chamber is located a cylinder D preferably flaring at the top as shown, said cylinder being open at the base. The plate C rests upon the upper end of the cylinder D and is provided with a series of orifices "c" through which the interior of the cylinder D communicates with vertical flues E, four in number being indicated in the drawings as seen more particularly in Fig. 3. The plate C is shown constructed with flanges c' about which are engaged the flues E, respectively.

Within the drum A is located a partition plate F, shown in Fig. 7 in plan, through

which the flues E pass, said plate F being constructed with flanges "f" and f' upon its upper and under surfaces as shown. The plate F thus divides the interior of the drum A into two interior chambers A' and A². Within said interior chambers A' and A² are located cylinders G and G' respectively, each constructed as shown in Fig. 4, the one being the counterpart of the other. The cylinders G and G' are located one above the other in the chambers A' and A².

At the top of the interior chamber A² is a plate H through which the flues E communicate, the under surface of said plate being formed with flanges to engage the flues and the cylinder within the chambers A², said cylinder being engaged at its base by the flange "f" of the plate F. The cylinder G is held in place by the flange f' on the plate F and by a flange c² on the plate C. The cylinders G and G' are each constructed with an orifice as indicated at "g," the orifice "g" of the two cylinders, however, being preferably arranged on opposite sides within the chambers A' and A², as shown more particularly and indicated in Figs. 2 and 6.

Between the drum A and the walls B is located an annular ring I flanged on the top and on the bottom to engage said walls and drum respectively.

The combustion chamber B' has free communication about the periphery of the plate C with the interior chamber A' as indicated by the arrows between the periphery of the plate C and the ring I in Figs. 2 and 6.

J denotes a dome above the plate H forming a dome chamber J' provided with suitable orifices, as at "j," through which the chamber J' communicates with the exterior atmosphere.

Beneath the cylinder D is located a supporting plate K preferably perforated, as shown at "k," the perforations therein being controlled by a suitable damper k'. Upon the plate K is located an annular burner L surrounding the base of the cylinder D, into which the gas is fed through an inlet pipe M. On the outside of the burner L, is located a deflector N extended upward above the perforations in the burner L, the air passing through the perforations "k" passing upward between the burner and the deflector and be-

ing directed by the deflector upon the flame immediately above the perforations in the burner, as shown in Figs. 2 and 6.

The various parts are held together by vertical rods P.

Q denotes the flue or up-take communicating with the chamber A² on the side opposite the orifices "g" of the cylinder G'.

It will be seen that the drum A is spaced from the interior cylinders G and G'.

The construction and operation of my improved stove will now be understood.

It will be seen that the products of combustion pass upward in the combustion chamber B' and into the interior chamber A'. Thence said products pass into the interior of the cylinder G, thence through the plate F and into the interior of the cylinder G', from whence they pass through the orifice "g" in the cylinder G' on the opposite side of the stove from that whence said products were admitted into the cylinder G. The products of combustion must then pass about the cylinder G' between it and the drum and the flue Q on the side of the stove opposite the opening, g, in the cylinder G'. The products of combustion thus are not allowed to pass into the room, and are compelled to travel back and forth within the interior chambers of the drum. Air enters the base of the cylinder D, passes through the flues E into the dome chamber J', thence outward into the room, the above described circulation of the products of combustion thoroughly heating

the air within said flues in a most complete and efficient manner.

What I claim as my invention is—

1. In a stove, the combination of an outer drum, the cylinders G G' arranged interiorly thereof and separated by a horizontal partition dividing the space within the drum into a lower and an upper chamber, the lower cylinder having an opening on one side thereof below the horizontal partition, and the upper cylinder having an opening on the opposite side thereof above the horizontal partition by which the products of combustion are made to pass through the inner cylinders, substantially as set forth.

2. In a stove, the combination of an outer drum, cylinders G G' arranged interiorly thereof and separated by a horizontal partition dividing the space within the drum into a lower and an upper chamber, the lower cylinder having an opening on one side thereof below the horizontal partition, and the upper cylinder having an opening on the opposite side thereof above the horizontal partition by which the products of combustion are made to pass through the inner cylinders, and vertical air flues passing through the inner cylinders, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

EZRA S. HOYT.

Witnesses:

W. E. GALLAGHER.

JACOB ALBRIGHT.