

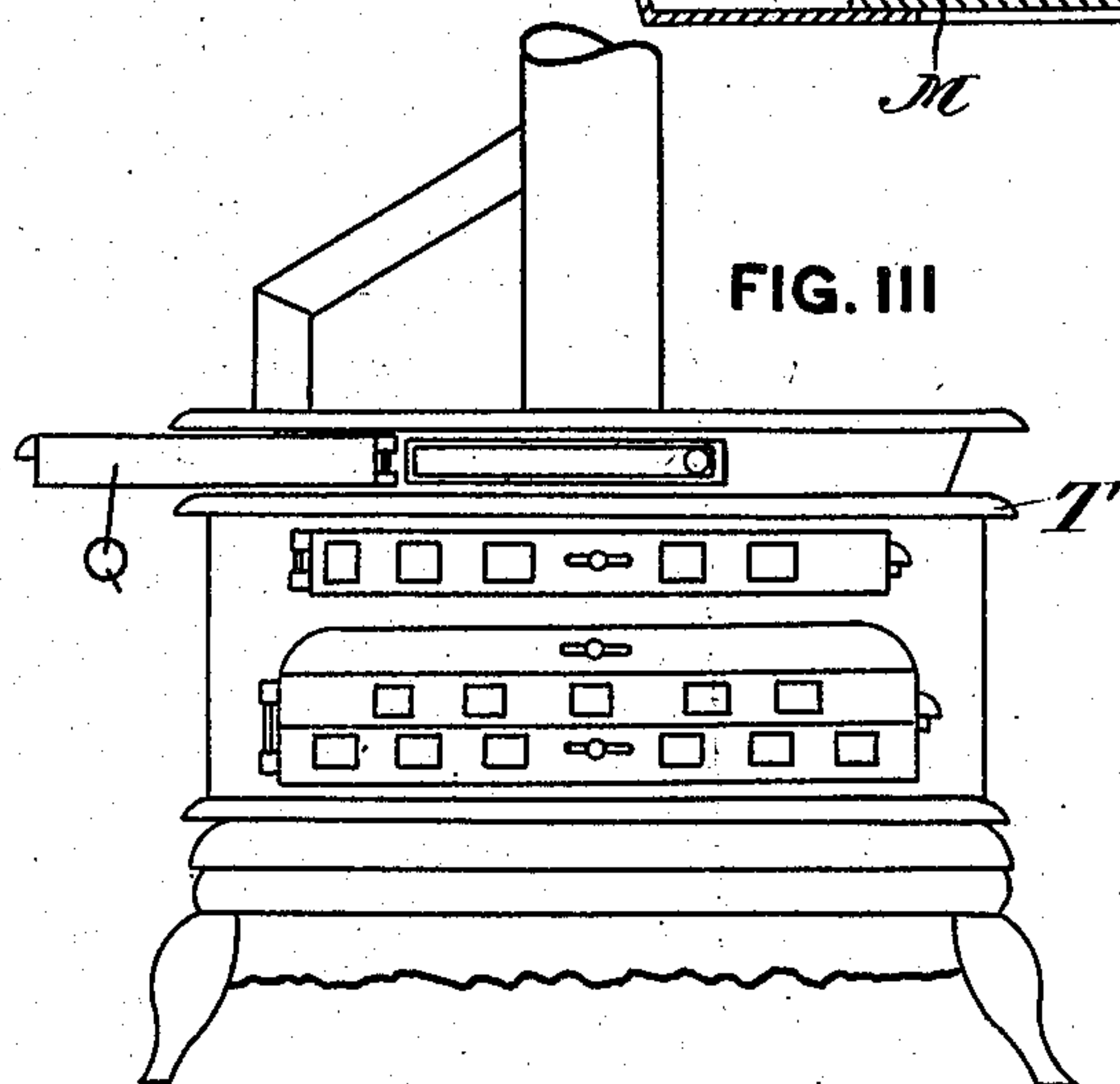
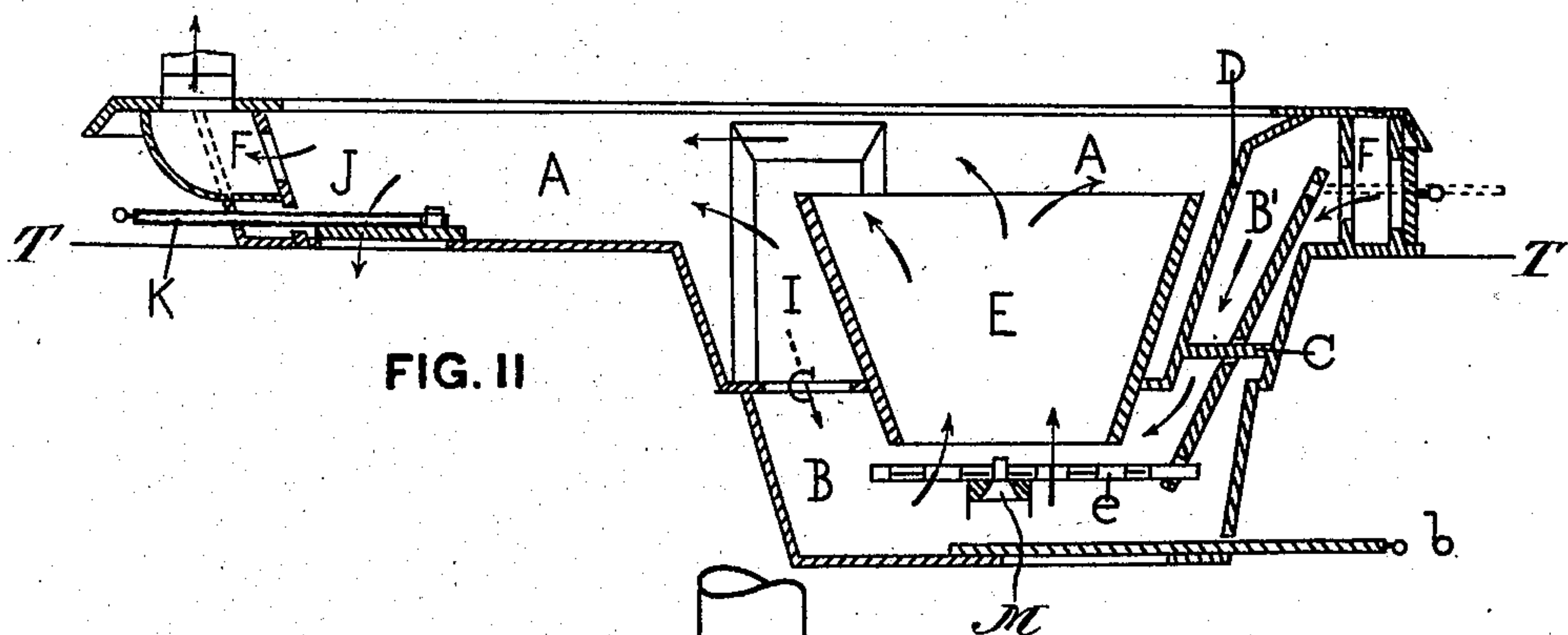
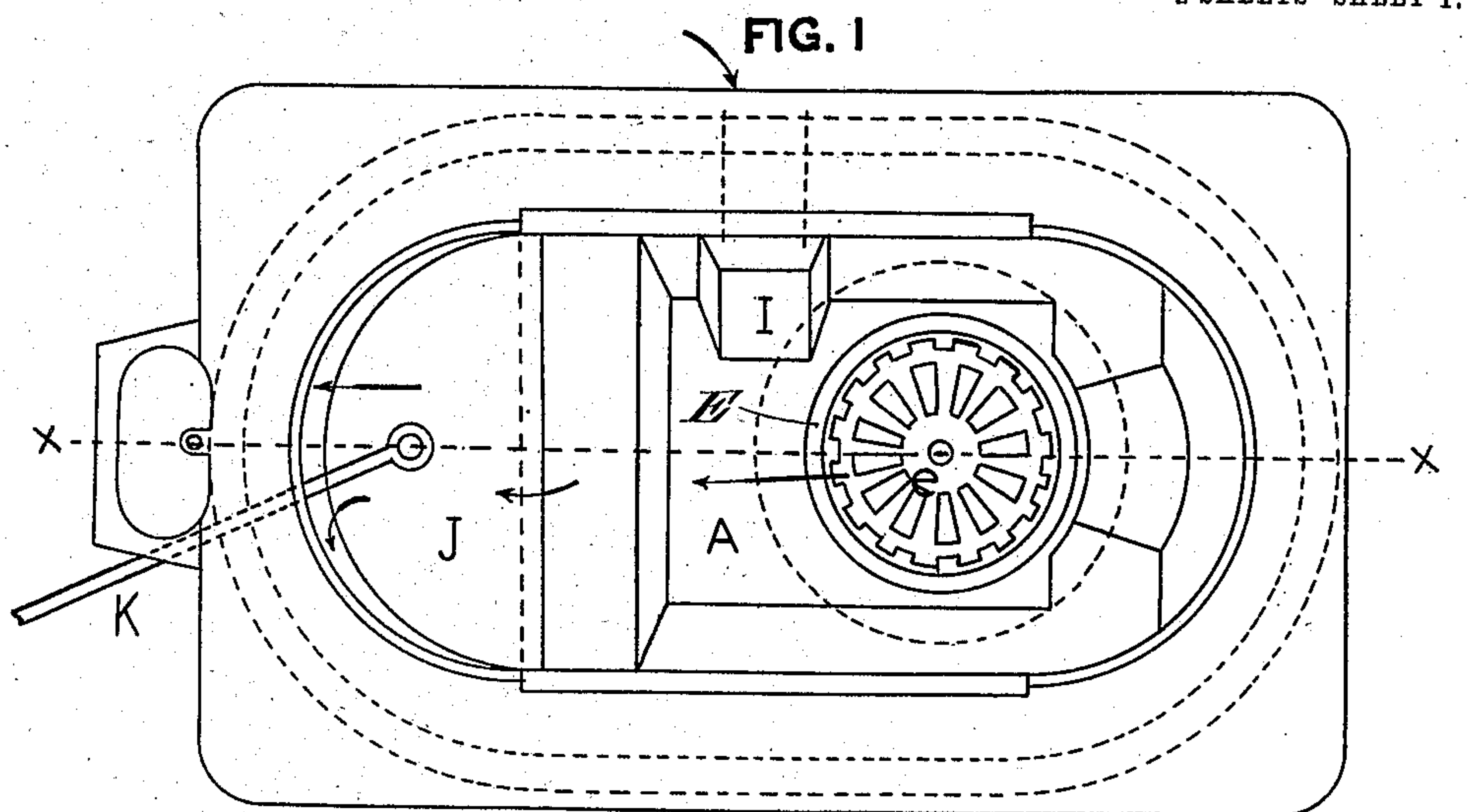
No. 894,432.

PATENTED JULY 28, 1908.

R. N. GRUNDY.
COOKING STOVE AND RANGE.

APPLICATION FILED FEB. 6, 1907.

2 SHEETS—SHEET 1.



Witnesses:

Samuel Leroy
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Robert Nelson Grundy
Inventor.

No. 894,432.

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2 SHEETS—SHEET 2.

FIG.VI.

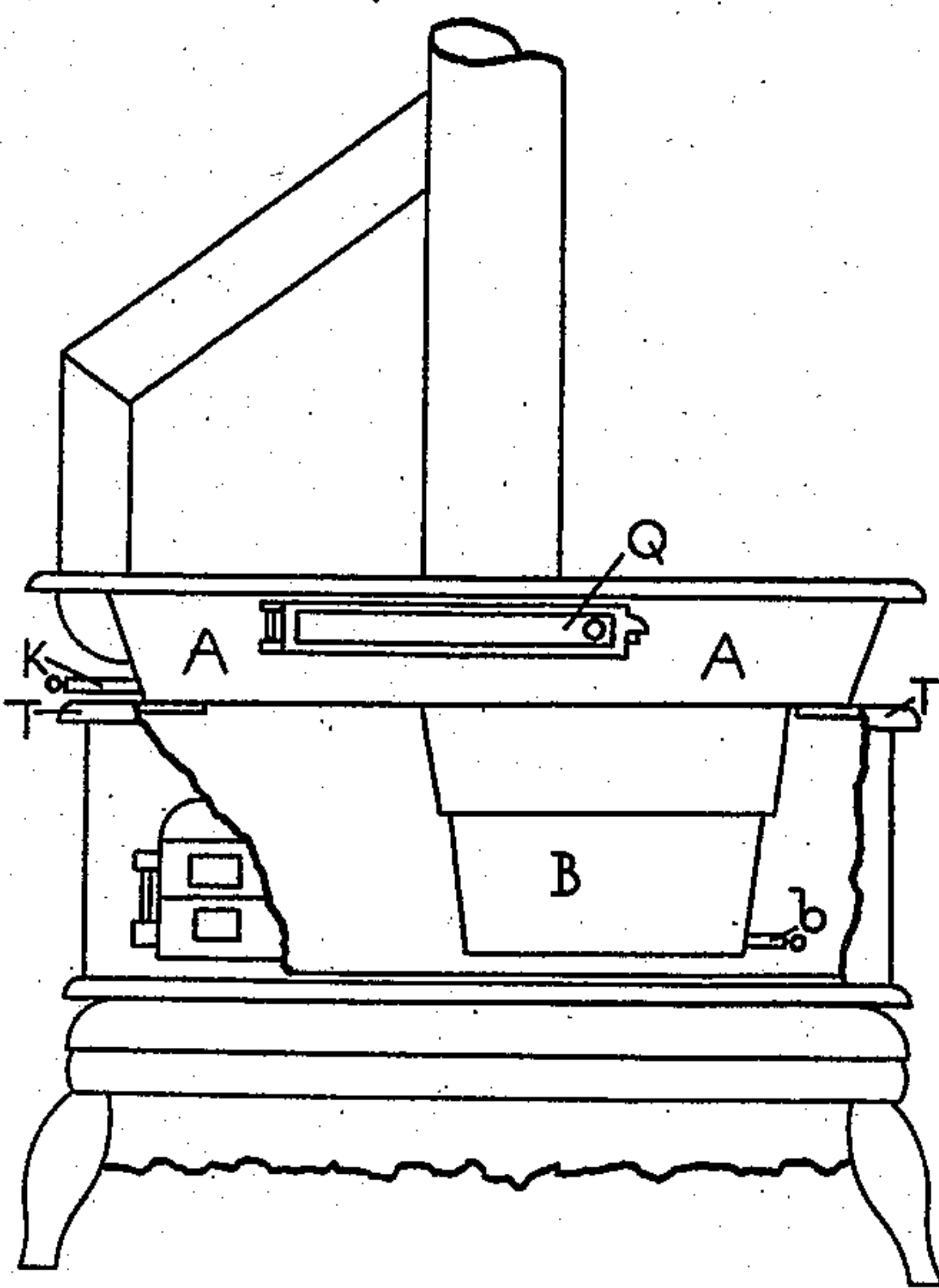


FIG.IV.

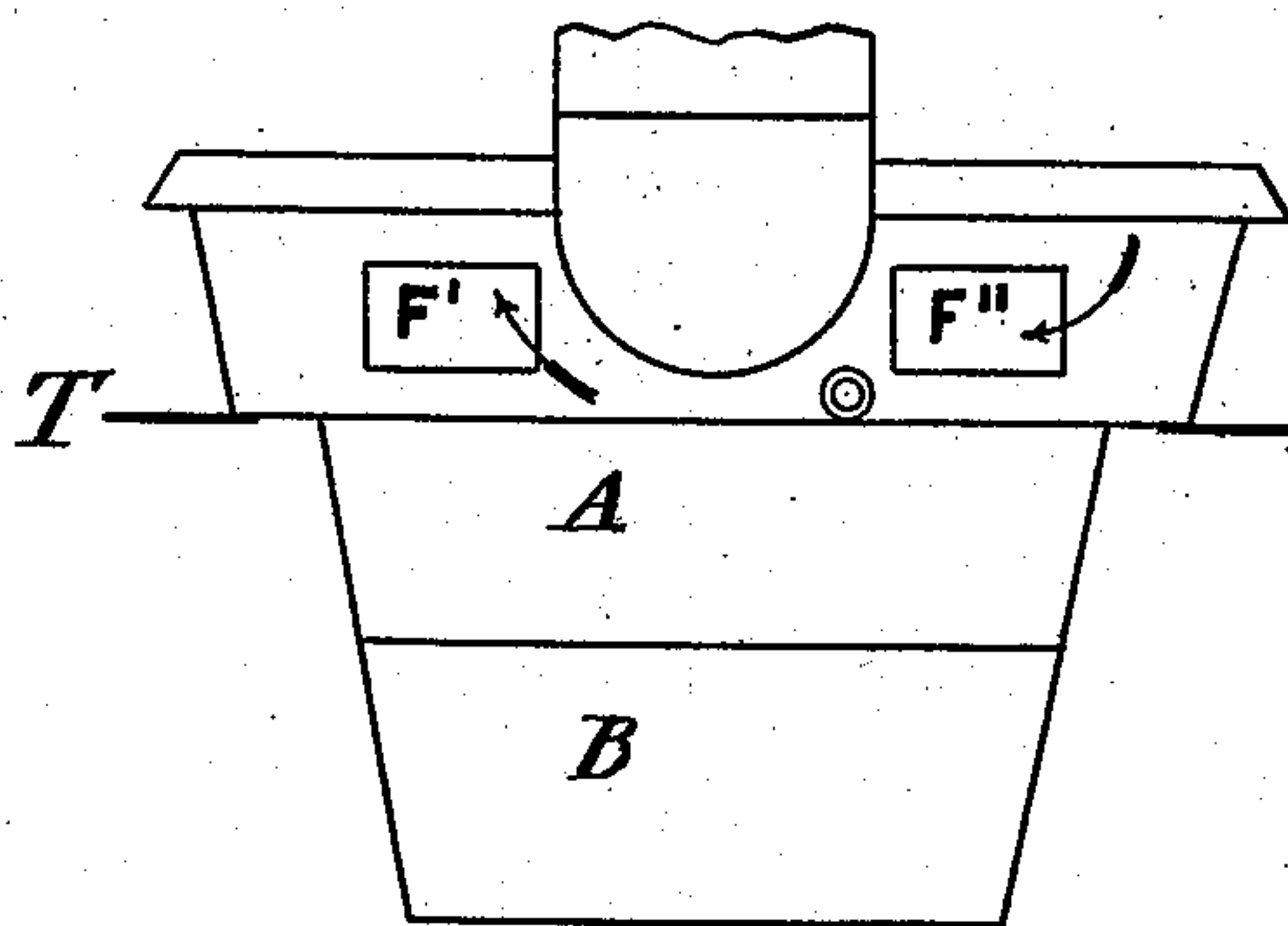
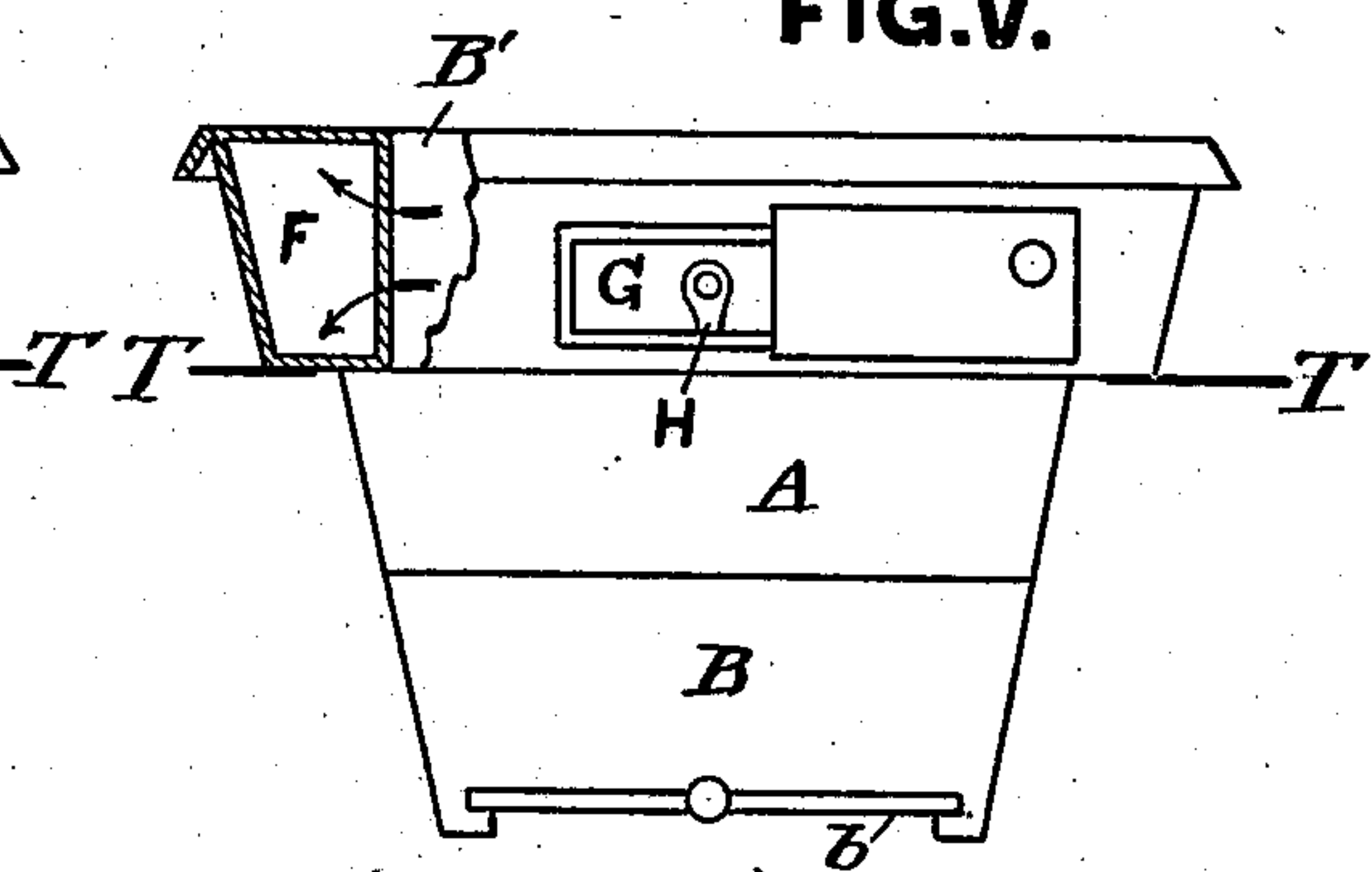


FIG.V.



Witnesses

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UNITED STATES PATENT OFFICE.

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COOKING STOVE AND RANGE.

No. 894,432.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed February 6, 1907. Serial No. 356,115.

To all whom it may concern:

Be it known that I, ROBERT NELSON GRUNDY, a subject of His Majesty King Edward VII, of Great Britain, residing at the city of Guelph, in the county of Wellington and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Cooking Stoves and Ranges, of which the following is a specification.

My invention relates to a portable reduced stove to be inserted into the fire box of an ordinary cooking stove or range from above; and has for its object to lessen the consumption of fuel, and to concentrate and retain the heat produced therein, in the most advantageous position.

It consists of a long shallow oblong combustion chamber, with a closed air chamber beneath, to which air is conducted by means of flues or ducts along the sides or ends of the combustion chamber—a small flaring fire pot fitting into a circular opening in the horizontal diaphragm dividing the two chambers, and forming the only means of communication between them. I attain these objects by the mechanism illustrated in the accompanying drawings, in which:

Figure I. is a top plan view of my improvements in cooking stoves showing the reduced combustion chamber, fire pot, and sliding draft regulator. Fig: II. is a section of the same along line $x-x$ in Fig: I showing the reduced combustion chamber, inclosed air chamber, fire pot, and shaking grate with mechanism for operating the same, all in vertical section in position on the stove top. Fig: III. is a front view of a cooking stove with my new or improved reduced portable stove in position. Fig: IV. is an end elevation of one end of my new or improved portable reduced stove showing the independent chimney, and the air inlets for the incoming air. Fig: V. is an elevation with portion broken away of the other end of my new or improved reduced stove, showing the hot air channel round the top of the fire box for heating the incoming air, and the sliding door for the insertion of a poker to operate the shaking grate. Fig: VI. is a similar view to Fig: III but with the front of the stove cut away to show the reduced stove in position in the fire box of an ordinary cooking stove.

Similar letters of reference indicate similar parts in all the drawings.

The reduced stove consists of two principal

chambers, the combustion chamber A and the inclosed air chamber B, separated the one from the other by the horizontal diaphragm C and the partition wall D Fig: II. A circular hole or opening is provided at one end of the horizontal diaphragm into which sits a small circular fire pot E tapering from top to bottom so as to fit tightly into the hole.

At the bottom of the fire pot E but not touching the same is the horizontal shaking or rocking grate (e) Figs: I and II and through it and the fire pot E is the only means of communication between the air chamber B and the combustion chamber A.

The air chamber B extends under the small fire pot E as shown in Fig. II. It must be deep enough to allow of the free circulation of the air, and to provide a suitable ash pit immediately under the fire pot E, said ash pit being provided with a slide (b) Figs. II and V at the bottom to permit of the ashes being removed. The end of the air chamber B immediately under the fire pot E extends upwards into a wide air duct B' which being close to the fire pot E tends to heat the incoming air, as shown in Fig. II. An additional air channel or duct F Figs. II and V running round the top of the reduced fire box may also be added, air being admitted thereto by means of the openings F' F'' Fig. IV. The incoming air traverses the air duct or channel F along the back and front of the reduced fire box and enters the upper extension B' of the air chamber B and is then drawn down and into the fire, and, by the time it reaches this point is already considerably heated. The opening G at the opposite end of the reduced fire box A Fig. V is normally closed with a sliding door, which when open allows a poker to be inserted to engage with and operate the rocking grate lever H. This opening G may be left open for the more direct admission of the air to the air chamber B when it is not desired to use the air heating ducts or channels F. Air may also be admitted to the air chamber B by means of auxiliary air ducts I as shown in Fig. II. These auxiliary air ducts I may be placed in any position against the inside of the reduced fire box and may be arranged to take the outside air either from the top sides or ends of the reduced fire box and by conducting it down the inside of the combustion chamber serve to heat the same as it passes through the ducts or channels.

At one end of the combustion chamber A

a small auxiliary chimney may be provided, leading into the main chimney of the stove to carry off the combustion gases—the floor of the combustion chamber adjacent to this auxiliary chimney may also be cut away to still further facilitate the escape of the smoke and the combustion gases through the stove upon which the reduced stove sets, into the regular chimney. This opening is covered with a sliding plate J controlled by the rod K which projects through the wall of the fire box Figs. I and II.

The fire pot E is a flaring cylinder open at both ends, it fits tightly into the circular hole or opening in the horizontal diaphragm C.

As will readily be understood the fire pot being small and only holding a small quantity of fuel is very economical it does not heat the room but places the heat just where it is wanted directly under the kettle or vessel; and when not required, the whole apparatus can be lifted from the stove and the ordinary stove plates and bridge replaced.

I am aware that efforts have been made to reduce the area of the fire chambers of stoves by means of fire bricks or movable

vertical partitions, but these are necessarily clumsy and difficult of adjustment; whereas my device is compact, effective and easily lifted into or out of position.

What I claim and desire to secure Letters Patent for is:

A portable reduced stove adapted to be inserted into the fire box of a cooking stove or range from above, comprising in combination the long shallow combustion chamber A running the whole length of the top of the reduced portable stove, an inclosed air chamber B under one end of said combustion chamber, a horizontal diaphragm C between the said combustion and air chambers, provided with an opening in which sets a plain tapered fire pot E; and closed air channels B' and F for conveying the outside air to the air chamber under the fire pot, the whole combined and operating substantially as hereinbefore described.

ROBERT NELSON GRUNDY.

Witnesses:

SAMUEL TERRELL,
D. H. BARLOW.