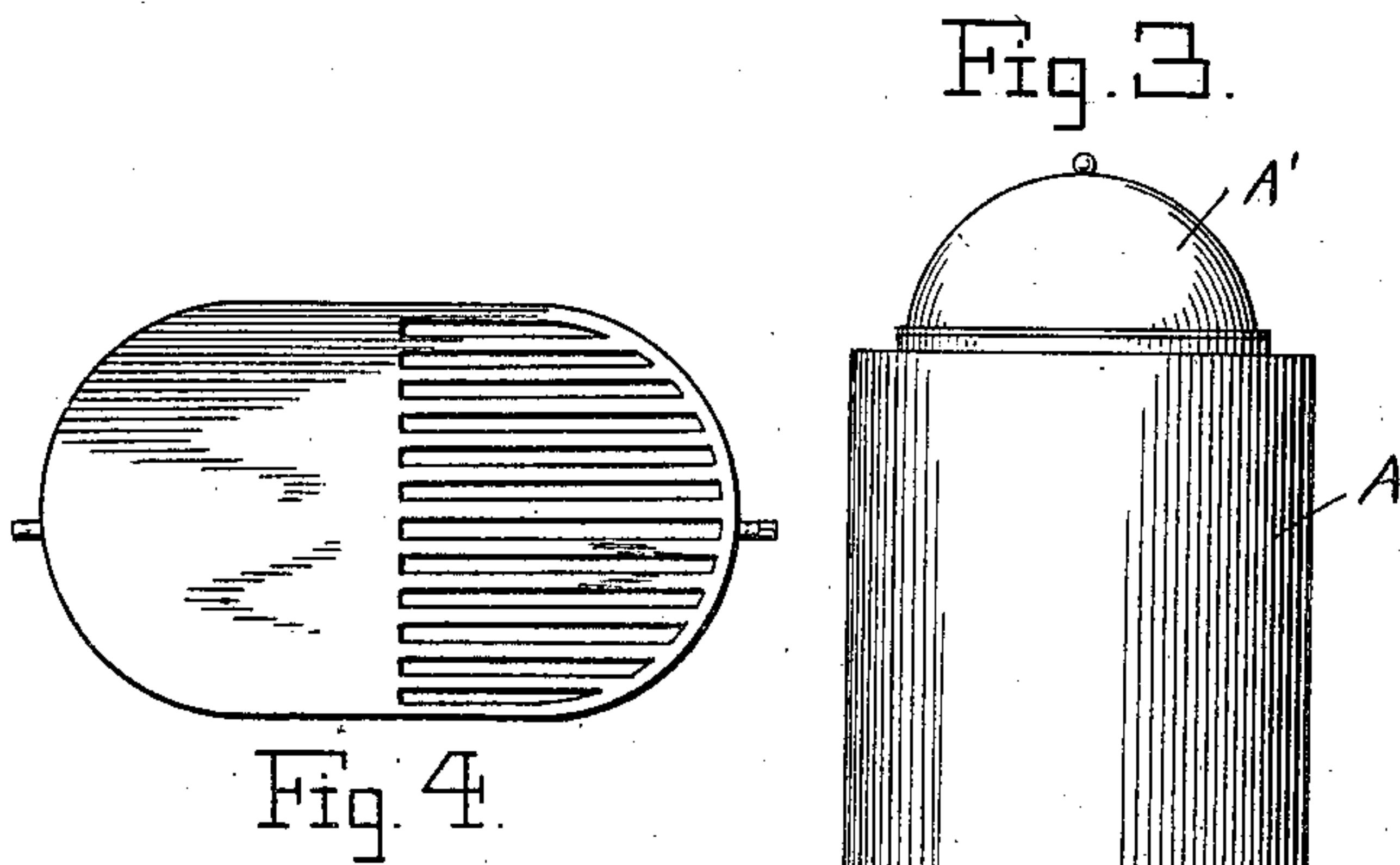
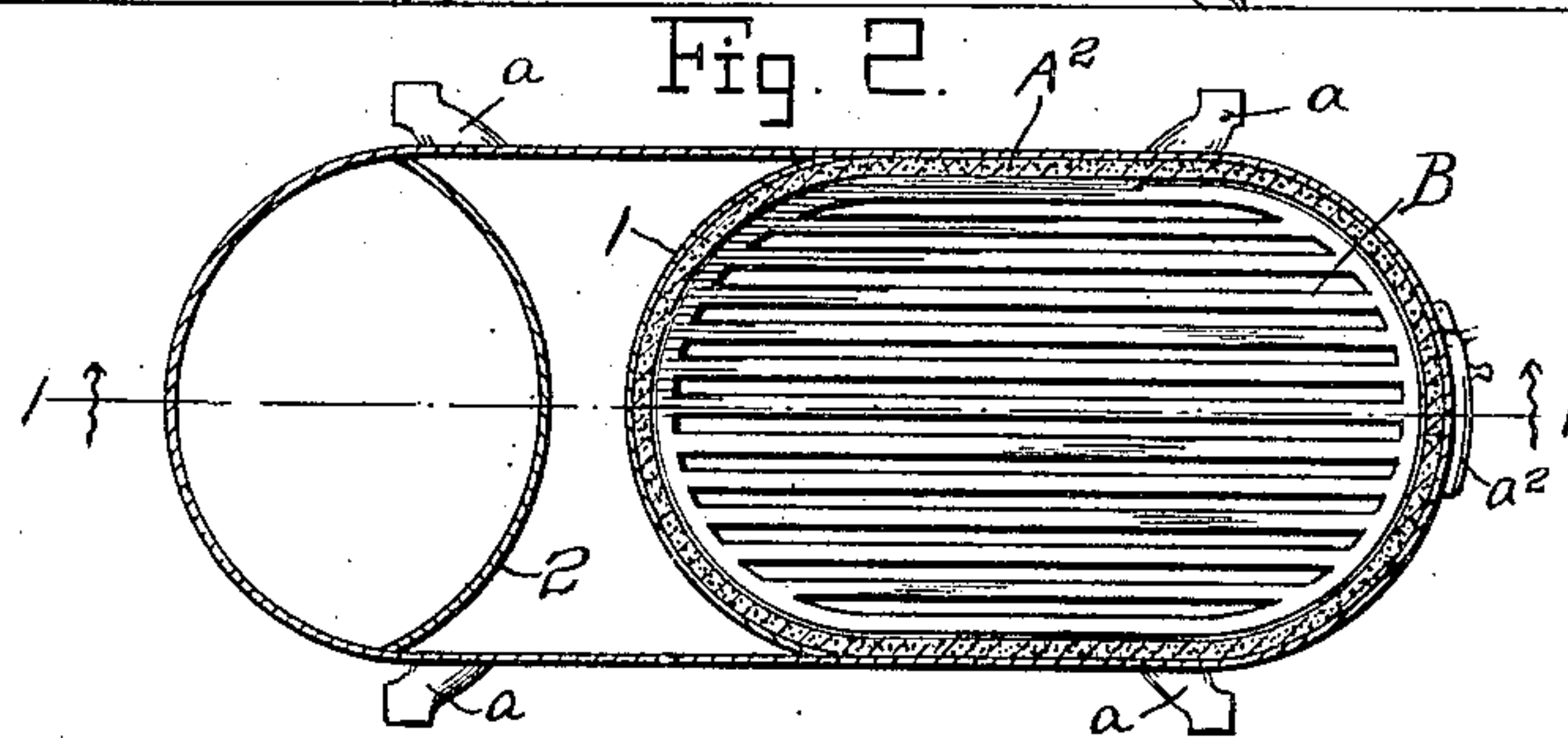
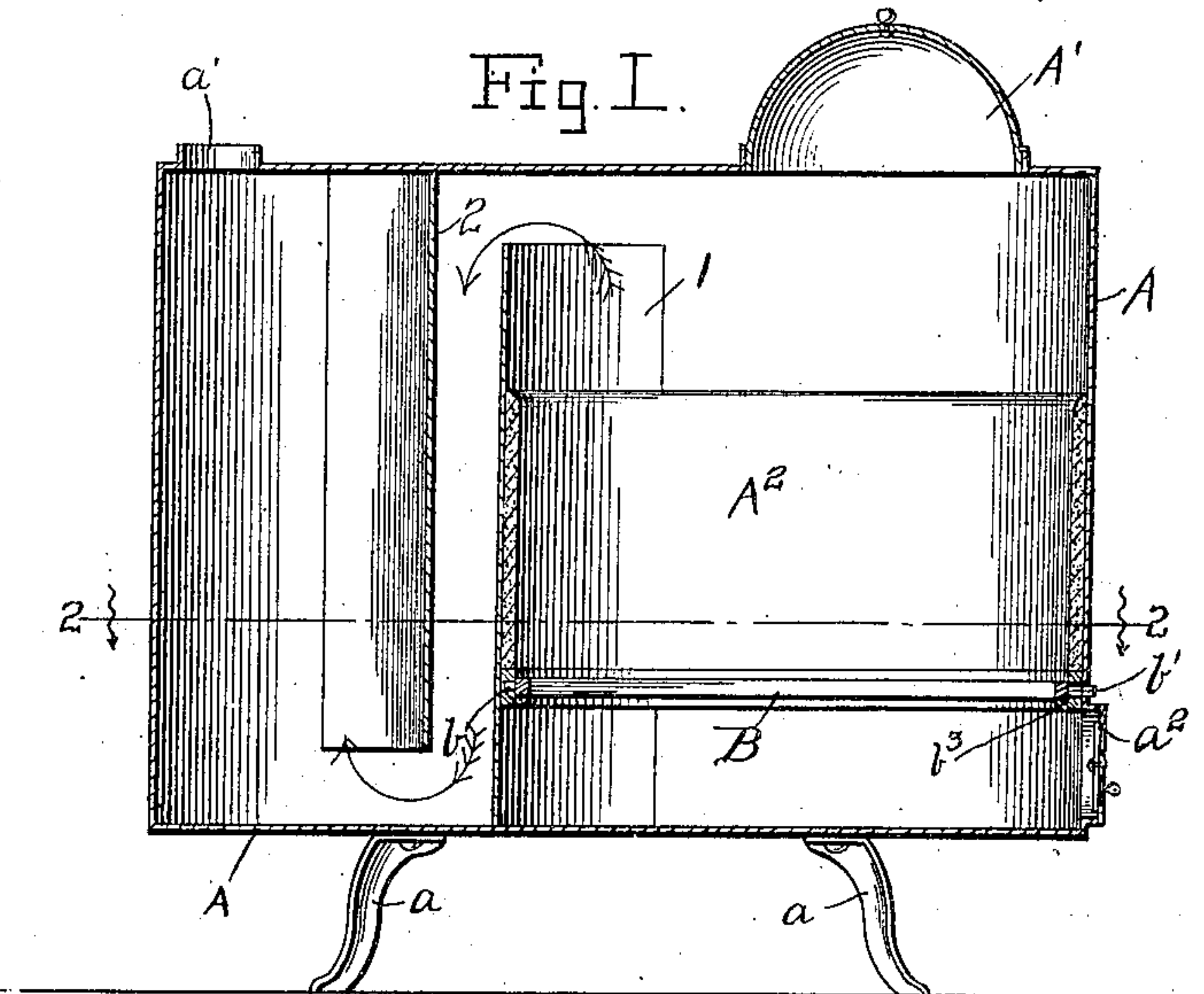


No. 887,251.

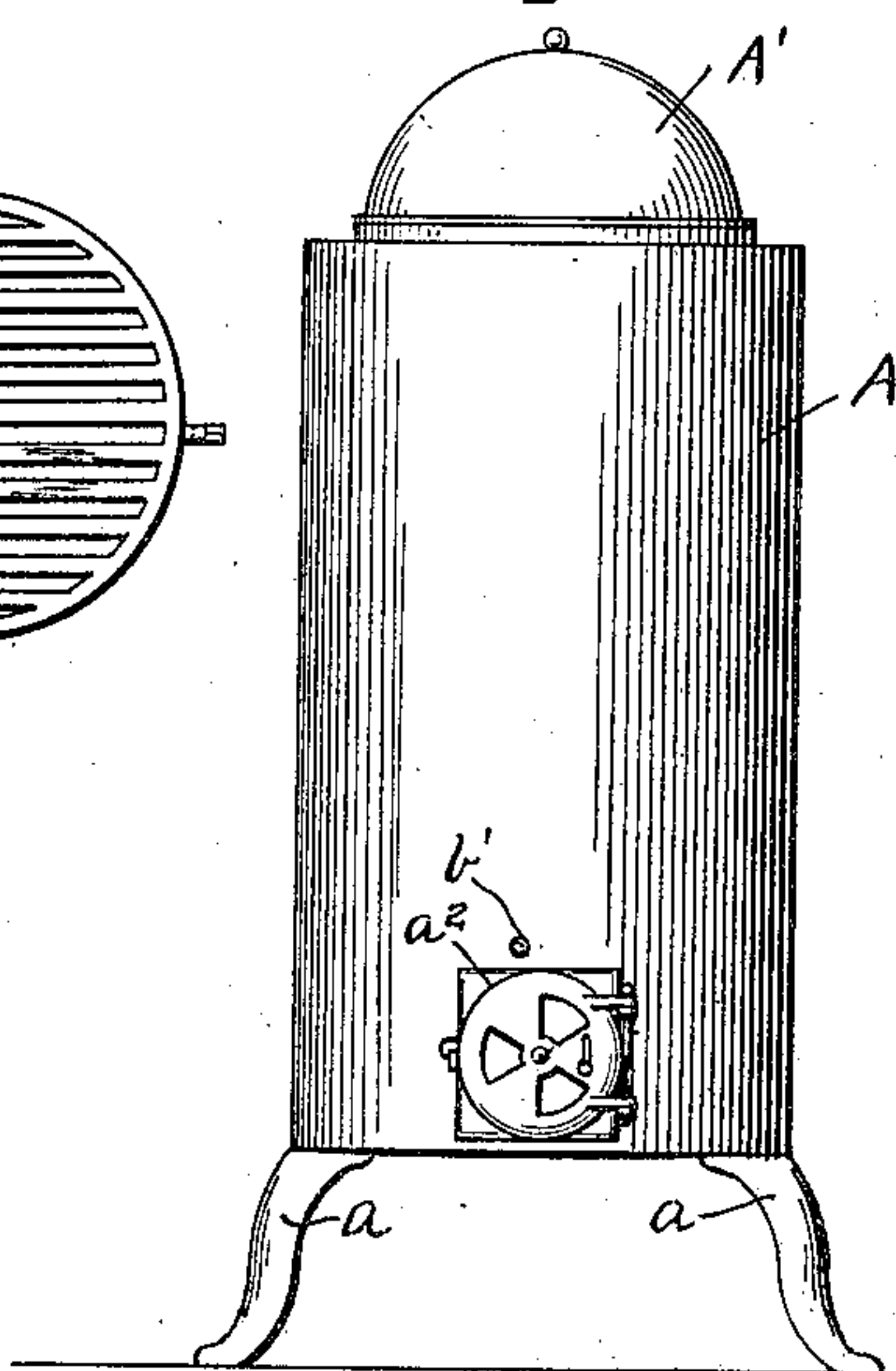
PATENTED MAY 12, 1908.

W. H. HEFNER.
STOVE.

APPLICATION FILED FEB. 1, 1905.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM HORACE HEFNER, OF RICHMOND, VIRGINIA.

STOVE.

No. 887,251.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed February 1, 1905. Serial No. 243,723.

To all whom it may concern:

Be it known that I, WILLIAM HORACE HEFNER, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

My said invention consists in certain improvements and the construction of stoves of that class commonly known as "air-tight" stoves, whereby a more perfect combustion of the fuel is attained and a much greater heating capacity is secured from any given quantity of fuel than with the ordinary form, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1, is a longitudinal vertical section through a stove of my improved construction, on the dotted line 1—1 in Fig. 2, Fig. 2, a horizontal section as seen when looking in the direction indicated by the arrows from the dotted line 2—2 in Fig. 1, Fig. 3, a front elevation of said stove, and Fig. 4, a plan view of a modified form of grate.

In said drawings the portion marked A represents the main body of the stove and B the grate of the fire-box.

The body A is composed of sheet iron or cast iron as preferred and is preferably oblong in cross-section as shown in Fig. 2. It is mounted upon suitable feet *a* as shown. Near the front end of the stove it is provided with an aperture in its top with a cover *A'* through which the fuel may be deposited in the fire-box, and at its rear with a flue outlet *a'*. The body of said stove is divided transversely by two curved partitions 1 and 2. Partition 1 extends from the bottom of the stove nearly to its top and forms the rear end of the fire-box, said partition extending from one side of the stove to the other, as shown most plainly in Fig. 2. Partition 2 extends from the top of said stove nearly to its bottom being also curved in cross-section and mounted a short distance in the rear of partition 1. Partition 1 is mounted with its convex side toward the back of said stove and partition 2 with its convex side toward the front, so that the greatest possible length of the fire-box is secured and a compartment of sufficient area provided between the partitions for securing a proper draft and carrying off the products of combustion. By this arrangement, also,

the greatest possible area of the sides of the stove is provided between the partitions, so as to afford the most radiating surface at this part of the stove with consequent beneficial results.

The convex sides of the partitions 1 and 2, being near each other, also partially divide the space between them at the center so as to deflect the downward currents of the products of combustion toward and against the sides of the stove and still further increase the radiating and heating capacity of the stove.

The grate B is mounted a short distance above the bottom of the stove between partition 1 and the front of said stove. It may be pivoted on gudgeons *b* and *b'* as shown if preferred, the gudgeon *b'* being squared upon its outer end to permit the application of a crank for the purpose of shaking or tilting said grate to deposit the ashes in the ash-box beneath. A rib or flange *b³* may also be provided around under one side of said grate to support it the pivots being preferably located a little to one side of the center so that said grate will rest firmly on said flange. The fire-box proper may be provided with a lining *A²* as shown if preferred, the same being any suitable material to protect the iron of which the stove body is composed from undue action of the heat. The ash pit beneath the grate B is provided with a door *a²* and said door with an ordinary form of damper to regulate the draft, as shown.

While the stove is primarily designed for the use of wood as a fuel, other fuel may, of course, be used if more convenient and preferred. By reason of having the grate B mounted above the ash compartment and said compartment provided with the door *a²* with the damper as shown, the draft may be regulated as desired, and as said draft comes directly beneath the fuel instead of by the end of the fuel, as in most wood heaters, a more perfect combustion of said fuel is secured with the consequent improved results. The partitions 1 and 2 serve also as deflectors to prevent a direct passage of the products of combustion from the fire-box to the flue, said products being compelled to pass over the top of partition 1, then down between partitions 1 and 2 and then up through the compartment behind partition 2, from which they escape into said flue. A great deal of the heat which with the common form of stove passes up the flue and is

wasted is thus held in the heater until it has an opportunity to radiate into the room, and is thus saved instead of being wasted, and the full value of the fuel thus utilized.

5 In some cases, as when wood fuel is used, a grate of the form shown in Fig. 4 may be preferred, wherein the rear portion thereof is solid and the front open, thus requiring all the draft to pass through the front end of
10 said grate. Other obvious modifications in the manner of mounting the grate, and in the details of construction may be made without departing from my invention, as will be readily understood.

15 I am aware that heating drums have been provided which have been interposed in the flues leading from stoves, but I am not aware that any stove has been made which in itself has been divided by vertical transverse par-
20 titions of the kind and the arrangement herein shown and described for the purpose of making said stove in itself of greater heat-
ing capacity.

25 Having thus fully described my said inven-
tion, what I claim as new and desire to secure by Letters Patent, is:—

1. A stove comprising a body oblong in cross-section with rounded ends and divided by vertical partitions extending from side to
30 side of the stove and curved in cross-section around a vertical axis with their convex sides adjacent to each other, the front par-
35 tition extending from the bottom of the stove nearly to its top and the rear partition
extending from the top of the stove nearly to its bottom with the space between said par-
titions, a fire box separate from said parti-

tions arranged between the front partition and the front of the stove with the grate
thereof above the bottom of said stove, the
40 top of said stove formed with an opening communicating with said fire box and pro-
vided with a cover, and a door in the front of said stove beneath the grate of said fire
box, said top of the stove being also provided
45 with an aperture behind the rear partition for the escape of the products of combustion,
all substantially as set forth.

2. A stove comprising a suitable body hav-
ing an aperture at the front of its top for the
50 introduction of the fuel, a cover therefor, said stove also having an outlet for the products
of combustion at its rear, a curved partition extending from the bottom of the stove
nearly to its top, another curved partition
55 extending from the top of the stove nearly to its bottom, said partitions being each
curved around a vertical axis and arranged with their convex sides adjacent and both
dividing said stove transversely, a fire-box
60 in front of said first partition, a grate at the bottom of said fire-box and a short distance
above the bottom of the stove, and a door
leading into the space beneath said grate
provided with a damper, substantially as
65 set forth.

In witness whereof, I, have hereunto set my hand and seal at Richmond, Virginia, this 28th day of January, A. D. nineteen hundred and five.

WILLIAM HORACE HEFNER. [L. s.]

Witnesses:

OLLIE V. BOSWELL.

FRANK L. KERNS.