

No. 626,838.

Patented June 13, 1899.

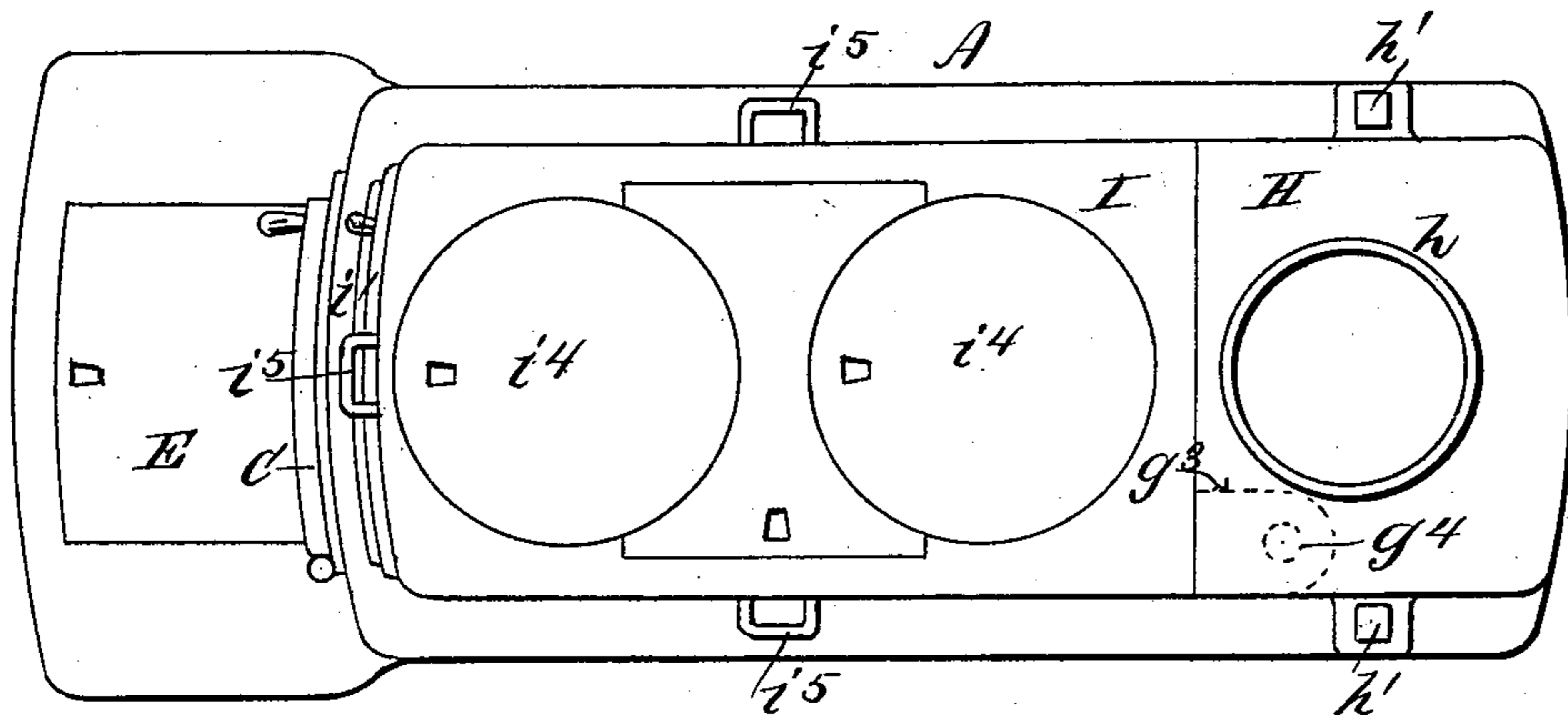
A. A. LOW.  
STOVE.

(Application filed Feb. 5, 1898.)

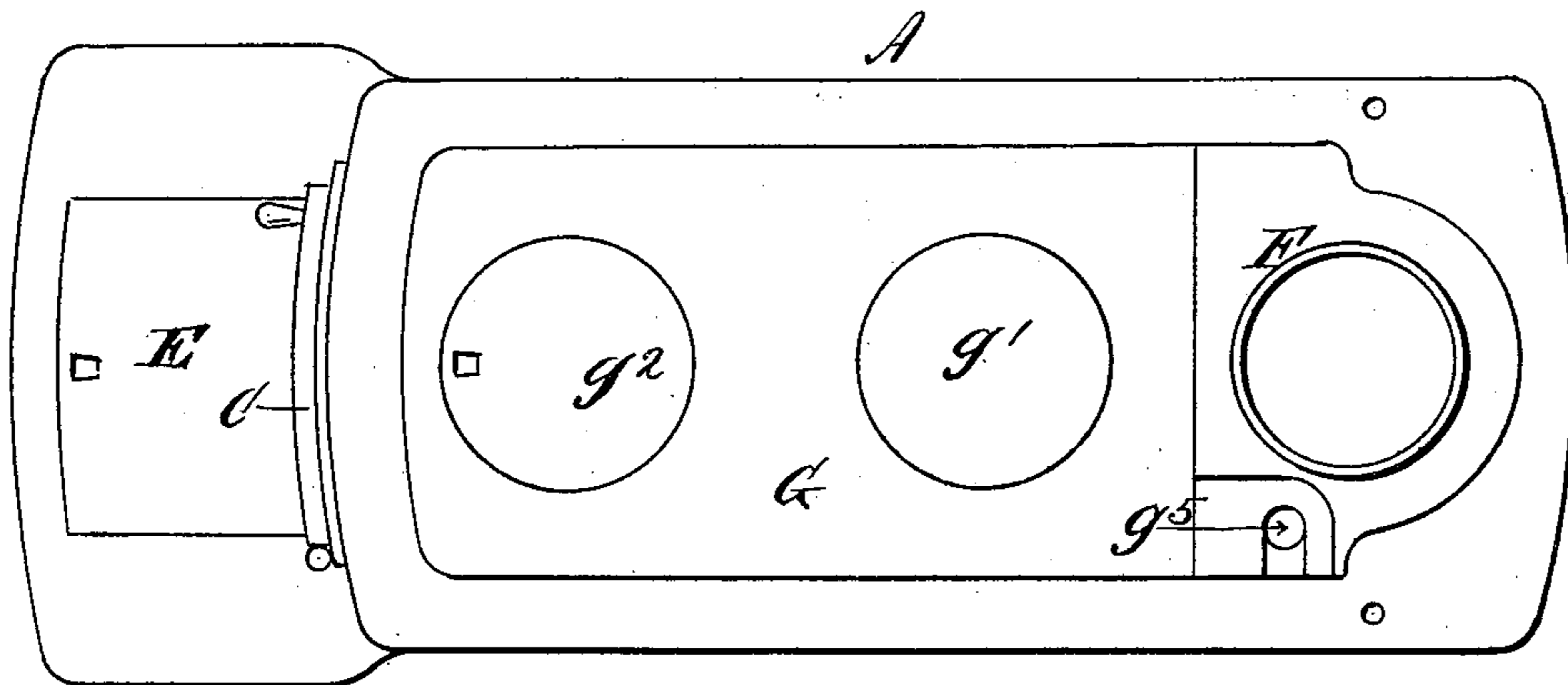
(No Model.)

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*Fig. 1.*



*Fig. 2.*



Witnesses:  
D. W. Gardner.  
D. H. McConnell

Inventor:  
Abbot Augustus Low  
By his Attorney  
George William Mott

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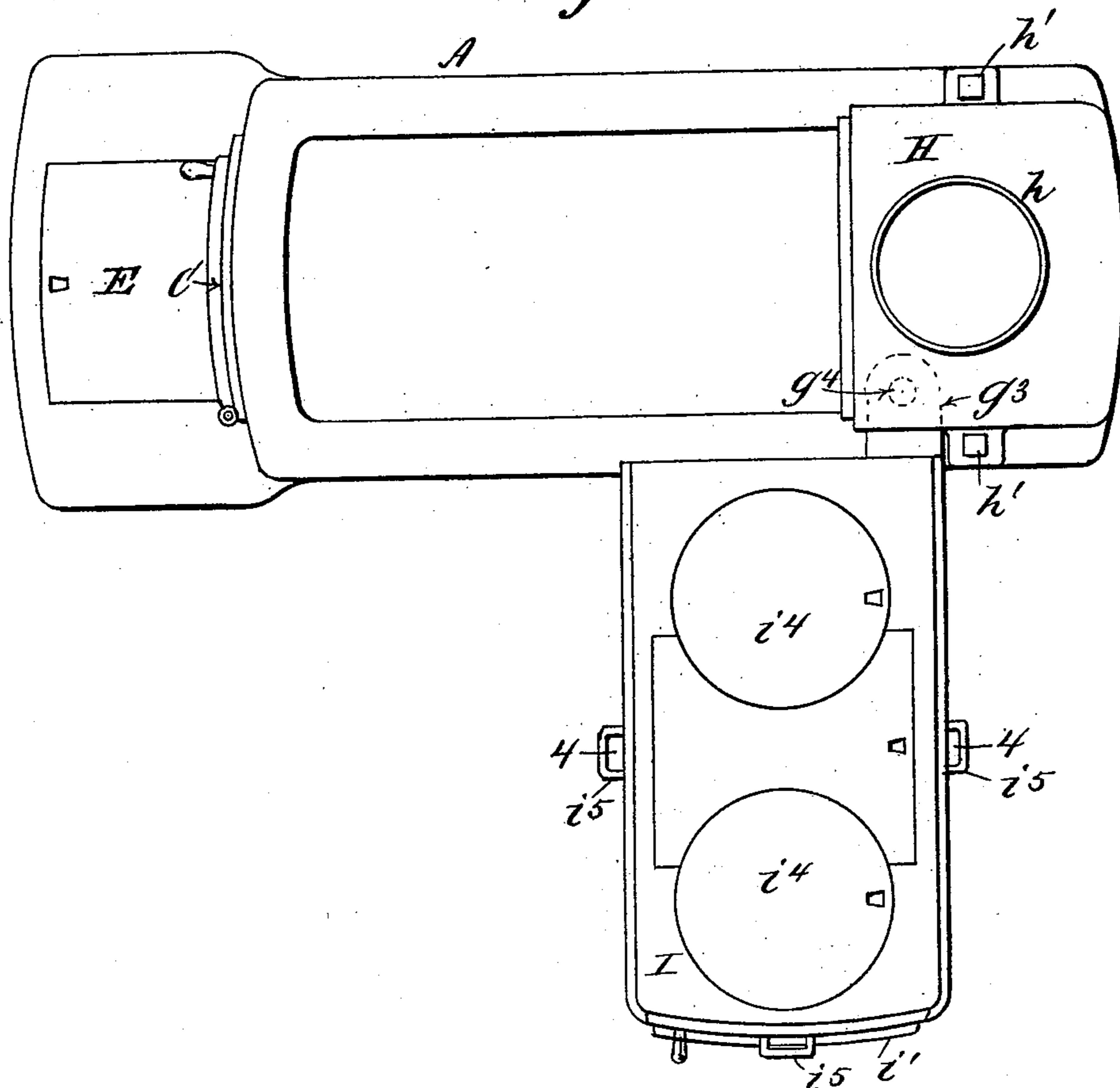
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*Fig. 3.*



*Witnesses:*

D. W. Gardner.  
D. H. McConnell

*Inventor:*

Abbot Augustus Low  
By his Attorney  
George William Elliott

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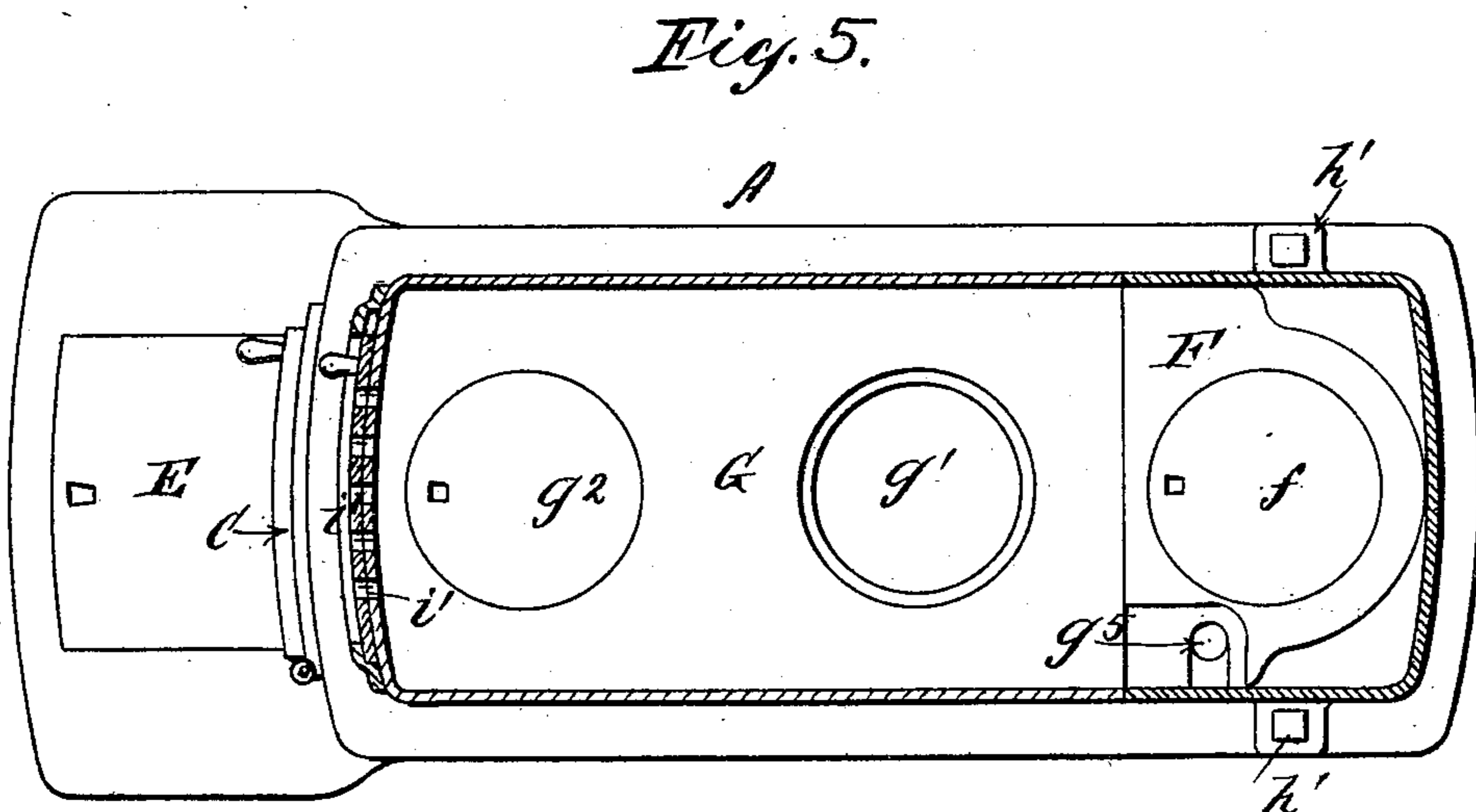
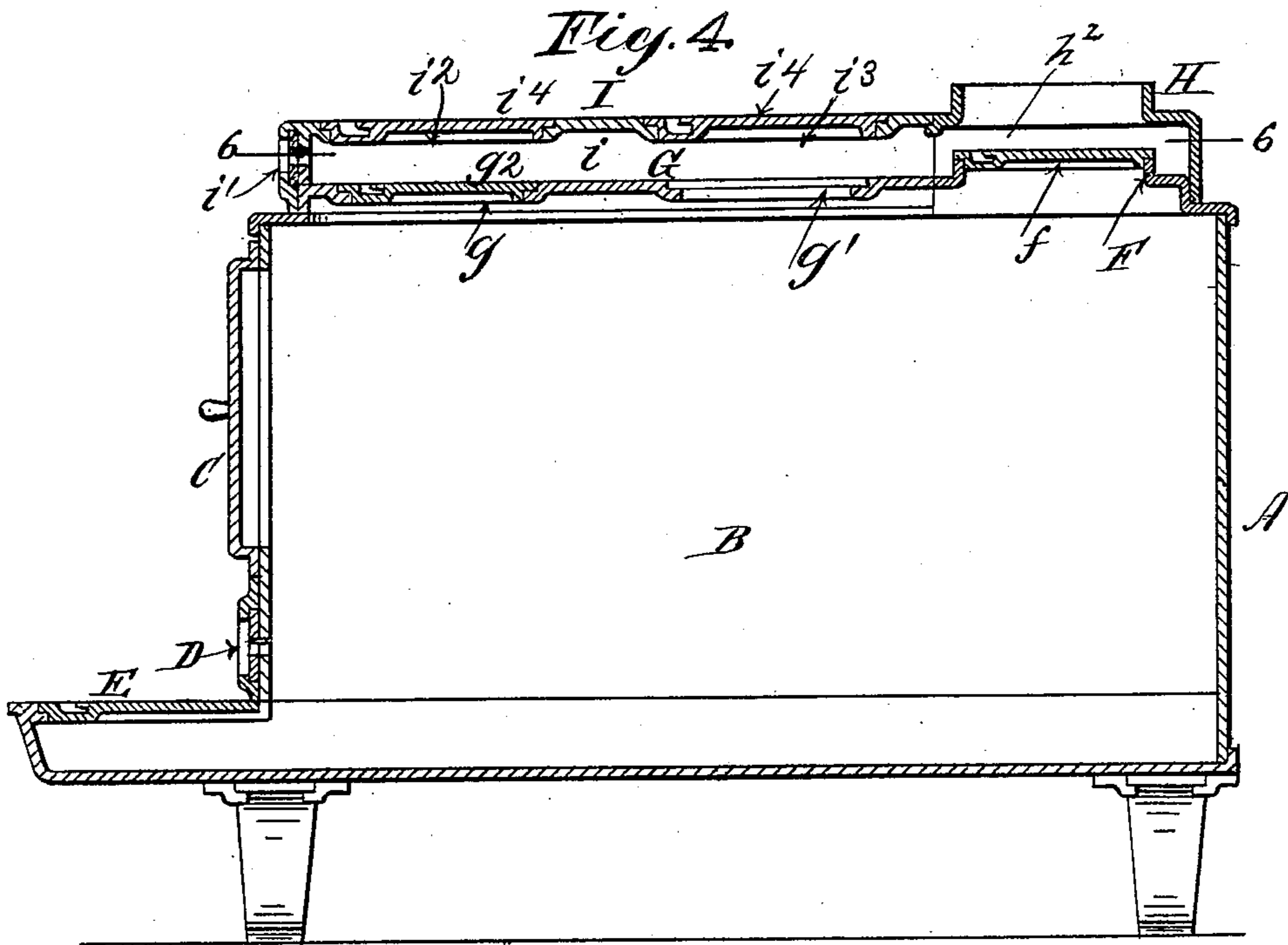
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3 Sheets—Sheet 3.



Witnesses:

D. W. Gardner.  
D. H. McConnell

Inventor:

Abbot Augustus Low  
By his Attorney  
George William Smith

# UNITED STATES PATENT OFFICE.

ABBOT AUGUSTUS LOW, OF NEW YORK, N. Y.

## STOVE.

SPECIFICATION forming part of Letters Patent No. 626,838, dated June 13, 1899.

Application filed February 5, 1898. Serial No. 669,264. (No model.)

*To all whom it may concern:*

Be it known that I, ABBOT AUGUSTUS LOW, a citizen of the United States, residing in the city of New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Stoves, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention is designed more particularly to apply to what are known as "box-stoves" for burning wood fuel, although applicable to stoves for burning other kinds of fuel.

My improvements are designed more particularly for use in conjunction with what are known as "box-stoves," in which wood is principally burned as fuel.

The invention is designed to attain more perfect combustion and to regulate and control the combustion within the fire-chamber, so that the fuel contained therein may be burned gradually from front to rear when so desired or the whole mass of fuel be subjected to ignition from end to end, as in ordinary wood-burning stoves, if preferred.

The invention consists in the special construction and arrangement of parts hereinafter set forth and claimed.

In carrying out my invention I do not confine myself to any special form or construction of stove, but herein, by way of illustration, show the principle applied to any ordinary wood-stove of the box class.

In the accompanying drawings, Figure 1 is a top view of the stove provided with my flue-plate, &c.; Fig. 2, a similar view with the flue-plate, &c., removed. Fig. 3 is a similar view of a stove provided with my improvements, showing the flue-plate and cover swung back at right angles to the stove. Fig. 4 is a vertical central longitudinal section. Fig. 5 is a horizontal section upon plane of line 6 6, Fig. 5.

A is the stove-body, inclosing the fire-chamber B and provided with the usual door C, damper D, and ash-pit cover E.

F is the thimble to which the stovepipe is ordinarily applied when the stove is used without my attachments.

G is the ordinary cover or top plate of the stove, provided with the holes  $g$   $g'$  and cover

or covers  $g^2$  and being formed with a lateral extension  $g^3$ , having a stud  $g^4$ , engaging with a recess  $g^5$ , said stud being designed to facilitate the swinging outward of the plate G and the extension being designed to support the plate when so turned, as illustrated in Fig. 3.

In applying my improvements to the stove I attach the auxiliary thimble-plate H to the rear of the stove-top by means of clamps or bolts  $h'$   $h'$  or by equivalent means that will sustain said auxiliary thimble-plate against displacement. This auxiliary thimble-plate H is formed with the supplementary thimble  $h$ , to which the stovepipe is applied.

I is a flue-plate fitting over and preferably resting upon the cover G and also fitting into or against and forming a continuation of the auxiliary thimble-plate H.

It will be seen that the auxiliary thimble-plate H creates a flue-space  $h^2$  around the ordinary pipe-thimble F and that this space  $h^2$  communicates with the flue-space  $i$  in the flue-plate I, the sides and front wall of which inclose and define the said flue-space. A damper  $i'$  is provided in the wall of the flue  $i$  for the purpose of controlling the admission of air to the flue  $i$  to effect the combustion of gases and carbon entering the flue  $i$  from the combustion-chamber, especially through the openings  $g$   $g'$  in the top plate G.

The flue-plate I is formed with the holes  $i^2$   $i^3$ , closed by covers  $i^4$ , and the ordinary thimble F is closed by means of a special cover  $f$ , excepting when it is desired to use the stove with a direct draft, as under old conditions before the application of my attachments. It is also formed with handles  $i^5$ , by which it may be bodily lifted from the cover G when desired.

By way of illustrating the practical operation of my invention we will suppose the parts to be in position, with the smoke-opening F closed by cover  $f$ . The combustion-chamber having been charged with fuel, the second hole  $g'$  in the top plate G is also closed with a cover  $g^2$  and the holes  $i^2$   $i^3$  in the flue I closed with covers  $i^4$ . The fire being started under these conditions, air for combustion will enter primarily through the damper D at the front and bottom of the stove, the products of combustion passing upward through the opening  $g$ , where they encounter a secondary supply

of air admitted through the supplementary damper *i'* in the flue-plate I, thereby insuring the ignition of the hot combustible gases and solids arising from the combustion-chamber

5 B. The final products of combustion pass from the flue *i* through the thimble-plate H into the smoke-pipe. Under these conditions the combustion of fuel will necessarily be restricted mainly to the front portion of the

10 chamber B and the ignition of fuel in the rear portion of the chamber will be prevented or, at least, materially retarded. When the fuel in the front of the fire-chamber B is nearly consumed or when it is desired to extend the

15 area of combustion farther rearward, the cover *g*<sup>2</sup> is removed from the hole *g'* and placed upon the hole *g*, when the products of combustion will pass into the flue *i* through the opening *g'*, or, if preferred, both the open-

20 ings *g g'* may remain uncovered, the resulting admixture of fresh air with the unconsumed products of combustion tending to insure the perfect consumption of the fuel prior to the escape of the products of combustion

25 from the flue *i* into the pipe attached to the thimble *h*.

It is obvious that by the manipulation of the various dampers and covers modified results may be attained, the position and ex-

30 tent of the fire being thus subject to regula-

tion, the essential feature in this connection being the direction and control of the draft or induced air and the attainment of practically complete combustion by means of the primary damper, the plurality of openings in the stove and flue-plates, and the covers there- 35 for, in conjunction with the auxiliary flue provided with the auxiliary damper for admitting air to the hot but unconsumed products of combustion. 40

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

In a box-stove the combination of the stove-body A, formed with the smoke-opening F, the cover *f*, for closing said smoke-opening 45 F, the pipe thimble-plate H, rigidly attached to the stove-body, the primary swinging top plate G, provided with holes *g, g'*, and covers *g*<sup>2</sup>, the auxiliary flue-plate I, upon the top plate G, fitting to the open side of the thim- 50 ble-plate H, and formed with openings *i*<sup>2</sup>, *i*<sup>3</sup>, and damper *i'* for admitting air to support combustion, and the covers *i*<sup>4</sup>, *i*<sup>4</sup>, the whole arranged and operating substantially in the manner and for the purpose described.

ABBOT AUGUSTUS LOW.

Witnesses:

D. W. GARDNER,  
FLORENCE MIATT.