

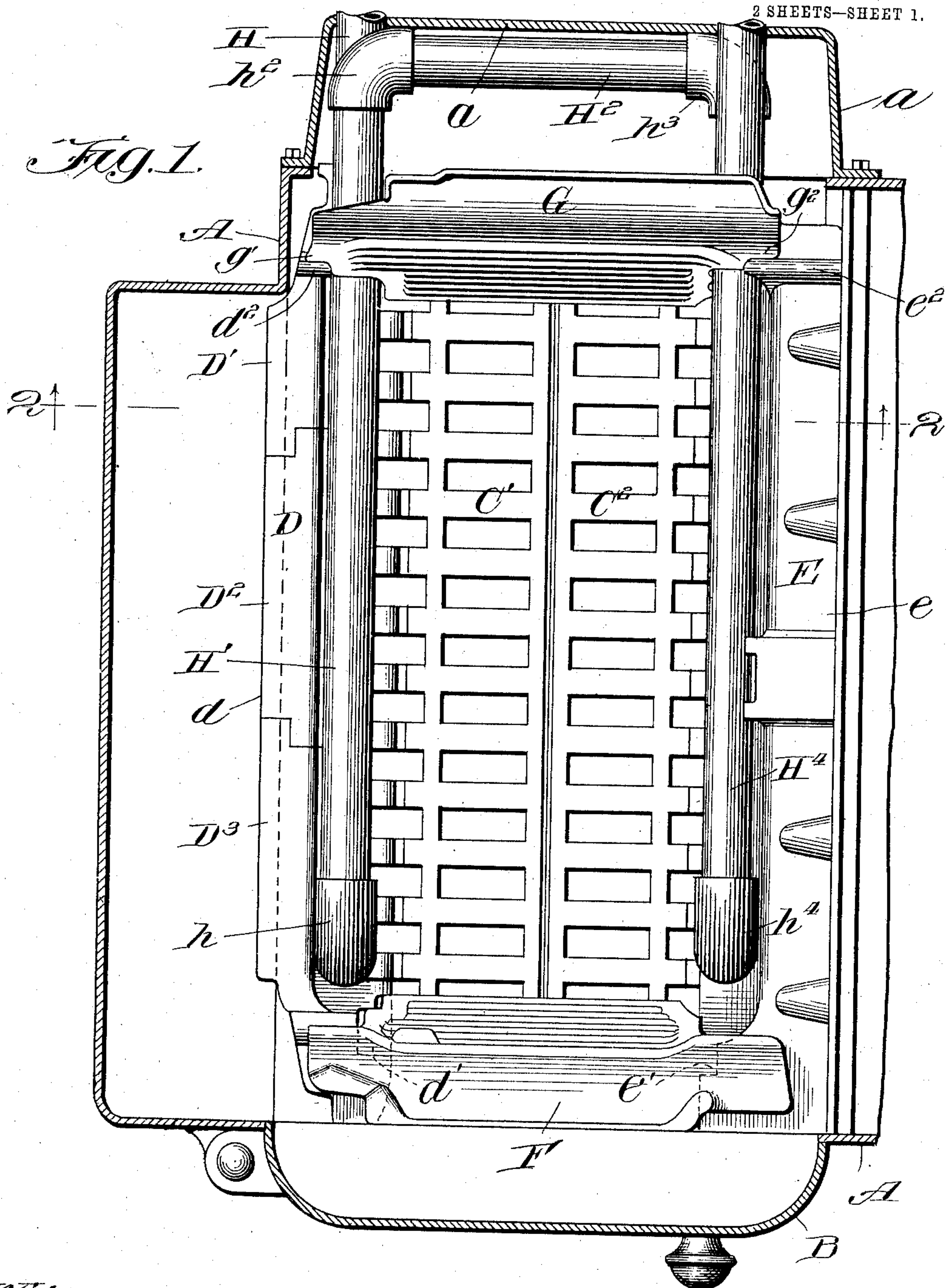
No. 864,737.

PATENTED AUG. 27, 1907.

A. F. HARTER.  
FIRE BOX FOR COOKING STOVES.

APPLICATION FILED APR. 22, 1907.

2 SHEETS—SHEET 1.



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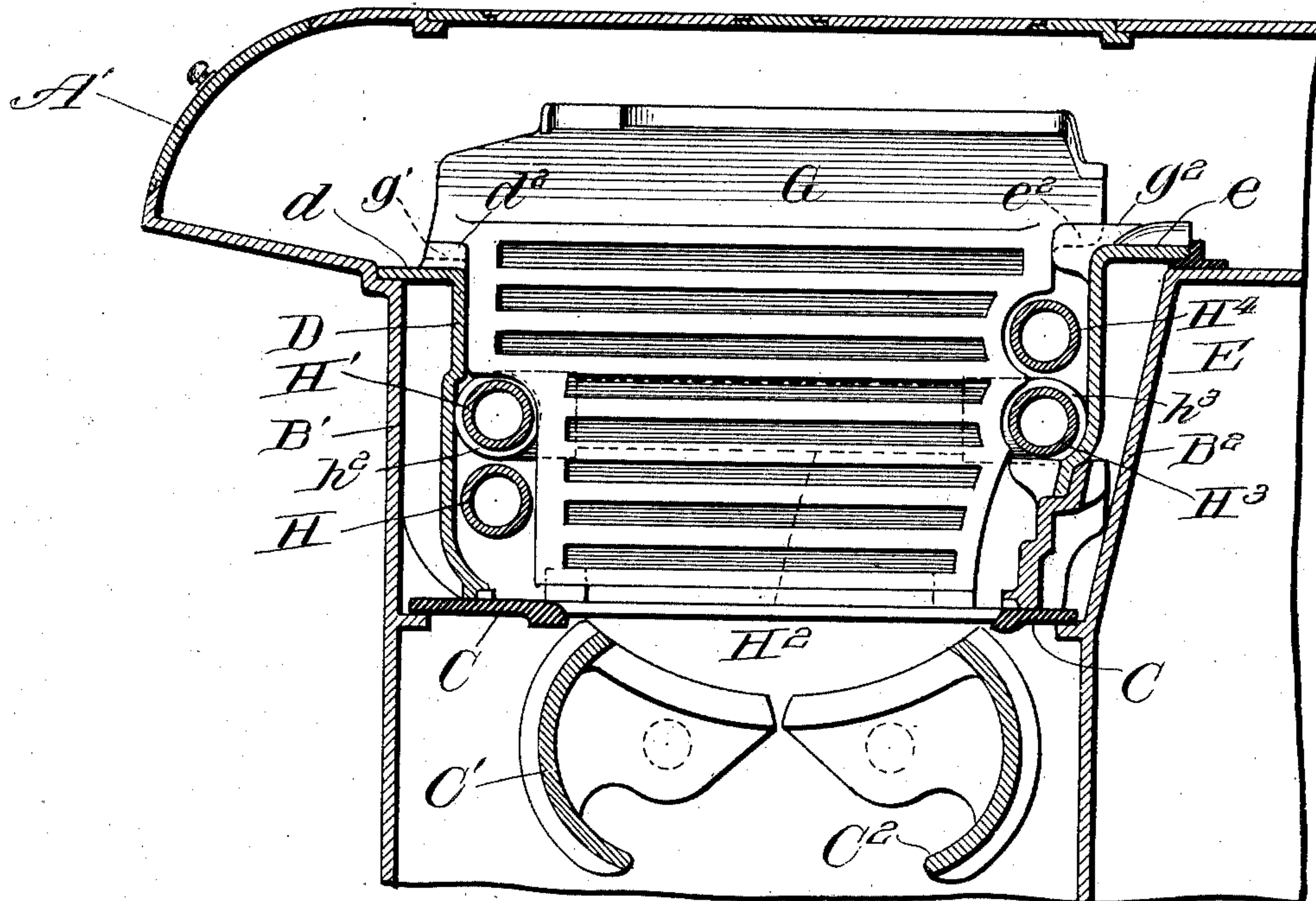
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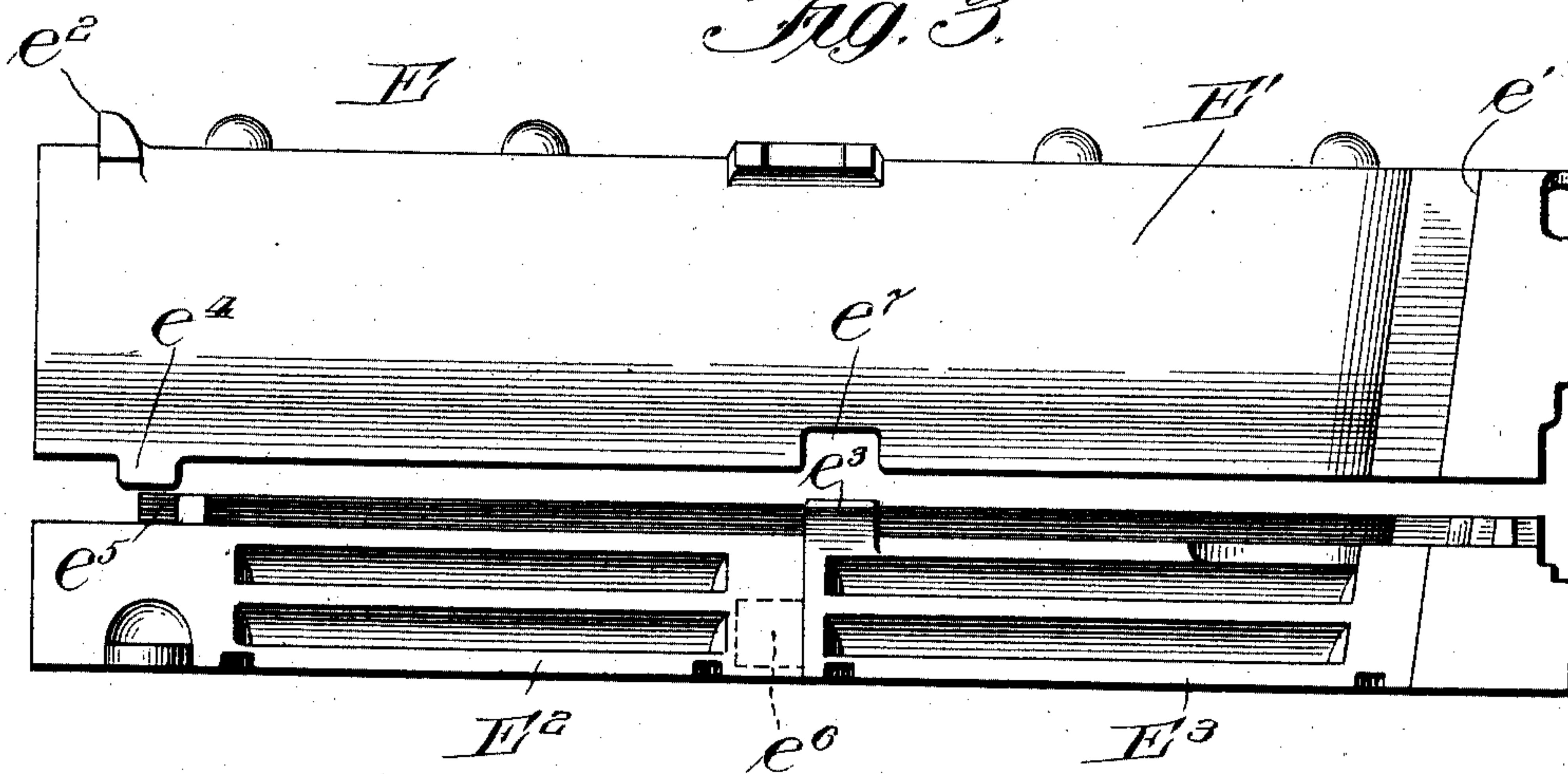
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2 SHEETS—SHEET 2.

*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## FIRE-BOX FOR COOKING-STOVES.

No. 864,737.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed April 22, 1907. Serial No. 369,444.

To all whom it may concern:

Be it known that I, AUGUSTUS F. HARTER, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Fire-Boxes for Cooking-Stoves, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to cook stoves and ranges, and more particularly to the construction and arrangement of the fire box and water coil therein.

In providing cooking stoves and ranges with water coils it is usual to arrange them entirely within the fire box linings which is objectionable as the coils obstruct the interiors of the fire boxes and afford spaces for clinkers, cinders, and ashes to lodge. The location of the coils within the fire box linings at the side thereof also interferes with the fire box being used for burning wood as the cross pipes of the coils interfere with wood being used as fuel as the wood cannot be inserted through the wood fire door or extended through the coal fire box into the usual extension thereof provided for use when wood is burned.

The primary object of my invention is to provide cooking stoves and ranges with a water coil fire box, the coils in which will neither obstruct the interior of the fire box, nor interfere with wood being used as fuel.

A further object of my invention is to provide a water coil fire box for cooking stoves and ranges, the linings of which may be replaced when worn out without removing the coil.

A still further object of my invention is to provide a water coil fire box which will be simple in construction, inexpensive in manufacture, and efficient in use.

The embodiment of my invention herein disclosed may be generally described as comprising a fire box having removable front, rear and end linings, and having a water coil, the pipes of which at the front and rear of the fire box lie closely against the inner surface of the linings, while the cross-pipe at the left end lies outside of the lining and at the rear of the extended fire box, the coil having no cross-pipe at the right side of the firebox, thereby permitting wood to be inserted through the usual fire box door.

My invention will be more fully described herein after with reference to the accompanying drawings in which the same is illustrated as embodied in a convenient and practical form, and in which

Figure 1 is a horizontal sectional view through the portion of a cooking stove or range immediately above the fire box, the fire box being shown in plan; Fig. 2 a

cross-sectional view on line 2—2 Fig. 1; Fig. 3 an elevational view of the inner surface of the rear lining, the sections composing such lining being shown as separated.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference character A designates the wall of a stove or range of any suitable construction provided with the usual extension *a*.

A' indicates the door at the front of the stove through which the coal is inserted into the fire box.

B' and B<sup>2</sup> designate the front and rear walls of the fire box, while reference character B indicates the usual wood feed door located on the right side of the stove.

C' and C<sup>2</sup> designate the grates at the bottom of the fire box, which may be of any usual or ordinary construction.

C indicates the grate frame.

D designates the removable lining at the front of the fire box, which is shown as made in three vertical sections D', D<sup>2</sup>, and D<sup>3</sup>.

Reference character E designates the lining at the rear of the fire box which is preferably made in sections.

Reference characters G and F indicate the right end and left end linings of the fire box which fit within the ends of the front and rear linings.

Reference letter H indicates the inlet pipe through which water passes to the water coil within the fire box. The pipe H extends to a point adjacent the right end of the fire box and is connected by a coupling *h* with a pipe H' lying above the pipe H and extending to the left into the fire box extension *a* where it is connected by an elbow *h*<sup>2</sup> with a cross-pipe H<sup>2</sup>. The opposite end of the cross-pipe H<sup>2</sup> is connected by an elbow *h*<sup>3</sup> to the pipe H<sup>3</sup> extending to a point adjacent the right side of the fire box where it is connected by a coupling *h*<sup>4</sup> with a pipe H<sup>4</sup> lying above the same and extending through the fire box and the exterior thereof to the exterior of the stove, the hot water being delivered from the coil through such pipe.

It will be observed that the pipes H and H' of the water coil lie close to the inner surface of the front lining D while the pipes H<sup>3</sup> and H<sup>4</sup> lie close to the inner surface of the rear lining E. The cross-pipe H<sup>2</sup> lies at the extreme left of the stove within the fire box extension *a* and outside of the end lining G so that such cross pipe does not obstruct the interior of the fire box and does not prevent the extension of the fire box being utilized when the lining G is removed.

The end lining G is provided with laterally projecting lugs *g*' and *g*<sup>2</sup> which engage upwardly projecting lugs *d*<sup>2</sup> and *e*<sup>2</sup> formed upon the upper edges of the front and rear linings, thereby supporting the left end lining G in proper position between the front and rear linings.



The left end lining G is cut away to form spaces surrounding the pipes of the water coil, as clearly shown in Fig. 2.

The right end lining F is similar in general construction to the left end lining G and is provided with laterally projecting lugs which overlie and engage inwardly projecting shoulders  $d'$  and  $e'$  formed on the right ends of the front and rear linings, thereby supporting the right end lining between the ends of the front and rear linings in such a way as to permit the removal of the end lining without removing the coil.

The front and rear linings rest at their lower edges upon the sides of the grate frame C and are provided with flanges  $d$  and  $e$  respectively at their upper edges which overlie the tops of the front and rear fire box walls  $B'$  and  $B^2$ .

In order that the rear lining may be more readily removed when burned out it is preferably formed in three sections. The upper section  $E'$  extends the entire width of the lining, while the lower part of such lining is formed in two sections,  $E^2$  and  $E^3$ . The section  $E'$  is provided with a recess  $e^7$  into which extends a lug  $e^3$  on the inner end of the section  $E^3$ . The section  $E^2$  is provided with a recess  $e^5$  on its upper edge near the left thereof into which it receives a lug  $e^4$  on the lower edge of the section  $E'$ . The section  $E^3$  is provided with inwardly extending lug  $e^6$  at the inner edge thereof which extends within a recess in the adjacent edge of the section  $E^2$ . By means of the interlocking lugs and recesses provided on the sections of the rear lining, the sections are removably held together so that they may be separately removed from the fire box. A further advantage in providing the rear lining in sections is that when only one section is burned out it alone needs to be replaced. The front lining may be readily removed by first lifting out the center section  $D^2$ , and afterwards the end sections.

When it is desired to remove the front or rear lining the end linings are removed by lifting them upwardly after which the front or rear lining may be drawn outwardly into the fire box, and then upwardly out of the stove, it being unnecessary to remove the water coil in order to replace any of the linings.

When it is desired to burn wood in the fire box the left end lining G is removed, thereby rendering available the fire box extension, such fire box extension being unobstructed by the water coil as the cross-pipe thereof is not located within the usual coal fire box, but adjacent the end of the extended fire box, while no cross pipe is used at the right end of the fire box.

From the foregoing description it will be observed

that I have invented an improved water coil fire box for cooking stoves or ranges in which the interior of the fire box is not obstructed by the pipes of the water coil, in which the fire box linings may be readily replaced without removing the water coil, in which the left end cross-pipe of the water coil is so located as to not interfere with the use of the extended fire box when wood is burned, and in which no cross pipe is used at the right end of the fire box, thereby permitting the insertion of wood through the usual wood fire door.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents, as circumstances may suggest or render expedient without departing from the spirit of my invention.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a fire box for cooking stoves and ranges, the combination with removable linings, of a water coil comprising pipes lying in close contact with the inner surfaces of the front and rear linings, and a cross connecting pipe lying outside of the lining at the end of the fire box and within the fire box extension.

2. In a cooking stove or range having the usual wood feed door at the right side thereof, the combination with removable front and rear fire box linings, a water coil comprising pipes lying in close contact with the inner surfaces of the front and rear linings, and a cross connecting pipe lying within the fire box extension, upwardly removable right and left fire box linings, fitted within the ends of the front and rear linings, the right end of the fire box being unobstructed by the coil, thereby permitting the insertion of wood through the wood feed door.

3. In a cooking stove or range, the combination with end and front fire box linings, of a rear fire box lining divided into three sections along a horizontal line and a vertical line extending downwardly from the horizontal line, whereby such lining may be removed through the fire box, and a water coil comprising pipes lying in close contact with the inner surfaces of the front and rear linings.

4. In a cooking stove or range, the combination with end and rear fire box linings, of a front fire box lining divided into a plurality of separable vertical sections, a water coil comprising pipes lying in close contact with the inner surfaces of the front and rear linings, the sections of the front lining being removable upwardly through the space between the pipes of the watercoil and the front fire box wall.

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

AUGUSTUS F. HARTER.

Witnesses:

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HARRY S. GAITHER.