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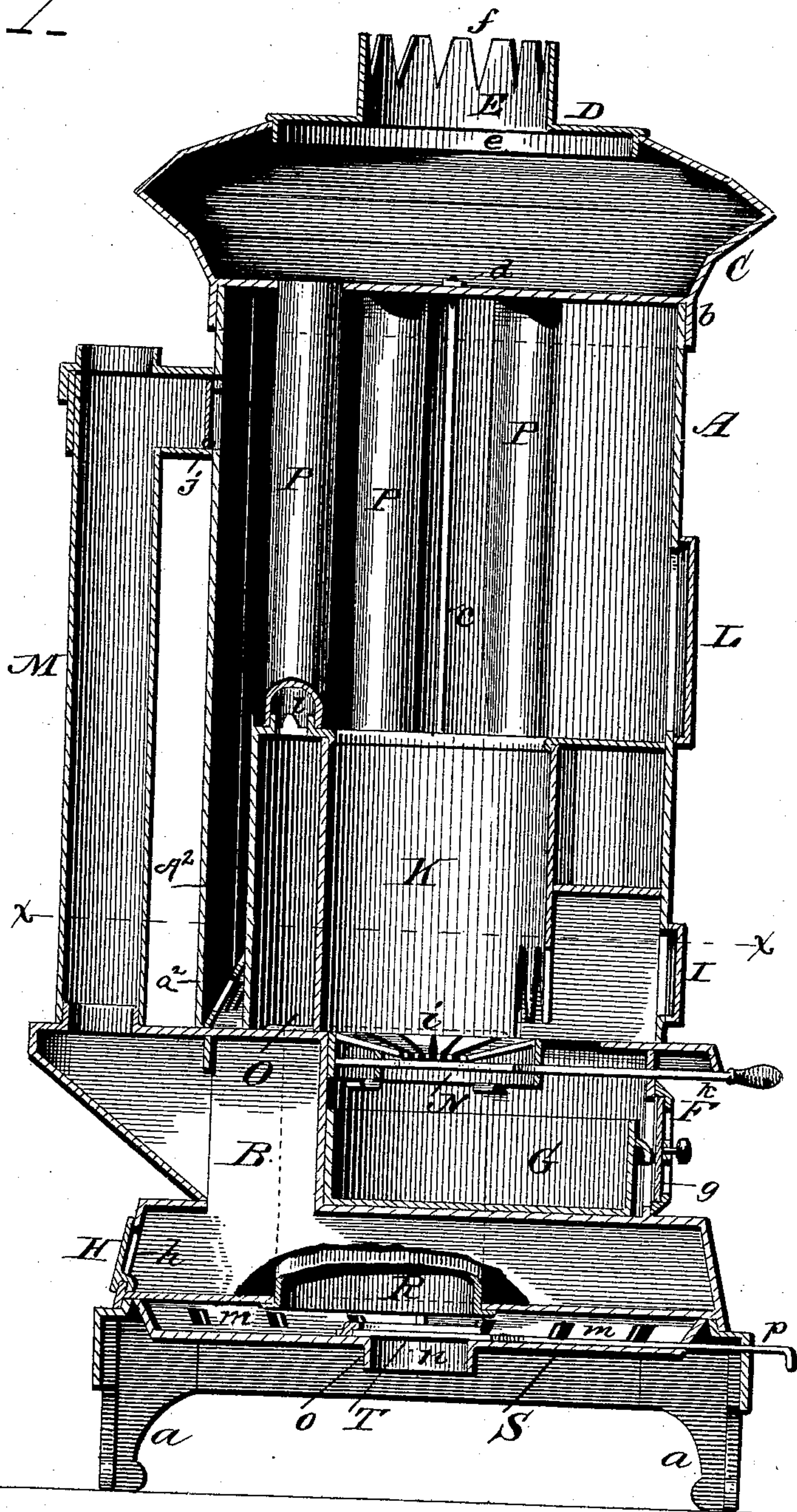
2 Sheets—Sheet 1.

O. OLSON & C. P. CARLSON.  
HEATING STOVE.

No. 543,561.

Patented July 30, 1895.

*Fig. 1.*



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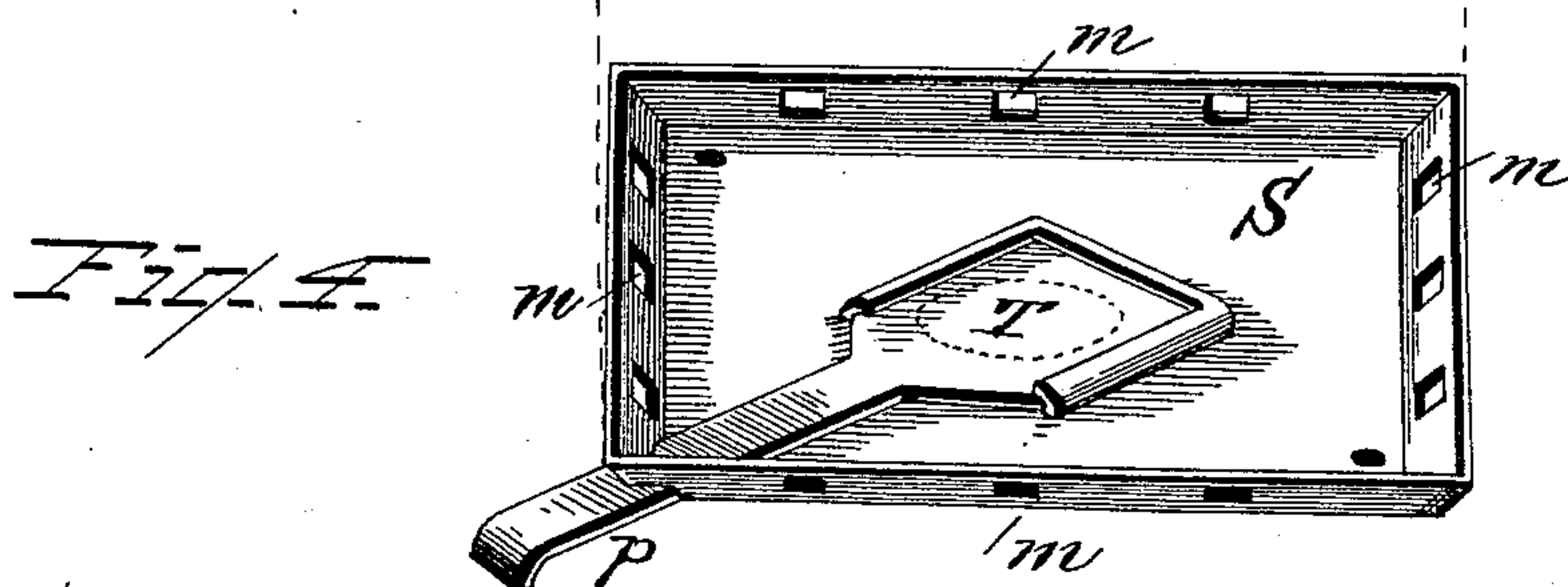
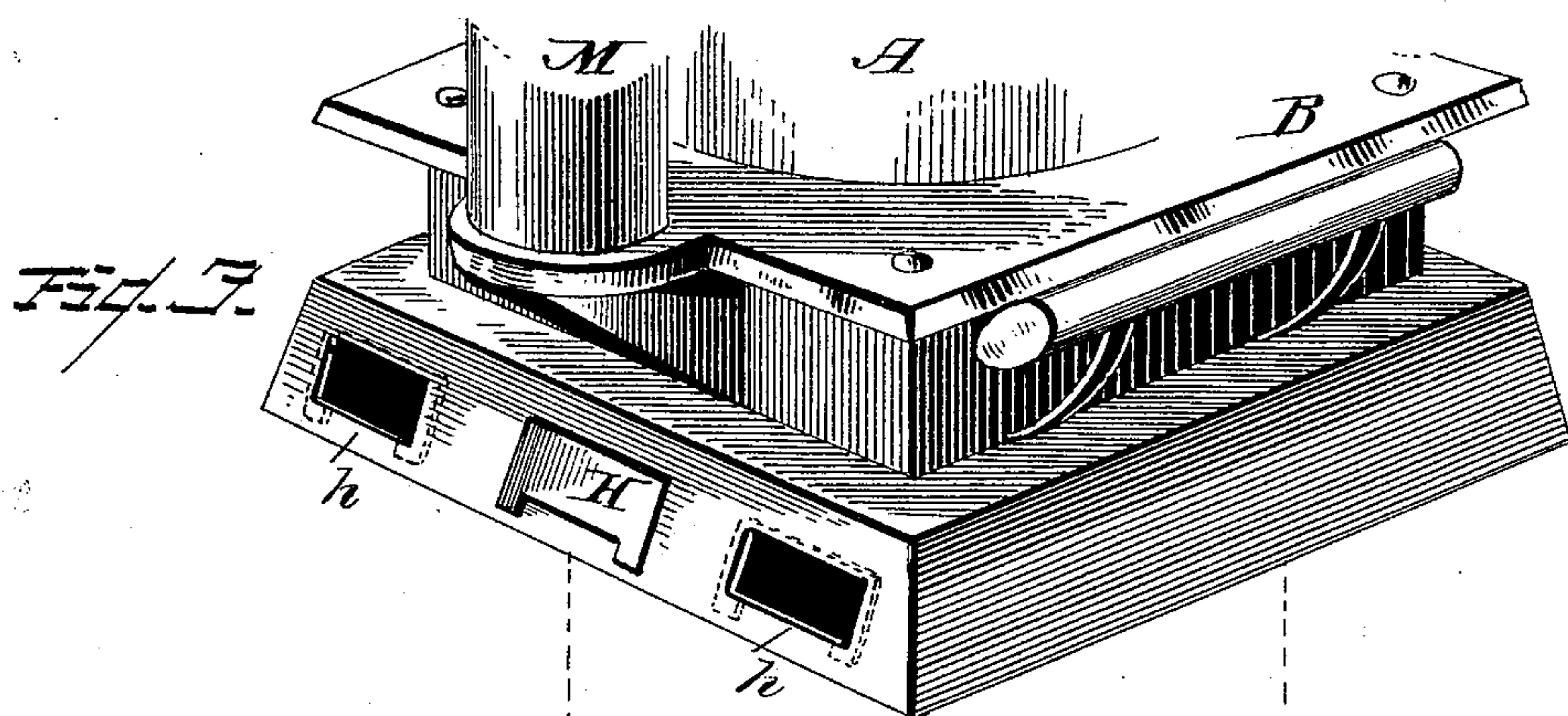
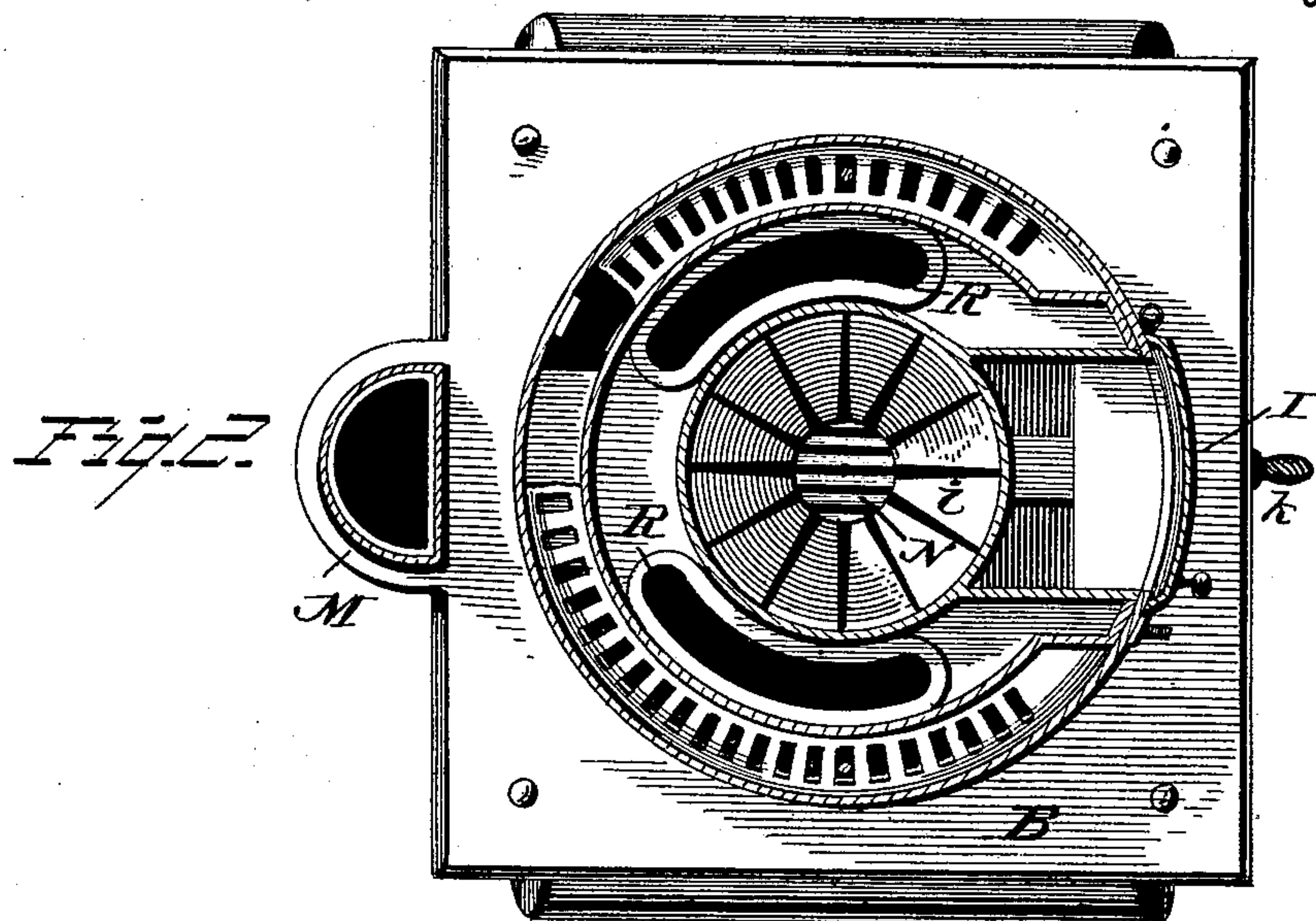
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# UNITED STATES PATENT OFFICE.

OLE OLSON AND CARL P. CARLSON, OF RUTHTON, MINNESOTA.

## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 543,561, dated July 30, 1895.

Application filed April 8, 1895. Serial No. 544,863. (No model.)

*To all whom it may concern:*

Be it known that we, OLE OLSON and CARL P. CARLSON, citizens of the United States, residing at Ruthton, in the county of Pipe Stone and State of Minnesota, have invented certain new and useful Improvements in Heating-Stoves; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has relation to that class of heating-stoves usually termed "surface-burners," and in which air is drawn into the stove from a room or from the outside atmosphere and discharged in a heated condition into any room or rooms by a suitable arrangement of conducting-pipes, whereby the rooms are heated to a proper temperature.

It is the purpose of the invention to provide such a stove as will be simple in construction and at the same time effectually heat the air introduced therein, the air passing into a receiver located at the bottom of the base of the stove and thence into ducts communicating with a hot-air chamber located around the fire-pot and afterward ascending into pipes and escaping into an air-chamber at the top of the stove, from whence it is conducted through pipes to the room or apartment to be heated.

The invention consists in a stove constructed substantially as shown in the drawings and hereinafter described and claimed.

Figure 1 of the drawings represents a longitudinal vertical section of a stove constructed in accordance with our invention, the hot-air pipes being shown in elevation; Fig. 2, a horizontal section taken on line *xx* of Fig. 1; Fig. 3, a perspective view of the base of the stove, showing a portion of the smoke-pipe and body; Fig. 4, an under side perspective view of the cold-air receiver and the valve used to control the central opening therein.

In the accompanying drawings, A represents the main body of the heating-stove, which is supported by a suitable base B, said base being preferably square in shape and raised from the floor by the legs *a*. Connected to the top of the body A is an air-chamber C, of any suitable form and construction, and

has a depending rim *b* to fit over the upper edge of the body to form a close joint between the two. This air-chamber is held in place by suitable brace-rods *c* and nuts engaging the screw-threaded ends thereof above the bottom of the air-chamber, as shown at *d* in Fig. 1 of the drawings.

The air-chamber C has an opening at its top, and within this opening fits a depending flange *e* of a removable cap D, said cap having a collar E, over which fits the pipe for conducting the hot air to the room or apartment desired. This collar E has spring-tongues *f*, which are formed by cutting the sheet metal, as shown in Fig. 1 of the drawings, thereby admitting the easy compression of the collar when fitting over it the hot-air pipe and forming an air-tight joint between the two.

In the front of the base B is a suitable hinged door F, which may have any of the usual forms of sliding dampers, as shown at *g*, and within the base on line with the door is located the usual ash-pan G.

At the rear of the base B are openings *h*, by which the stove or base can be cleaned, said openings being closed by suitable slides H of any desirable construction.

The lower portion of the main body A is provided with a suitable door I, through which access may be obtained to the interior of the body for the purpose of cleaning the grate and giving draft to the fire-pot K. The products of combustion pass from the fire-pot into the main body A of the stove, where they heat not only the body itself, but the pipes P extending up around its sides, and then the products pass down through the lower portion of the body, which forms a passage or flue *A*<sup>2</sup> outside of the chamber O. At the bottom of the flue *A*<sup>2</sup> is formed an inclined grating to catch any pieces of coal or cinder that may fall from the top of the hot-air chamber O and prevent them from passing down into the base. The products pass through this grating into the base B, heating not only the lower portions of the air-ducts R, but the top of the air-receiver S. Thus it will be seen that the products of combustion heat not only the body A from top to bottom, but the air-pipes P, the outer side of the hot-air chamber O, the air-ducts R from top to bottom, and the top of the air-receiver before they escape up the



chimney M. Above the door I is a larger door L to admit the proper feeding of the stove with fuel, which door may be of any suitable construction.

5 At the rear of the base B is the usual smoke-pipe M, which communicates therewith and with the body A at or near its top, the products of combustion entering the smoke-pipe being conducted off in the usual manner  
10 through a pipe entering the fireplace or chimney.

The smoke-pipe M may be secured in place in any suitable and well-known manner, and at the top of said pipe is a suitable damper j.  
15 Below the grate i is a draw-grate N, which is provided with a suitable handle k extending out through the front of the base within convenient reach.

Around the exterior of the fire-pot K is an  
20 air-chamber O, and at its top has a plurality of openings surrounded with upturned flanges l, over which fit the air-pipes P. These air-pipes extend up and communicate with the interior of the air-chamber C, whereby the  
25 air after it is heated passes up through the pipes and into the air-chamber and thence out through the pipe connected to the collar E.

The air-chamber O communicates at its lower end with suitable air-ducts R, which  
30 ducts are located in the base B of the stove, and these ducts in turn communicate with an air-receiver S located under the base of the stove. This air-receiver S has openings m around its four sides, which openings are for  
35 the purpose of drawing the cold air from the room into the receiver, where it is conducted by the ducts R into the air-chamber O, and by virtue of the chamber being located around the fire-pot K, and the wall of said fire-pot  
40 forming one of the walls of the air-chamber, the air is quickly and effectually heated before it passes up through the pipes P. In order that air may be drawn into the receiver S from a room other than that in which the

stove is located the bottom of the receiver has an opening n, around which is a depending flange o, to which may be connected a suitable pipe leading from another room or rooms or to the outside atmosphere. This central opening n is provided with a suitable sliding  
50 valve T, which valve has a handle p extending out through the front of the stove in convenient position for operation. The opening n may be shut off or closed when desired by means of the valve T, thereby taking the air  
55 only from the room in which the stove is located. The air as it ascends into the pipes P is also heated, as said pipes are surrounded by the heat coming from the fire-pot, and consequently every provision is made for effect-  
60 ually heating the cold air previous to its discharge.

The stove is equally as well adapted to either hard or soft coal and will produce a great amount of heat with a comparatively  
65 small quantity of fuel.

Having now fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a heating stove the main body A, the hot  
70 air chamber C, at its top; the fire pot, the air chamber O partially surrounding it, and the air pipes P, connecting the two chambers O, C; combined with the flue A<sup>2</sup>, in the lower portion of the body A, the inclined grate a<sup>2</sup>,  
75 the air ducts R, extending up through the base and connecting at their upper ends with the chamber O, the air receiver, and the base, with which the stove pipe connects, substantially as shown. 80

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

OLE OLSON.

CARL P. CARLSON.

Witnesses:

JACOB F. CARLSON,

JESS F. SLINATE.