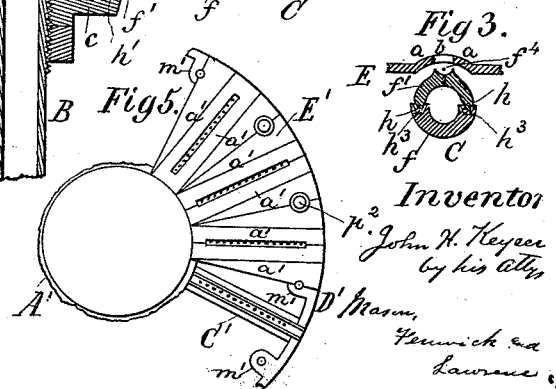
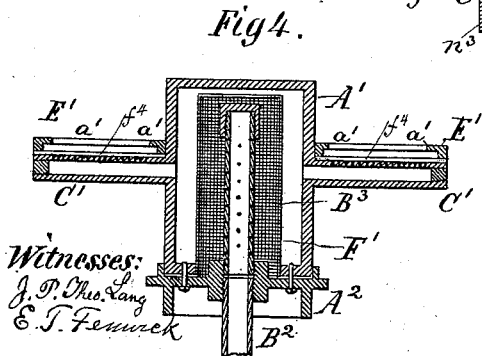
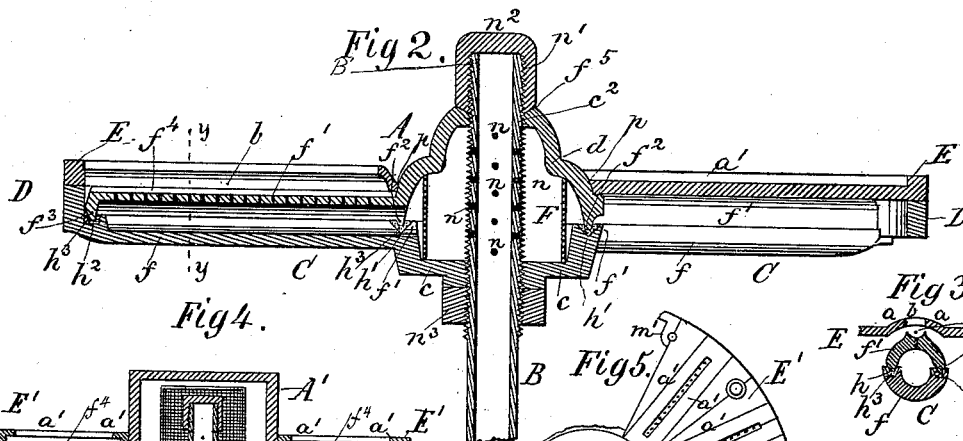
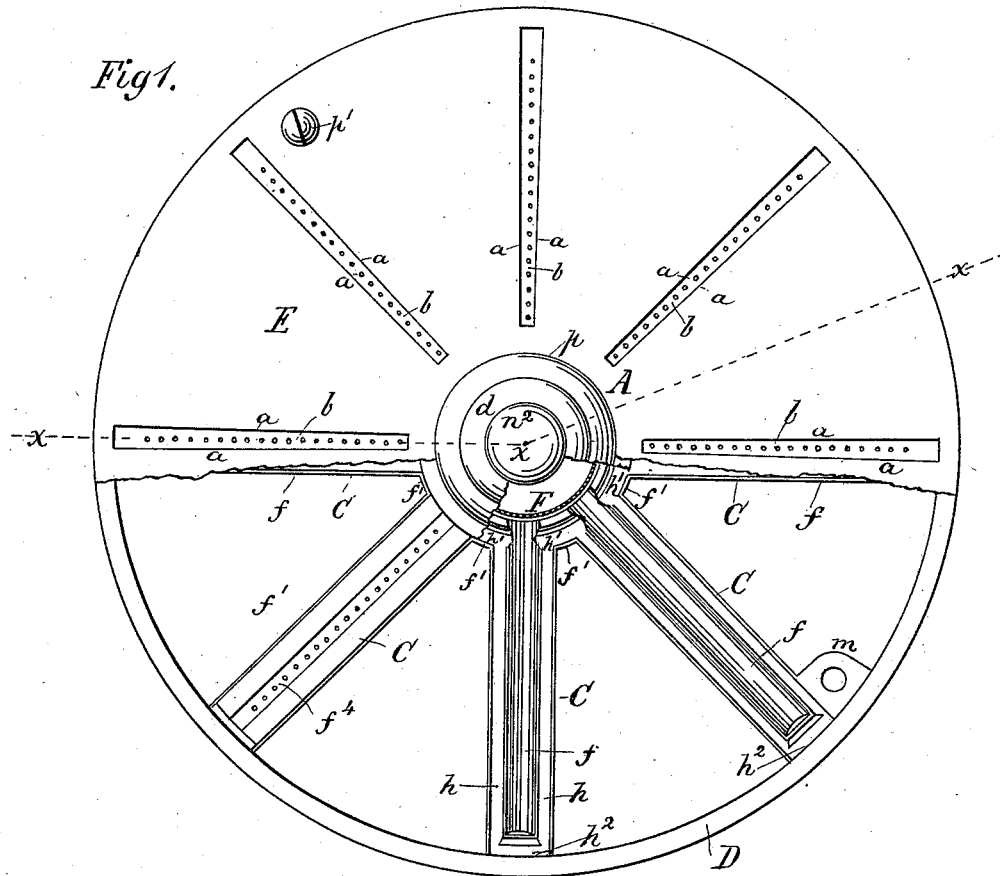


(No Model.)

J. H. KEYSER.  
GAS BURNER FOR STOVES, &c.

No. 418,846.

Patented Jan. 7, 1890.



Witnesses:  
J. P. Thos. Lang  
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# UNITED STATES PATENT OFFICE.

JOHN H. KEYSER, OF NEW YORK, N. Y.

## GAS-BURNER FOR STOVES, &c.

SPECIFICATION forming part of Letters Patent No. 418,846, dated January 7, 1890.

Application filed July 30, 1889. Serial No. 319,159. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN H. KEYSER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gas-Burners for Stoves, Furnaces, and other Heating Structures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention consists in an improved construction of the gas-burner for which a patent was granted to me on the 3d day of September, 1889, No. 410,566.

In the accompanying drawings, Figure 1 is a plan view of my improved gas-burner, a portion of the slitted burner-plate being broken away to more plainly exhibit the parts below. Fig. 2 is a vertical section in the line  $xx$  of Fig. 1, and Fig. 3 is a section in the line  $yy$  of Fig. 2. Fig. 4 is a vertical central section of the gas-burner as I have heretofore constructed it; and Fig. 5 is a broken top view of the same, these views being shown for the purpose of illustrating the difference between my present mode of making the burner and that heretofore practiced by me, and also making the utility of my new mode more apparent.

A in the drawings represents a circular gas receiving and superheating chamber, closed at top and bottom except where the gas-supply pipe B, having perforated extension portion B', is inserted into it.

C C are radial tubular burner-arms.

D is a band or ring encircling the burner-arms.

E is a slitted burner-plate having inclined wind-guards  $a$  at the edges of its burner-slits  $b$ , and F a wire-gauze cylinder encircling the perforated extension portion B' of the gas-supply pipe B.

The gas-burner thus far described may be regarded substantially the same in principle of operation as my before-mentioned allowed invention, and it is mainly the manner in which the parts are constructed and united that constitutes my present invention, which I will now proceed to describe specifically.

The lower portion  $c$  of chamber A is con-

structed separate from the upper portion  $d$ , and with said lower portion semicircular portions  $f$ , constituting halves of the tubular burner-arms, are cast, being separated by 55  
channeled packing portions  $f'$ , and around these halves the band or rim D is cast, so that the portions  $c, f, f'$ , and D are in one piece. Each half burner-arm is cast with packing receptacle, channels, or depressions  $h, h', h^2$ , 60  
and the channels of all the arms connect by means of the cross-channels  $h' h^2$ , and they are packed with asbestos or other suitable packing material  $h^3$ . On two or more of these half burner-arms perforated lugs  $m$ , for the 65  
reception of the clamping-screws  $m'$  or other fastenings of the slitted burner-plate, are cast. The upper section or portion  $d$  of the chamber A is cast with a central hole  $c^2$  in its top and with upper perforated portions  $f'$ , 70  
constituting the other halves of the burner-arms. The said halves are separated by packing portions  $f^2$ , and the ends of these halves of the arms are formed with vertical flanges  $f^3$ , 75  
of about the same thickness as the width of the packing-channels in the lower halves or the thickness of the metal along the radial edges of the upper halves of the arms. In the top of the halves semicircular wind-guard channels  $f^4$  are formed, and at right angles 80  
thereto along these channels the fine perforations or gas jet or burner passages are provided. At the top of the central passage in the upper portion of the chamber A a beveled surfaced or ground joint  $f^5$  is formed. The 85  
two cast portions described are placed together and just match one another, as shown in Figs. 1, 2, and 3. The perforated extension-pipe B' is screw-threaded peripherically and its perforations  $n$  occupy a place within 90  
the chamber A, while its upper imperforate screw-threaded end  $n'$  extends up through the hole  $c^2$  in its top and receives a clamping and packing cap-nut  $n^2$ . Below the perforations  $n$ , outside the chamber A, the supply- 95  
pipe B is provided with a clamping-nut  $n^3$ , and by means of the nuts  $n^2$  and  $n^3$  the two described cast portions of the burner are bound tightly together, gas-tight joints being formed between the parts by the asbes- 100  
tus packing  $h^3$ , the ground joint  $f^5$ , and a suitable ground joint or gasket between

the chamber A and the nut  $n^2$ . The slitted burner-plate E may be made in one piece, as in Fig. 1, or of radially-divided segmental sections  $E'$ , as in Fig. 5, and when made in one piece a central hole  $p$  and holes for fastenings  $p'$  are provided in it at points opposite the lugs  $m$ , and it is set down upon a shoulder of the reservoir and the ring D and confined in place by means of the screws  $p'$  or other fastenings passed through it and the lugs  $m$ , as illustrated in Figs. 1 and 2.

In Figs. 4 and 5 I have represented a burner as heretofore made by me and which in its main features is like my heretofore-referred-to patented burner.

The chamber  $A'$ , with burner-arms  $C'$  complete, and ring  $D'$  are cast in one piece. The perforated pipe  $B^3$  does not extend through the chamber A and the wire-gauze cylinder does not extend up to the top of the chamber  $A'$ . The bottom plate  $A^2$  of said chamber is cast separate from said chamber, and is tapped to receive the screw-threaded ends of the sections of the pipe  $B^2$  and  $B^3$ . The outer ends of the burner-arms are plugged, the plugs being inserted after the cores have been removed. The ring  $D'$  is formed with perforated fastening-lugs  $m'$ , and the segments of the slitted burner-plate are provided with half-holes, which form, when united, complete holes for the reception of the fastenings  $p^2$ .

Having in mind views 4 and 5, it will be apparent that by means of the divided construction of the gas-burner, as herein de-

scribed, the manufacturer is enabled to dispense with cores, and thus save in the casting operation much of the expense incurred by the employment of core-molds and dried and baked cores, which are necessary when the undivided chamber  $A'$ , arms  $C'$ , and ring or band D are cast all in one piece, in the manner illustrated in the said views, Figs. 4 and 5.

What I claim is—

1. In a gas-burner provided with the ordinary gas-conducting channels through its arms, the combination, with the lower halves of the arms, the ring, and the lower portion of the chamber, all provided with connection and pack channels adapted to be filled with asbestos or suitable packing, of the upper section having end flanges and radial edges adapted for entering the said packing and connection channels, and means for clamping the parts together, substantially as described.

2. The combination of the divided casting of the gas-burner constructed as described, the perforated extension  $B'$  of the supply-pipe B, binding the parts together, and the wire-gauze cylinder applied around the perforated extension  $B'$  and between the two parts of the chamber A, substantially as and for the purpose described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOHN H. KEYSER.

Witnesses:

WILLIAM TURTON,

THOMAS F. DAY.