

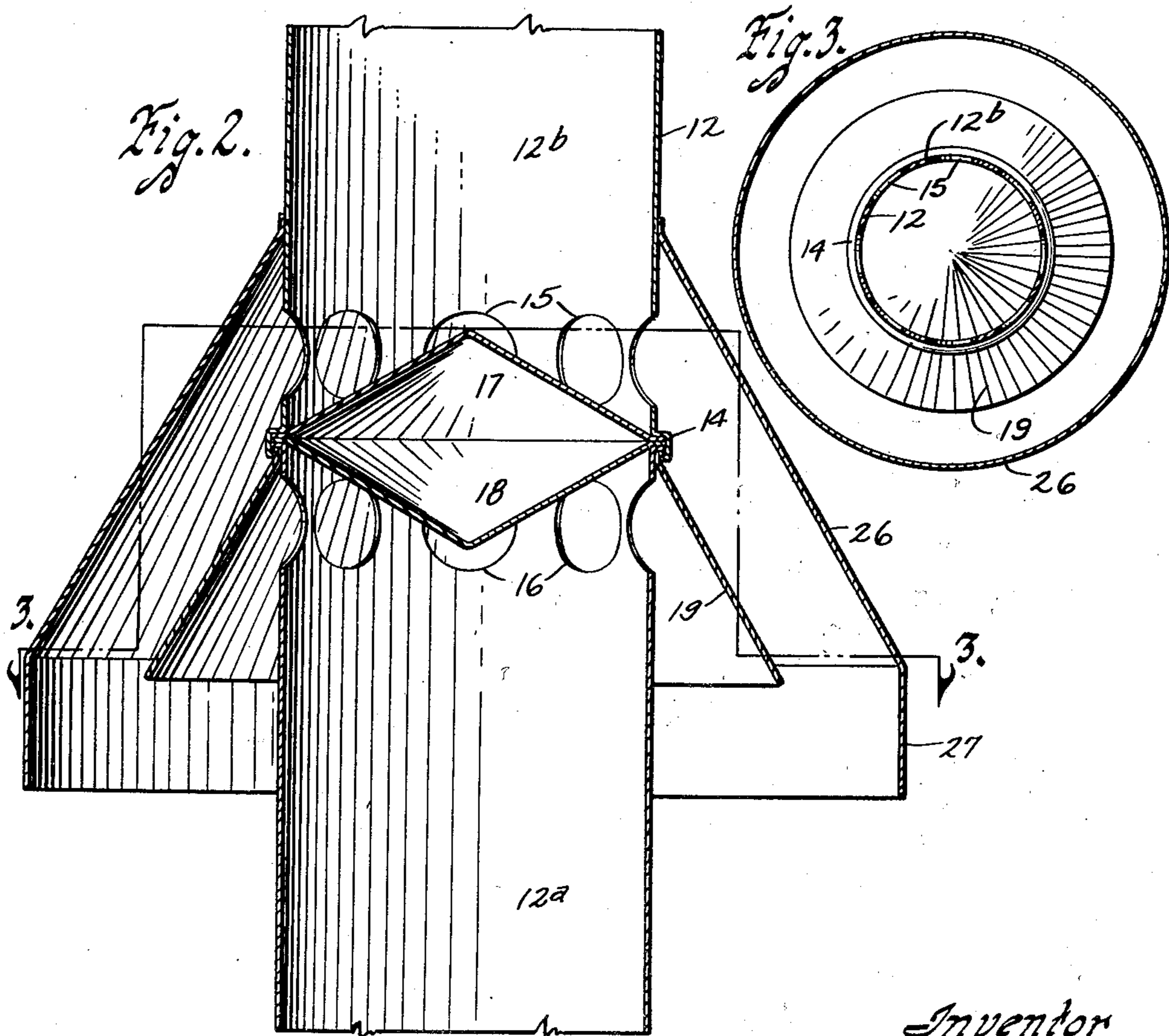
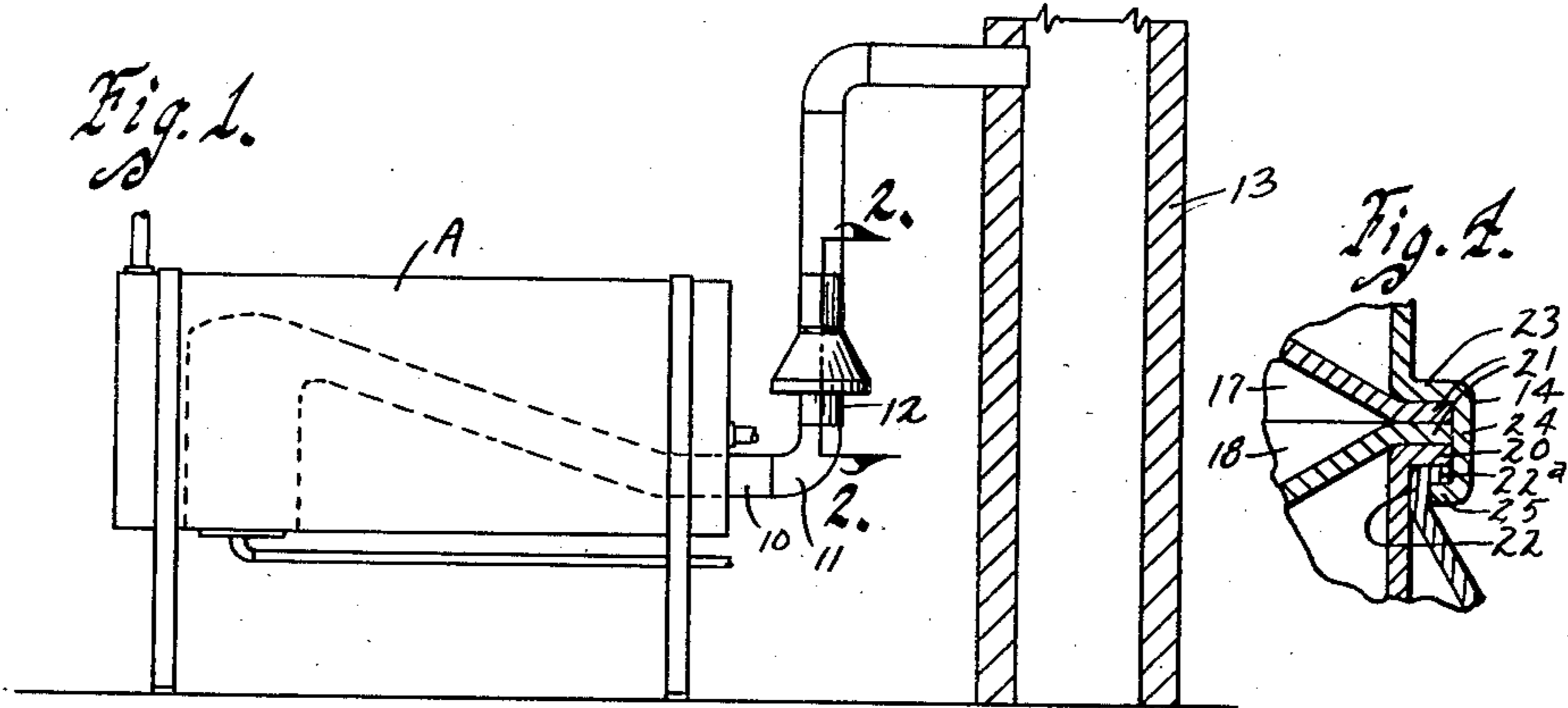
Feb. 23, 1937.

R. L. KLAR

2,071,409

DRAFT DIVERter

Filed May 25, 1936



Witness
H. S. Menzemaier

Inventor
~ Robert L. Klar ~
By Bair, Freeman & Sinclair
Attorneys

UNITED STATES PATENT OFFICE

2,071,409

DRAFT DIVERTER

Robert L. Klar, Des Moines, Iowa, assignor to
Leland Heater Company, Des Moines, Iowa, a
corporation of Iowa

Application May 25, 1936, Serial No. 81,699

7 Claims. (Cl. 126—307)

The object of my invention is to provide a draft diverter adapted for use in connection with pipes for conducting the products of combustion away from the point of combustion.

5 More particularly, it is my object to provide a draft diverter of such construction that it will allow excessive draft and that it will not allow too much back draft on the appliance.

10 In this connection, it is my purpose to provide a draft diverter in connection with a pipe for carrying products of combustion, and having spaced holes, the draft diverter including a partition preferably in the form of a double cone between the spaced holes, a hood in the form of
15 a truncated cone connected to a pipe between the spaced holes and another larger generally similar hood connected to the pipe above the holes.

20 With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my draft diverter, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:
25

Figure 1 is a side elevation of a draft diverter embodying my invention shown installed in connection with a water heater.

30 Figure 2 is a vertical, sectional view of the draft diverter taken on the line 2—2 of Figure 1.

Figure 3 is a horizontal, sectional view taken on the line 3—3 of Figure 2; and

Figure 4 is a sectional view showing the joint of Figure 2 on an enlarged scale.

35 My draft diverter may be illustrated as used in connection with a hot water heater, such for instance as is illustrated in the Leland patent, No. 1,823,803.

40 In the accompanying drawing, I have used the reference character A to indicate a water heater of the type under consideration. Such a water heater has, as nearly as may be, a balanced draft. The products of combustion emerge through the pipe 10, which is connected by an
45 elbow 11 with the pipe 12 leading to the stack 13.

Sections of the pipe 12 are connected by a seam, as at 14.

50 In the wall of the pipe 12 above the seam 14 is a horizontal row of holes 15 and below the seam 14 is a horizontal row of holes 16.

In the pipe 12 between the upper and lower rows of holes is a partition, which is preferably in the form of a double cone, comprising the upper cone 17 and the lower inverted cone 18.
55 Th cone-shaped partition members are used in

preference to a disc-type partition, because they afford better deflecting and guiding means.

A hood 19 in the form of a truncated cone has its smaller upper end secured to the pipe 12 between the upper and lower rows of holes, and
5 preferably for convenience in manufacture, this cone is secured to the pipe at the seam 14.

As shown in the particular form of structure here illustrated, the lower section 12a of the pipe 12 has at its upper edge an outwardly extending annular flange 20.

The cone partition members 17 and 18 have flanges 21 at their peripheries resting above the flange 20.

The hood 19 has at its upper, smaller end, a
15 short cylindrical portion 22 to fit the pipe 12 and terminating in a horizontal, peripheral flange 22a arranged just below the flange 20 at the upper end of the pipe section 12a.

The pipe section 12b above the section 12a has
20 at its lower end a peripheral flange 23 at the outer end of which is a downwardly extending annular flange 24, having at its lower end an intumed annular flange 25.

Thus the flange 21 rests above the flanges at
25 the peripheries of the cone partition members 17 and 18 and the flange 25 is below the flange 22a at the upper end of the cone hood 19.

There is thus provided a simple and inexpensive joint structure for the assembling of the
30 pipe sections 12a and 12b, the cone partition members 17 and 18 and the hood 19.

The upper smaller end of a hood 26 having the form of a truncated cone is secured to the outside of the pipe 12 above the upper row of holes 15.
35 The hood 26 is larger than the hood 19 and extends downwardly preferably surrounding the hood 19 and spaced therefrom.

At the lower end of the hood 26, it has a cylindrical downwardly extending skirt 27, which
40 extends preferably from just above the level of the lower end of the hood 19 to a point substantially below the hood 19.

The fault of the ordinary draft diverters in many cases and especially when used with a balanced down draft heater, such as that shown at
45 A is twofold. There are times when too much draft is imposed,— that is there is too great a pull through the pipe for carrying away the products of combustion,—and in the second place, sometimes there is a back draft from the stack, and that back draft is imparted to the heater.

My present draft diverter has been carefully tested, and I find that it is free from these two objectionable features.
55

In the use of my draft diverter, the products of combustion from the pipe 10 travel upwardly through the lower section 12a of the pipe 12 to the partition member 18, which tends to deflect them and they pass outwardly from the pipe section 12a through the hole 16 to the space between the pipe section 12a and the hood 19.

They then pass downwardly under the edge of the hood 19 and upwardly between the hood 19 and the hood 26 and through the holes 15 into the upper pipe section 12b and thence downwardly to the stack.

If there is a strong chimney pull, it is not imparted to the pipe section 12a and the heater, but there is then a tendency to draw air from the basement or from the room in which the heater is located into the lower part of the hood 26, so that no chimney draft or pull is imposed on the heater.

On the other hand, if there is a back draft from the stack, it is not imparted directly to the pipe section 12a, and the heater, but is dissipated from the lower end of the hood 26 into the basement or room.

Thus the two objectionable features of other draft diverters are avoided by a draft diverter having the structure herein described.

It will be obvious that changes can be made in the details of the construction and arrangement of parts of my improved draft diverter and it is my purpose to cover by my claims, any modified forms of structure which may be reasonably included within their scope and within the scope of my invention.

I claim:

1. A draft diverter structure having a pipe for conducting products of combustion, a partition therein, the pipe having openings in its wall above and below the partition, a downwardly opening flaring hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings.

2. A draft diverter structure having a pipe for conducting products of combustion, a partition therein in the form of a double cone, the pipe having openings in its wall above and below the partition, a downwardly opening truncated cone-

shaped hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings.

3. A draft diverter structure having a pipe for conducting products of combustion, a partition therein, the pipe having circumferential rows of openings in its wall above and below the partition, a downwardly opening truncated cone-shaped hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings.

4. A draft diverter structure having a pipe for conducting products of combustion, a partition therein, the pipe having openings in its wall above and below the partition, a downwardly opening truncated cone-shaped hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings, and extending below the first hood.

5. A draft diverter structure having a pipe for conducting products of combustion, a partition therein, the pipe having openings in its wall above and below the partition, a downwardly opening truncated cone-shaped hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings, with a cylindrical portion extending from its lower end downwardly past the first hood.

6. A draft diverter structure having a pipe for conducting products of combustion, a partition therein, the pipe having openings in its wall above and below the partition, a downwardly opening truncated cone-shaped hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings, and substantially surrounding the first hood.

7. A draft diverter structure having a pipe for conducting products of combustion, a partition therein in the form of a double cone, the pipe having circumferential rows of openings in its wall above and below the partition, a downwardly opening truncated cone-shaped hood secured to the pipe between the upper and lower openings, a similar larger hood secured to the pipe above the openings, and substantially surrounding the first hood.

ROBERT L. KLAR.