

Dec. 8, 1931.

B. L. FLAHERTY

1,835,703

PIPE AND CHIMNEY CONNECTION

Filed March 25, 1930

2 Sheets-Sheet 1

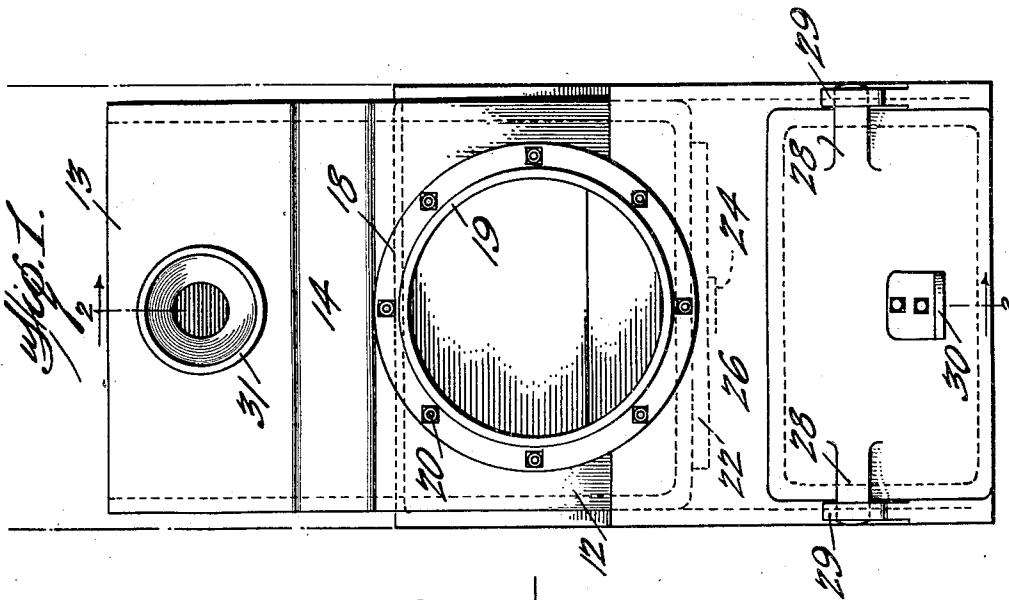
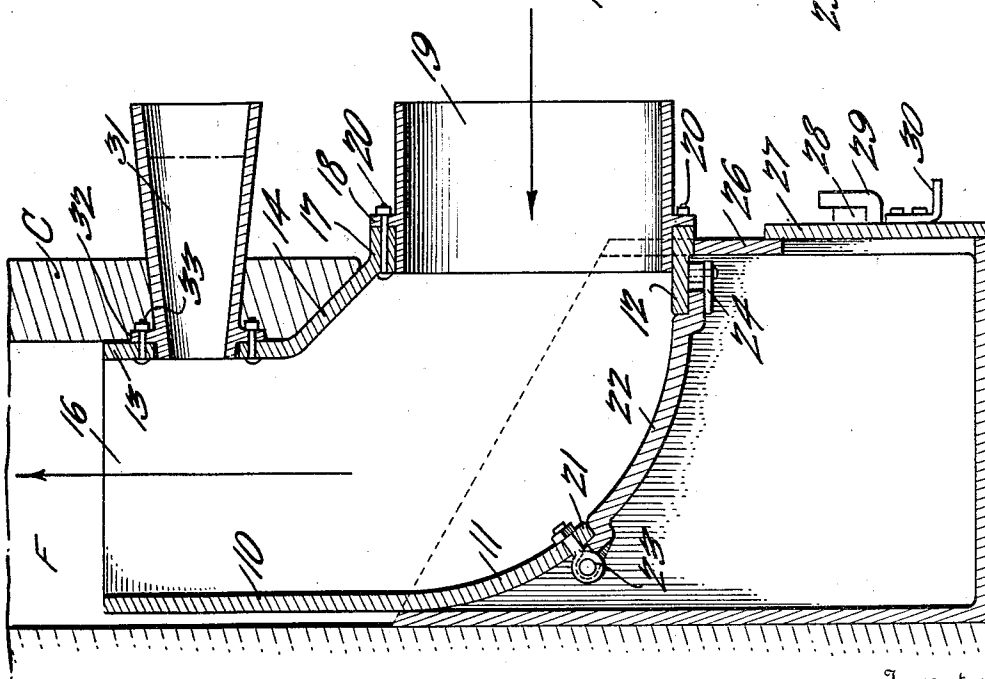
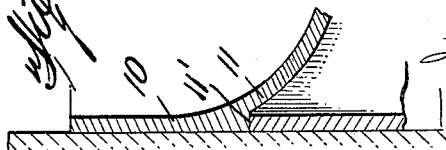


Fig. 3.

Fig. 4.



Inventor

B. L. FLAHERTY

John W. Flaherty

Attorney

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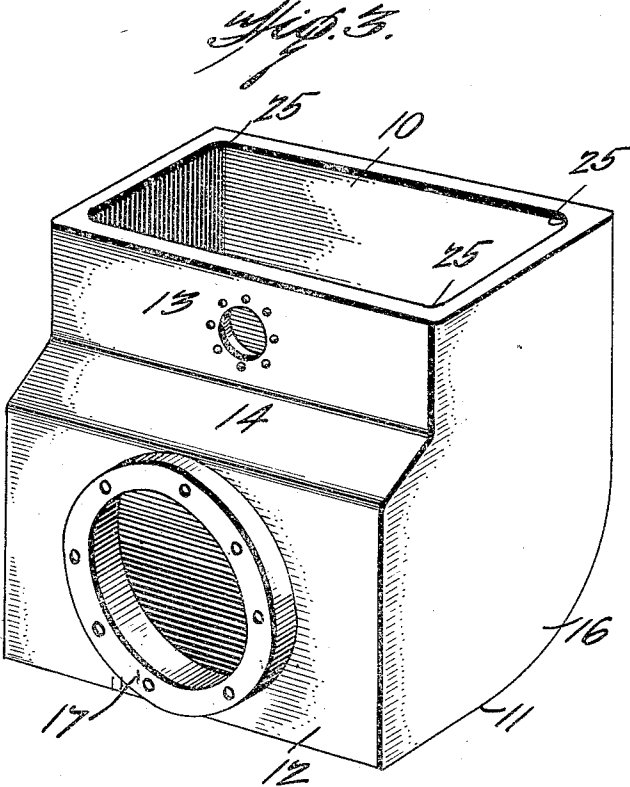
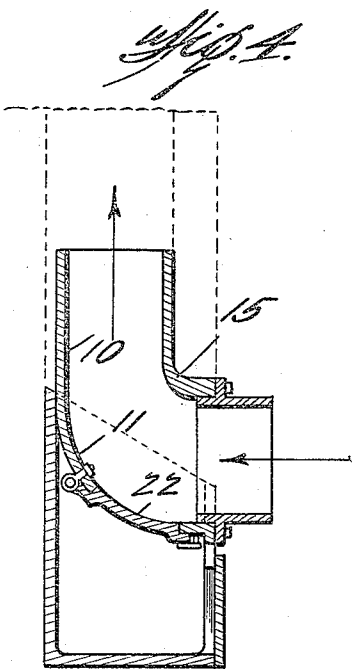
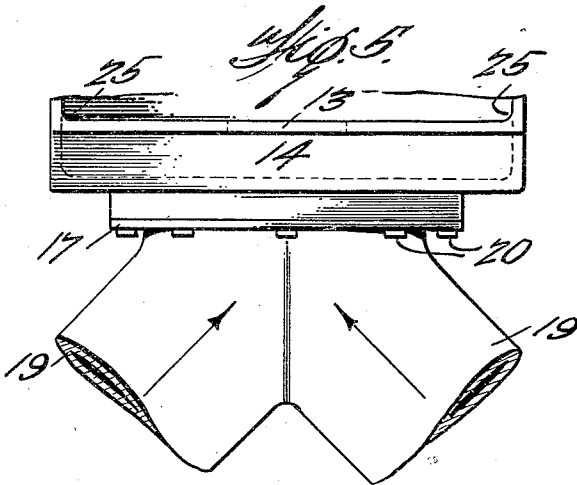
B. L. FLAHERTY

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2 Sheets-Sheet 2



Inventor

B. L. FLAHERTY

By *J. H. [Signature]*

Attorney

UNITED STATES PATENT OFFICE

BURT L. FLAHERTY, OF DAYTON, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO CENTRAL HEATING EQUIPMENT CORPORATION, OF DAYTON, OHIO, A CORPORATION OF OHIO

PIPE AND CHIMNEY CONNECTION

Application filed March 25, 1930. Serial No. 438,817.

This invention relates to pipe and chimney connection and has special reference to a pipe and chimney connection forming the intake for a chimney, stack or the like of the type shown in my copending application bearing the Serial Number 438,087.

One important object of the invention is to provide an improved pipe and chimney connection arranged for the connection of one or more smoke pipes and adapted to be located within a chimney.

A second important object of the invention is to provide a device of this description arranged to receive the flowing gases from a smoke pipe and conduct them into chimney or the like without the production of eddy currents and in such manner that a smooth and uninterrupted flow of the gases will be obtained thereby promoting draft.

A third important object of the invention is to provide a device of this character having a combustion chamber so as to ensure practically complete combustion of all combustible matter in gaseous, vaporized or solid states before entering the chimney proper.

A fourth important object of the invention is to provide means in such a device to permit the removal of soot and the like from the device.

A fifth important object of the invention is to provide an improved combination of such a pipe and chimney connection with a soot receiving receptacle.

A sixth important object of the invention is to provide a novel device of this character adapted not only for connection of one or more smoke pipes of ordinary size but also for connection of one or more smaller pipes such as are used in connection with gas stoves, gas heaters and the like.

With the above and other objects in view, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:

Figure 1 is a front elevation of the complete invention;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a perspective view of the pipe and chimney connection removed from the chimney;

Figure 4 is a reduced scale section similar to Figure 2 but showing a slight modification of the invention;

Figure 5 is a detail plan view illustrating the manner of connecting two smoke pipes to the pipe and chimney connection.

Figure 6 is a detail section showing a modified joint between the pipe and chimney connection and soot receptacle.

The embodiments of the invention here shown are not to be understood as other than certain preferred forms and the invention may be produced in other forms having proportions and sizes to suit different purposes to which the device is adaptable. The forms here shown and described are therefore to be understood as merely typical of a wide range of embodiments of the invention.

In the present forms the pipe and chimney connection is preferably in the form of a hollow casting of iron or other suitable metal and has a vertical back wall 10 which continues downwardly and forwardly in a regularly curved portion 11, the arc of curvature being substantially 90°. This curved portion merges at its forward end into a vertical front wall 12. The casting also has a vertical front wall 13 at its upper end and from the lower end of this wall extends (in the form shown in Figure 2) a forwardly inclined front wall 14, the lower edge of which also joins the front wall 12. In the form shown in Figure 4 the wall 14 is replaced by an arcuate wall 15. The walls just described are joined by side walls 16 which are perpendicular to the front and back walls. The upper edges of the walls 10, 13 and 16 all lie in the same horizontal plane. Thus the upper part of the device forms a rectangular portion of proper size to fit within the flue F of a chimney C.

The front wall 12 is provided centrally with an opening around which is a forwardly

extending annular flange 17 the forward edge of which forms a seat for the flange 18 of a smoke pipe nipple 19, bolts 20 serving to hold the nipple in place. This nipple may either
5 be straight as in Figure 2 for connection of a single smoke pipe or may be branched as in Figure 5 for connection of two smoke pipes.

It will now be noted that the internal cross sectional area of the pipe and chimney
10 connection is much greater than the pipe area so that, just back of the nipple the casting is both wider and higher than the diameter of the pipe. Also, if a plane be passed at 45°
15 through the wall 11 and its center of curvatures it will be found that the distance between walls 11 and 14 is greater than the distance between walls 10 and 13. Thus gases
20 entering through the nipple will flow smoothly up into the chimney and no checking or back pressure will be produced thus promoting an efficient draft. Further the presence
25 of the enlarged portion just behind the nipple permits the gases to move slowly at this point and promotes the completion of combustion in any unburnt gases.

In the wall 11 is an opening 21 which is closed by a door 22 hinged at 23 to the rear
30 portion of the wall 11. A latch 24 is provided at the forward edge of the opening to hold the door closed and it is to be noted that the door is curved to conform to the curvature of the wall 11 so as not to interfere
35 with the smooth flow of gases.

The interior corner of all meeting walls
35 are joined by curved surfaces 25 to eliminate all sharp corners and the interference caused thereby.

The curved portion of the pipe and chimney connection is seated in the open upper
40 end of a soot receptacle 26 which is held in the lower part of the chimney, C, and is provided with a suitable cleanout door 27 here shown as a flat metal plate having lateral
45 lugs 28 fitting L-shaped brackets 29 cast on the front of the receptacle 26. This door is opened by simply lifting the same by its handle 30 to free the lugs from the brackets whereupon it may be moved away bodily
50 from the soot receptacle.

In the front wall 13 there may be provided a suitable opening to receive the inner end of
55 a nipple 31 provided with a flange 32 where-through extend bolts 33 by means of which the nipple is secured in place. This nipple is of flaring form so that it may receive the delivery end of a small pipe such as may lead from a gas heater or stove.

A modified form of joint between the pipe
60 and chimney connection and soot receptacle is shown in Figure 6 in the form of the shoulder 11'.

There has thus been provided a simple and efficient device of the kind described and for
65 the purpose specified.

It is obvious that changes may be made in

the form and construction of the invention without departing from the principles thereof. It is not, therefore, desired to confine the invention to the exact form herein shown and described but it is desired to include all
70 such as come within the scope claimed.

Having thus described the invention, what is claimed is:—

1. A pipe and chimney connection having an intake end and a delivery end at a vertical
75 angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said connection having parallel side walls and the internal
80 cross sectional area of the portion between the intake and delivery ends being greater than the internal cross sectional area of the respective ends.

2. A pipe and chimney connection having
85 one end adapted for connection to a smoke pipe and the other end adapted to enter a chimney and extend upwardly therein, said connection being expanded between said ends
90 to provide a combustion chamber and thereby promote complete combustion of partially consumed and unconsumed fuel flowing from the smoke pipe, the bottom and rear of the expanded portion being curved to provide
95 free and uninterrupted flow of gases through the connection whereby to promote draft.

3. A pipe and chimney connection having an intake end and a delivery end at a vertical
100 angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said connection having parallel side walls and the internal
105 cross sectional area of the portion between the intake and delivery ends being greater than the internal cross sectional area of the respective ends, and a downwardly opening soot door in said curved wall conforming in
110 curvature to the wall.

4. A pipe and chimney connection having an intake end and a delivery end at a vertical
115 angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said connection having parallel side walls and the internal cross sectional area of the portion between the intake and delivery ends being greater than the internal
120 cross sectional area of the respective ends, said intake end having a front wall provided with a tubular forward extension, and a pipe nipple fitting said extension and projecting forwardly therefrom.

5. A pipe and chimney connection having
125 an intake end and a delivery end at a vertical angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said intake end
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having a front wall provided with a tubular forward extension, a pipe nipple fitting said extension and projecting forwardly therefrom, and a downwardly opening soot door in said curved wall conforming in curvature to the wall.

6. A pipe and chimney connection having an intake end and a delivery end at a vertical angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said connection having parallel side walls and the internal cross sectional area of the portion between the intake and delivery ends being greater than the internal cross sectional area of the respective ends, said intake end having a front wall provided with a tubular forward extension, a pipe nipple fitting said extension and projecting forwardly therefrom, and a downwardly opening soot door in said curved wall conforming in curvature to the wall.

7. A pipe and chimney connection having an intake end and a delivery end at a vertical angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said intake end having a front wall provided with a tubular forward extension, a pipe nipple fitting said extension and projecting forwardly therefrom, said delivery end having a front wall provided with an opening, and a flaring pipe nipple extending forwardly from said opening and secured to said front wall of the delivery end.

8. A pipe and chimney connection having an intake end and a delivery end at a vertical angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said connection having parallel side walls and the internal cross sectional area of the portion between the intake and delivery ends being greater than the internal cross sectional area of the respective ends, said intake end having a front wall provided with a tubular forward extension, a pipe nipple fitting said extension and projecting forwardly therefrom, said delivery end having a front wall provided with an opening, and a flaring pipe nipple extending forwardly from said opening and secured to said front wall of the delivery end.

9. A pipe and chimney connection having an intake end and a delivery end at a vertical angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, a downwardly opening soot door in said curved wall conforming in curvature to the wall, a soot receptacle into which said door opens, and a removable door at the front of said soot receptacle.

10. A pipe and chimney connection having an intake end and a delivery end at a vertical angle to each other, said ends being joined by a portion having rear and bottom walls joined by a cylindrical wall having its axis transverse the connection, said connection having parallel side walls and the internal area of the portion between the intake and delivery ends being greater than the internal area of the respective ends, a downwardly opening soot door in said curved wall conforming in curvature to the wall, a soot receptacle into which said door opens, and a removable door at the front of said soot receptacle.

In testimony whereof I affix my signature.
BURT L. FLAHERTY.

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