(No Model.)

D. D. GILBERT.

STEAM BLOWER OR INJECTOR FOR BOILER FURNACES.

No. 526,703. Patented Oct. 2, 1894.

Fig. 2.

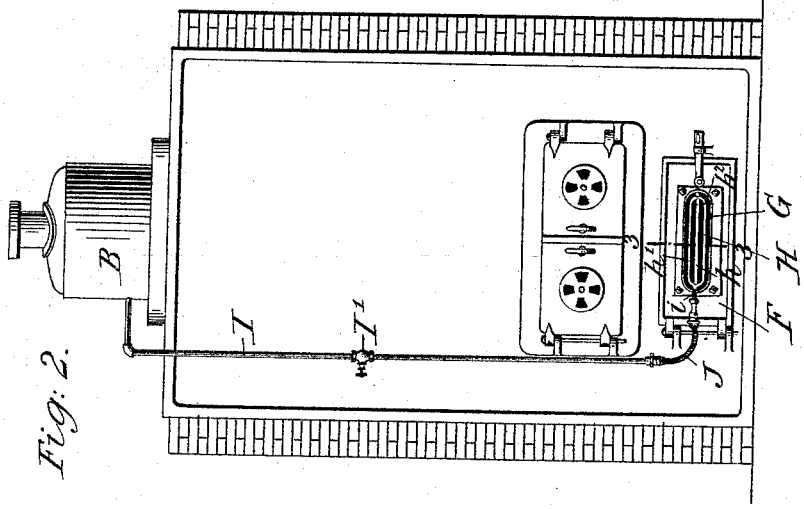


Fig. 3.

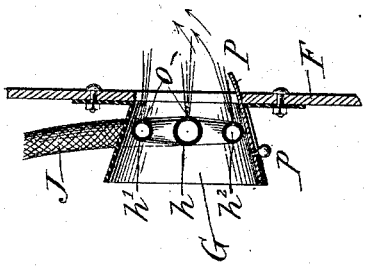


Fig. 4.

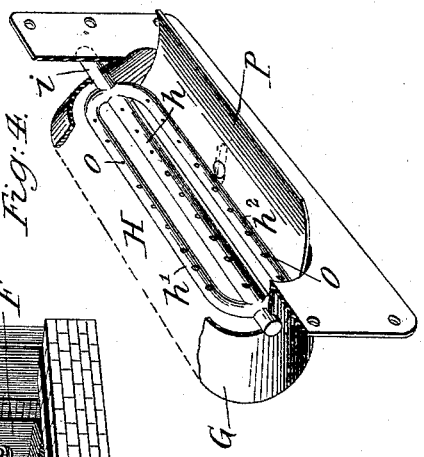
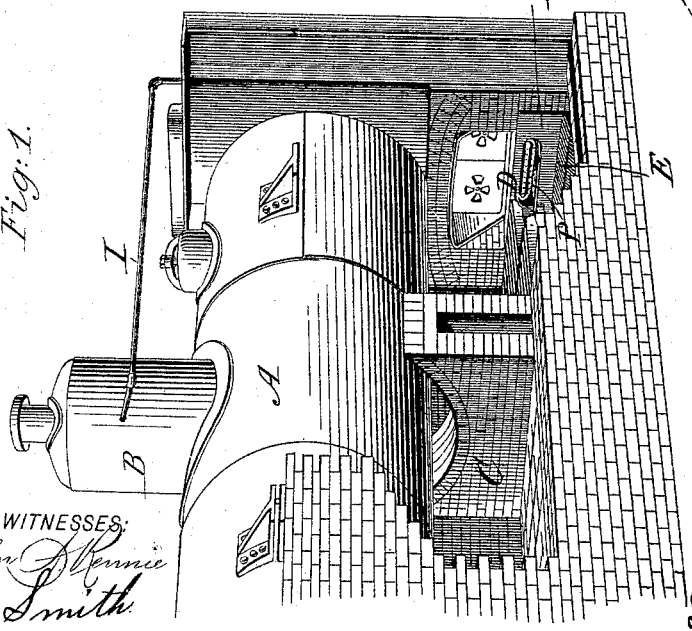


Fig. 1.



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STEAM BLOWER OR INJECTOR FOR BOILER-FURNACES.

SPECIFICATION forming part of Letters Patent No. 526,703, dated October 2, 1894.

Application filed September 2, 1893. Serial No. 484,646. (No model.)

To all whom it may concern:

Be it known that I, DAVID D. GILBERT, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Steam Blowers or Injectors for Boiler-Furnaces, of which the following is a specification.

This invention relates to steam boilers and other furnaces having means for supplying a jet or blast of steam and air for increasing the draft, and aiding combustion of the fuel and at the same time preventing incrustation, and the invention consists in the novel construction and combination of parts as hereinafter particularly described and defined in the claims whereby efficiency of the steam and air in increasing the draft and preventing incrustation is greatly promoted.

To more fully comprehend the nature of my invention reference must be had to the accompanying drawings wherein similar letters of reference indicate corresponding parts on all the figures, and wherein—

Figure 1 represents a perspective view of a steam boiler looking from the rear, part of the brick work being broken away to show more clearly the fire place with my invention applied thereto. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional detail taken on the line 3—3, Fig. 2; and Fig. 4 is a perspective view of my invention detached from the fire place, parts being broken away to show more clearly the interior.

A, designates the boiler; B, the steam dome; C, the bridge wall; D, the fire place; E, the ash-pit, and F, the ash-pit door, all of which, except the last named being of any ordinary or usual construction.

The ash-pit door F, is formed with an opening as shown at the outside, of which there is provided in any suitable manner, an oblong bell-mouthed flue or funnel G, which in the present instance is formed separately and secured to the door by bolts or otherwise. The inner opening of the flue corresponds in size to the aperture or orifice in the door, while its sides and ends are tapered or flared outwardly to increase its size at the point of inlet as clearly shown in Fig. 3. Arranged within this flue or funnel G, is a steam receiving chamber H, which preferably is constructed with a main or central pipe or division h, and an upper and lower branch h', h^2, respectively, the latter being of slightly smaller diameter than the main or central division h, all of which, however are joined together to form one complete chamber; and are provided with a series of outlets O, through which the steam escapes into the ash-pit from whence it passes with the air between the grate bars. These steam outlets O, as shown in Fig. 4 are preferably, but not necessarily of varying sizes, those farthest away from the inlet I, being the largest. By this arrangement I am enabled to secure a more even distribution and consequent discharge of steam into the ash-pit, as the force of steam at the inlet i is greater. The outlets O, need not be so large as those farther away where the pressure of steam is not so great.

The chamber H, is supplied with the necessary steam by means of the pipe I, having an intermediate controlling valve I'; the said pipe being led from the steam dome or from any other convenient source of steam supply, its lower end being coupled to a short flexible hose J, which in turn is coupled to the inlet pipe i. This flexible hose connection readily admits of the opening and closing of the ash-pit door for cleaning or other purposes.

In order that the steam may be directed toward the fire and thus fully utilized I provide an extensible deflecting plate P, which extends across the whole length of and at the lower side of the flue or funnel directly under the steam chamber H. This plate is moved into the ash-pit more or less, by a manipulation of the button P, and the steam, striking against the curved inner end of the plate is directed upward toward the grate bars.

Although I have shown my invention as made independent of the door and as fastened thereto it must be understood that the flue or funnel may be cast with the door and the other parts applied thereto just as readily.

Having thus described my invention, what I claim is as follows:

1. In a steam blower or injector for boiler furnaces the combination with an ash-pit door provided with a flaring steam-chamber having outlets delivering into the ash-pit and a steam supply pipe leading to the steam cham-

ber, of a flexible hose-pipe connecting the said supply pipe with the door, whereby the said door may be opened and closed, substantially as shown and described.

2. In a steam blower or injector for boiler furnaces, the combination with an ash-pit door having an opening provided with a flaring mouth and a steam chamber at said opening, provided with a series of outlets and a steam supply pipe connecting with the steam-chamber by means of a flexible hose pipe, of an adjustable deflecting plate disposed in the direction of the grate and adapted to direct thereto the steam escaping from the outlets, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 30th day of August, 1893.

DAVID D. GILBERT.

Witnesses:
MARIE SERVOTTE,
NELLIE A. HOGAN.