(No Model.)

C. N. BACON.

HOT AIR FURNACE.

No. 381,750. Patented Apr. 24, 1888.

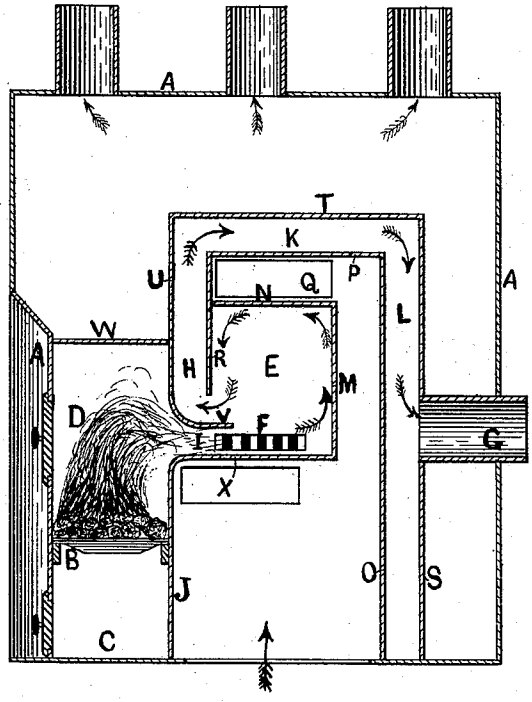


Fig. 1.

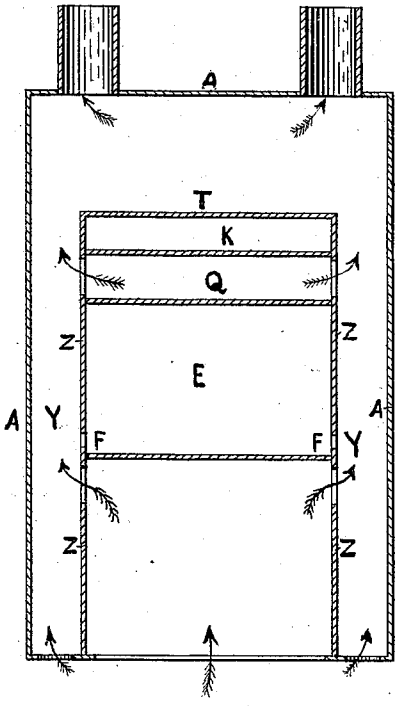


Fig. 2.

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UNITED STATES PATENT OFFICE.

CLOVIS N. BACON, OF BOSTON, MASSACHUSETTS.

HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 381,750, dated April 24, 1888.

Application filed July 17, 1886. Serial No. 208,317. (No model.)

To all whom it may concern:

Be it known that I, CLOVIS N. BACON, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Hot-Air Furnaces, of which the following is a specification.

The object of my invention is to provide a hot-air furnace for dwelling-houses and other buildings requiring hot air to be conducted and distributed throughout several rooms or series of apartments by means of hot-air pipes leading from the furnace to the same, as heretofore employed and now in general use for such purpose; and it consists in the construction, combination, and arrangement of the several parts of the furnace, as hereinafter more fully described, and specifically set forth in the claim.

Figure 1 represents a vertical longitudinal central section of a hot-air furnace constructed according to my invention. Fig. 2 represents a vertical cross-section of the same.

A represents the outer wall or casing, formed of sheet metal, cast-iron, or other suitable material, and provided with a fire-grate, B, ash-box C, fire-box D, and auxiliary combustion-chamber E, provided with air-inlet passages F, and an angular draft-flue consisting of the front vertical flue, H, horizontal flue K, and vertical portion L, leading to the outlet smoke-pipe G, passing through the said outer casing at the rear of the furnace, as shown.

A partition, J, extends vertically upward at the rear of the fire-box D, and at about the center of the same is turned at a right angle or in a horizontal plane, forming the bottom X of the short horizontal flue I, leading from the said fire-box to the auxiliary combustion-chamber E, thence extending at right angles vertically, forming the rear wall, M, of said chamber, and then turned at a right angle forward, forming the top N of said chamber, as shown.

A vertical partition, O, extends from the bottom of the furnace to a point about two-thirds the height of the interior, and is then turned at a right angle, forming the top P of the hot-air flue Q, and then at a right angle downward, where it terminates, forming the front part, R, of the combustion or auxiliary chamber E, and the rear side of the vertical portion H of the said smoke-flue. At the rear of the former partition, O, is provided a vertical partition, S, which extends parallel with the same, and is then turned at a right angle above the former and extends horizontally forward, forming the top portion, T, of the smoke-flue K, thence at a right angle downward, forming the front side, U, thereof, and then curved and turned inwardly, forming the top V of the short horizontal flue I, as shown. A short horizontal plate, W, is connected with the front portion or outer wall, A, of the furnace, and with the partition U, forming the top of the fire-box D.

All of the above-named partitions are secured at their opposite edges with the two vertical partitions Z near each side portion of the wall of the furnace, thus forming vertical air passages or flues Y, into which the cold air is drawn at the bottom, as shown by the arrows in Fig. 2, and also the main body of cold air is drawn inward through the central portion of the bottom, passing upward is deflected outward by the horizontal partition X, and then enters the said vertical air-passages Y, as shown. Another current is drawn in more centrally and passes upward at the rear of the auxiliary combustion-chamber E, and is deflected toward each side by the horizontal partition P, whence it enters the vertical air-passages Y, near the upper portions thereof, through the openings, as indicated by the arrows shown in Fig. 2, and thence out at the top of the furnace, which is provided with a series of hot-air-conducting pipes leading to different parts of the house or other building, as heretofore employed.

The furnace is provided with suitable doors and draft-regulating dampers, as usual.

Having thus described my invention, what I claim is—

The combination, with an outer casing, of a fire-chamber within said casing, a drum communicating with the space between the outer casing and fire-chamber, and having within it a combustion-chamber connected with the fire-chamber, a deflector extending partially across the mouth of the combustion-chamber, a second deflector extending in proximity to the end of the first-named deflector, and a casing partially surrounding the drum and forming with a portion of the walls of the drum a smoke-exit flue, substantially as described.

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