

(No Model.)

A. M. WAYNE.
SMOKE CONSUMER.

No. 261,284.

Patented July 18, 1882.

Fig. 1

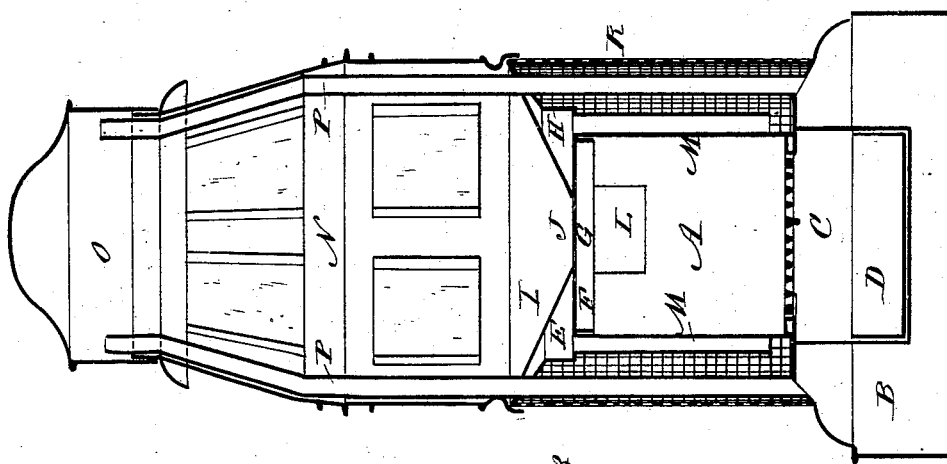


Fig. 2

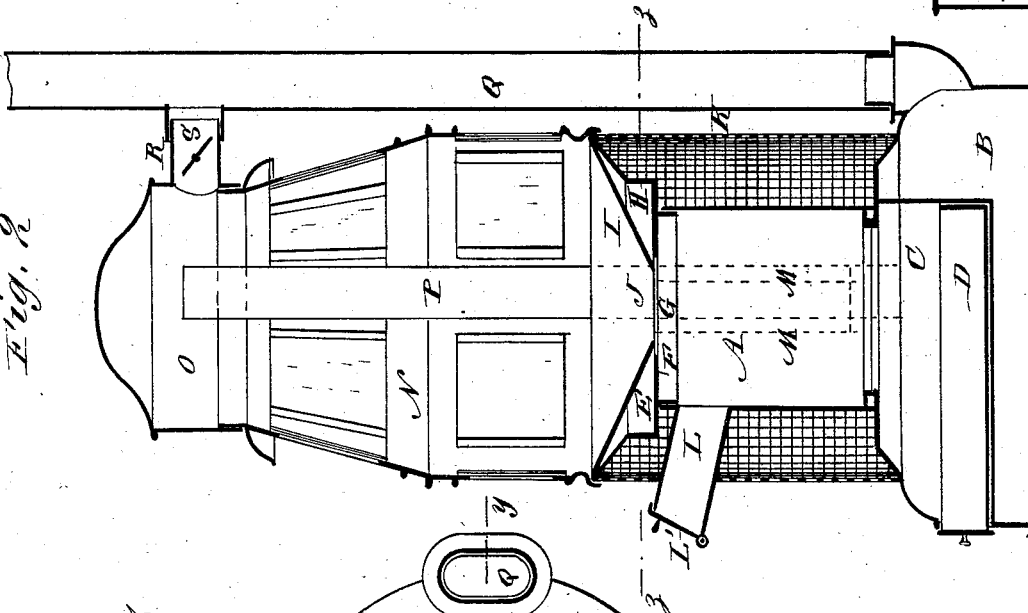
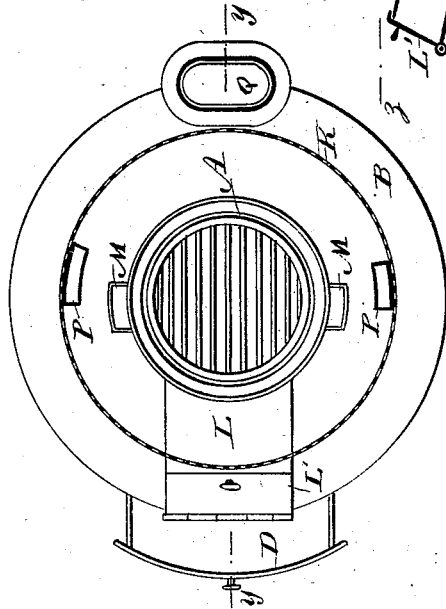


Fig. 3



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ABRAHAM M. WAYNE, OF QUINCY, ILLINOIS.

SMOKE-CONSUMER.

SPECIFICATION forming part of Letters Patent No. 261,284, dated July 18, 1882.

Application filed April 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM MARTIN WAYNE, of Quincy, in the county of Adams, in the State of Illinois, have invented a new and Improved Smoke-Consumer, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved furnace or stove which consumes or burns its smoke, cinders, soot, and other products of combustion in a perfect manner.

The invention consists in a stove or furnace constructed with a hot air chamber provided with a deflecting funnel-shaped top above the fire-pot, into which hot-air chamber the air is conducted by flues, and when heated in this chamber is deflected upon the fire in the pot, thereby consuming the smoke, cinders, gases, &c. The fire-pot is surrounded by a sieve or net-work, and through the space between this net-work and the fire-pot flues extend from the hollow base to the top of the dome of the stove, so that the gases of combustion can pass through these flues into the hollow base and from there through the chimney-pipe; or by opening a valve the gases can pass directly from the dome into the chimney-pipe, all as will be fully described hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional elevation of my improved smoke-consumer on the line *xx*, Fig. 3. Fig. 2 is a longitudinal sectional elevation of the same on the line *yy*, Fig. 3. Fig. 3 is a sectional plan view of the same on the line *zz*, Fig. 2.

A cylindrical fire box or pot, A, rests on a hollow base, B, provided below the pot A with an ash-pit, C, adapted to receive a sliding ash-drawer, D, which ash-pit is closed at the bottom and all the sides, except the front, so that there will be no communication between the ash-pit C and the hollow base B.

A hot-air chamber, E, rests on the fire-pot A, which chamber E is formed of a plate, F, provided with a central aperture, G, and resting on and projecting over the upper edges of the pot A, on which plate F the outwardly-inclined annular sides H rest.

A funnel-shaped deflecting-top, I, of the hot-

air chamber E rests on the upper edges of the inclined sides H, and this funnel-shaped top I is provided with a central bottom aperture, J, of less diameter than the aperture G, so that the inner lower edges of the funnel-shaped top I overlap the inner edges of the plate F, as shown in Figs. 1 and 2.

A cylindrical sieve or equivalent device, K, surrounds the pot A and rests on the base B, extending from the same to the outer meeting edges of the sides H and top I of the hot-air chamber E.

A fuel-chute, L, provided at its outer end with a door, L', extends through the sieve or net-work K into the pot A below the hot-air chamber.

Flues M, which are open at the lower end, pass up along the outside of the pot A, from near the bottom of the same, into the bottom of the hot-air chamber, so that these flues will be in the space between the sieve K and the pot A, to which they are attached. On the outer edge of the top I of the hot-air chamber E the dome N rests, which is provided with a top, O. This dome may be made of cast or sheet iron with or without mica doors.

Flues P extend from the hollow base through the space between the sieve K and the pot A and through the dome N, along the inner sides of the walls of the same, into top O, and the upper ends of these flues are open.

A chimney-pipe, Q, extends from the hollow base B upward on the outside of the stove, and a pipe, R, containing a damper-valve, S, extends from the top O into the chimney-pipe Q.

The air in the hot-air chamber E is heated by the fire in the pot A, and thereby a draft or suction is created, causing air to be drawn from the space between the sieve K and the pot A through the flues M into the chamber E. The hot air passes from the chamber E through the annular opening between the edges of the apertures G and J, and is deflected by the overlapping part of the funnel-shaped top I upon the flames and smoke in the upper part of the pot A. This causes a perfect combustion of all the smoke, cinders, soot, and gases of combustion in the pot A.

As the lower or inner end of the chute L is below the hot-air chamber E, all the dust, &c., that passes through this chute upon the fire

will be consumed by the hot air deflected by the funnel-shaped top I of the hot-air chamber. If the damper-valve S is opened, the combustion-gases from the dome N pass through the short pipe R into the chimney-pipe Q; but if the damper-valve S is closed the combustion-gases rise to the top of the dome, and then pass through the flues P into the hollow base B, and from there through the chimney-pipe Q, whereby a large circulation of these hot gases is obtained and most of the heat is radiated.

The smoke-consumer can be made circular, oval, square, or oblong, and may be made of any desired size.

With a slight modification the above-described construction can be applied to steam-boilers, locomotives, furnaces, &c.

The wire-netting K forms the outside casing of the stove, and through the meshes of the same the air can pass to the flues M.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is--

1. In a stove or furnace, the combination, with the fire-pot A, of the sieve K, surrounding it, the hot-air chamber E on the fire-pot, and the flues M, substantially as herein shown and described, and for the purpose set forth.

2. In a stove or furnace, the combination, with the fire-pot A, of the centrally-apertured plate F, the sides H, the funnel-shaped top I, and the flues M, substantially as herein shown and described, and for the purpose set forth.

3. In a stove or furnace, the combination, with the fire-pot A, of the centrally-apertured plate F, the sides H, the funnel-shaped top I, having its inner lower edges overlapping the edges of the aperture G in the plate F, and the flues M, substantially as herein shown and described, and for the purpose set forth.

4. In a stove or furnace, the combination, with the fire-pot A, of the deflector I and the fuel-chute L below this deflector, substantially as herein shown and described, and for the purpose set forth.

5. In a stove or furnace, the combination, with the fire-pot A, of the centrally-apertured plate F, the sides H, the funnel-shaped deflector I, the flues M, the hollow base B, the dome N, the chimney-pipe Q, and the flues P, substantially as herein shown and described, and for the purpose set forth.

6. In a stove or furnace, the combination, with the fire-pot A, of the apertured plate F, the sides H, the funnel-shaped deflector I, the flues M and P, the dome N, the hollow base B, the chimney-pipe Q, and the cylindrical sieve or net-work K, surrounding the fire-pot A, substantially as herein shown and described, and for the purpose set forth.

7. In a stove or furnace, the combination, with the fire-pot A, of the apertured plate F, the sides H, the funnel-shaped deflector I, the flues M P, the hollow base B, the dome N, the chimney-pipe Q, and the closed ash-pit C in the base B, substantially as herein shown and described, and for the purpose set forth.

8. In a stove or furnace, the combination, with the fire-pot A, of the apertured plate F, the sides H, the funnel shaped deflector I, the flues M and P, the dome N, the hollow base B, the chimney-pipe Q, the pipe R, and the damper-valve S, substantially as herein shown and described, and for the purpose set forth.

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Witnesses:

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