No. 822,409. PATENTED JUNE 5, 1906.

J. WAGNER.

HEAT SAVING SMOKE ARRESTER.

APPLICATION FILED OCT. 5, 1905.

Fig. 1.

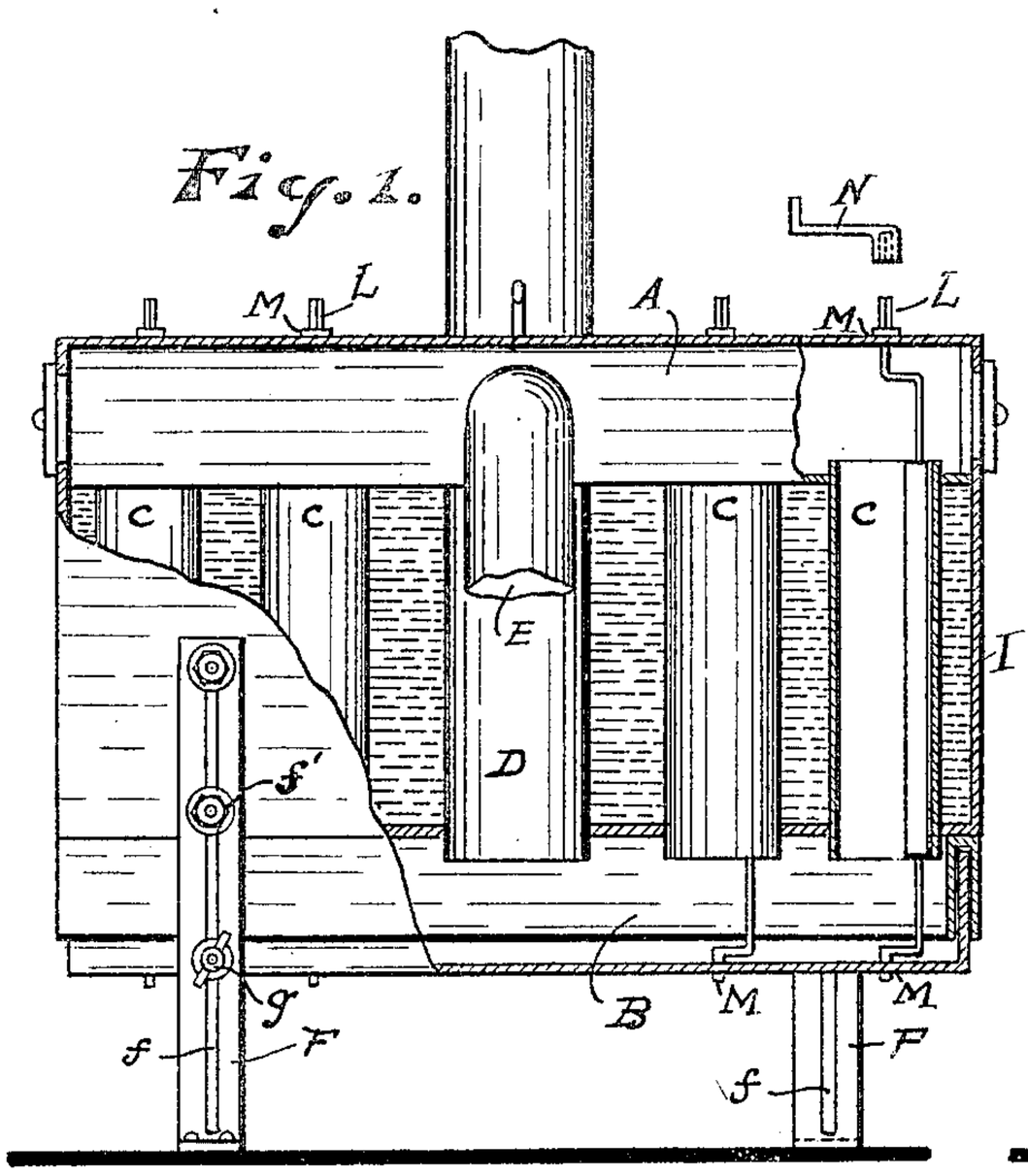


Fig. 2.

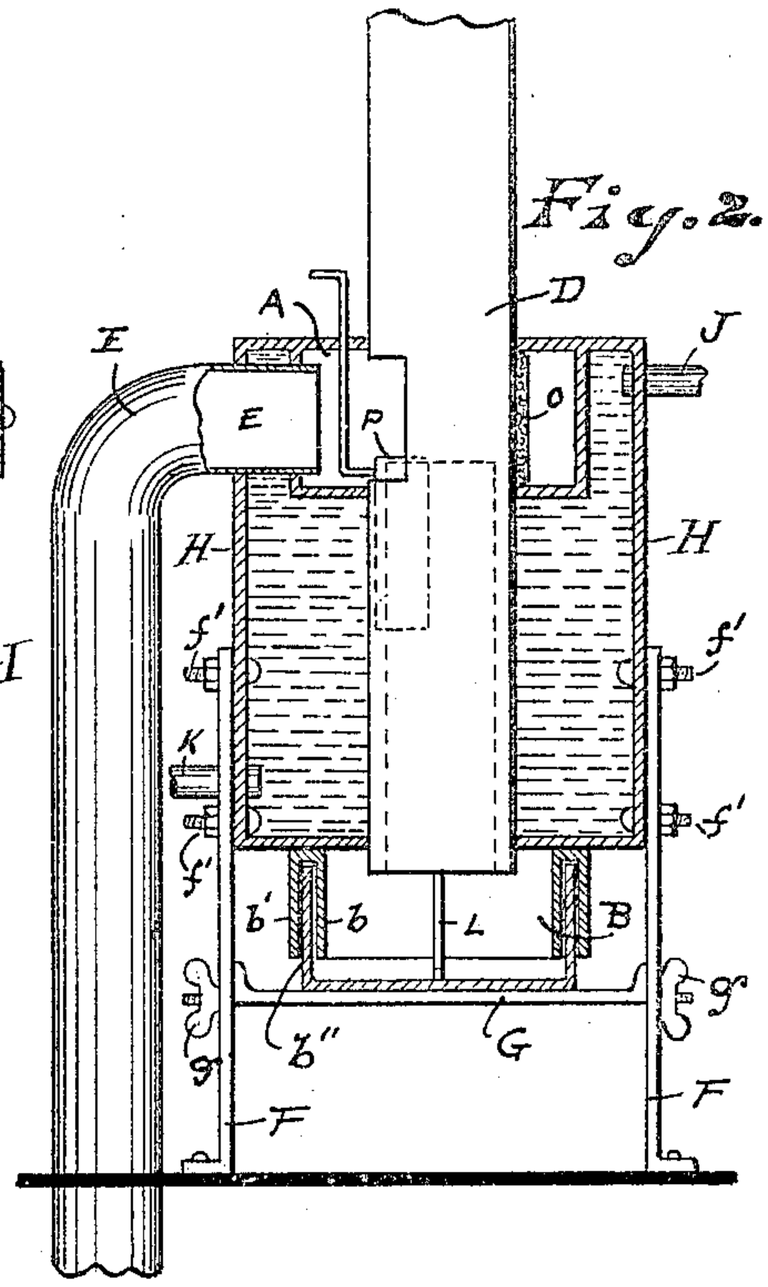
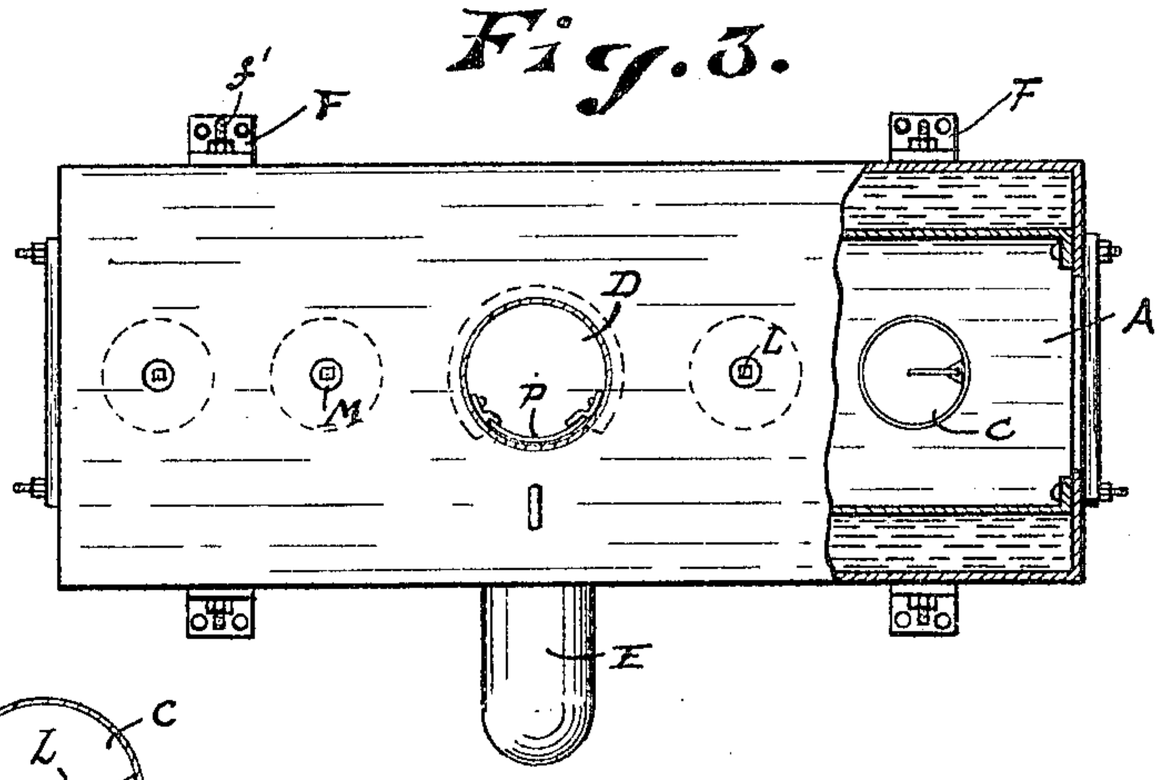


Fig. 3.



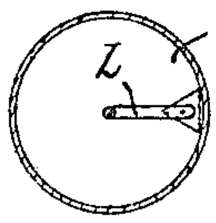


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN WAGNER, OF PORTAGE, WISCONSIN.

HEAT-SAVING SMOKE-ARRESTER.

No. 822,409. Specification of Letters Patent. Patented June 5, 1906.

Application filed October 5, 1905. Serial No. 281,372.

To all whom it may concern:

Be it known that I, JOHN WAGNER, a citizen of the United States, residing at Portage, county of Columbia, and State of Wisconsin, have invented new and useful Improvements in Heat-Saving Smoke-Arresters, of which the following is a specification.

My invention relates to improvements in heat-saving smoke-arresters.

The object of my invention is to provide an efficient device for precipitating and removing soot from the gaseous products of combustion and utilizing the heat of such gases, adequate provision being made for the removal of the accumulated soot, whereby the apparatus may be kept at maximum efficiency.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side view, partly in vertical section, of apparatus embodying my invention. Fig. 2 is a vertical cross-sectional view drawn through the smoke-exit flue. Fig. 3 is a plan view, partly in horizontal section. Fig. 4 is an enlarged cross-sectional view of one of the downwardly-extending smoke-flues.

Like parts are identified by the same reference characters throughout the several views.

Two chambers A and B are connected by downdraft-flues C, and an updraft-flue D extends from the lower chamber through the upper chamber and upwardly to a chimney or other suitable point of discharge. (Not shown.) An inlet-pipe E leads from a stove or furnace (not shown) and discharges smoke into the upper chamber A, from which it passes downwardly through flues C and upwardly through the flue D. The lower chamber is formed in sections, the top wall of the chamber having depending parallel flanges *b* *b'* and the bottom wall having upwardly-extending flanges *b''*, which fit the space between the flanges *b* *b'*, as shown. Legs F, provided with slots *f*, are adjustably secured to the walls H by set-screws *f'*, and rods G, extending through holes in the legs, support the pan-shaped bottom section of the chamber, these rods being held n place by thumb-nuts *g*. The rods may be withdrawn and the bottom section of the chamber removed and emptied from time to time.

The top walls of the chambers A and B are extended and connected with side and end walls H and I to form a water-chamber inclosing the connecting-flues and the sides of the upper chamber and provided with inlet and outlet pipes J and K, which may, if desired, form part of a circulatory system. This location and construction of the water-chamber permits the removal of the bottom section of chamber B and also permits access to the top of chamber A, through which crank-rods L extend downwardly in the flues C and are journaled in brackets M near the bottom of such flues and also in the top of chamber A. The central portions of these crank-rods are offset into contact with the walls of the flues C and are triangular in cross-section, Fig. 4, with two edges contacting with the flue-wall, so that when rotated in either direction they will remove the soot and permit it to drop into chamber B preparatory to the removal of the lower section thereof. The upper exterior ends of the crank-rods are provided with handles N.

The flue D in chamber A is provided with a covering of asbestos O or other non-heat-conducting material, and a valve P may be opened to admit the smoke directly from pipe E to flue D.

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

1. The combination of upper and lower chambers connected by suitable downdraft-flues and having an updraft-flue leading from the lower chamber through the upper chamber; a smoke-inlet pipe leading to the upper chamber; a water-jacket disposed around the sides of the upper chamber and the flues between the chambers; crank-rods extending through the upper chamber, and the respective downdraft-flues and offset in the latter into contact with the wall thereof; said rods having edges contacting with the walls of said flues, and the lower chamber being provided with a removable pan-shaped bottom extending below the water-chamber.

2. The combination of upper and lower chambers connected by suitable downdraft-flues and having an updraft-flue leading from the lower chamber through the upper chamber; a smoke-inlet pipe leading to the upper chamber; a water-jacket disposed around the sides of the upper chamber and the flues be-

tween the chambers; crank-rods extending through the upper chamber, and the respective downdraft-flues and offset in the latter into contact with the walls thereof; the offset portions of said rods being triangular in cross-section with two edges in contact with the walls of the respective flues.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN WAGNER.

Witnesses:
MOSES J. DOWNEY,
WM. O. KELM.