No. 882,767. PATENTED MAR. 24, 1908.

M. V. MORAN & J. S. DONOHUE.

SMOKE CONSUMER.

APPLICATION FILED JULY 19, 1907.

Fig. 1.

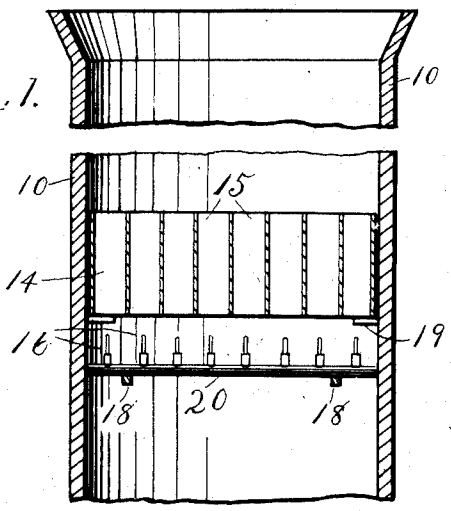


Fig. 2.

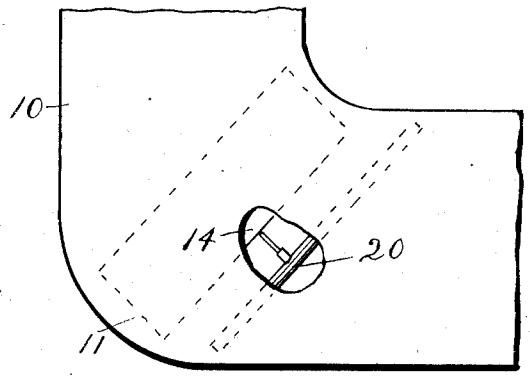


Fig. 3.

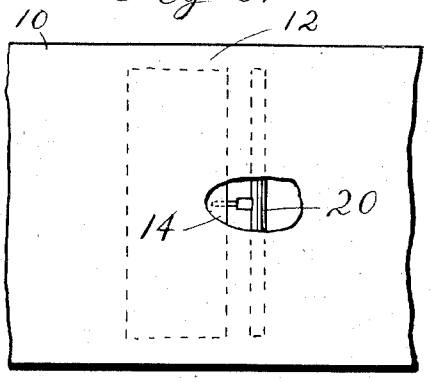


Fig. 4.

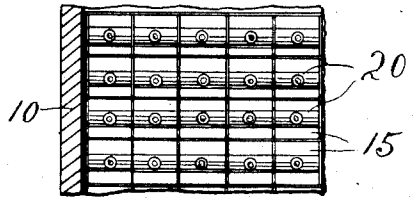


Fig. 5.

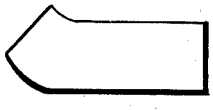
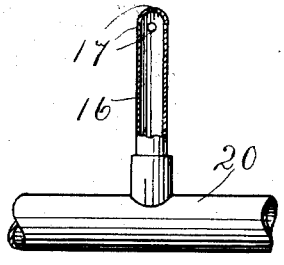


Fig. 6.



Fig. 7.



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UNITED STATES PATENT OFFICE.

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SMOKE-CONSUMER.

No. 882,767. Specification of Letters Patent. Patented March 24, 1908.

Application filed July 19, 1907. Serial No. 384,647.

To all whom it may concern:

Be it known that we, MICHAEL V. MORAN and JAMES S. DONOHUE, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Smoke-Consumers, of which the following is a specification.

Our invention relates to devices for removing the soot and other coloring matter from the clouded smoke resulting from imperfect combustion of the fuel in furnaces and stoves; and accomplishes this desirable object by a novel method of mixing steam or a liquid spray with the smoke, causing a precipitation of the coloring matter, and leaving the uncolored gases to escape from the stack or chimney.

The accompanying drawing illustrates the device, similar characters of reference denoting corresponding parts in the several views.

Figure 1, is a vertical section of the device in a section of a smoke stack or chimney, which is shown fragmentarily. Fig. 2 is a curved part of a smoke-channel partly broken away, and showing the proper position of the device when used in a curve. Fig. 3 is a view similar to that in Fig. 2 and showing the device in operative position in a horizontal smoke channel. Fig. 4 is a plan view of a portion of the device as shown in Fig. 1. Figs. 5 and 6 are side views of modifications of the flues and Fig. 7 is a side elevation, partly in section and enlarged, of a steam pipe and a perforated tube or nipple.

The reference numeral 10 designates the smoke stack or chimney, or a smoke channel of any ordinary type, in which our device is set.

14 designates a plurality of short flues, grouped in close lateral contact and extending across the smoke stack. The flues 15 may be either square, round or oval in cross section, and may be either straight or curved as shown in the different figures of the drawing, but their opposite sides must be parallel. The group of flues 14, may be set in a stack of any shape or inclination, but in any case, the openings of the flues must be in line with the draft, and must extend entirely across the smoke-channel or have any unoccupied spaces filled, so as to compel the smoke to pass through the flues. The group of flues 14 may be placed at any desired point between the fire box and the top of the stack.

Between the fire and the flues 14, are located the pipes 20. These pipes are disposed across the entrances to the flues 14, and within a few inches thereof. On these pipes are arranged tubes or nipples 16, one of which is directed towards the center of each flue 15, and may either stand at a short distance from said flues as seen in Fig. 1, or just reach to the entrance of the flues as seen in Fig. 2, or may enter a short distance into the flue as shown in Fig. 3. Perforations 17 are provided at, and near the end of the tubes for the exit of the steam or spray.

The group of flues may be held in place by supports 19, and the pipes 20, be supported by cross rods 18.

If a single device as above described is not sufficient to clarify the smoke, two or more may be used along the smoke-channel.

What we claim and desire to secure is,—

The combination with a smoke-stack, of a plurality of flues having parallel sides and extending across said stack, the openings of said flues being in line with the draft of said stack, steam pipes between the fire box and said flues, nipples on said pipes, one for each of said flues and directed towards the entrance of said flues, said nipple having a terminal, and also lateral perforations, for the purposes specified.

In testimony whereof we affix our signatures, in presence of two witnesses.

MICHAEL V. MORAN.
JAMES S. DONOHUE.

Witnesses:
CHAS. D. SWETT,
LEVIN S. FREY.