

(No Model.)

F. W. COOK.
SAWDUST BURNER.

No. 421,555.

Patented Feb. 18, 1890.

Fig. 1.

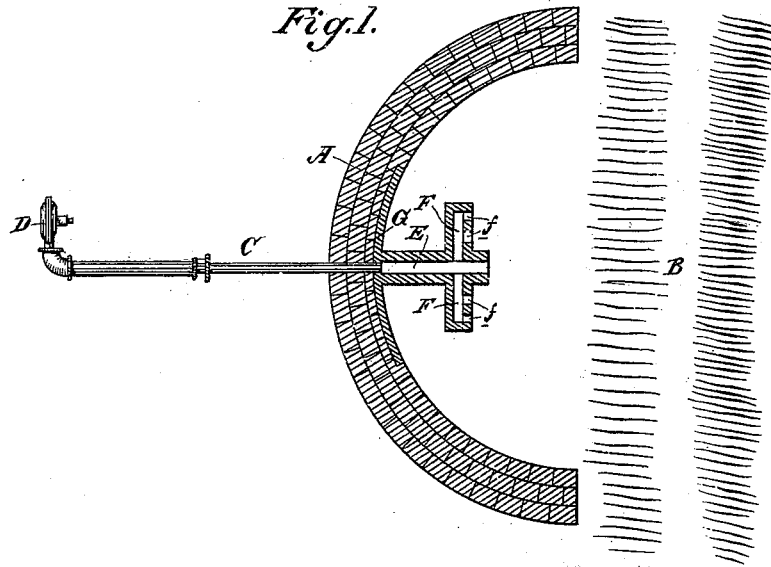


Fig. 2.

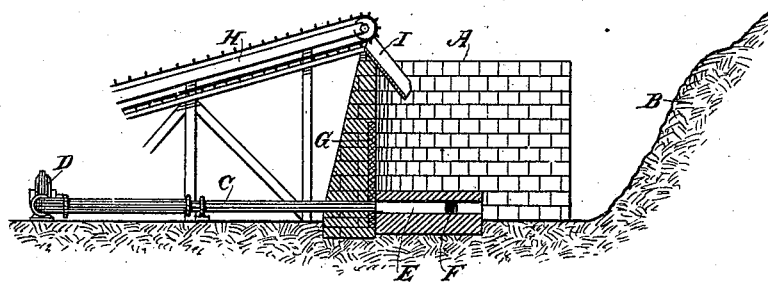
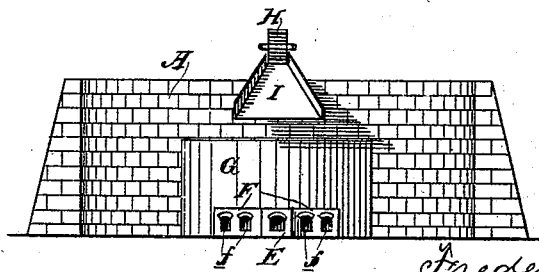


Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK W. COOK, OF SAN FRANCISCO, CALIFORNIA.

SAWDUST-BURNER.

SPECIFICATION forming part of Letters Patent No. 421,555, dated February 18, 1890.

Application filed April 6, 1889. Serial No. 306,234. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. COOK, of the city and county of San Francisco, State of California, have invented an Improvement in Sawdust-Burners; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of burners for disposing of refuse, more especially of sawdust; and my invention consists in a fire-wall preferably in the shape of a semicircle, and partially inclosing a space within which the sawdust is fed, and in connection with said wall a blast-pipe with connected flue under the charge of sawdust, and provided with backwardly-directed exit-apertures, whereby the flue is prevented from becoming clogged and the wall is not subjected to intense heat.

My invention further consists, in connection with said wall and blast apparatus, of a carrier for conveying the sawdust to the top of the wall, and a chute for depositing it within the space partially inclosed by the wall, all of which I shall hereinafter fully describe.

The object of my invention is to provide a device for burning sawdust, which shall be of a durable character and efficient in operation.

Referring to the accompanying drawings, Figure 1 is a plan of my burner, the blast-flue being shown in horizontal section. Fig. 2 is a vertical center section. Fig. 3 is a rear elevation.

A is a wall, which is here shown as made of stone, though it may be constructed of any suitable fire-resisting material, stone being preferred as being more economical and available in most cases and answering every purpose. The shape of the wall is semicircular, thereby leaving its entire back open, and in order to protect it from the wind it is best to build it against the face of a hill or other elevation, either natural or artificial, the hill being here shown by B.

C is a pipe or channel, which is connected at its outer end with the blower D, and its inner end passes in through the front of the wall at the bottom and connects on the inside, or behind the wall, with the flue E, made of fire-brick or fire-clay and occupying a radial plane with relation to the wall. This flue E has at its inner end a cross-flue F, made of

similar material, which said cross-flue has apertures *f*, extending backwardly—that is to say, toward the open back of the wall.

G is a section of fire-lining made on the inner surface of the center of the stone wall A.

H is a traveling carrier of any suitable construction, one end of said carrier being supposed to be in connection with the sawdust-dump, whereby it may be readily loaded, and the other end being in communication with the chute I at the top of the wall and which extends downwardly into the space inclosed by the said wall, said chute being shaped, as shown in Fig. 3, with a flare toward the bottom, so as to properly distribute the sawdust within the space behind the wall. The carrier here shown consists, simply, of an endless chain provided with transverse scraping-boards passing over a platform, whereby the sawdust is scraped or carried up the incline.

The operation of the burner is as follows: The sawdust is carried up by the carrier and discharged into the chute, by which it is directed downwardly into the space behind the wall A and over the wind-flue F. The blast of air is directed through the pipe or passage C and into and through the flues E F, emerging backwardly from the exit-apertures *f* and directly under the mass of sawdust above. As the pile burns down it sinks and crumbles away, while fresh supplies are fed from the top. The position of the exit-apertures *f* in the cross-flue is such that they are not liable to become choked with the sawdust, as they would if they were in the top of the flue; nor do they concentrate heat in such a way as to burn out the apparatus, as they would if they were in the front of the flue, but being directed backwardly there is nothing for them to injure, and they have a straight unimpeded play.

The object of the fire-lining G in the stone wall is simply to protect it at that point from eddies and currents, which have a tendency, notwithstanding the backward direction of the apertures, to be thrown forwardly against the wall.

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

In a sawdust-burner, an open-backed fire-

resisting wall within the area partially inclosed, by which the sawdust is deposited, in combination with the air-blast pipe passing through the front of the wall at its base and
5 extending behind said wall into the clear space partially inclosed thereby, the cross-flue connected with the inner end of the air-blast pipe and removed from the wall by a clear space, said flue having apertures only in its
10 back and directed toward the open back of

the wall, and the blower connected with the outer end of the air-blast pipe, substantially as described.

In witness whereof I have hereunto set my hand.

FREDERICK W. COOK.

Witnesses:

S. H. NOURSE,

H. C. LEE.