(No Model.)

H. AUCHU.

REFUSE BURNER, WATER HEATER, AND STEAM GENERATOR.

No. 437,009. Patented Sept. 23, 1890.

Fig. 1.

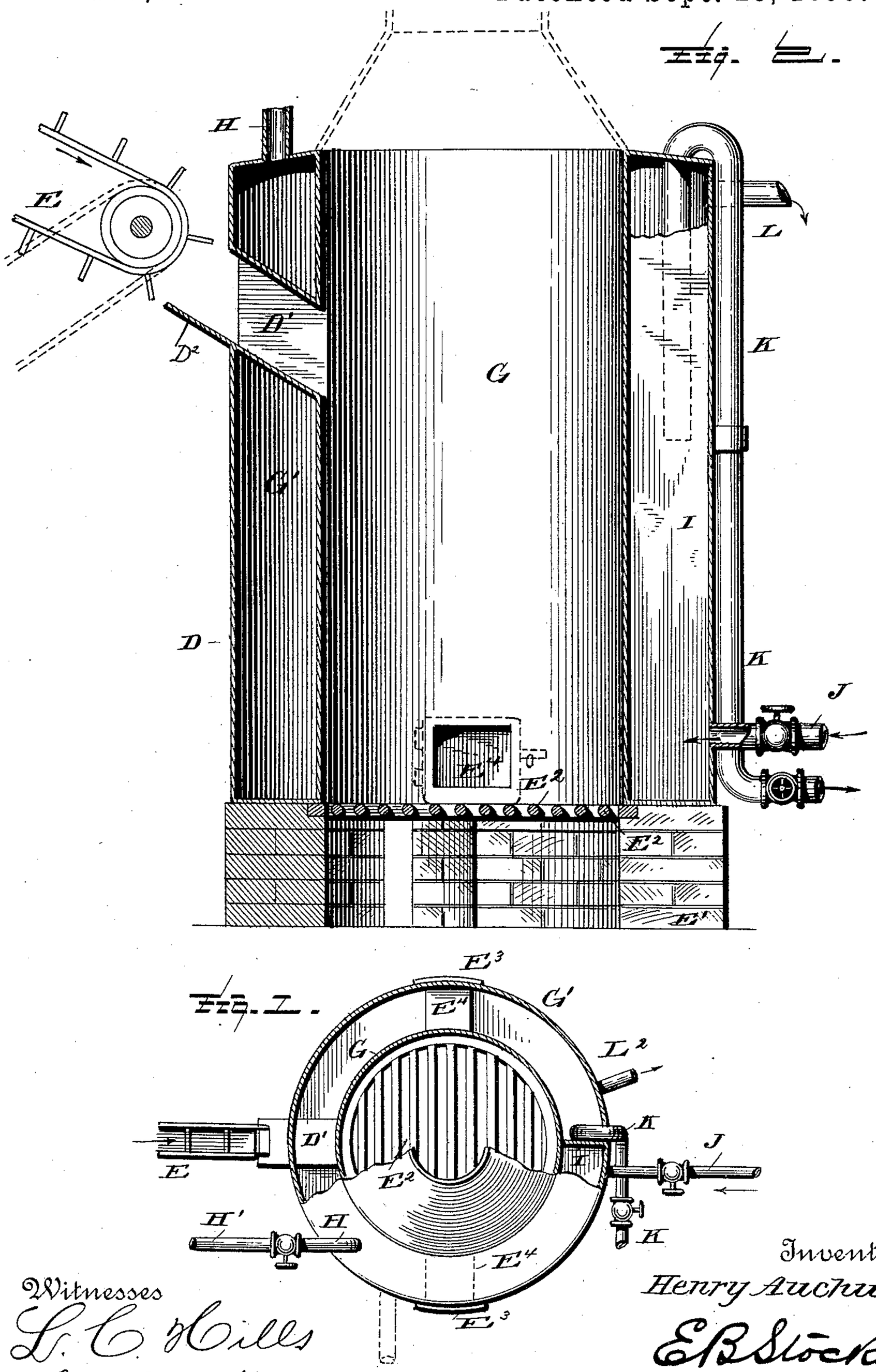

Fig. 2.

Witnesses
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HENRY AUCHU, OF EMPORIUM, PENNSYLVANIA.

REFUSE-BURNER, WATER-HEATER, AND STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 437,009, dated September 23, 1890.

Application filed March 29, 1890. Serial No. 345,803. (No model.)

To all whom it may concern:

Be it known that I, HENRY AUCHU, a citizen of the United States, residing at Emporium, in the county of Cameron, State of Pennsylvania, have invented certain new and useful Improvements in Refuse-Burners, Water-Heaters, and Steam-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in refuse-burners, and the novel features thereof will be hereinafter pointed out, and particularly defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a top plan with portions broken away, showing my improved burner with its connected pipes. Fig. 2 is a vertical section through the burner, showing also a portion of the conveyer for feeding refuse matter to the burner.

Like letters of reference refer to like parts in both the figures of the drawings.

Referring now to the details of the drawings by letter, D is a refuse-burner, and E is an endless conveyer designed to feed the refuse from a mill—such as sawdust, chips, and the like—to the burner, said conveyer being arranged, preferably, upon an inclined plane, as shown in Fig. 2, and the burner having an inclined opening or receiving-spout D′, as seen in Fig. 2. This burner is supported upon a suitable base E′, of brick-work or other suitable foundation, and provided with suitable grate E^2 and ash door or doors E^3. Suitable provisions should be made for sufficient draft to the interior of the furnace from the under side thereof, as indicated by arrows.

The burner consists of the inner combustion-chamber G and the outer or water chamber or jacket G′, as shown best in Fig. 2, the spout D′ being made water-tight and passing through the water-space, and serving, further, as a stay to prevent collapsing of the parts. The ash-doors E^3 have communication with the combustion-chamber through conduits E^4, which also pass through the water-space, as seen in Fig. 1.

A smoke-stack may or may not be provided, as circumstances may require. One is shown in dotted lines in Fig. 2.

The water-chamber is provided with a steam-outlet H, through which the steam passes, and from whence it may be conducted by suitable piping, as H′, to a mill, where it may be utilized for running some of the parts of the mill or for any purposes desired.

The water space or chamber, which entirely surrounds the combustion-chamber, is provided with a vertical partition I, and J is a water-supply pipe connected with any suitable source of supply and entering the water-chamber near its bottom upon one side of said partition.

K is a pipe connected with the top of the water-chamber upon the opposite side of the partition or diaphragm I for the purpose of conducting the hot water from said chamber to a pond.

L is an overflow-pipe from the water-chamber, as shown in both views.

The operation is simple, and will be readily comprehended from the above description when taken in connection with the drawings. Fire being started in the burner and the water turned on, the water is caused to circulate within the water-chamber, and as it becomes heated is conveyed off through pipes to the desired place. The furnace is fed with fuel by the conveyer. The diaphragm I is important, as it causes the water to pass entirely around the combustion-chamber before it reaches the discharge-pipe. If the furnace is located on a lower plane than the mill, the conveyer should be arranged as shown in full lines; if above the mill, of course the inclination of the conveyer would be reversed, as indicated by dotted lines.

The feed-spout is provided with an exterior inclined ledge D^2, arranged beneath the delivery end of the conveyer, as shown in Fig. 2, so as to allow said delivery end to be arranged at a distance from the mouth of the feed-spout, and said ledge serves to catch the material carried by the conveyer and deliver it to the furnace. This is deemed of importance.

What I claim as new is—

1. A refuse-burner provided with a surrounding water-chamber having a vertical

diaphragm, combined with a supply-pipe on one side of the diaphragm near the bottom and a discharge-pipe upon the opposite side, with its lower end near the vertical center of the water-chamber, substantially as specified.

2. The combination, with the burner having surrounding water-chamber provided with vertical diaphragms, of the feed-spout passed through said water-chamber, an independent conveyer for conveying fuel to said feed-spout, a supply-pipe communicating with the chamber from one side of the diaphragm near the bottom thereof, and the discharge-pipe communicating with the chamber from the opposite side and the overflow and steam pipes at the upper end of the water-chamber, substantially as specified.

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

HENRY AUCHU.

Witnesses:
J. HOWARD,
GEO. A. WALKER.