(No Model.)

J. STEVENS.

STRAW BURNING BOILER.

No. 271,148. Patented Jan. 23, 1883.

Fig. 1

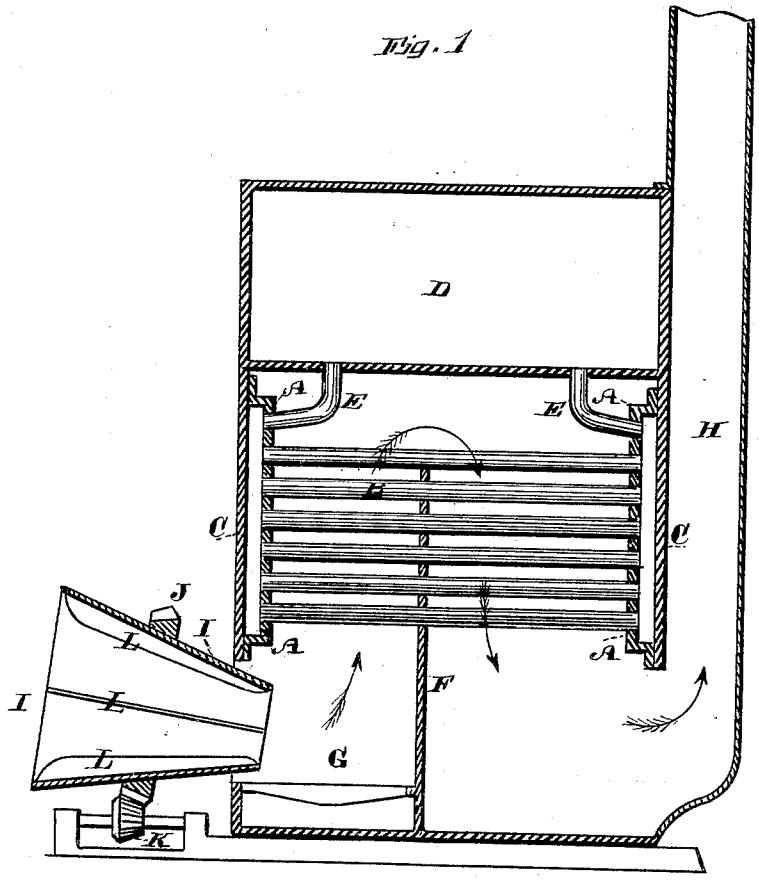
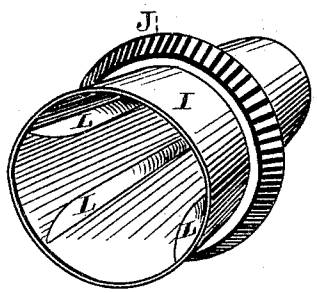


Fig. 2



Witnesses;
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UNITED STATES PATENT OFFICE.

JOSEPH STEVENS, OF SAN FRANCISCO, CALIFORNIA.

STRAW-BURNING BOILER.

SPECIFICATION forming part of Letters Patent No. 271,148, dated January 23, 1883.

Application filed May 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH STEVENS, of the city and county of San Francisco, State of California, have invented an Improved Straw-Burning Boiler; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in steam-boilers in which straw is employed as a fuel; and it consists in a peculiar construction of the device by which the straw is fed to the furnace, as will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section. Fig. 2 is a view of the revolving cylinder.

A A are the flue-sheets of my boiler, placed at the desired distance apart, and having the flues B extending between them and calked to make tight joints. Outside of these flue-sheets are other sheets, C, connected with the flue-sheets around the edges by flange-irons, so as to stand at a short distance from the flue-sheets, being suitably stayed for strength. Between these sheets, and within the tubes, the water for making steam is contained, and above the whole is a steam-drum, D, which is connected with the upper part of the water-spaces by pipes E, as shown. A diaphragm or partition, F, extends up to near the top from the rear of the furnace G, the tubes B passing through it, and this diaphragm divides the space between the flue-sheets into two chambers, so that the heat and products of combustion from the furnace G will pass up around the water-tubes B to the top, over the partition F, and thence down to the bottom around that portion of the tubes beyond the partition, escaping finally into the smoke-stack H.

The sides of this apparatus are cased up to about the center of the sides of the drum D, so that the whole fire and tube space is entirely inclosed.

In order to feed straw, chaff, or other light fuel into the furnace suitably, I employ a cylindrical or slightly-tapering device, I, one end of which enters an opening in the furnace-front, and the other, extending a short distance upward and backward, is supported by a suitable guide, upon which it turns. Around its center is fixed a bevel-gear section, J, and a pinion, K, upon a shaft deriving power from the engine, meshes with the gear and turns the feeding-cylinder at any desired rate of speed. Within this cylinder or cone are fixed a number of leaves or wings, L, which extend spirally from end to end, and when the straw or chaff is forced in by the operator these spiral wings or blades will draw it gradually into the furnace, thus keeping up a steady, regular supply. The draft may be perfectly regulated and the firing even and effective.

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

In a steam-boiler, and in combination with a furnace, G, for the combustion of fuel, the hollow cone or cylinder I, revolving upon its axis, and having within it the spiral leaves or wings L, substantially as and for the purpose herein described.

In witness whereof I hereunto set my hand.

JOSEPH STEVENS.

Witnesses:
S. H. NOURSE,
C. D. COLE.