S. Kennedy,

Feeding Boiler Furnaces,

No. 29,794, Patented Aug. 28, 1860.

Fig. 1.

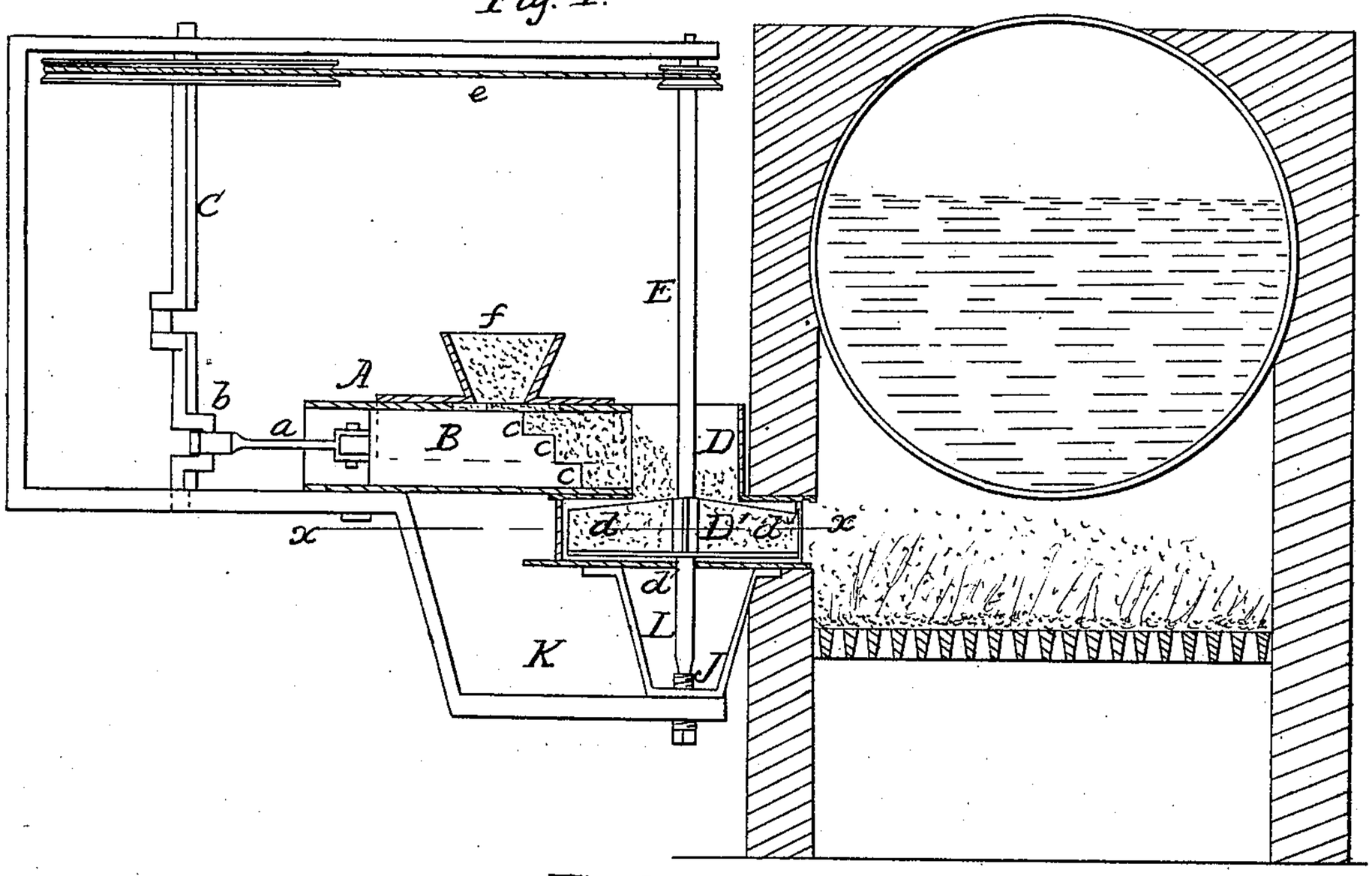
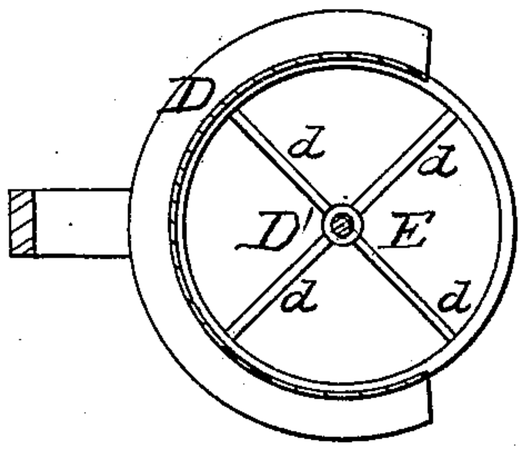


Fig. 2.



Witnesses.

J. W. Coombs.

R. S. Spencer

Inventor

Saml Kennedy

per Munn & Co

Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL KENNEDY, OF HIBBETS, OHIO.

APPARATUS FOR FEEDING SAWDUST TO FURNACES.

Specification of Letters Patent No. 29,794, dated August 28, 1860.

To all whom it may concern:

Be it known that I, SAMUEL KENNEDY, of Hibbets, in the county of Carroll and State of Ohio, have invented a new and Improved Apparatus or Device for Feeding Sawdust to Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side sectional view of my invention applied to its work. Fig. 2 a horizontal section of the same taken in the line *x*, *x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain a device for feeding saw-dust to the furnace direct from the saw and to distribute the saw-dust in the furnace in the most favorable way to insure a perfect combustion of the former.

The invention is designed to be applied to the furnaces of the boilers of steam saw mills and to afford an automatic feeding device which will cause the sawdust to be consumed as fast as it is produced during the sawing operation.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents a cylinder which is placed in a horizontal position and has a piston or plunger B, fitted within it. The piston or plunger has a reciprocating movement given it by means of a rod *a*, which is driven from a crank *b*, on a vertical shaft C, as shown in Fig. 1. The front end of the plunger B, has a series of step-like projections *c*, formed on it, and the front end of the cylinder communicates with the upper part of a cylindrical box D, at its center.

Through the center of the cylindrical box D, a vertical shaft E passes, and on this shaft E, and within the box D, radial plates or blades *d*, are attached, and fitted on a circular plate *d'*. The ends of the plates or blades *d*, nearly touch the inner side of the box D, and form a scatterer D'.

The box D, communicates with the furnace of a steam boiler as shown in red Fig. 1, and the upper end of the shaft E, is connected with the shaft C, by means of a belt *e*. The lower end of shaft E, projects below box D, and is stepped upon an adjustable point or screw J, which passes through the frame K, and stirrup L. The frame K, supports the cylinder, shafts C, E, and the other parts of the machine in the manner shown. The stirrup L, supports the bottom of box D. The screw J, not only serves as a step or bearing for the shaft E, but also connects the frame K, to the stirrup L. The screw J, it will be noticed is placed so low below box D, that access to it may be readily had for oiling; the location of screw J, is also intended to be below the grate so that the oil applied to the bearing of shaft E, upon said shaft J, cannot become so much heated by the fire as to be quickly evaporated.

On the cylinder A, a hopper *f*, is placed, which communicates with the interior of the cylinder A.

The operation is as follows: Motion is given the shaft C, by a belt from any of the running shafts of the mill, and the saw dust is conducted direct from the saw kerf to the hopper *f*, by means of a suitable spout. The reciprocating movement of the plunger B, forces the saw dust from the cylinder A, into the box D, from which it is ejected by the rotation of the blades *d*, the latter throwing the saw dust into the furnace in a scattered state over the fire insuring the ready consumption of the former.

The step like projections *c*, at the front end of the plunger B, admit of the free entrance of the sawdust into the cylinder A, and prevent the choking or clogging of the cylinder.

If desired a reciprocating screen may be placed over the hopper *f*, and operated from the shaft C, the screen excluding blocks and large substances from the cylinder.

By the employment of a cylinder and plunger to convey the dust to the feeder the air is prevented from entering the fire through the hopper *f*, the upper part of box D, being intended to be left covered. When the extremity of the cylinder that pushes the dust toward the feeder passes beyond the bottom of the hopper all communication between the hopper and cylinder is cut off and the dust within the hopper rests upon the cylinder and thus effectually prevents the admission of air.

I do not claim the invention of rotary feeders nor the use of endless belts to convey the dust to the feeders, but

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

1. The combination of the stepped plunger B, cylinder A, and hopper *f*, with the box D, scatterer D′, and shafts C, E, as and for the purpose herein shown and described.

2. The arrangement of the leaving of the lower end of shaft E, within a stirrup L, below the box D, and upon a screw J, which also connects the stirrup and the frame K, together all as set forth for the purpose specified.

SAMUEL KENNEDY.

Witnesses:
JASPER H. FISHEL,
FRANKLIN DOWNS.