

(No Model.)

2 Sheets—Sheet 1.

J. A. ERICKSON.
MECHANICAL STOKING APPARATUS.

No. 578,630.

Patented Mar. 9, 1897.

Fig. 1.

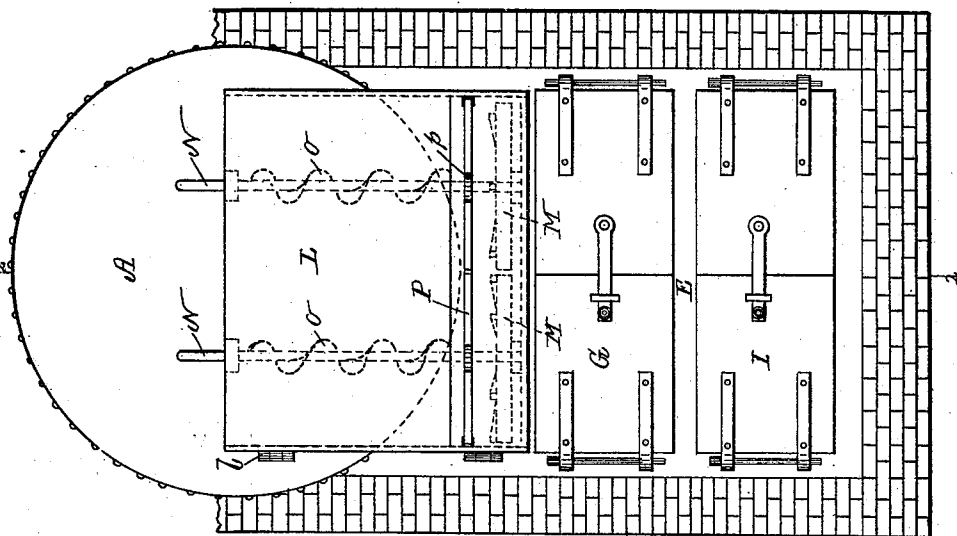
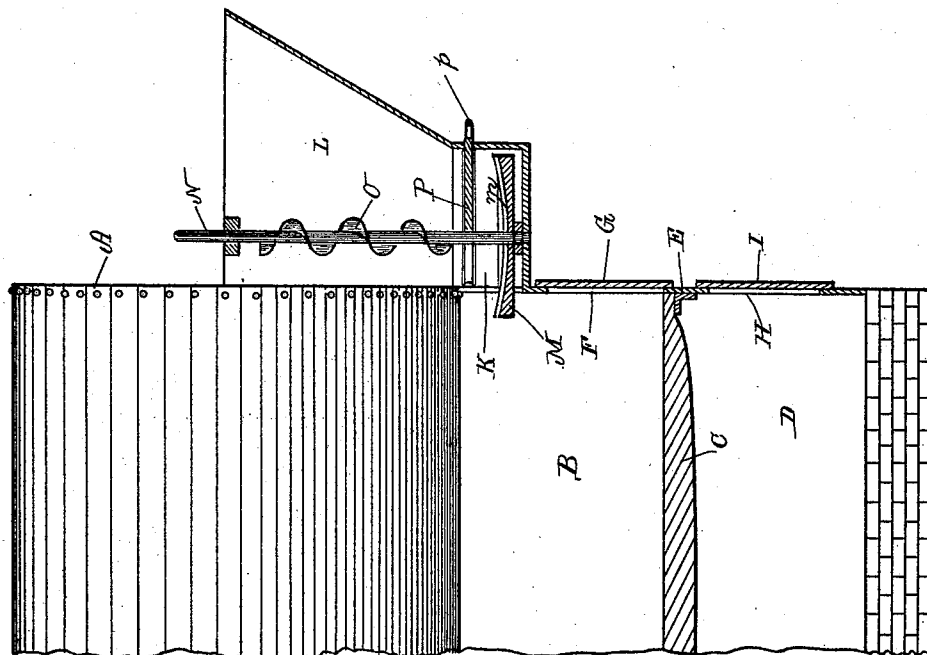


Fig. 2.



Witnesses.

Lauritz N. Höller.
Charles A. Harris

Inventor.

John A. Erickson
by *Alvan Judson*
his atty.

(No Model.)

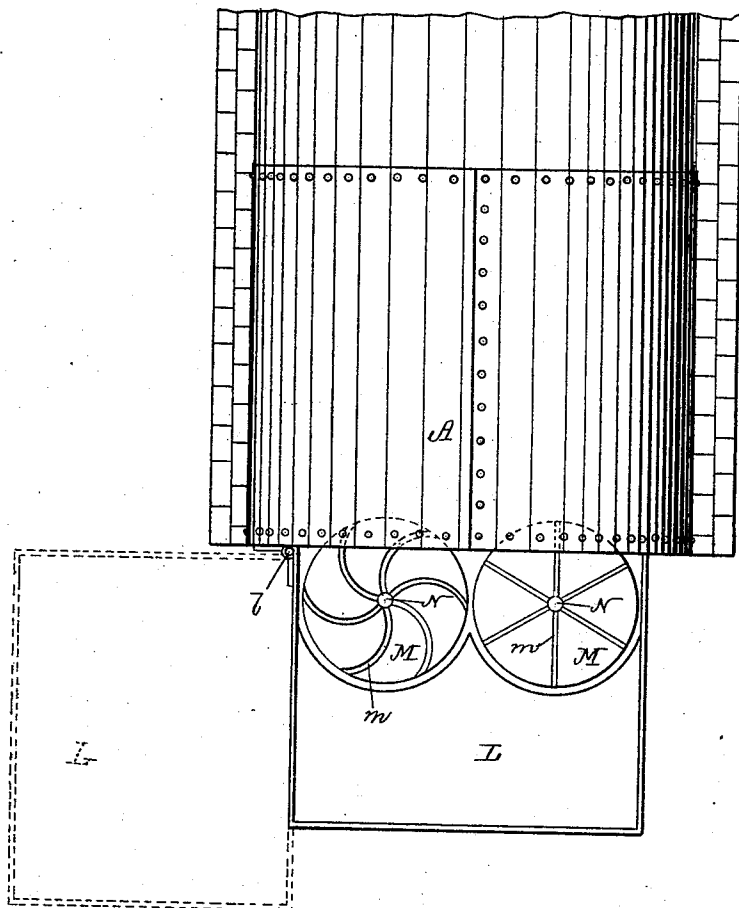
2 Sheets—Sheet 2.

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Fig. 3.



Witnesses

Lauritz N. Høller
Charles A. Harris

Inventor

John A. Erickson
by *Alban Fredrick*
his atty.

UNITED STATES PATENT OFFICE.

JOHN A. ERICKSON, OF MALDEN, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO ROBERT C. CLAUS, OF BELMONT, AND RICHARD C. H. VOIGT, OF BOSTON, MASSACHUSETTS.

MECHANICAL STOKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 578,630, dated March 9, 1897.

Application filed June 9, 1896. Serial No. 594,869. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. ERICKSON, a citizen of the United States, and a resident of Malden, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Mechanical Stoking Apparatus, of which the following, taken in connection with the accompanying drawings, is a specification.

10 This invention relates to improvements in mechanical stoking apparatus for the purpose of automatically feeding the fuel to furnaces by mechanical means; and the invention is applicable to fire-pots for steam-boilers, as well as furnaces of any kind.

15 The invention is carried out as follows, reference being had to the accompanying drawings, wherein—

20 Figure 1 represents a front elevation of my invention. Fig. 2 represents a vertical section on the line 2 2 in Fig. 1, showing the steam-boiler in elevation; and Fig. 3 represents a top plan view of the invention, showing the adjustable gates removed.

25 Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

30 A in the drawings represents a steam-boiler furnace or heating device of any well-known form or construction, and B represents the fire-pot, adapted to contain the fuel, as usual.

C represents the grate-bars or grate, and D represents the ash-pit below the grate, as usual.

35 E represents the boiler-front, having a feed-opening F, adapted to be closed by a door or doors G G, as shown in Figs. 1 and 2.

H represents the ash-pit opening, adapted to be closed by a door or doors I I, as usual.

40 Through the boiler-front E is made a feed-perforation K above the feed-opening F, as shown in Fig. 2. To the boiler-front is pivoted, preferably at l, the fuel-containing hopper L, the lower end of which communicates with the fire-pot B by means of the feed-opening K. Within the hopper L are arranged one or more fuel-distributing disks M M, a portion of which projects into the fire-pot through the opening K, as shown. Each of
50 such disks is dish-shaped on its upper sur-

face and preferably provided on such upper surface with radial or curved ribs *m m*, as shown in Figs. 2 and 3.

Each disk M is attached to a vertical shaft N, journaled in suitable bearings and preferably provided with a spiral or helical feeding O or disintegrator, as shown, the object of which is to feed the fuel in the hopper L downwardly toward the rotary fuel-distributors M M, above mentioned.

60 Above the rotary disks M M is located one or more valves, gates, or cut-offs P P, which are guided in suitable ways in the lower portion of the hopper L, and provided at their front ends with suitable handles *p p* to enable the operator to open or close said gates as may be needed, and thus to control the feed of the fuel from the hopper L to the rotary disks M M, as may be needed from time to time.

70 The shafts N N may be set in rotary motion by hand or by any well-known mechanism, as may be desired, without departing from the essence of my invention.

75 In using the device the shaft or shafts N, with its spiral wing O and distributing-disk, is set in a rotary motion, causing the fuel in the hopper L to be disintegrated and fed downward upon the disk or disks M, and as the latter rotate they cause the fuel to be thrown into the fire-pot or furnace B.

80 If it is desired to regulate the feeding of the fuel into the furnace, this can be done either by regulating the speed of the disks M or by closing the gate or gates P more or less, as circumstances may require.

85 The ribs *m* on the disk or disks M serve during the rotation of the latter to throw or conduct the fuel from said disks through the feed-opening K into the fire-pot B.

90 If it is desired to make repairs on the boiler or for other similar purposes of repairs, it is only necessary to swing the hopper L to one side, as represented in dotted lines in Fig. 3.

95 Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. In a mechanical stoking apparatus a hopper arranged in front of the boiler, furnace or heating device, one or more rotary 100

shafts arranged therein with distributing-disks secured to the lower end of such shaft, and a helical feed-screw or disintegrator attached to said shaft and one or more gates
5 for regulating the fuel-supply substantially as and for the purpose set forth.

2. In a mechanical stoking apparatus, the combination with a boiler-furnace, of a feed-hopper arranged in front of the furnace, a
10 vertical shaft arranged in said hopper, a rotary distributing-disk arranged on the lower end of said shaft, a rotary disintegrating or feed device arranged on the shaft above the disk, and a gate disposed between the disk

and disintegrator for regulating the supply 15 of fuel to the furnace, the said hopper being hinged at one side to the front of the furnace, whereby the hopper and its contained feed mechanism may be swung out of position when not in use, substantially as described. 20

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 19th day of May, A. D. 1896.

JOHN A. ERICKSON.

Witnesses:

ALBAN ANDRÉN,
SAMUEL J. CRADDOCK.