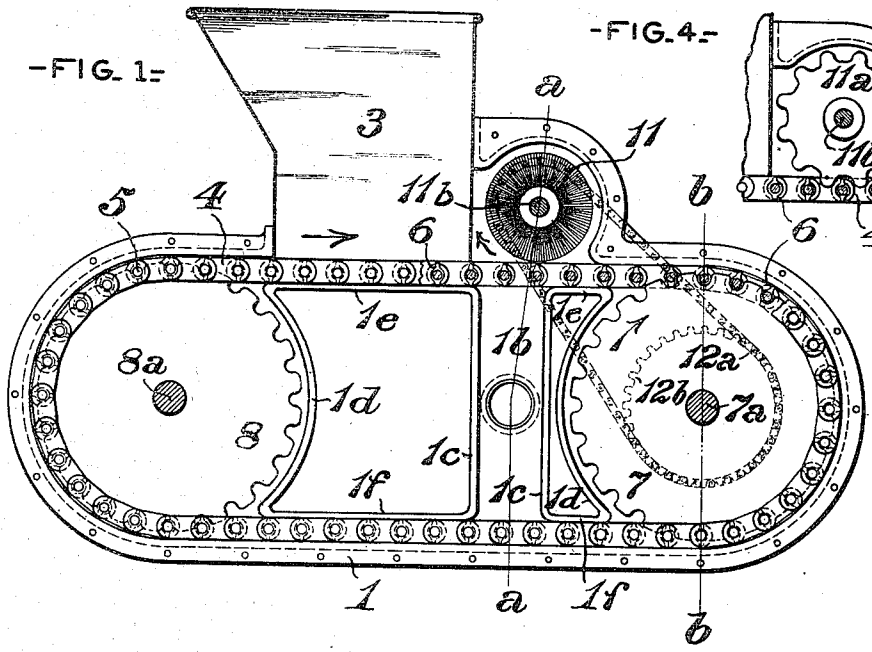
R. R. LASSITER.

APPARATUS FOR FEEDING PULVERIZED FUEL.

APPLICATION FILED FEB. 18, 1914.

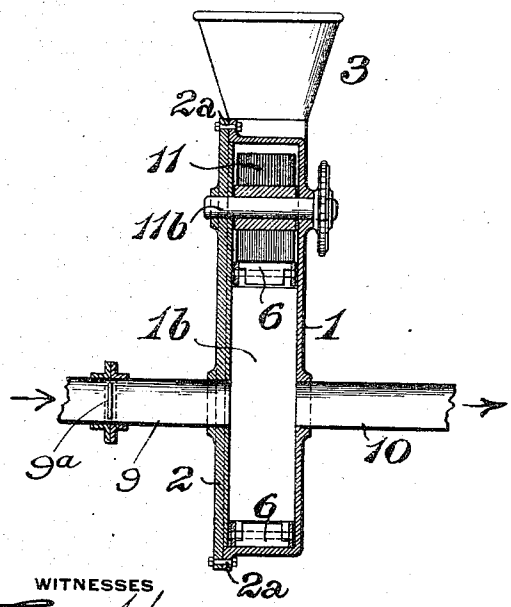
1,165,520. Patented Dec. 28, 1915.

-FIG. 1-

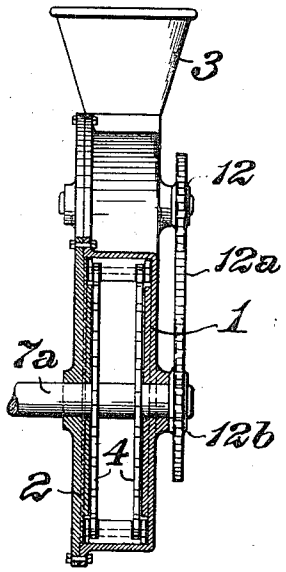


-FIG. 4-

-FIG. 2-



-FIG. 3-



WITNESSES

Edward A. Wright

S. R. Bell.

INVENTOR

Robert R. Lassiter,

By J. Lowden Dell,

Atty.

UNITED STATES PATENT OFFICE.

ROBERT ROLAND LASSITER, OF RICHMOND, VIRGINIA.

APPARATUS FOR FEEDING PULVERIZED FUEL.

1,165,520. Specification of Letters Patent. Patented Dec. 28, 1915.

Application filed February 18, 1914. Serial No. 819,315.

To all whom it may concern:

Be it known that I, ROBERT ROLAND LASSITER, of Richmond, in the county of Henrico and State of Virginia, have invented a certain new and useful Improvement in Apparatus for Feeding Pulverized Fuel, of which improvement the following is a specification.

My invention relates to means for supplying pulverized fuel to steam boiler and other furnaces, and its object is to provide a mechanism of such character which shall be of simple and inexpensive construction, ready applicability, and freedom from liability to derangement in service, and in the operation of which the supply of fuel may be regulated as required, and excess delivery or clogging of the apparatus be prevented.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawing: Figure 1 is a side view, in elevation, of an apparatus for feeding pulverized fuel, illustrating an application of my invention, the side plate of the feed casing being removed to show the members inclosed therein; Figs. 2 and 3, vertical transverse sections, on the lines *a a* and *b b*, respectively, of Fig. 1; and, Fig. 4, a partial side elevation showing a structural modification.

In the practice of my invention, I provide a feed casing, 1, which is of rectangular longitudinal section throughout the major portion of its length, and of semicircular longitudinal section at its ends. The casing is of rectangular transverse section, and is open at one of its sides, which, in operation, is closed by a removable side plate, 2, which is secured to the casing by bolts, 2^a, passing through a flange extending around its open side. A vertical feed channel, 1^b, extends through the feed casing, and a supply hopper, 3, which is open at bottom throughout the whole or any desired portion of its length, is secured to the top of the feed casing, above an opening therein and adjacent to the feed channel, 1^b.

An endless conveyer, which comprises a plurality of pairs of links, 4, coupled into chains by pins, 5, on which are mounted conveyer plates or blades, 6, is fitted to traverse longitudinally in the horizontal channels of the feed casing, 1, which extend between its sides above and below the upper and lower open ends, respectively of the feed channel, 1^b, its conveyer plate, 6, closely adjoining the top, side, and end walls of the feed casing, and forming the front and rear walls of a plurality of open bottomed pockets or measuring compartments traversing therein. The conveyer chains engage driving sprocket wheels, 7, fixed on a driving shaft, 7^a, journaled in bearings adjacent to one end of the feed casing, and rotated by any suitable prime mover, and idler or carrier sprocket wheels, 8, fixed on a shaft, 8^a, journaled in bearings adjacent to the opposite end of the feed casing. Vertical transverse walls, 1^c, extend across the feed casing and form boundaries of the interposed feed channel, 1^b, and segmental transverse walls, 1^d, extend across the casing, adjacent to the sprocket wheels, 7 and 8, and are curved concentrically therewith. The walls, 1^c and 1^d, are connected by upper horizontal transverse walls, 1^e, and lower horizontal transverse walls, 1^f, over and under which, respectively, the conveyer traverses, the spaces between the walls being closed to prevent the access of fuel thereto.

An air supply pipe, 9, leading from a compressor or other source of supply of air under pressure, opens into one side of the feed channel, 1^b, said pipe being controlled by a suitable valve, 9^a, in the ordinary manner, and a fuel delivery pipe, 10, in line axially with the pipe, 9, leads from the opposite side of the feed casing to the furnace which is to be supplied with pulverized fuel.

In order to prevent clogging of the conveyer, a rotatory clearer is disposed adjacent to its upper side, in position for its periphery to contact therewith in its rotary movement. As shown in Figs. 1 and 2, the clearer is in the form of a wire brush, 11, fixed upon a shaft, 11^b, journaled in an upper extension of the feed casing, said shaft carrying a sprocket wheel, 12, which is rotated by a chain, 12^a, passing over a sprocket wheel, 12^b, on the driving shaft, 7^a. In the structural modification shown in Fig. 4, a sprocket wheel, 11^a, the teeth of which enter the spaces between the blades, 6, is substituted for the brush, 11.

In the operation of the appliance, the pulverized fuel which drops, from the opening in the bottom of the supply hopper, 3, upon the upper horizontal wall, 1^e, of the feed chest, is carried along the channel formed by said wall and the adjoining vertical walls, by the conveyer blades, 6, to the up-

per opening of the feed channel, 1^b, into which it drops from the spaces between the blades. These spaces, as before stated, form the front and rear walls of open bottomed pockets, each of which receives a measured quantity of fuel from the superposed hopper, this being greater or less, as desired, accordingly as the chain of connected conveyer blades is moved at slower or at higher speeds, respectively. The falling particles of pulverized fuel, in their passage through the feed channel, encounter the current of air under pressure which passes across their vertical line of traverse through the air supply fuel delivery pipes, 9 and 10, and the major portion of the pulverized fuel, determined by the speed of the conveyer and the pressure of the air current, will be mingled with the current of air, and carried with it into the furnace, through the delivery pipe, 10. The excess amount of pulverized fuel which is not taken up by the air current, will fall to the bottom of the feed chest, and be returned by the blades of the conveyer, over the upper plate, 1^e, to the upper opening of the feed channel.

I claim as my invention and desire to secure by Letters Patent:

1. In an apparatus for feeding pulverized fuel, the combination of a feed casing having one side integral and the other removable, vertical and horizontal transverse walls projecting inwardly from said integral side, a space being left between the vertical walls to form a feed channel and the horizontal walls forming, with the sides of the casing, upper and lower conveyer channels connected at their ends and communicating through said feed channel, a supply hopper leading into the upper conveyer channel, a plurality of connected conveyer blades, forming an endless open-pocket conveyer, mounted to travel in said conveyer channels, and alined air-inlet and fuel-outlet pipes opening into opposite sides of said feed channel.

2. An apparatus for feeding pulverized fuel, the combination of an elongated, narrow feed casing having semi-circular ends, conveyer channels extending along the top and bottom of said casing and around said ends, an endless chain conveyer mounted to travel in said channels, a vertical feed channel connecting said top and bottom channels, alined air-inlet and fuel-outlet pipes opening into said feed channel, a supply hopper to deliver the fuel into said conveyer as it travels in said top channel and before it passes over said feed channel, and a rotary cleaner located to engage said conveyer as it passes over said feed channel.

ROBERT ROLAND LASSITER.

Witnesses:

SAMUEL E. HOYT,

ISAAC WOLFE.