Aug. 12, 1924. 1,504,528

C. L. STRANDRUD

STEAM FUEL FEEDER

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Fig. 1.

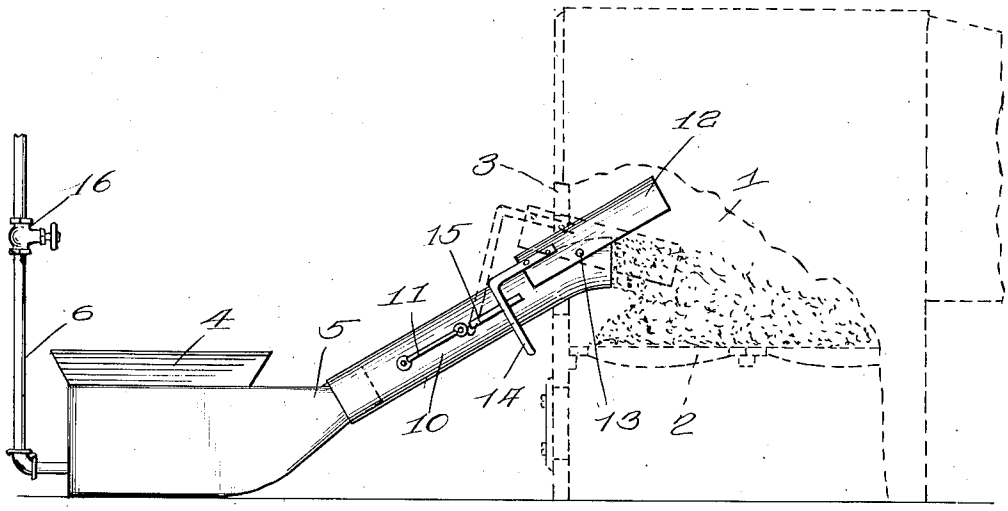
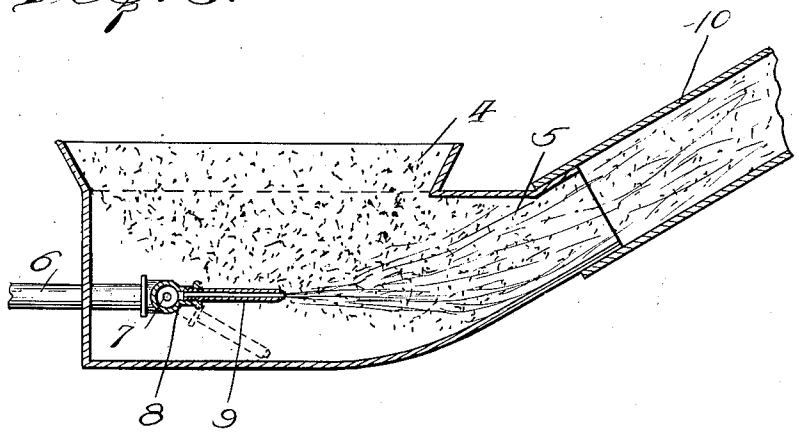


Fig. 3.



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Fig. 2.

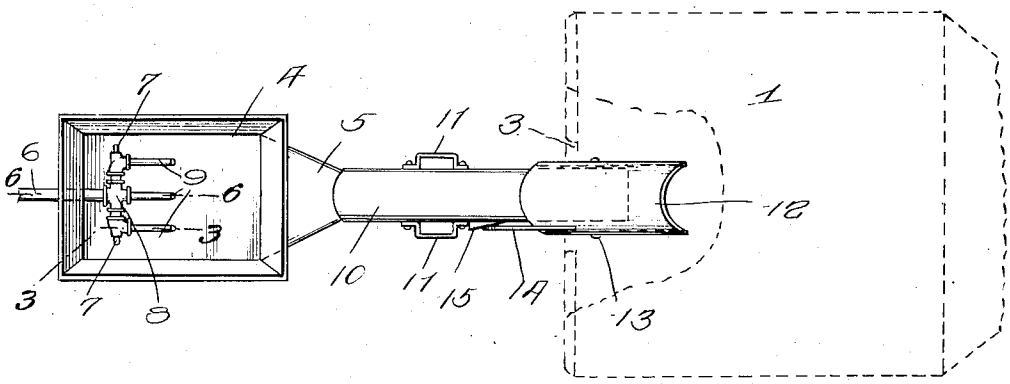


Fig. 1.

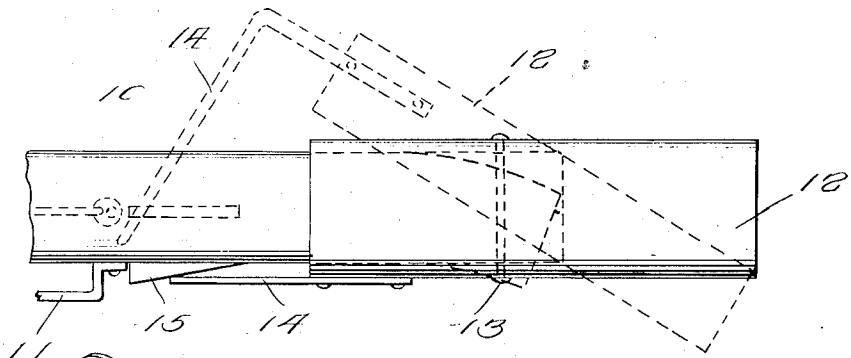


Fig. 5.

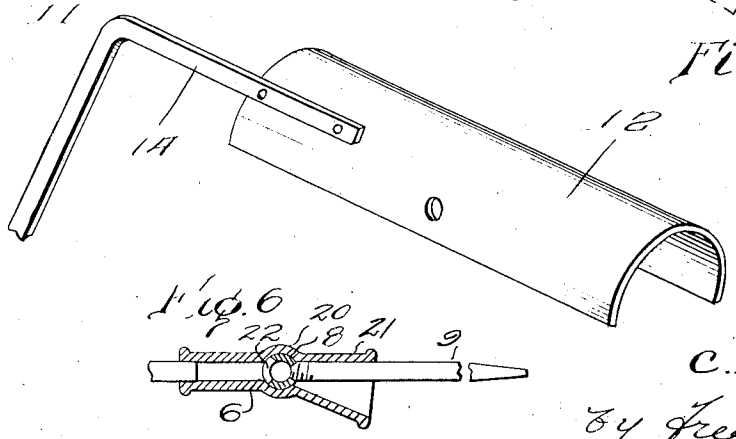


Fig. 6

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Patented Aug. 12, 1924. 1,504,528

UNITED STATES PATENT OFFICE.

CHRIS L. STRANDRUD, OF SEATTLE, WASHINGTON.

STEAM-FUEL FEEDER.

Application filed October 7, 1922. Serial No. 593,159.

To all whom it may concern:

Be it known that CHRIS L. STRANDRUD, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, has invented certain new and useful Improvements in Steam-Fuel Feeders, of which the following is a specification.

This invention relates to improvements in an attachment for burning saw dust or the like in furnaces.

The primary object of the invention is to provide means for keeping the saw dust agitated while being introduced to the furnace, and means for readily and conveniently permitting an attendant to manually distribute and spread the saw dust in the furnace.

The invention also comprehends improvements in the details of construction and arrangement of parts which will be hereinafter described and particularly pointed out in the claim.

In the drawings:

Fig. 1 is a side view of the invention applied to a furnace.

Fig. 2 is a top plan view.

Fig. 3 is a section on line 3—3 of Fig. 2, the initial position of the nozzles being shown in dotted lines.

Fig. 4 is an enlarged side view of the spout and hood.

Fig. 5 is a perspective view of the hood.

Fig. 6 is a section on line 6—6 of Fig. 2.

1 indicates a furnace, 2 the grate, and 3 the feed opening to the fire box.

Suitably supported in front of the furnace is a hopper 4, provided with an upwardly inclined tapered exit end 5. A steam supply pipe 6 passes into the front end of the hopper. The pipe 6 is formed with a circular section 20 having a flared hollow projection 21 extending forwardly therefrom. Rotatably mounted within the section 20 is a hollow coupling 8, having an opening 22 which in all positions of the coupling establishes communication between said coupling and the pipe 6. Lateral pipes 7 project from the coupling 8 and each of the pipes 7 and also the coupling 8 carry forwardly projecting nozzles 9. By reason of the flaring projection 21, through which the central nozzle 9 projects, a movement of the nozzles is permitted on the coupling 8 as a center, the upper wall of the projection 21 limiting the upper position of the nozzles to a substantially horizontal one while the lower wall of the projection 21 permits a downward movement of the nozzles to direct their open ends downwardly, as shown in dotted lines in Fig. 3. This detail is conventional construction and no claim is made to such herein.

Fitted to turn on the end of the tapered exit end 5, is a pipe 10, which projects through the feed opening in the front of the furnace. This pipe is provided with handles 11 to readily permit an operator to rotate it, as will appear later on.

Pivoted at 13 to the end of the pipe 10 is a hood 12, and secured to the hood is a handle 14, cooperating with a wedge 15 on the pipe 9, the handle 14 being frictionally held by the wedge.

In operation, steam is admitted through the steam pipe by opening valve 16, and the pressure of said steam holds the short exit pipes 9 elevated, as shown in full lines in Fig. 1, and then saw dust is thrown into the hopper and is broken up and scattered when it strikes the pipes 9. The weight of the saw dust tilts the pipes 9 downwardly but the pressure of the steam will cause said pipes to gradually rise again, which causes the saw dust to be again broken up. The steam from the pipes 9 acts as jets to blow the saw dust up through the tapered exit 5, and into the pipe 10. From the pipe 10, the saw dust is blown into the fire box of the furnace, and to distribute it, the hood is tilted on its pivot.

While the saw dust is passing through the pipe 10, the latter may be rotated by the operator to scatter the dust and thereby prevent packing, which further conditions the dust to be more readily blown through the pipe by the action of the steam jets. Obviously by manipulating the hood on the end of the pipe, the saw dust can be distributed evenly over the entire surface of the grate, the rotation of the pipe and tilting of the hood making it possible to throw the saw dust in any direction according to the will of the operator.

The blast of steam and saw dust entering the fire box enhances the draft and materially tends to promote combustion, and as the operator can distribute the saw dust, it is evident an even fire can be maintained.

What I claim is:

In combination, a furnace, including a fire box, a saw dust receiving hopper lo-

cated in front of the furnace, a steam pipe extending into the front end of the hopper, a horizontal pipe mounted at the inner end of and communicating with the steam pipe, a series of nozzles communicating with the horizontal pipe and projecting rearward therefrom and underlying the hopper entrance, said nozzles being mounted for swinging movement with respect to said horizontal pipe, whereby when saw dust is thrown into the hopper and on the nozzles the weight of the saw dust rocks the nozzles downwardly and the force of the steam passing through the nozzles subsequently rocks the latter upwardly and agitates the saw dust.

In testimony whereof I affix my signature.

CHRIS L. STRANDRUD.