

*A. Rodgers & E. Tarrant. Machine for Feeding Fuel
to Furnaces.*

112636

Fig. 1.

PATENTED MAR 14 1871

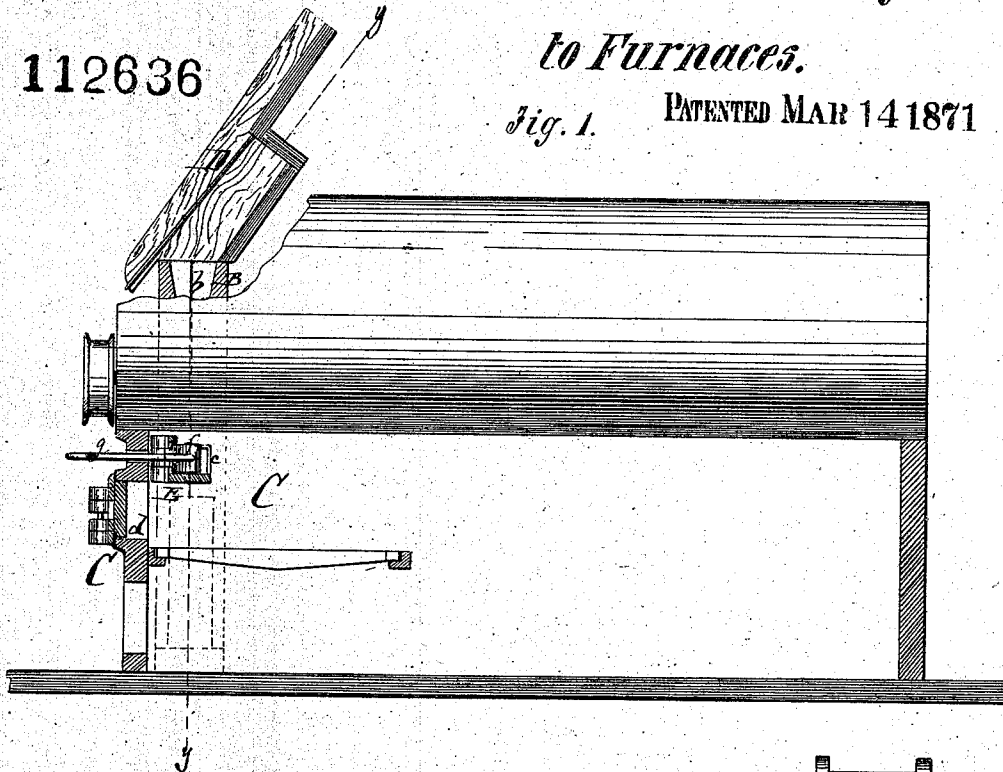
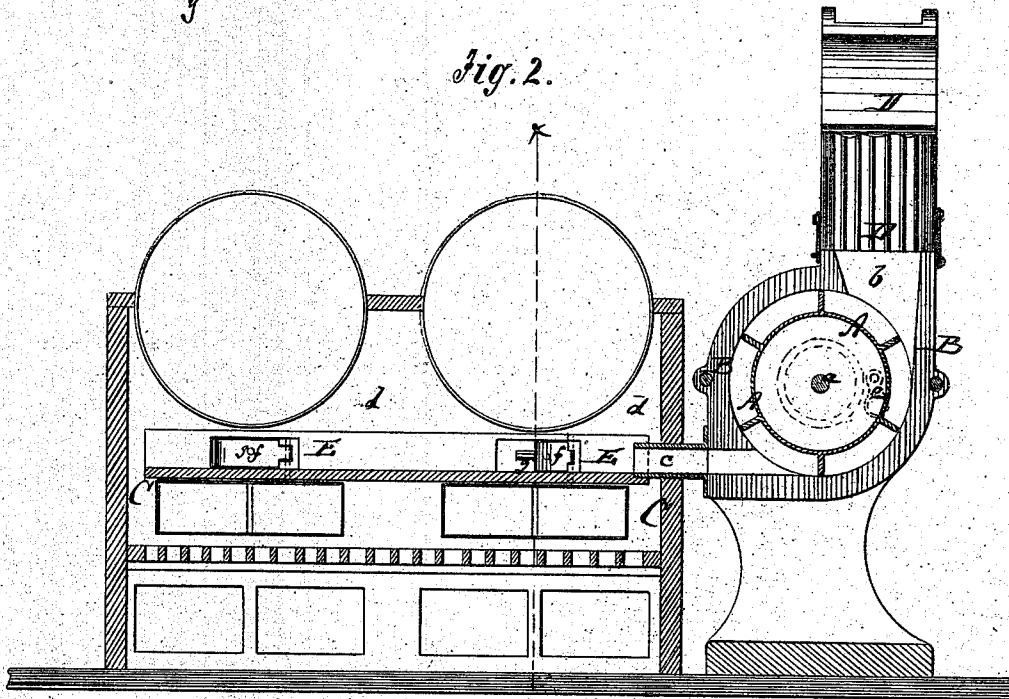


Fig. 2.



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ALEXANDER RODGERS AND ESAU TARRANT, OF MUSKEGON, MICHIGAN.

Letters Patent No. 112,636, dated March 14, 1871.

IMPROVEMENT IN MACHINES FOR FEEDING FUEL TO FURNACES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that we, ALEXANDER RODGERS and ESAU TARRANT, of Muskegon, in the county of Muskegon and State of Michigan, have invented a new and improved Machine for Feeding Fuel to Furnaces; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical longitudinal section of a furnace provided with our improved attachment, the plane of section being indicated by the line *x x*, fig. 2.

Figure 2 is a vertical transverse section of the same, the plane of section being indicated by the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

Our invention relates to feeders for supplying furnaces with fine coal, sawdust, shavings, or other comminuted fuel, and the principle thereof consists in graduating the pieces to a uniform size as they are fed along, forcing them into the fire by a pneumatic power independent of the furnace-draught, and regulating the exact locality of their deposit.

We will now describe all that is necessary to a full understanding of our invention, and then clearly specify it in the claims.

A in the drawing represents a rotary winged wheel hung within a case, B, which is securely set up near the furnace O.

The wheel-fan is mounted upon a shaft, *a*, which receives rotary motion by steam or other machinery.

b is the spout for introducing the fuel within the case B.

c is the discharge-spout of said case, reaching into the furnace close behind the fire-front *d* of the same.

The blades of the wheel are made of steel, cast-iron, or other strong material, and reach close to the inner circumference of the case, so as to gather and convey all the powdered fuel, and, if necessary, cut any larger pieces that may enter between their ends and the case.

D is a hopper, having a wire screen, to be placed upon the spout *b* in an inclined position. It is made in form of an inclined trough with a wire bottom.

The fuel to be discharged into the furnace is thrown

upon this trough, and only the portions fine enough to pass through the wire screen will be admitted to the fan.

An opening in the side of the case B, regulated by a damper, *e*, serves to supply air to the fan.

The spout C discharges the fuel upon a transverse guide, E, which is L-shaped in cross-section, and secured transversely against the inner side of the fire-front *d*.

f f are plates pivoted to the upright flange of the guide E, and provided with rods *g* that extend through apertures in the fire-front to the face of the furnace. These plates *f* can be adjusted into such suitable positions that they will extend across the guide E to deflect the fuel, that is with considerable speed forced into the furnace, to any suitable part of the grate or grates, and to consequently distribute it in suitable manner.

There may be one or more such deflecting-plates in each furnace, their operating faces being preferably concave.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

1. The discharging-throat *c*, leading from a delivery apparatus outside of the furnace, combined, as described, with the transverse guide E, L-shaped in form, and arranged against the inner side *d* of the furnace, for the purpose specified.

2. The deflecting-plates *f f*, arranged within the furnace for the purpose of guiding the fuel in the desired direction, substantially as herein shown and described.

3. The L-shaped transverse guide E, combined, as described, with plates *f f* pivoted thereon, and adjustable with reference thereto, for the purpose specified.

4. The troughed screen-hopper D, the fuel-receiver and conveyer A B *a b c*, the guide E, and the deflectors *f f*, all combined, as described, to successively perform their respective functions and bring about the common result of depositing the comminuted fuel within the furnace, on the principle specified.

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