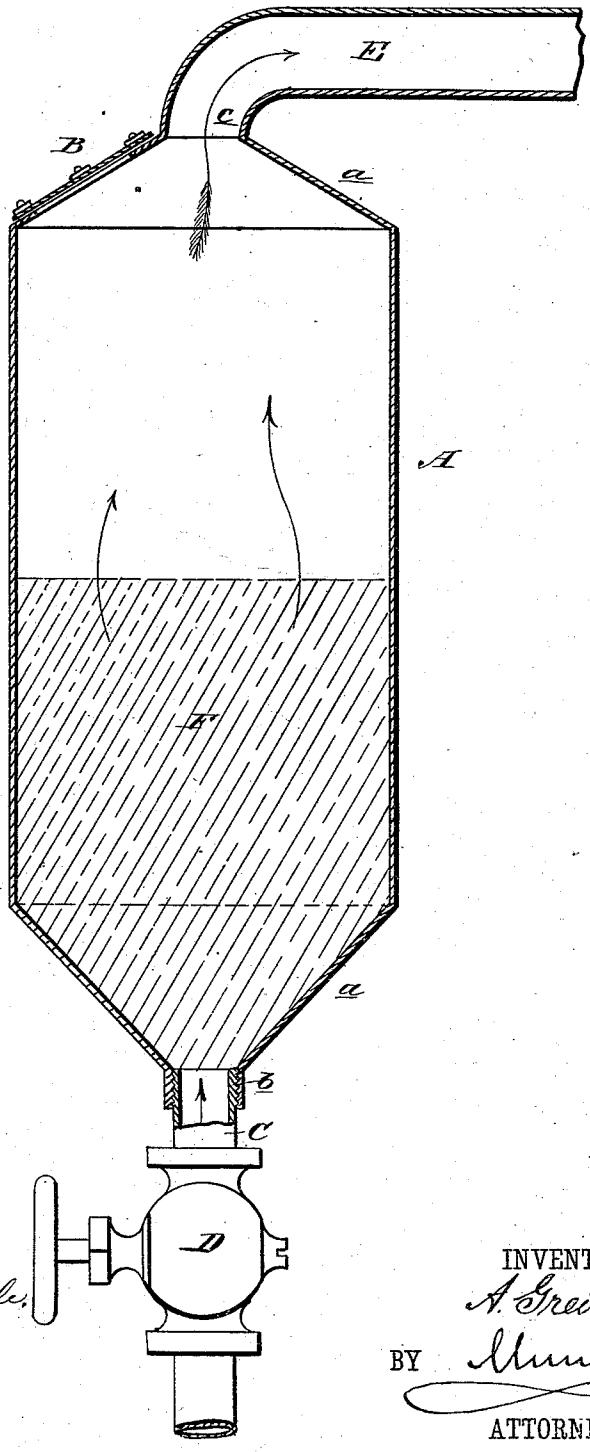
(No Model.)

A. GREINER.

Device for Feeding Fine Fuel.

No. 238,891. **Patented March 15, 1881.**



WITNESSES:
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UNITED STATES PATENT OFFICE.

AUGUSTUS GREINER, OF SOMERSET, OHIO.

DEVICE FOR FEEDING FINE FUEL.

SPECIFICATION forming part of Letters Patent No. 238,891, dated March 15, 1881.

Application filed December 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS GREINER, of Somerset, in the county of Perry and State of Ohio, have invented a new and Improved Device for Feeding Fine Fuel, of which the following is a full, clear, and exact description.

The object of this invention is to economize in the quantity of fuel used, and to use cheaper fuel for furnaces, forges, &c.

The drawing represents a vertical sectional elevation of the apparatus for containing the supply of coal-dust.

In the drawing, A represents a hollow cylindrical vessel having conical ends *a a*, and in the upper end a suitable door, B, for the introduction of the coal-dust.

Connected with a central opening, *b*, in the lower end of the vessel A is a pipe, C, for the admission of the forced current of air or steam into the said vessel A, said pipe C being provided with a suitable regulating valve or cock, D.

Connected with a central opening, *c*, in the upper end of the vessel A is a pipe, E, for conducting the coal-dust-laden current or jet of air or steam to the furnace or fire for which it is designed.

F represents a quantity of coal-dust in the vessel A.

It is designed to arrange the vessel A between a source of steam or air pressure and the furnace or fire-box to be supplied with fuel, and to make suitable connections therewith. Coal-dust is then introduced into the vessel A through the door B, which latter is afterward tightly closed in order to prevent the escape of air, steam, or coal-dust. A suitable fire is then built in the furnace or fire-box, and when the walls of said furnace or fire-box have become heated to some extent the blast of air or jet of superheated steam is applied through the pipe C and opened valve D up through the coal-dust in the vessel A, and in passing through the vessel A the air or steam column takes up a quantity of the coal-dust F and carries it through the pipe E into the heated furnace or fire-box, wherein it is ignited by the fire there and burned with a rapidity and intensity proportioned to the degree of fineness to which it (the said coal-dust) is reduced. If the coal be very finely comminuted it will take fire in the furnace or fire-box and burn like a jet of gas, and if the coal be introduced into the furnace by a jet of steam the steam will be decomposed by the incandescent floating particles of carbon, and thereby supply additional oxygen to the carbon, and also furnish hydrogen for combustion.

With a continuous supply of air or steam borne dust coal of suitable fineness a furnace or fire-box will require little or no other fuel after the walls thereof have become thoroughly heated.

In this process fine coals that are otherwise almost useless as fuel can be used, and such coals can be obtained at much less cost than those of ordinary commercial grades; and, further, it is found that complete combustion is assured with air or steam borne coal of sufficient fineness; hence the combustion of the fuel is attended with a higher temperature than in the usual methods of burning coal, and is characterized by an entire absence of smoke.

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

An apparatus for feeding coal-dust to furnaces, consisting of an air tight coal-dust vessel provided at one end with an inlet adapted to be connected with an air or steam supply, and at the other end with an outlet adapted to be connected directly with the furnace, as shown and described.

AUGUSTUS GREINER.

Witnesses:

MINNIE GREINER,

LOUIS GREINER.