

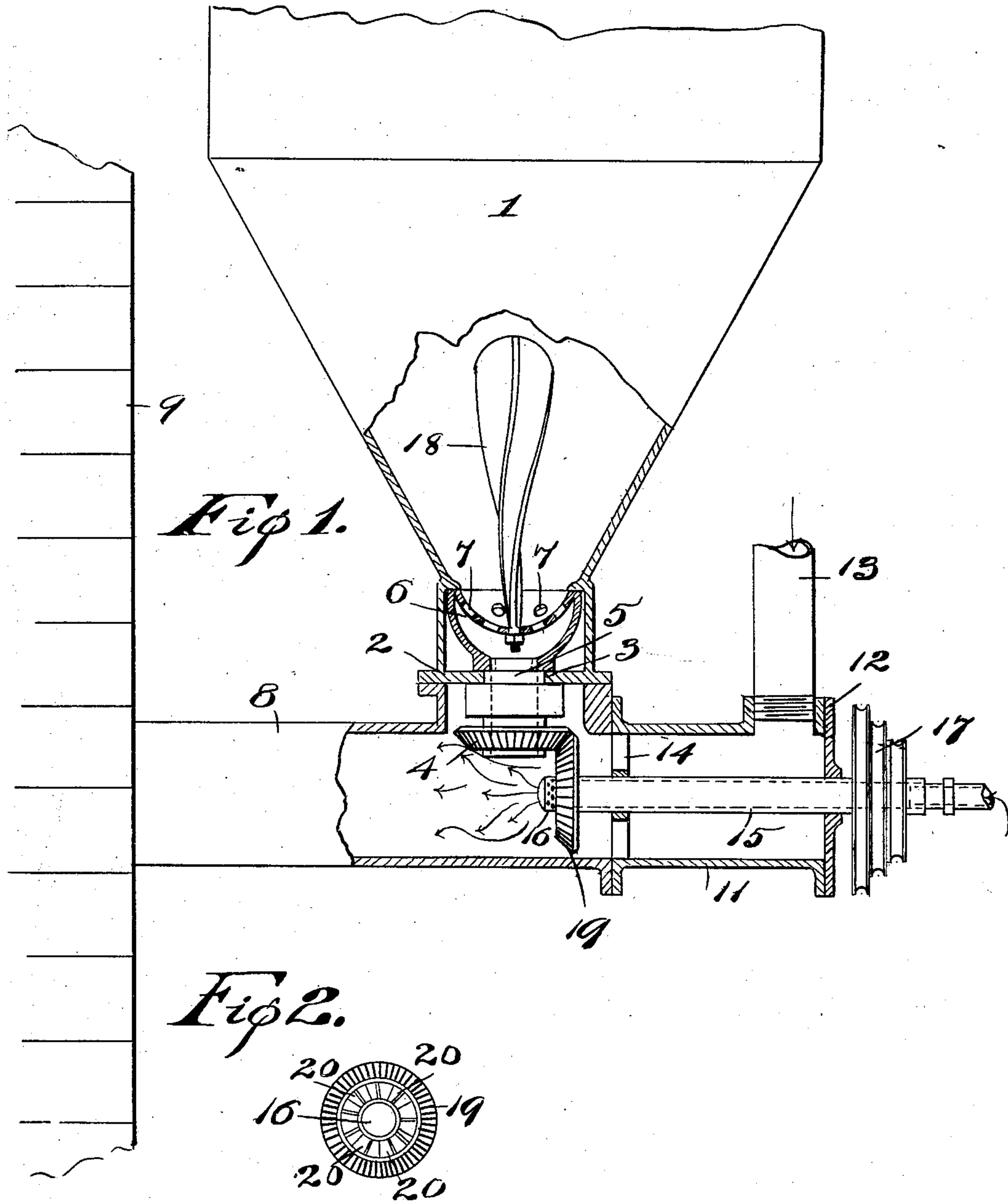
No. 701,800.

Patented June 3, 1902.

C. A. DALLY.
FUEL BURNER.

(Application filed May 25, 1901.)

(No Model.)



WITNESSES:
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CHARLES A. DALLY, OF CARNOT, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
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FUEL-BURNER.

SPECIFICATION forming part of Letters Patent No. 701,800, dated June 3, 1902.

Application filed May 25, 1901. Serial No. 61,864. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. DALLY, a citizen of the United States of America, residing at Carnot, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Fuel-Burners; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in fuel-burners.

The object of my invention is to provide a combination-burner for mixing and forcing into the furnace or fireplace such fuel mixtures as coal-dust, oil, and air.

With the above object in view the invention consists of the novel combination and arrangement of parts, as shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my apparatus, partly shown in section. Fig. 2 is a front view of one of the wheels removed from the interior of the apparatus.

In said drawings the numeral 1 represents a hopper. 2 is a flange at base of said hopper, having an opening 3 therein.

4 is a miter gear-wheel having a hollow shaft 5 projecting into the hopper-opening. 6 is a cup-shaped casting secured to the upper end of said gear-shaft and is provided with suitable-shaped openings or perforations 7.

8 is the burner-pipe, which extends into the furnace or fireplace 9. 11 is a chamber connected at its inner end to said burner-pipe and closed at its outer end by a head 12. 13 is an air-supply pipe connected to said chamber, and 14 is a bridge in the form of a cross formed in said chamber. 15 is a hollow shaft rotatably mounted in said chamber, bridge, and head, said hollow shaft being closed at its inner end by a perforated head 16. 17 is a step-cone pulley arranged upon said hollow shaft, and 18 is a spirally-formed feed-shaft extending up into the hopper and secured at its lower end to the said cup-shaped casting 6. 19 is a miter gear-wheel secured upon said hollow shaft to mesh with said gear-wheel 4, said gear 19 being provided with angularly-disposed vanes or arms 20.

In use as a burner and mixer with coal-

dust and oil as a fuel power is applied to the cone-pulley 17, which causes the gears to rotate the spiral shaft 18, thus agitating and feeding the coal-dust from the hopper to the burner. At the same time compressed air is forced into the chamber 11 and burner-pipe through the pipe 13, and the oil is forced through the hollow shaft 15 by means of a steam-jet. As the air passes out of the chamber 11 into the burner-pipe the blades 20 of the spur gear-wheel 19 cause said air to swirl around and thoroughly mix the coal-dust and oil-spray previous to passing into the furnace.

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

1. A coal-dust burner for furnaces, comprising a hopper for holding the coal-dust; an air-chamber, a bladed gear-wheel mounted on a shaft running through said air-chamber; a perforated cup or shell loosely fitted in the base of said hopper; a gear-wheel secured to said cup to mesh with the bladed gear-wheel; a spiral bladed shaft connected to said cup or shell to extend into said hopper; means to rotate said shafts, and means for introducing air under pressure to the air-chamber, all arranged and combined to operate as set forth.

2. A combined oil and coal-dust burner for furnaces, comprising a burner-pipe, a hopper connected to said burner-pipe; an air-chamber connected to said pipe; a rotatable oil-spraying pipe extending through said air-chamber into said burner-pipe; a bladed gear-wheel mounted upon said rotatable pipe; a perforated cup or shell loosely fitted in the base of said hopper; a gear-wheel secured to said cup to mesh with said oil-spray-pipe gear; a spiral bladed shaft connected to said cup or shell to extend into said hopper; means to rotate said oil-spraying pipe, and means for introducing air under pressure to the air-chamber, all arranged and combined to operate as shown and set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

CHARLES A. DALLY.

Witnesses:

R. W. HAY,
H. H. FOWLER.