

No. 679,046.

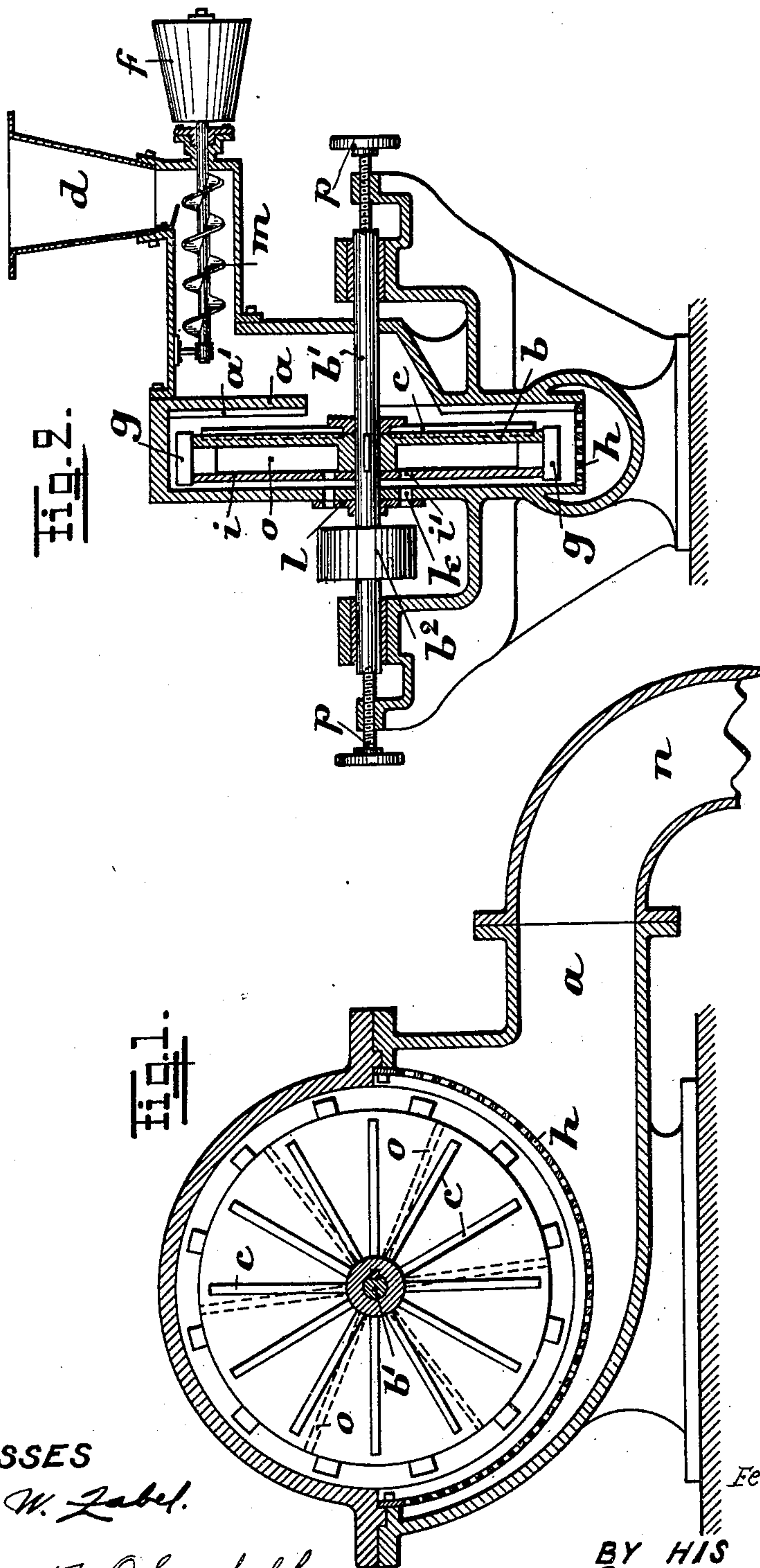
Patented July 23, 1901.

F. DE CAMP.

APPARATUS FOR PRODUCING COAL DUST AND CARRYING IT INTO FURNACES.

(Application filed Oct. 8, 1900.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

FERDINAND DE CAMP, OF BERLIN, GERMANY.

APPARATUS FOR PRODUCING COAL-DUST AND CARRYING IT INTO FURNACES.

SPECIFICATION forming part of Letters Patent No. 679,046, dated July 23, 1901.

Application filed October 8, 1900. Serial No. 32,330. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND DE CAMP, engineer, a subject of the German Emperor, residing at 170 Müllerstrasse, Berlin, Germany, have invented a certain new and useful Improvement in Apparatus for Producing Coal-Dust and Carrying It into Furnaces, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an improved apparatus for producing coal-dust and carrying it into a furnace. In my said apparatus the small coal entering the casing of the apparatus and not yet being mixed with air is ground at first between rotating flat surfaces provided with ribs and then mixed with air by means of ventilator-vanes arranged on the back side of one of the said flat surfaces and throwing the coal-dust mixed with air into the furnace. Thus the mixing of the coal-dust with air is effected only after the fuel being completely ground in such a manner that the air-current cannot influence the coal-dust during the operation of grinding, and thus the material is kept pending during a long time between the grinding-surfaces.

According to my present invention there are provided means for regulating the entrance of the air with regard to the quantity of the introduced coal. As such a means I provide a slide-valve, by which the air-inlets may be closed more or less, or I arrange between the air-inlets and the ventilator-vanes a rotating disk provided with openings and adapted to be moved to and from the air-inlets, or I may use both the slide and the rotating disk in combination with each other.

Now I shall describe a preferable modification of an apparatus constructed according to my said invention and shown on the accompanying drawings, in which—

Figure 1 is a vertical section rectangular to the axis, and Fig. 2 is a vertical section taken in the direction of the axis.

The front wall of the casing *a* is provided with ribs *a'* on the inner side. Within the casing a rotating disk *b*, preferably made of cast-steel, is fixed on a shaft *b'*, driven by a pulley *b<sup>2</sup>*. The said disk *b* is provided with removable ribs *c* opposite to the ribs *a'* of the

casing *a* and carries on its periphery tappets *g*. The coal is fed through the hopper *d*, Fig. 2, to the feeding-screw *m*, driven by the conical pulley *f* with adjustable velocity. This feeding-screw leads the coal into the casing *a*, where it is ground between the ribs *a'* and *c*. If thus the coal is ground to coal-dust, it is gripped by the tappets *g*, distributing it in the casing. At the same time air is sucked in through the openings *k* by means of the ventilator-blades *o*, fastened on the back side of the disk *b* and throwing the coal-dust mixed with air through the screen *h* and the channel *n* into a furnace. (Not shown in the drawings.)

The ventilator-blades *o* are covered by a disk *i*, provided with openings *i'* opposite to the air-inlets *k* of the casing *a*. The latter may be closed more or less by a slide *l*, whereby the entrance of the air is regulated according to the quantity of the coal. For effecting such a regulation still more exactly the shaft *b'*, with the rotating parts *b o i* fastened thereon, can be moved axially by means of the screws *p*, such moving the disk *i* to or from the openings *k*. If the disk *i* is moved to close against the rear wall of the casing, then the air can only pass through the openings *i'* if during the rotation of the disk *i* the openings *i'* coincide with the openings *k*. If, however, the disk *i* is moved somewhat to the right hand of Fig. 2, the air-current becomes more constant, it being, however, throttled by the small distance between the wall of the casing and the disk *i*. If this distance is enlarged, the air-current will flow through it freely.

Having now particularly described and ascertained my said invention and the manner in which the same is to be performed, I declare that what I claim is—

1. In an apparatus for producing coal-dust and carrying it into a furnace the combination of a casing provided in its interior on its front wall with ribs, of a disk also provided with ribs opposite to the ribs of the casing and rotating in the latter of ventilator-blades arranged on the back side of the said disk and of an inlet and an outlet for the fuel.

2. In an apparatus for producing coal-dust and carrying it into a furnace the combina-

tion of a casing provided in its interior on its front wall with ribs of a disk also provided with ribs opposite to the ribs of the casing and rotating in the latter, of ventilator-blades  
5 arranged on the back side of the said disk, an inlet and an outlet for the fuel, of a second disk provided with openings and adapted to be rotated in the casing and moved axially

and of air-inlet openings arranged in the rear wall of the casing.

In witness whereof I hereunto subscribe my name this 20th day of September, A. D. 1900.

FERDINAND DE CAMP.

Witnesses:

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10