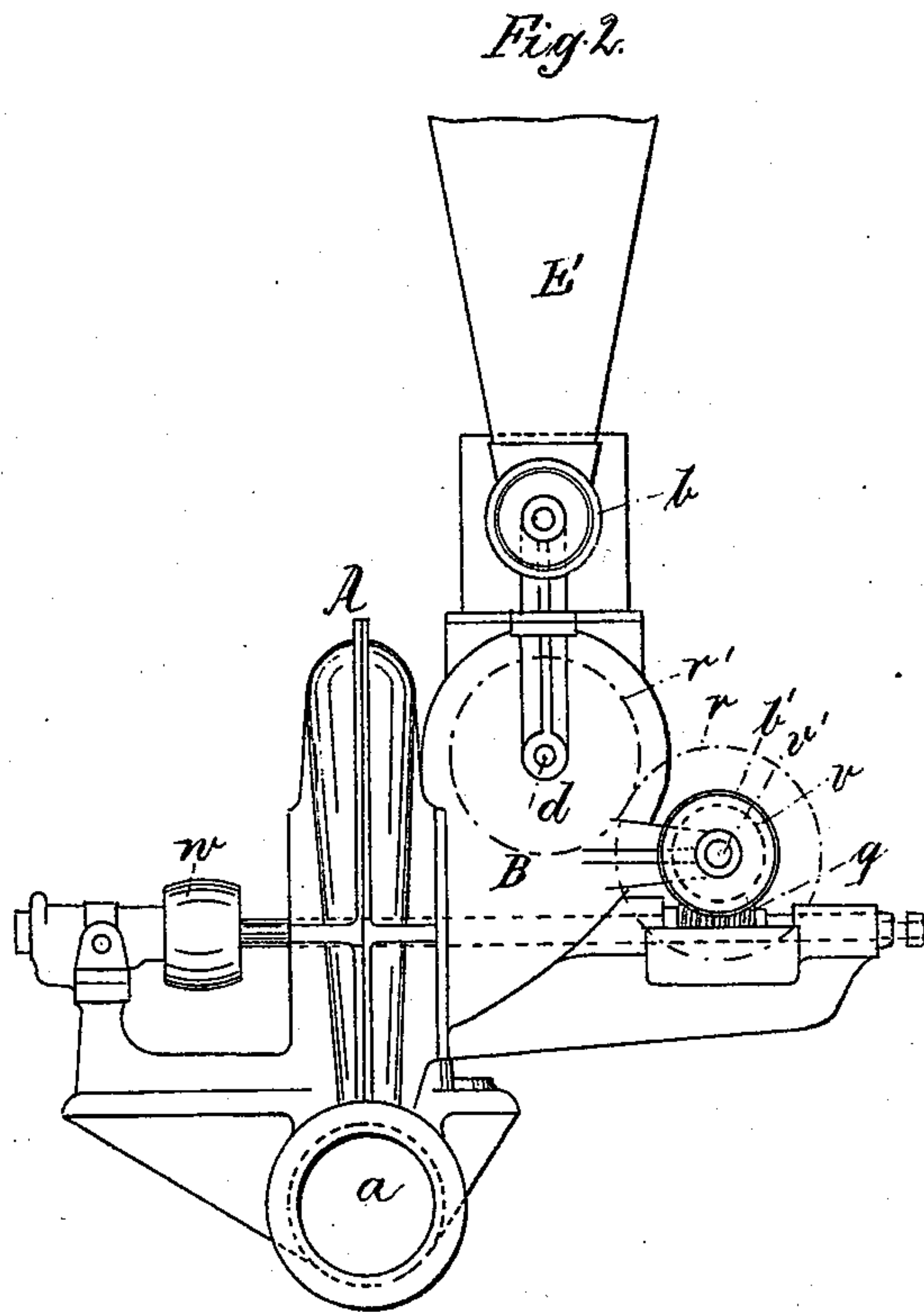
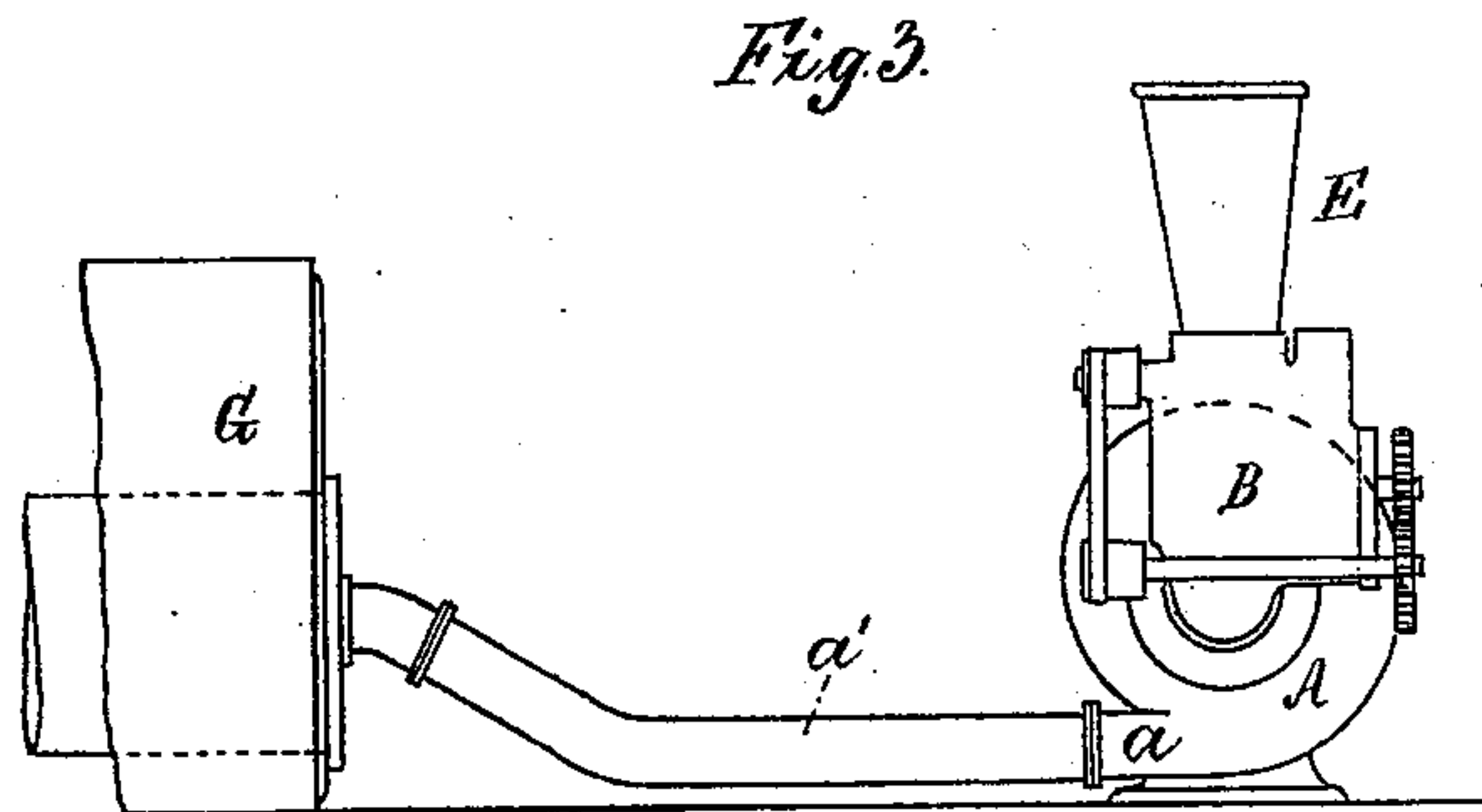
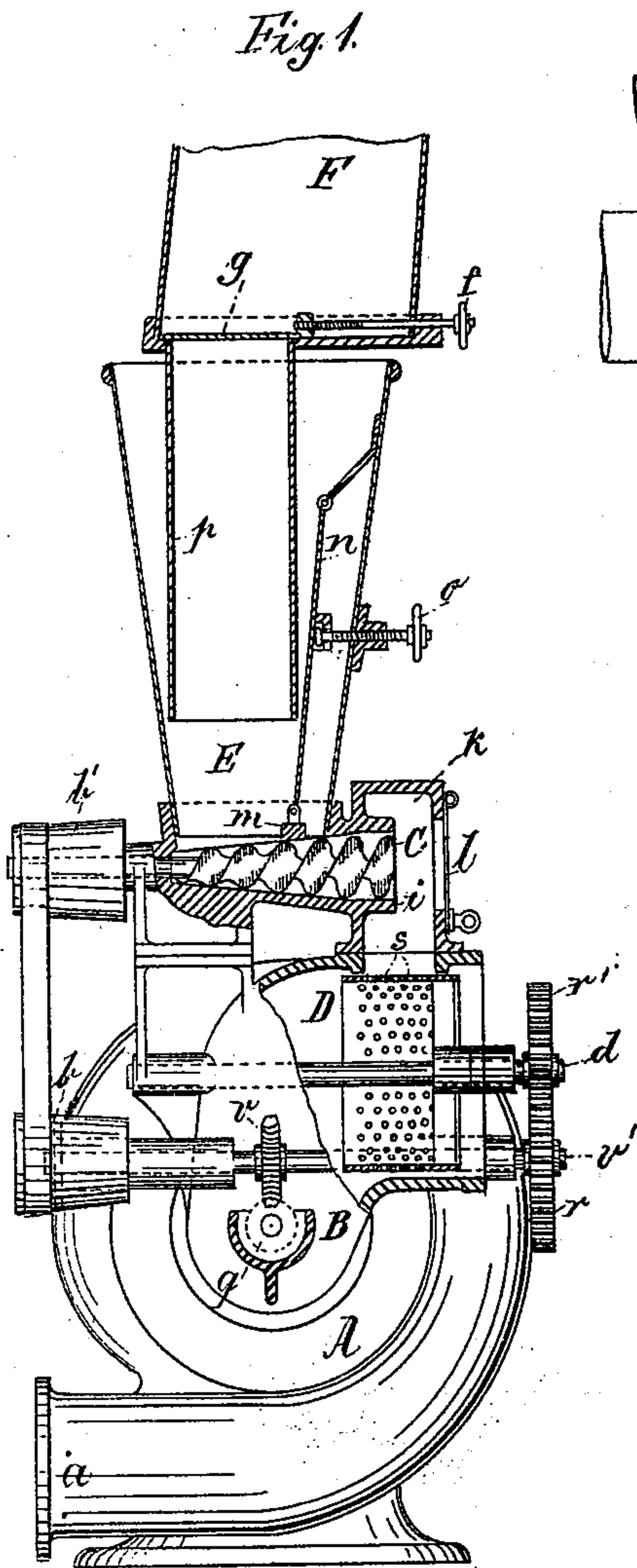


(No Model.)

F. DE CAMP.
FEEDING APPLIANCE FOR COAL DUST.

No. 551,074.

Patented Dec. 10, 1895.



Witnesses.
E. M. Samasure
Chas. W. Myer

Inventor
Ferdinand de Camp
by *Wm. H. Babcock*
Attorney

UNITED STATES PATENT OFFICE.

FERDINAND DE CAMP, OF BERLIN, GERMANY.

FEEDING APPLIANCE FOR COAL-DUST.

SPECIFICATION forming part of Letters Patent No. 551,074, dated December 10, 1895.

Application filed August 27, 1895. Serial No. 560,676. (No model.) Patented in Germany September 5, 1893, No. 80,497; in France November 12, 1894, No. 242,799; in Belgium November 12, 1894, No. 112,691; in Switzerland November 12, 1894, No. 9,564, and in England November 12, 1894, No. 21,816.

To all whom it may concern:

Be it known that I, FERDINAND DE CAMP, a citizen of the German Empire, residing at Berlin, in the Kingdom of Prussia and Empire of Germany, have invented a new and useful Improvement in Devices for Feeding Coal-Dust to Coal-Dust Furnaces, of which the following is a specification, the same having been patented in Germany by Letters Patent No. 80,497, dated September 5, 1893; in France by Letters Patent No. 242,799, dated November 12, 1894; in Belgium by Letters Patent No. 112,691, dated November 12, 1894; in Switzerland by Letters Patent No. 9,564, dated November 12, 1894, and in England by Letters Patent No. 21,816, dated November 12, 1894.

This invention relates to a device for feeding the fire-boxes or combustion-chambers where dust coal is fired, and has for its object to feed the coal-dust in the simplest manner in determined quantities and with as little noise as possible. The equal distribution of the coal-dust is effected by a perforated revolving drum and the quantity of the admitted coal-dust is regulated by a slide in connection with a conical worm conveyer. The coal-dust received continuously in even quantities and in finely-divided state inside of the perforated drum is driven out by the blast of a rotary fan or other device for creating a current of air and mixed at the same time with air for the combustion, also aspirated by the ventilator and then led to the fire-box of a furnace.

In the accompanying drawings, Figure 1 shows the device in a longitudinal section with the ventilator in elevation. Fig. 2 is an elevation seen from the opening of the ventilator. Fig. 3 illustrates the connection of the device with the fire-flue of a steam-boiler as an example.

The outlet-opening of a ventilator A forms a double-curved part B, in which the worm C and the equalizing-distributor D are housed. The equalizing-distributor D consists of a perforated cast-iron drum with small holes *s* in its periphery. It is keyed upon the shaft *d* and is so placed at the open end of part B below the box *k* that its outer periphery turns in contact with or close proximity to the edge of the opening of box *k*. The worm conveyer

C has its casing open toward this box *k* at the upper part of the latter, where the conveyer's casing is cylindrical, while the rest of it is conical. The conical part is under the hopper E, filled with dust coal. Only this part, being under the hopper, takes from the dust while the wider spaces of the worm beyond this part receive the dust in loose masses during the revolutions of the conveyer. These spaces being wider will be only partly filled, and therefore clogging of the coal-dust will be prevented. The dust, being consequently in a loose state, falls in an even current into the box *k* from the opening *i* of the conveyer-casing. The box *k* is provided with a sight-hole *l*, which covers the opening in part B above the drum D.

To regulate the quantity of the dust to be taken from the hopper, the following device has been provided for in the hopper: A metal block *m*, curved to fit the worm conveyer, is hinged to a movable side wall of the hopper *n*. The wall *n* and with it the block *m* can be displaced from outside by means of a screw *o*. Thus the part of the conveyer taking the dust from the hopper—i. e., its conical part—can be shortened or lengthened by turning the screw *o* more or less in, and thus the quantity of coal-dust to be fed toward the distributing-drum can be regulated.

The hopper E is charged from a higher reservoir F by means of a tube *p*, and F is separated from E by a slide *g*, moved by means of a screw *f*. This arrangement insures the forward motion of the coal without giving off clouds of dust. The ventilator A receives motion in the well-known manner by a belt-pulley *m*. A worm *q* on its shaft transfers motion upon a shaft *v* by means of a worm-wheel *u*. From this shaft the gear-wheels *r* *r'* transfer motion to the drum D and by means of conical belt-pulleys *b b* and belt motion is communicated to the propeller C. The conical pulleys permit of regulating the number of revolutions of conveyer C, and consequently the quantity of the coal-dust fed. The opening *a* of the ventilator is connected to the combustion-chamber of a furnace (here the fire-flue of a steam-boiler G) by means of a suitable conduit *a'*.

The coal-dust falling from reservoir F into

the hopper E is led by the worm conveyer C into the space *k*, where it falls upon the perforated rim of the drum D. Then it passes, finely divided, through the holes *s* into the
5 inner space of the drum D. The ventilator removes the coal-dust from here by aspiration, whereby it is thoroughly mixed with the aspirated air. This mixture of coal-dust and
10 air is then pressed by the ventilator through the conduit *a a'* into the combustion-chamber of the furnace, a steam-boiler, &c.

I claim—

1. A perforated rotary distributing drum in combination with means of supplying coal
15 dust to its periphery and a ventilating device operating in its interior space to mix the said

dust with air and transfer it to a combustion chamber, substantially as set forth.

2. In combination with a hopper the hinged plate *n* arranged on one side of its interior
20 the adjusting screw *o* acting on the said plate to control the discharge and a conical screw conveyer having its smaller end arranged under the outlet of the said hopper, substantially
25 as set forth.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FERDINAND DE CAMP.

Witnesses:

CHAS. H. S. SCHULTZ,
WM. HAUPT.