

No. 772,606.

PATENTED OCT. 18, 1904.

C. BROSSMANN, JR.
POWDERED FUEL FEEDING DEVICE.

APPLICATION FILED JULY 24, 1902.

NO MODEL.

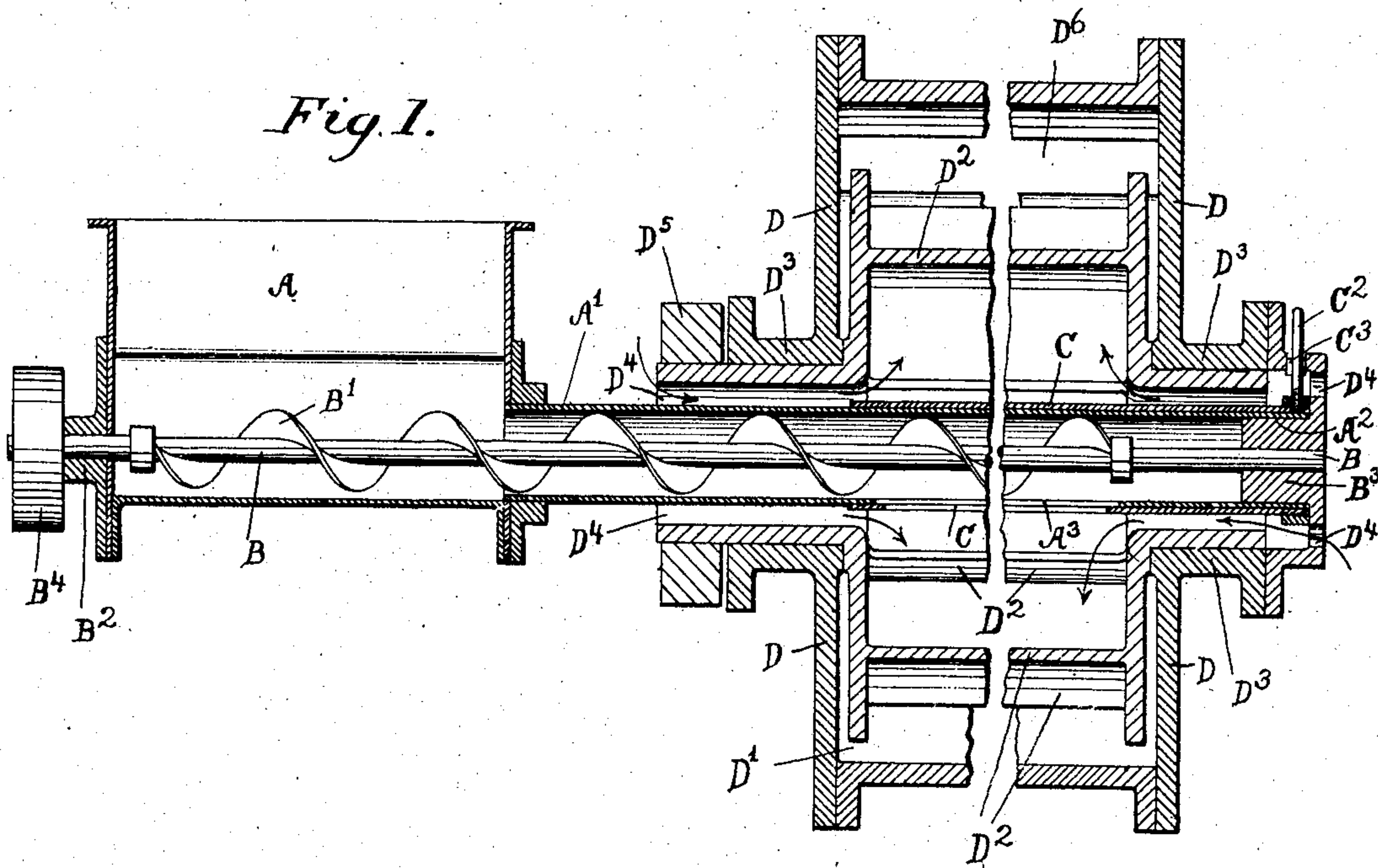


Fig. 4.

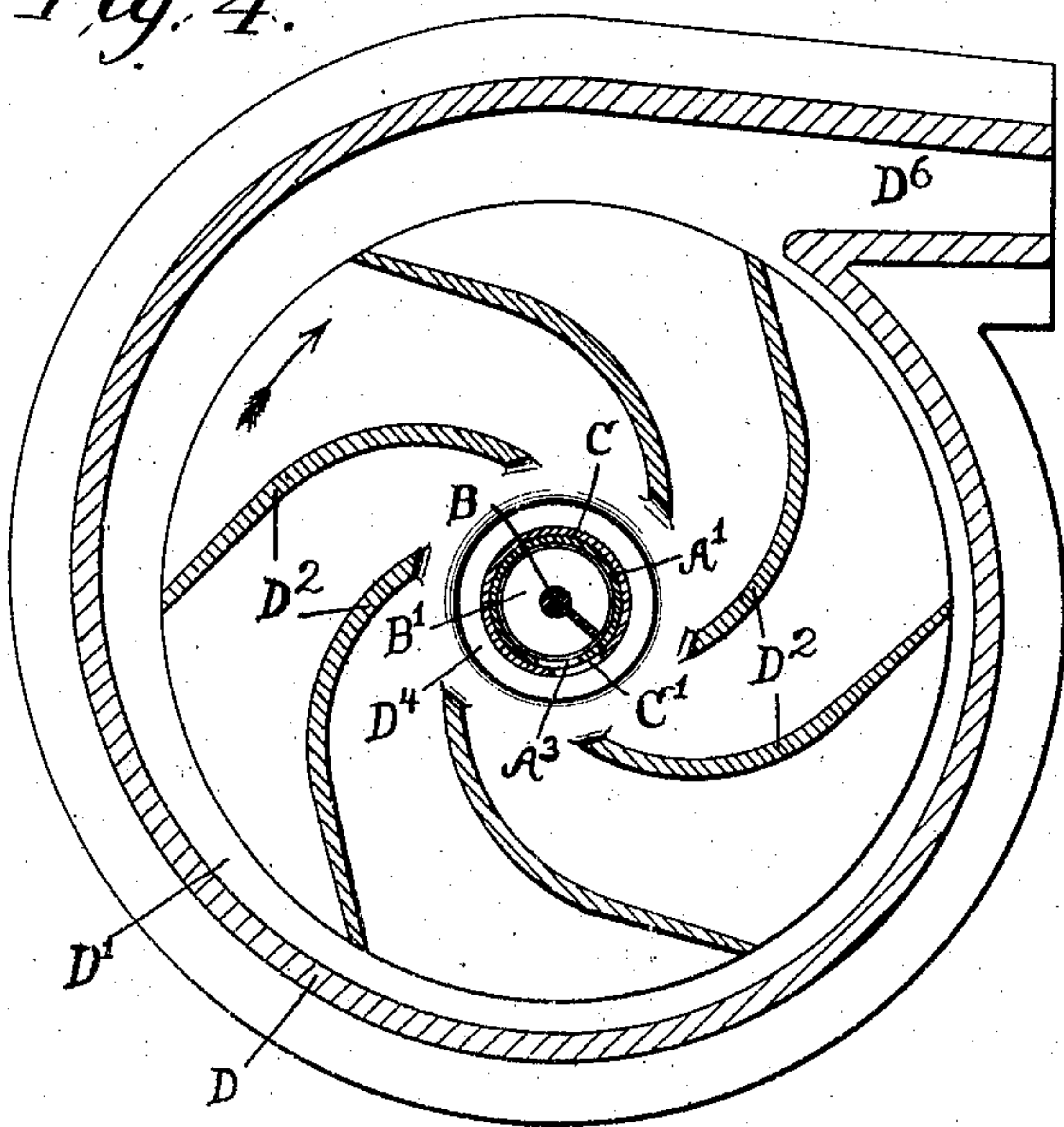


Fig. 2.

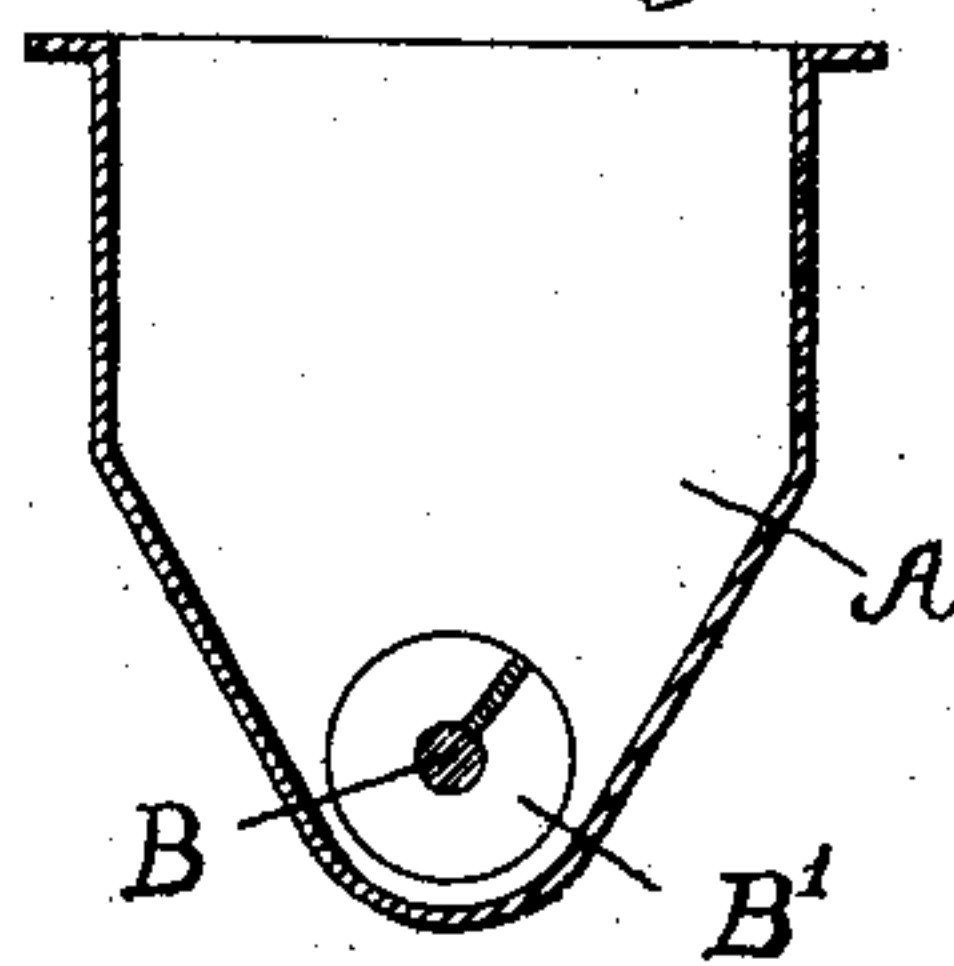
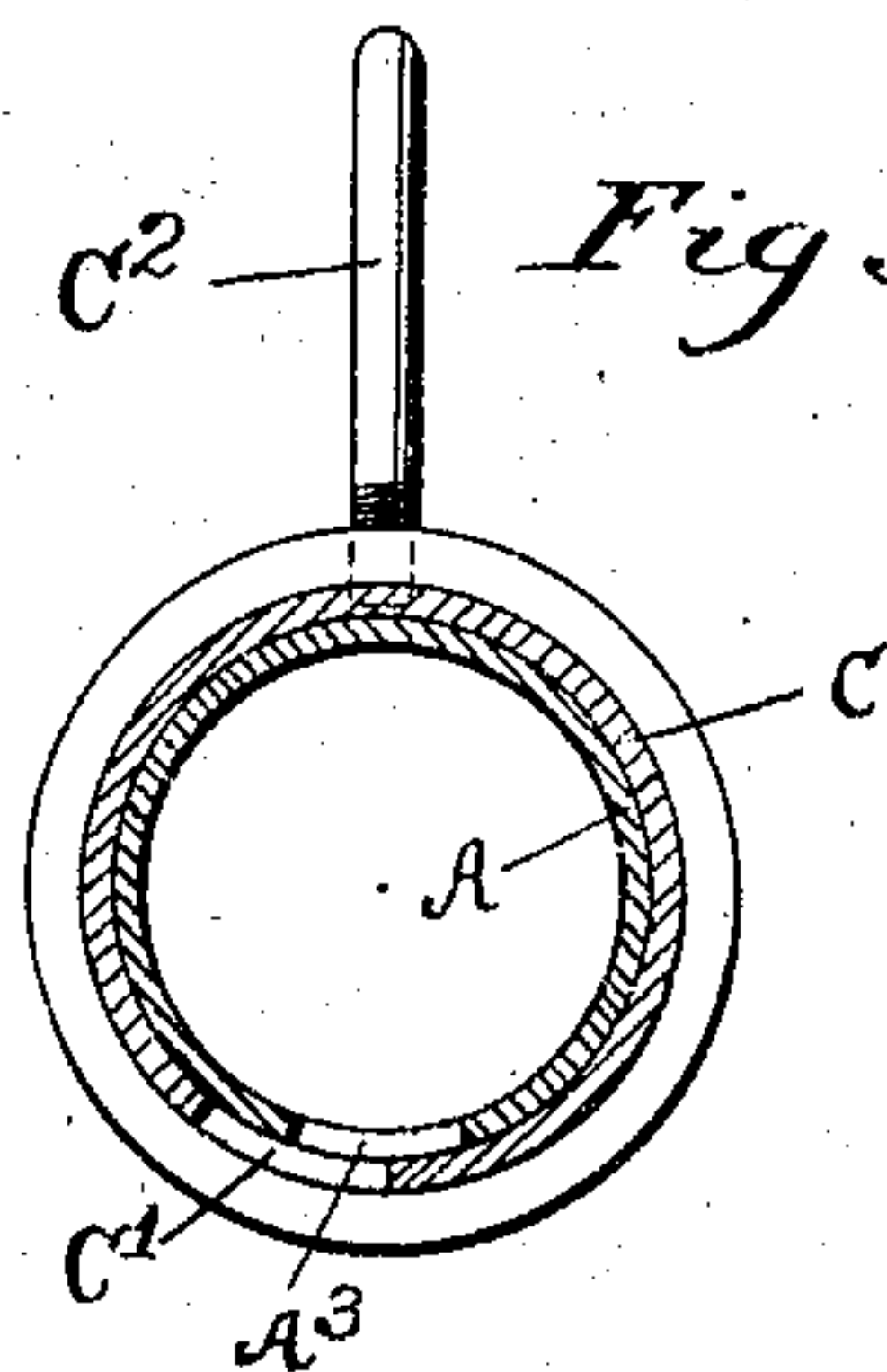


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES BROSSMANN, JR., OF INDIANAPOLIS, INDIANA.

POWDERED-FUEL-FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 772,606, dated October 18, 1904.

Application filed July 24, 1902. Serial No. 116,791. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BROSSMANN, JR., a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a certain new and useful Improvement in Powdered-Fuel-Feeding Devices, of which the following is a specification.

My invention relates to devices for feeding coal-dust or other pulverized fuel into furnaces or other places for combustion, and has for its object to provide a new and improved apparatus for this purpose.

In the accompanying drawings, Figure 1 represents a sectional view of my apparatus. Fig. 2 is a cross-section of the hopper and conveyer. Fig. 3 is a detailed section through the sleeve and associated parts. Fig. 4 is a sectional view through the fan-chamber.

Like parts are represented by like letters in all figures.

In carrying out my invention I provide a hopper A, preferably of the shape shown in Fig. 2. Associated with said hopper and leading therefrom I provide a fixed pipe A', which may be extended to any desired distance and its opposite end supported, as indicated at A². In the bottom of the hopper A and extending through the pipe A', I provide a shaft B, around which is a worm conveyer B'. The shaft B, being mounted in suitable bearings B² and B³, is rotated by means of the driving-pulley B⁴, to which power is applied from any desired source. In the bottom of the pipe A' is a slot or opening A³. Adjustably fitted onto the pipe A' is a sleeve C, in which is a slot or opening C', similar to and associated with the opening in the pipe A', and which when turned on the pipe by means of the regulator C², made to work in the slot C³, regulates the size of the opening from the pipe.

Around the pipe and supported in any desired manner I provide a fan-casing D, preferably circular in form and constructed of any suitable material. Mounted within the fan-chamber D' in such a manner as to revolve around the pipe A', I provide a centrifugal fan comprising a series of blades D².

The fan is so mounted in bearings D³, formed in the walls of the fan-chamber D', as to leave between these bearings and the pipe A', around which it revolves, openings D⁴ for the passage of air into the fan-chamber. The fan is driven by means of the pulley D⁵, to which power is applied from any desired source. From the fan-chamber, preferably near its top, is an opening D⁶, leading to the place for combustion.

Having thus described a device which illustrates my invention in one form, its use and operation are as follows: The coal-dust or other pulverized material contained in the hopper A by its own weight settles in the bottom of the hopper, where it comes in contact with the conveyer B', mounted on the shaft B, which is driven by the pulley B⁴ at any desired speed, and is thus carried from the hopper into and through the pipe A' until it reaches the slot or opening A³ in the bottom of the pipe. The size of this opening is regulated by means of the sleeve C and the regulator C², connected therewith, and allows the dust or other material to be discharged from the pipe, as may be desired, into the fan-chamber D', where it is caught by the blades of the fan D², which are driven at any desired speed by means of the pulley D⁵, mixed with the current of air admitted through the openings D⁴, and in a uniform manner forced with the air necessary for its combustion directly from the fan-chamber through the opening D⁶ into the furnace or place where it is to be consumed.

Of course the size and proportion of these several parts may be greatly altered without departing from the spirit of my invention, and I do not wish to be limited to the particular or precise thing which I have shown.

I desire to have my drawings taken in a sense as diagrammatic, intending to illustrate my invention and show one form of apparatus in and by which it can be realized.

I claim—

1. A powdered-fuel-feeding device consisting of a feeding-fan with a hollow center having a fuel-feeding aperture associated therewith, a fuel-conveyer apparatus which

delivers the fuel in such hollow center opposite the feeding-aperture, said aperture arranged for discharging it outwardly to the fan-blades.

5 2. A powdered-fuel-feeding device consisting of a feeding-fan with a hollow center, a fuel-conveyer apparatus which delivers the fuel in such hollow center and having associated therewith an aperture for discharging
10 the fuel outwardly to the fan-blades, said aperture regulable to regulate the supply of fuel.

3. A powdered-fuel-feeding device consisting of a feeding-fan with a hollow center, a
15 fuel-conveyer apparatus which delivers the fuel in such hollow center and having associated therewith an aperture for discharging the fuel outwardly to the fan-blades and air-ducts which open into the fan about such hollow
20 center.

4. A powdered-fuel-feeding device consisting of a feeding-fan with a hollow center, a fuel-conveyer apparatus which delivers the fuel in such hollow center and having associated
25 therewith an aperture for discharging the fuel outwardly to the fan-blades, said aperture regulable to regulate the supply of fuel and air-ducts which open into the fan about such hollow center.

30 5. In a powdered-fuel-feeding device the combination of a fan-chamber with a discharge-opening therefrom leading to the combustion-chamber, a fan in such chamber, a conveyer to convey the powdered fuel to the
35 middle of such fan and air-ducts which lead the air into such fan at the point of such discharge of the fuel into the fan.

6. In a powdered-fuel-feeding device the combination of a fan and chamber in which
40 it rotates with a conveyer which conveys the fuel in mass to the fan, and air-ducts separate from the fuel-conveying passage and which deliver air to the fan at the point where the fuel is delivered to it.

45 7. In a powdered-fuel-feeding device the combination of a fan and chamber, said fan having a hollow center with a powdered-fuel-conveying apparatus containing a pipe which passes into such fan-center and having at one

side an aperture which leads the fuel from the
50 pipe into the midst of the blades of the fan.

8. In a powdered-fuel-feeding device the combination of a fan and chamber, said fan having a hollow center with a powdered-fuel-conveying apparatus containing a pipe which
55 passes into such fan-center and provided with an aperture which leads the fuel from the pipe into the midst of the blades of the fan, said aperture being regulable as to size.

9. In a powdered-fuel-feeding device the
60 combination of a fan and chamber, said fan having a hollow center with a powdered-fuel-conveying apparatus containing a pipe which passes into such fan-center and provided with an aperture which leads the fuel from the
65 pipe into the midst of the blades of the fan and an air-space surrounding said pipe and leading to the fan-chamber so as to bring the air into such chamber at the point where the fuel is discharged from its conveyer-pipe into
70 the fan-chamber.

10. A powdered-fuel-feeding device comprising a fan and fan-chamber, an air duct or opening for conveying air to the fan, a conveying mechanism for conveying the powdered
75 fuel to the center of the fan, separate from the inflowing air the conveying mechanism having associated therewith an aperture for projecting the powdered fuel toward the fan-blades.
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11. A powdered-fuel-feeding device comprising a rotary fan, a hollow non-rotating part about which the fan rotates having an aperture associated therewith through which
85 the powdered material is injected into the fan-chamber, and a conveying mechanism for conveying powdered fuel into said hollow non-rotating part.

12. A powdered-fuel-feeding device comprising a fan, a hollow bearing upon which
90 said fan is mounted and about which it rotates, a conveying mechanism for conveying the powdered fuel through said hollow bearing to the center of the fan.

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Witnesses:

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