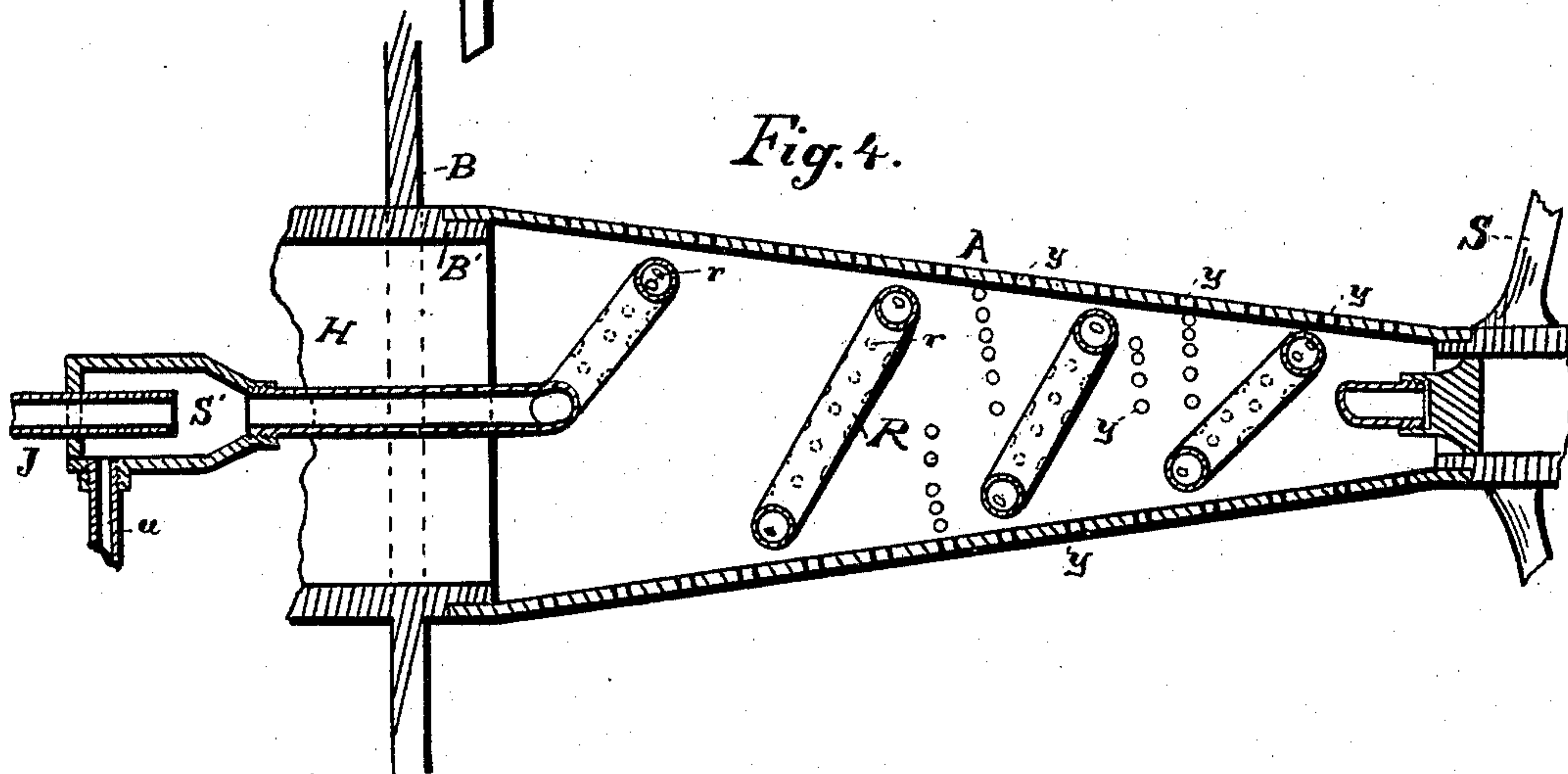
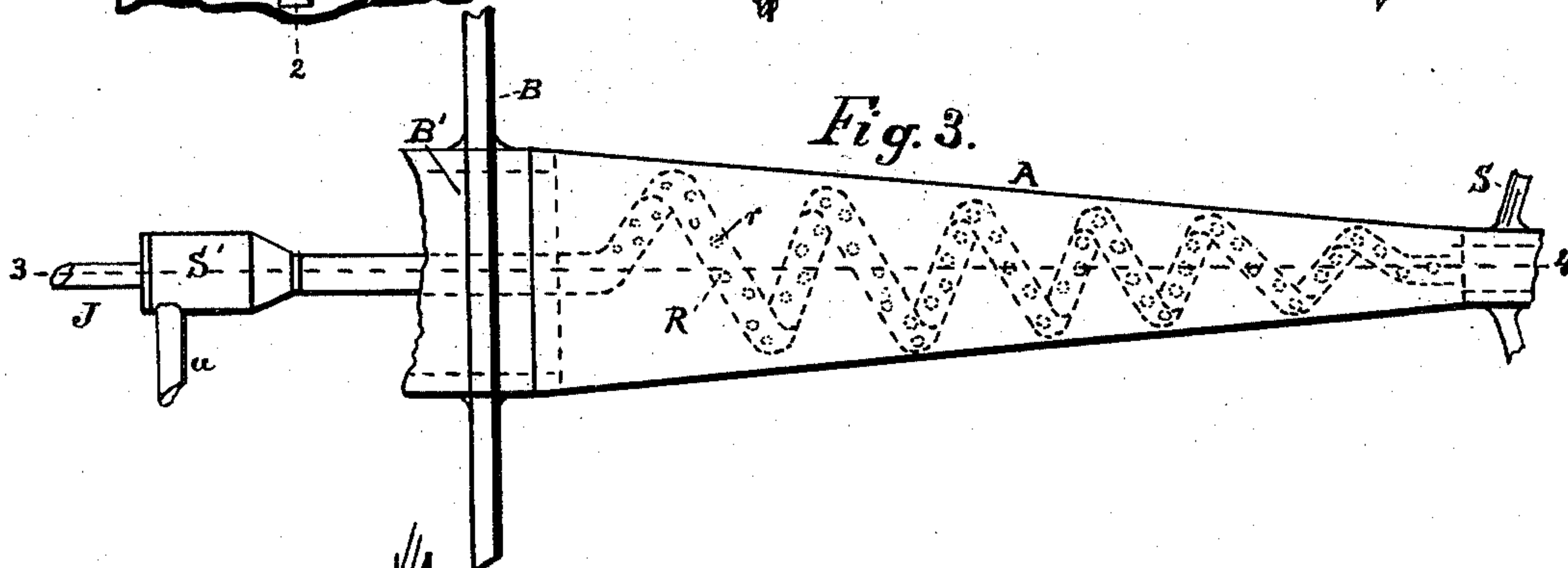
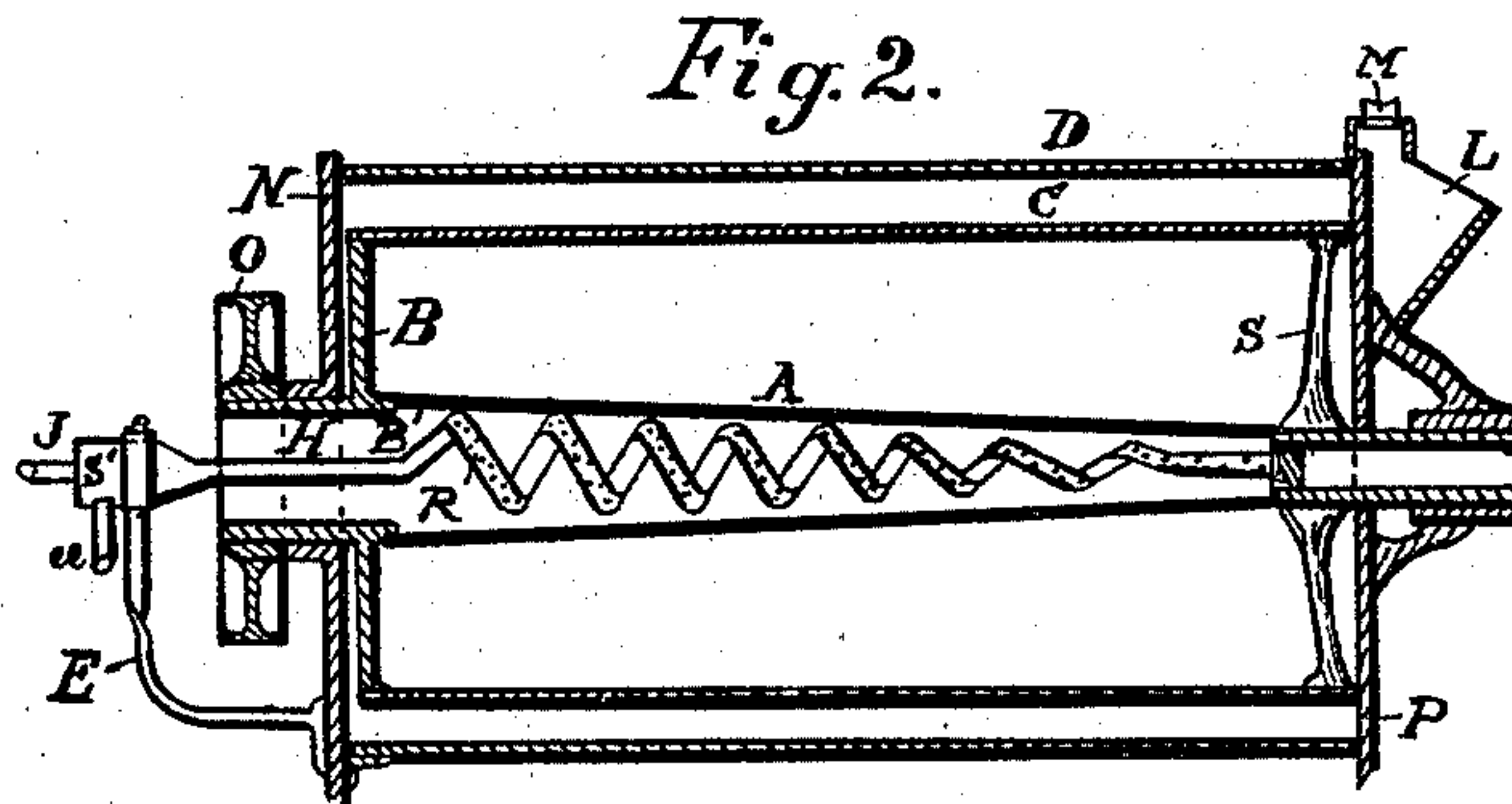
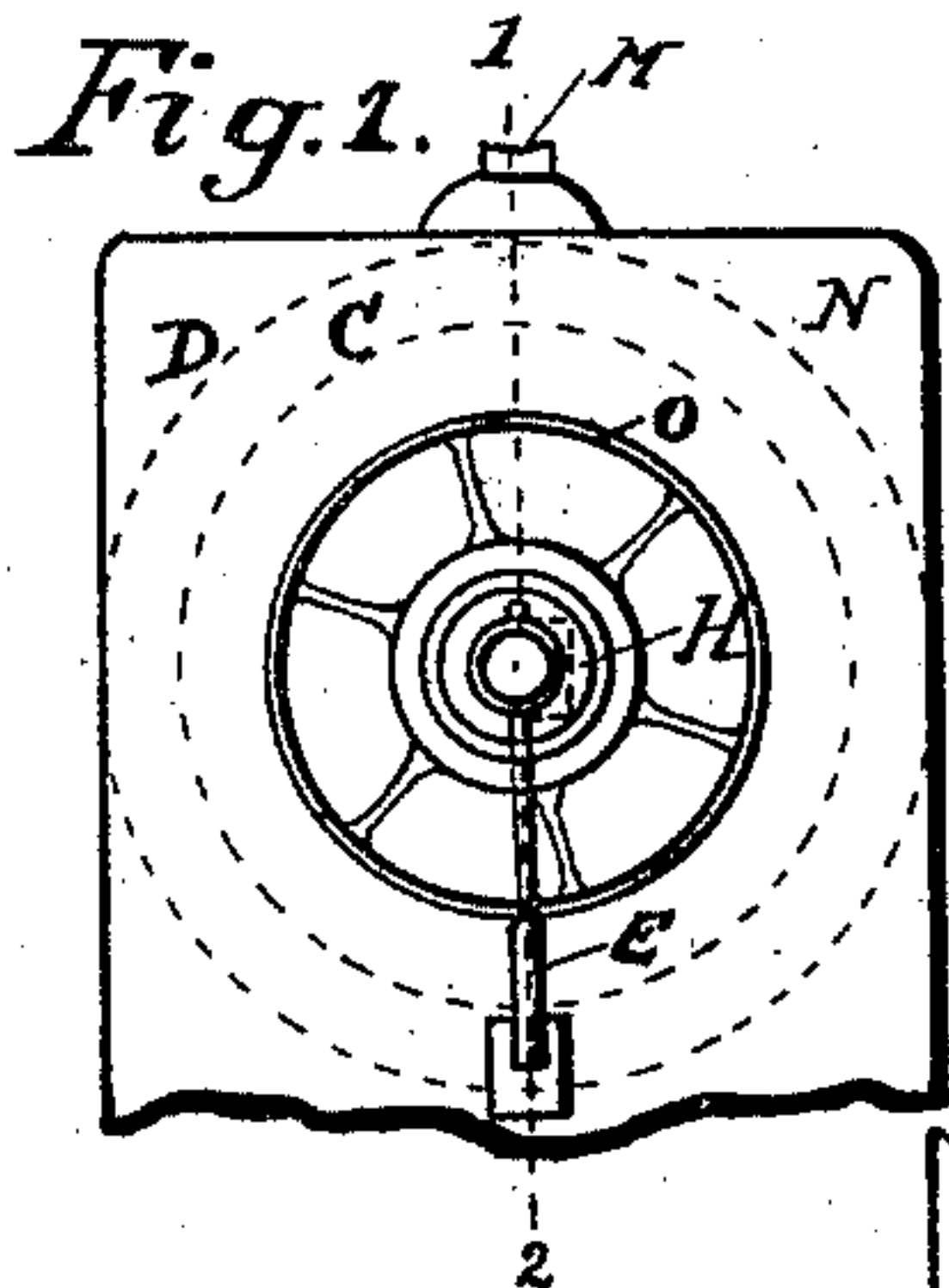


(No Model.)

C. H. DUEHRING.
COFFEE ROASTER.

No. 585,659.

Patented July 6, 1897.



WITNESSES:

A. G. Eyrer.
Otto von der Wense.

INVENTOR

C. H. Duehring

UNITED STATES PATENT OFFICE.

CARL H. DUEHRING, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO DAVID B. FRASER, OF NEW YORK, N. Y.

COFFEE-ROASTER.

SPECIFICATION forming part of Letters Patent No. 585,659, dated July 6, 1897.

Application filed June 17, 1896. Serial No. 596,914. (No model.)

To all whom it may concern:

Be it known that I, CARL H. DUEHRING, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented and made new and useful Improvements in Coffee-Roasters, of which the following is a specification.

My invention relates to improvements in coffee-roasters in which the heat for roasting is transmitted to the coffee through a cylinder contained inside of the cylinder in which the coffee to be roasted is placed.

The objects of my improvements are, first, to roast coffee quicker and to utilize nearly all of the heat generated in the inner cylinder, the heat having to pass through the coffee before getting out; second, to heat by means of air and gas under regulated pressure as a fuel; third, by this arrangement I economize fuel consumption, as the heat is generated in and transmitted from the inside of inner cylinder, and I consequently dispense with heating the outer walls of the regular coffee-furnace, with which the heat is applied outside of the cylinder; fourth, utilizing the amount of heat generated to a fuller extent than in regular coffee-furnaces, since the heat by my invention has to go through the coffee from inside of the cylinder to the shell before it can escape, so that little is lost. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a rear view of the machine with exception of its legs, where the gas-pipe J enters through the hollow hub H of the back head of the roasting-cylinder into the heating-cone of the roasting-cylinder. Fig. 2 is a vertical section of the roaster on line 1 2 indicated on Fig. 1. Fig. 3 is a side view of the inner or heating cylinder as it appears attached to the inside of the roasting-cylinder; and Fig. 4 is a sectional view through the heating-cylinder, as indicated by dotted line 3 4 in Fig. 3.

Similar letters refer to similar parts through the several views.

My improvements can be applied to any of the ordinary roasting-cylinders by making the necessary changes, which consist, first, of a perforated sheet-metal cylinder A in the shape of a frustum of a cone the larger end of which connects onto the hub of the back head B and

the smaller end to the hub of the front spider S. As this inner cylinder A is connected onto the back head B and the front spider S of the roasting-cylinder, it of course revolves with it. Both the hubs of the back head B and the front spider S are hollow and extend through the back and front plates of the roaster, respectively, where they enter the bearings and form the supports of the revolving roasting-cylinder C. On the hollow hub B' of the back head B, which extends through the back plate N of the roaster, is attached, by means of set-screws, the pulley O, from which by means of belt-power the roasting-cylinder C will be revolved. Held by the brace E, Fig. 2, and entering through the hollow hub B' of the back head of the roasting-cylinder is the coiled pipe R, Fig. 2, perforated with holes *r* toward the side of this inner cylinder through which the gas and air being ignited pass and give out heat and are then transmitted to the coffee in the cylinder C. This coiled pipe R is supported outside of the cylinder by the brace E. S' is the combustion-chamber, where air and gas from the pipes J and *u* mix under pressure and after being ignited heat the cone heating-chamber A and also the coffee in chamber C through the perforations *y*. The roasting-cylinder is constructed, as the ordinary roasting-cylinders are, by having a sheet-steel casing C, connected to rims of the back plate B and front spider S, Fig. 2. Between the front plate P and the back plate N of the outer cylinder and connected thereto is the sheet-metal casing D, Fig. 2, or dotted line, Fig. 1, which incloses the roasting-cylinder C and to which the smoke-stack M, Fig. 2, is connected. L in Fig. 2 is a sectional view of a hopper through which the coffee to be roasted enters the roasting-cylinder C.

The ordinary operation of the machine is as follows: The roasting-cylinder C is set revolving through the pulley O, then the gas in pipe J and air in pipe *u* are turned on by regulating-valves in said pipes, and then through the hollow hub H of the back head-plate of the roasting-cylinder, which extends through the back plate N, the gas issuing out of the holes in the coiled pipe R is ignited. Then the coffee enters the revolving cylinder through the hopper L and falls into the coffee-cylinder, which is constructed as the or-

dinary coffee-roasting cylinders are, where it is being revolved and receives the heat from the inner cone heating-cylinder A and in the course of time is roasted. After it is roasted
5 it is discharged either through a slide in the shell of the cylinder C or through a door in the front plate P.

Now I am aware that prior to my invention coffee-roasters similar to my drawings, as far
10 as the arrangement of the front plate and cylinder in which the coffee to be roasted is placed, were in common use, but they did not contain my invention.

Having now fully described my invention
15 and the manner in which I have embodied it,

what I claim as new and as my invention, and desire to secure by Letters Patent, is—

In a coffee-roasting machine, the combination with the roasting-cylinder, of the frusto-conical heating-chamber located within said
20 roasting-cylinder, and the coiled heating-pipe located within the heating-chamber having the coils larger at one end and diminishing toward the other end; substantially as described.

CARL H. DUEHRING.

Witnesses:

A. G. EYRE,

OTTO VON DER WENSE.