

No. 619,746.

Patented Feb. 21, 1899.

H. C. HOEFINGHOFF.

APPARATUS FOR MALTING CORN, BARLEY, &c.

(Application filed Mar. 18, 1898.)

(No Model.)

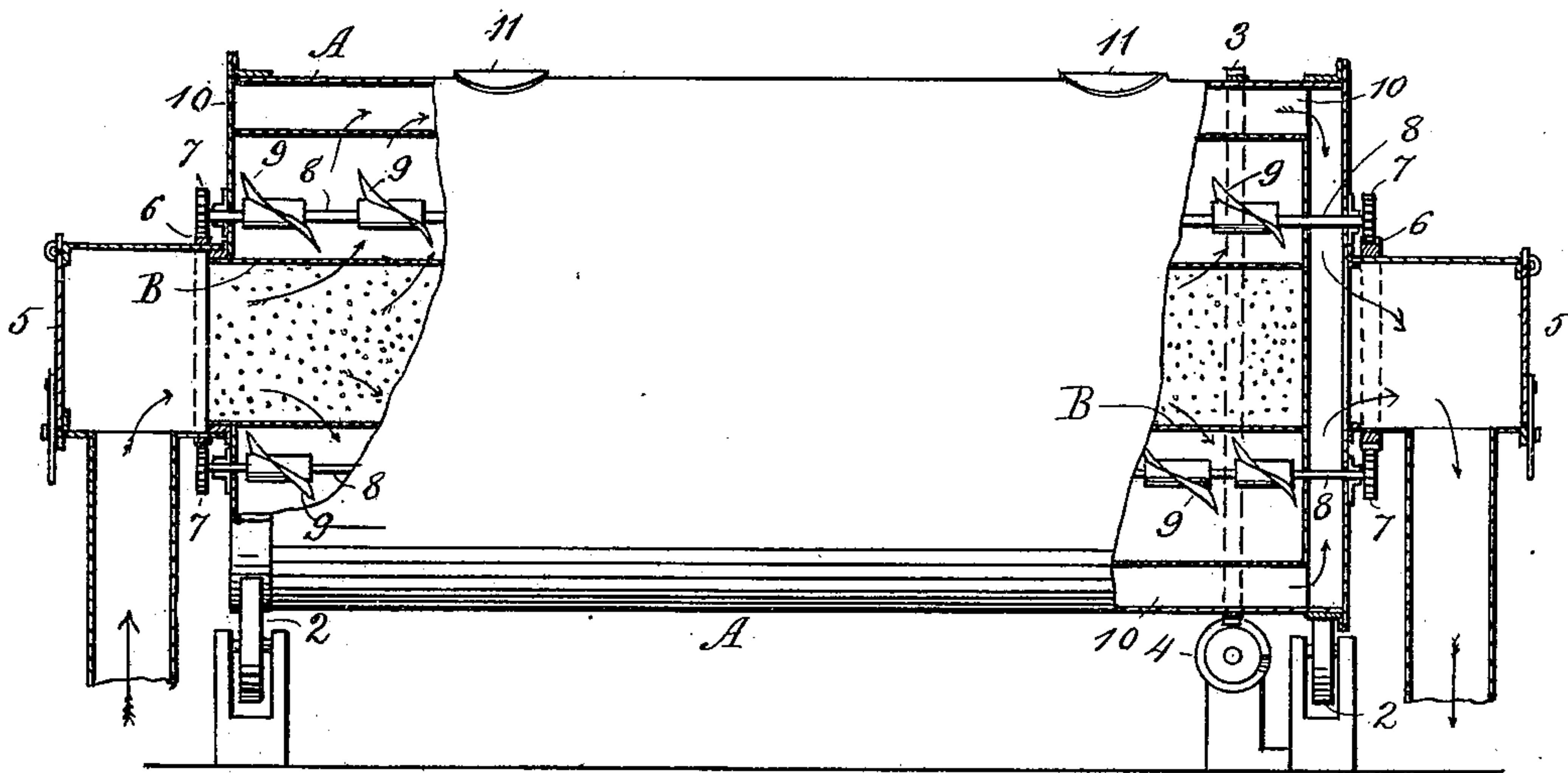


Fig. 1.

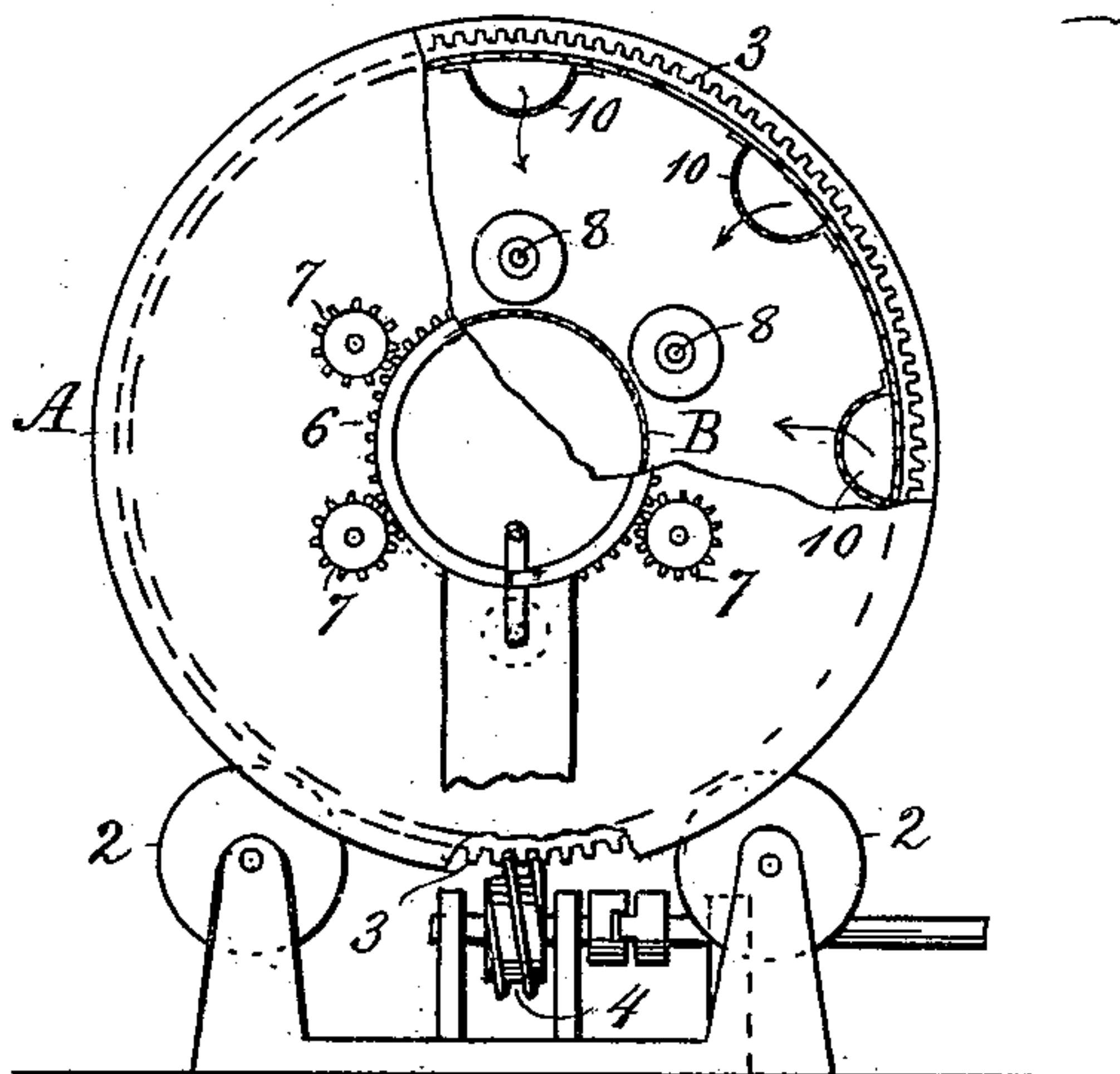


Fig. 2.

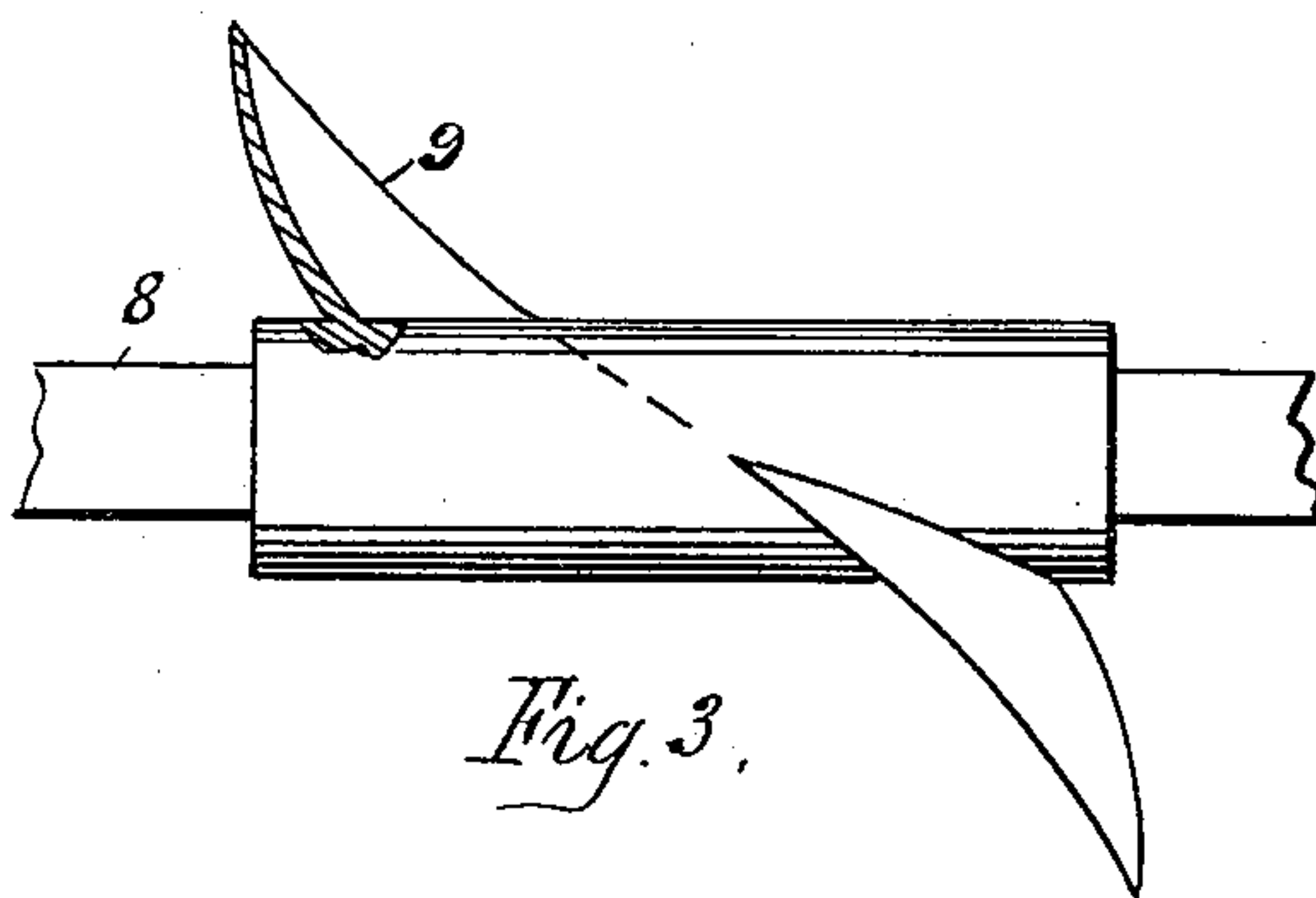


Fig. 3.

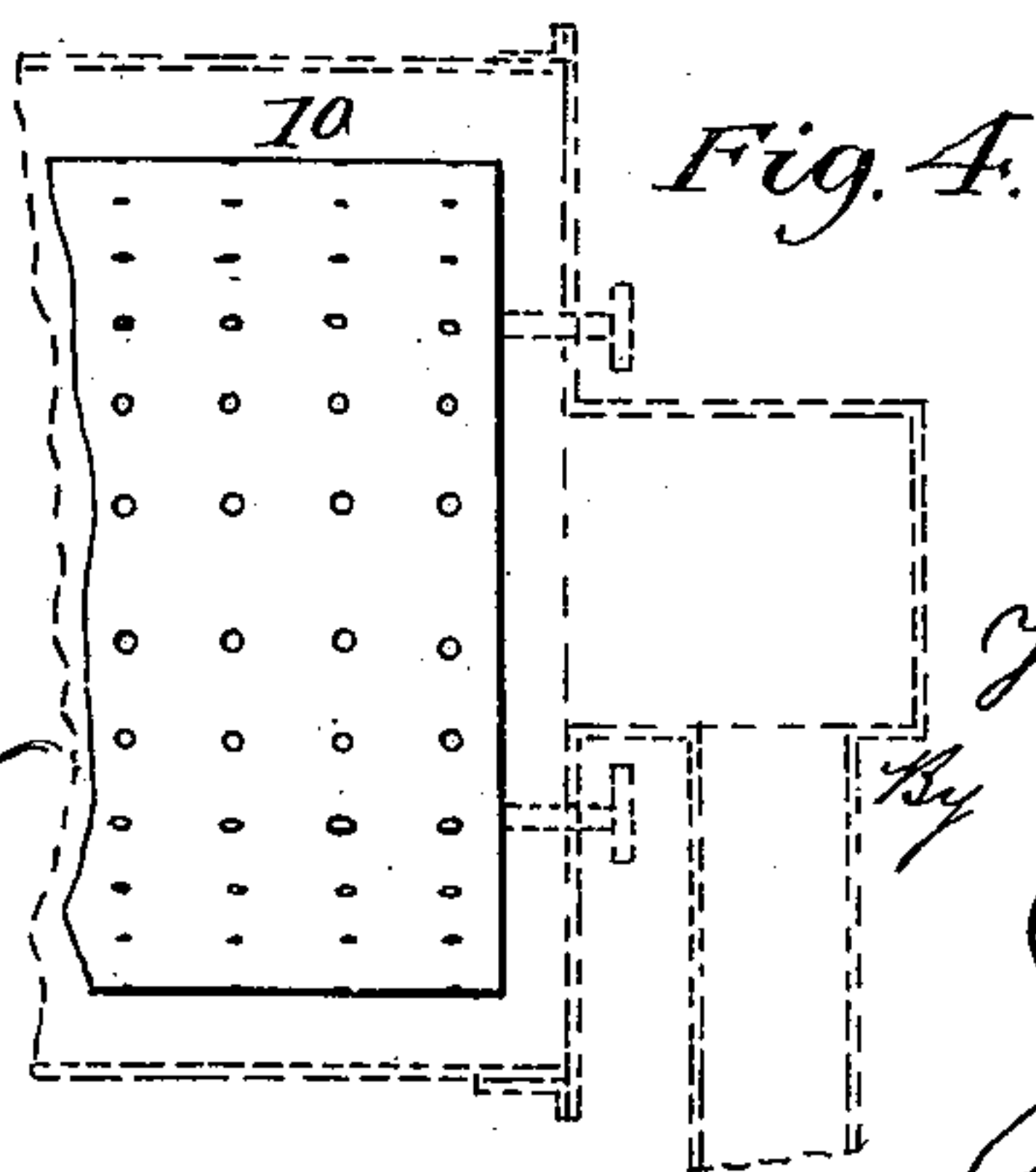


Fig. 4.

Witnesses

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By

*[Signature]*



# UNITED STATES PATENT OFFICE.

HARRY C. HOEFINGHOFF, OF CINCINNATI, OHIO, ASSIGNOR TO ALBERT A. FREY, OF SAME PLACE.

## APPARATUS FOR MALTING CORN, BARLEY, &c.

SPECIFICATION forming part of Letters Patent No. 619,746, dated February 21, 1899.

Application filed March 18, 1898. Serial No. 674,350. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY C. HOEFINGHOFF, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Apparatus for Malting Corn, Barley, or other Cereals, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of my improved malting apparatus; Fig. 2, an end view of the same, partly in section; and Fig. 3, a detail view.

My invention relates to certain improvements in apparatus for malting barley, corn, or other cereals. It is well understood by malsters and others who are interested in the product that the highest skill aided by ripe experience are requisite in the preparation of the article and that it is of the utmost importance, especially while the grain is undergoing the germinating or sprouting process, to secure uniformity of action of the means employed for that purpose. Any failure in that respect or in the subsequent drying of the same involves serious consequences not only in the way of actual loss, but also in the reputation of the producer.

The object of my invention is to provide a novel, reliable, and efficient device whereby the entire operation may be automatically effected with certainty and absolute uniformity.

The peculiar features and exceptional advantages of the device will be apparent by reference to the accompanying drawings, in which A and B respectively represent two concentric cylinders attached to the same heads, the inner one being open at one end. The structure is revolvably supported on roller-bearings 2 and encircled near one end by a cogged ring 3, adapted to engage a worm-wheel 4. Stationary circular air-chambers 5, diametrically larger than the inner cylinder, are joined to the ends of the same by gasket-rings or other suitable means adapted to maintain contact therewith without interfering with the rotary movement. The inner ends of these chambers are encircled by cogged rings 6, which engage pinions 7 and

impart motion to a series of shafts 8, extending through the grain-chamber and journaled in the cylinder-heads and provided at intervals with screw-shaped disks or scrapers 9. The inner cylinder is perforated throughout its length and circumference to admit air, which passes through the entire contents of the grain-chamber and is drawn thence by an exhaust-fan into the perforated tubes 10 and discharged, as shown by darts in the drawings. In order to provide against a too free discharge of the air and insure a thorough distribution thereof through the contents of the grain-chamber, the perforations in the tubes 10 are gradually reduced in size or number as they approximate the point of final discharge.

The operation of the device will be readily understood. The charge of grain being introduced through suitable gates 11 into the space between the outer and inner cylinders, the apparatus is set in motion. It is evident that the mass will be overturned from the circumference toward the center, and being more or less moist during the sprouting process the grains will tend to accumulate and adhere to the surface of the inner cylinder, thereby preventing a free commixture and at the same time obstructing the perforations by particles of chaff, fragments of sprouts, &c. The current of air being thus practically excluded, a thorough and uniform mixture of the mass is rendered impossible. This serious defect is entirely obviated by the arrangement of the shafts 8, which necessarily revolve at a rate of speed differing from the cylinders, making several revolutions to one of the latter and causing the scraping-disks to pass and repass over the entire surface of the inner cylinder, thereby keeping it free from accumulations of adhering matter and preventing any obstruction of the air-holes. Every portion of the matter is thus subjected to uniform agitation, as well as the free action of the air. A further important advantage is secured by the gradual reduction of the size or number of the perforations in the outlet-tubes 10. It is easily demonstrated that the discharge of air through a tube or opening of uniform size is accelerated as it approaches an exhaust-fan. By reduc-

ing the outlet, as described, the current is rendered more equable and the effect more uniform and effective.

What I claim as new is—

- 5 1. In an apparatus for malting corn, barley or other grain, the combination of the concentric cylinders A and B, forming an annular grain-chamber, and means for forcing a current of air through the same; of a series  
10 of shafts extending longitudinally through the grain-chamber and provided with mixing disks or scrapers, all constructed and arranged substantially as and for the purposes herein specified.

- 15 2. In an apparatus for malting grain, the

combination with the concentric cylinders and the herein-described series of shafts extending longitudinally through the grain-chamber, and the mixing-disks attached thereto; of the graduated perforations in the  
20 air-outlet tubes, adapted to equalize the action of the air upon the contents of the grain-chamber, substantially as herein specified.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of  
25 March, 1898.

HARRY C. HOEFINGHOFF.

Witnesses:

R. S. MILLAR,

WALTER KAMMAN.