No. 839,322. PATENTED DEC. 25, 1906.

C. F. ROCK & W. D. ANDERSON.

WHEAT HEATER.

APPLICATION FILED JAN. 15, 1906.

2 SHEETS—SHEET 1.

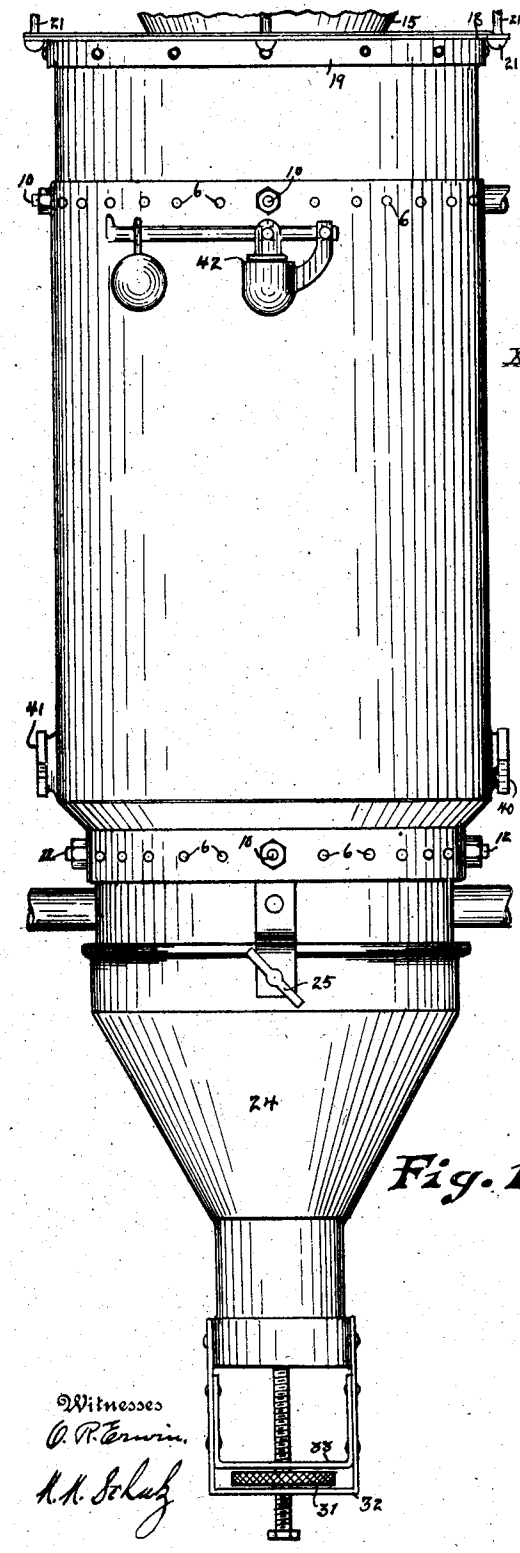


Fig. 1.

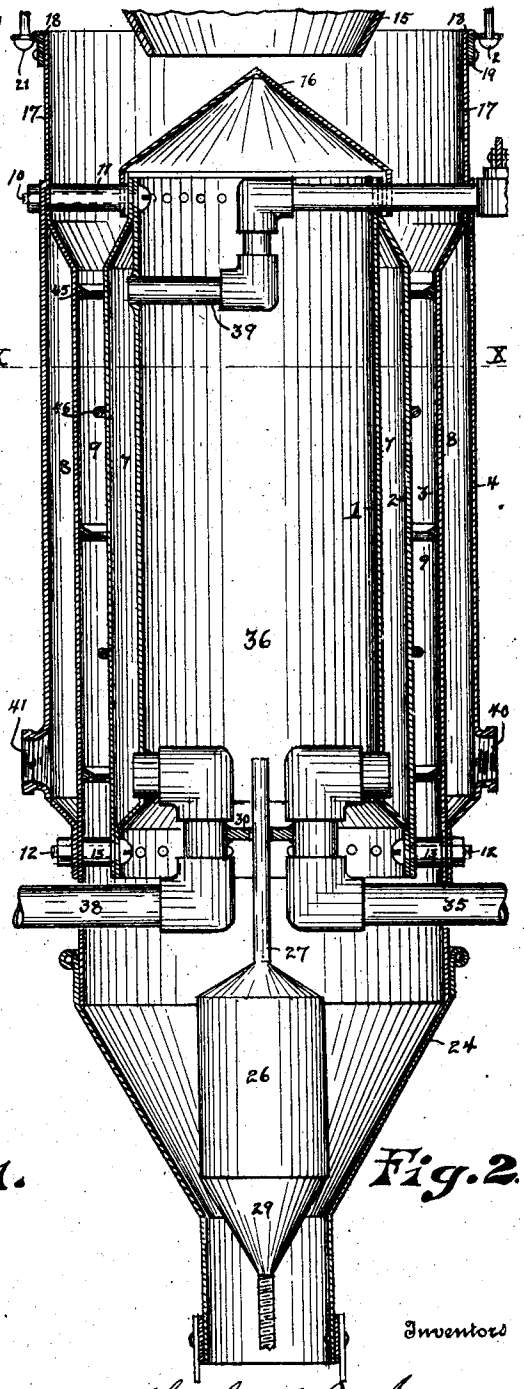


Fig. 2.

Witnesses
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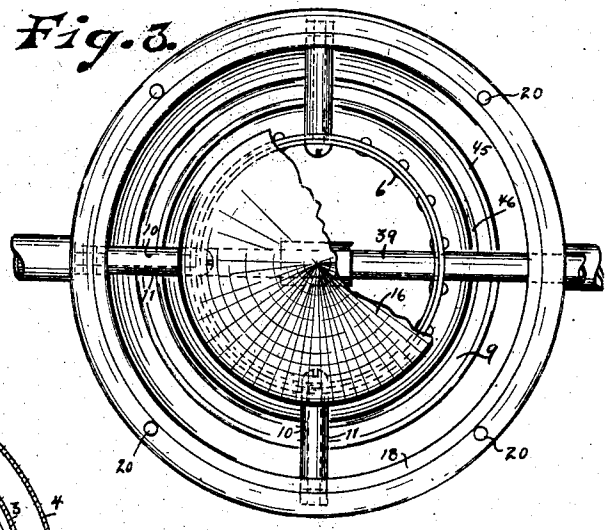
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2 SHEETS—SHEET 2.

Fig. 3.



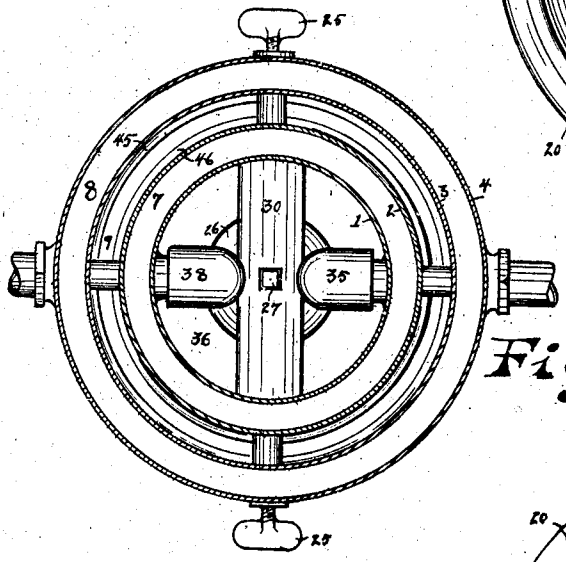


Fig. 4.

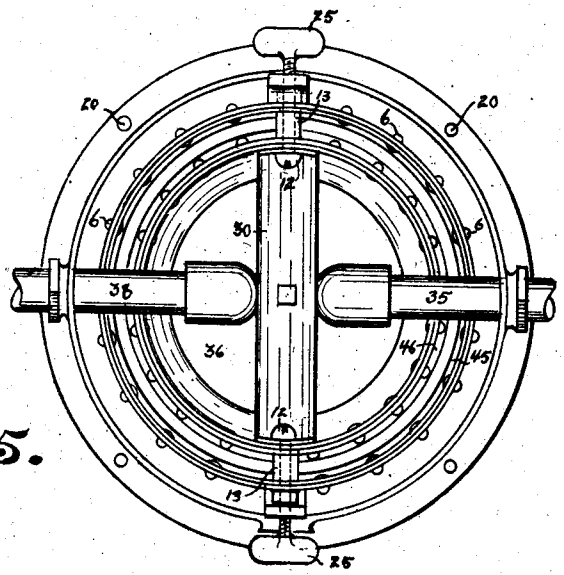


Fig. 5.

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WHEAT-HEATER.

No. 839,322. Specification of Letters Patent. Patented Dec. 25, 1906.

Application filed January 15, 1906. Serial No. 296,043.

To all whom it may concern:

Be it known that we, CHARLES F. ROCK and WILLIAM D. ANDERSON, citizens of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Wheat-Heaters, of which the following is a specification.

Our invention relates to improvements in wheat-heaters.

The object of our invention is to provide an inexpensive structure in which the wheat may be effectively treated preparatory to the grinding operation, the wheat being passed longitudinally through and mixed in an annular chamber, which is located between two annular steam-chambers, at the base of which the wheat is collected and delivered through a regulating-spout.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of our invention. Fig. 2 is a vertical central sectional view of the same. Fig. 3 is a plan view. Fig. 4 is a sectional view drawn on line x x of Fig. 2. Fig. 5 is a bottom view with the collecting-chamber and regulator removed.

Like parts are identified by the same reference characters throughout the several views.

The chambers are formed by providing a series of concentric cylinders 1, 2, 3, and 4, respectively. To form the steam-chambers 7 and 8, the cylinder 3 is preferably expanded at its upper end into contact with the cylinder 4, to which it is secured by bolts or rivets 6. The cylinder 4 is reduced at its lower end and brought into contact with the cylinder 3, to which it is also secured by rivets 6. The cylinder 2 is similarly reduced at its upper end and connected with cylinder 1, the latter being expanded at its lower end and connected with cylinder 2, as shown, thus forming the chambers 7 and 8, with an annular passage 9 between them having diverging walls at its upper end. The wheat passes downwardly through this passage 9, into which it is delivered by a spout 15 and a distributing-cone 16. The steam-chambers are connected at their upper ends by bolts 10, which are preferably passed through spacing-sleeves 11, similar bolts and spacing-sleeves 12 and 13, respectively, being employed to connect the lower ends of the steam-chambers. The wall of the cylinder 3 is extended upwardly, as shown at 17, and provided with an outwardly-extending flange 18, which is preferably reinforced by a ring 19 and provided with apertures 20, (see Fig. 3,) adapted to facilitate suspending the device by means of hanger-bolts 21, Fig. 2. The lower end of the cylinder 3 is extended downwardly, and a collecting-cone 24 is connected with it by set-screws 25.

A regulating device 26 is mounted upon an adjusting-rod 27 within the collecting-cone 24. This regulating device has a conically-tapered lower end 29. The upper end of the rod 27 is square in cross-section and passes through a suitable opening in a bar 30, which prevents this rod from turning, but permits it to be raised and lowered by means of the nut 31 operating between the arms 32 and 33 of a bracket connected with the lower end of the collecting-chamber 24, which chamber is extended downwardly in the form of a discharge-spout.

Steam is admitted to the chamber 7 through a pipe 35, which passes inwardly through the lower extension of cylinder 3 and upwardly in the inner chamber 36 and then outwardly through cylinder 1. A discharge-pipe 38, similarly arranged, communicates with the chamber 7 at a point opposite the connection of the inlet-pipe. We have also preferably provided a vent-pipe 39, which leads from the upper portion of the chamber 7 inwardly and upwardly in chamber 36 and then outwardly through the upper ends of the respective cylinders. Steam is admitted to the chamber 8 through a suitable port 40 and exhausts through a port 41, this chamber being provided with a vent-port 42.

The walls of the wheat-passage 9 are provided with deflecting-rings 45 and 46, respectively. These rings are preferably formed of wire and are rigidly secured to the outer and inner walls, respectively, of the wheat-passage 9. The wire of which the rings are composed may be either triangular in cross-section, as shown at 45, or round in cross-section, as shown at 46, the style of wire employed being immaterial. The wires 45 and 46 are arranged alternately and serve to deflect the wheat in opposite directions away from the outer and inner walls of the passage, causing the wheat to mix and turn, so that

all portions become equally heated while passing between the steam-chambers.

It will be observed that the walls of the cone 29 are substantially parallel with those of the cone 24. This arrangement permits a close adjustment of the regulating device without clogging.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the described class, the combination of a set of concentrically-arranged cylindrical steam-chambers formed with an annular passage between them; and a series of deflecting-rings arranged in alternation upon the inner and outer walls of said passage.

2. In a device of the described class, the combination of a set of concentrically-arranged cylindrical walls connected in pairs at their upper and lower ends to form a pair of concentric steam-chambers having an annular passage between them; and deflecting-rings arranged at intervals on the walls of said passage and rigidly connected therewith.

3. In a device of the described class, the combination of a set of concentrically-arranged steam-chambers formed with an annular passage between them; a set of rings on each of the walls of said passage, formed of wire, and rigidly secured to the respective walls; said rings being widely separated arranged in alternation on opposite sides of the passage, and adapted to partially obstruct the passage at intervals.

4. In a device of the described class, the combination of a set of four concentrically-arranged cylinders separated from each other by annular spaces, the intermediate cylinders having their upper portions conically tapered in opposite directions and secured to the inner and outer cylinders; said inner and outer cylinders having their lower ends conically tapered convergingly and secured to the intermediate cylinders; a distributing-cone covering the upper ends of the inner cylinders, and deflecting devices located in the space between the intermediate cylinders.

5. In a device of the described class, the combination of a set of concentrically-arranged steam-chambers formed with an annular passage between them; a distributing-cone supported by the inner steam-chamber, and arranged to deliver grain into said annular space; a collecting-cone below said chamber, and a regulating device mounted therein and having a tapered lower end with sides substantially parallel to the walls of the collecting-cone; said collecting-cone being provided with a discharge-outlet below the regulating device and the tapered end of the regulating device being adapted to enter said outlet when the regulator is in depressed position.

6. In a device of the described class, the combination of a set of concentrically-carranged steam-chambers formed with an annular passage between them; a distributing-cone supported by the inner steam-chamber, and arranged to deliver grain into said annular space; a collecting-cone below said chambers, and a regulating device mounted therein and having a tapered lower end with sides substantially parallel to the walls of the collecting-cone; said receiving-cone being provided with a discharge-outlet below the regulating device; together with a supporting-rod for said regulating device; and an adjusting-screw for lifting and lowering said rod.

7. In a device of the described class the combination of a set of concentrically-arranged steam-chambers formed with an annular passage between them; means for delivering grain into said passage; inlet and exhaust ducts connecting with the inner steam-chamber through the inner wall thereof; and inlet and exhaust ducts connecting with the outer steam-chamber through the outer wall thereof.

8. In a device of the described class, the combination with a collecting-cone provided with a discharge-outlet at its lower end, of a regulating device within the collecting-cone, tapered at both its upper and lower ends, and having its tapered lower end surface substantially parallel to the opposing surface of the collecting-cone; guide-rods connected to the respective ends of the regulating device; and means, connected with the lower guide-rod, for adjusting the regulating device vertically.

9. In a device of the described class, the combination with a collecting-cone provided with a discharge-outlet at its lower end, of a regulating device within the collecting-cone tapered at both its upper and lower ends, and having its tapered lower end surface substantially parallel to the opposing surface of the collecting-cone; guide-rods connected to the respective ends of the regulating device; and means, connected with the lower guide-rod, for adjusting the regulating device vertically; said regulating device being out of contact with the collecting-cone in all positions of adjustment.

In testimony whereof we affix our signatures in the presence of two witnesses.

CHARLES F. ROCK.
WILLIAM D. ANDERSON.

Witnesses:
LEVERETT C. WHEELER,
JAS. B. ERWIN.