(No Model.)

W. ANDREW.

MALTING APPARATUS.

No. 259,993. Patented June 27, 1882.

Fig. 1

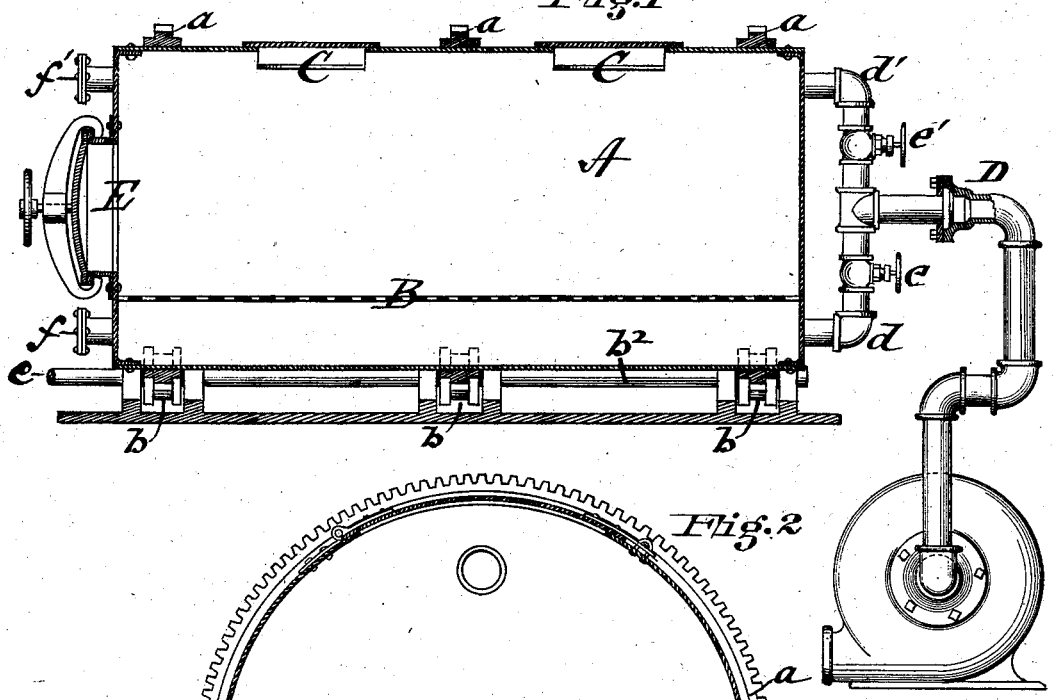


Fig. 2

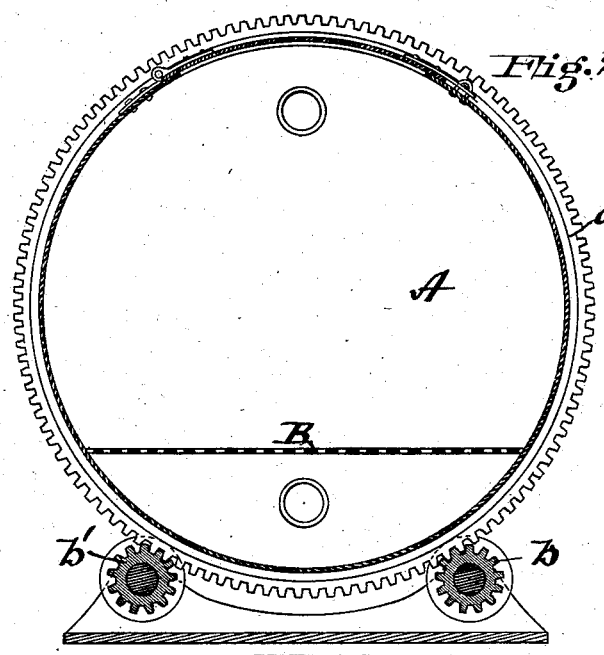
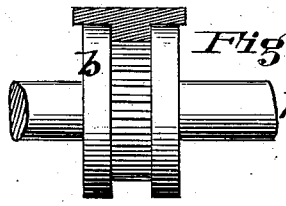


Fig. 3



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MALTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 259,993, dated June 27, 1882.

Application filed November 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ANDREW, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Malting Apparatus, of which the following is a specification.

My invention relates to malting, its object being to provide a simple, economical, and efficient apparatus by which the operation of malting may be facilitated.

To this end it consists in the construction of a cylindrical tank suitably provided for rotation, having a perforated partition or false bottom and connections for exhausting and introducing air at opposite sides of the partitions, as may be desired. The apparatus is intended especially to afford a means of regulating the temperature and moisture of the germinating grain by artificially-applied currents of air, and of agitating and turning over the body of grain to expose it thoroughly to the air-currents.

My invention is illustrated in the accompanying drawings, in which Figure 1 is a vertical axial section of a tank embodying my improvements. Fig. 2 is a vertical cross-section of the same, and Fig. 3 a detached view of one of the bearing-rollers.

Referring to the figures of the drawings, A designates a sheet-iron tank of cylindrical form, encircled by two or more bearing-tires, *a*, provided with a central line of cogs. The tank rests upon two sets of bearing-wheels, *b b'*, constructed as shown in Fig. 3, with a line of cogs arranged in a central depression of the periphery. The cogs of the bearing-tires *a* and the bearing-wheels *b* mesh with each other, and one or both lines of bearing-wheels may be arranged upon a shaft, b^2, to which power is applied for rotating the tank through the medium of the cogs. The central rib of the bearing-tires serves to guide the tank in the peripheral depression of the bearing-wheels, the latter being journaled in fixed bearings on a suitable frame.

At a convenient distance below the central axis of the tank is arranged a false bottom or perforated partition B. At the upper side of the tank are one or more openings, C C, provided with covers *c*, hinged or otherwise suitably secured, for the purpose of charging and discharging the tank of grain.

Attached to the tank at one end are branch pipes *d d'*, provided with stop-valves *e e'*, and meeting in a common main, D, arranged in the projected axis of the tank, and provided with a rotating joint, which permits the rotation of the tank without disturbing the connection. The parts are so arranged that the branches *d d'* communicate with the tank at opposite sides of the partition B. Access-openings *f f'* are arranged preferably at the opposite ends of the tank, said openings being provided with removable caps and communicating with the interior of the tank also at opposite sides of the partition B. A man-hole, E, provided with a suitable removable cover and clamp, is also arranged centrally at the end of the tank for access in cleaning, &c. As thus arranged the grain is fed downward from steeping-tanks into the tank A and spread uniformly over the false bottom B, where it may be sprinkled by a hose or otherwise through the opening *f'*. An exhauster being applied to the main D, the valve *e'* and opening *f* being closed, and the valve *e* and opening *f'* left open, air is drawn into the upper portion of the tank and passes through the body of grain and the partition B, and thence out through branch *d* and main D; or valve *e* and opening *f'* being closed and *e'* and *f* opened, air may be forced through main D and branch *d'* into the upper part of the tank, and thence through the grain and partition B, and out through the opening *f*. At intervals the tank may be rotated to agitate the grain and expose fresh portions to the air-currents. The air may be suitably moistened and cooled before being applied to the tank, as above described. When the operation is completed the covers *c* are withdrawn and the tank rotated to bring the openings below, when the grain may be allowed to fall below into suitable receptacles.

It will be apparent that with an apparatus such as hereinbefore described the connections may be changed at will, so as to subject the body of grain upon the partition alternately to the action of air passing through it, first in one direction and then in the other, so as to cool and moisten it thoroughly and uniformly.

Heretofore a malting apparatus has been composed of a cylinder adapted to rotate, combined with air exhausting or forcing devices;

but such broadly does not constitute my invention.

Having described my invention, I claim and desire to secure by Letters Patent—

1. In a malting apparatus, the combination of the cylindrical malting-tank adapted to rotate upon its axis, a perforated partition or false bottom arranged in a fixed horizontal position within the tank, below its axis, and devices connected with one end of the tank for charging or exhausting air both above and below the said perforated partition or false bottom, substantially in the manner and for the purpose described.

2. In a malting apparatus, the combination of the malting-tank A, provided at one end with air-openings *f f'*, the perforated partition B, secured in a fixed horizontal position within the tank, the air-pipes *d* and *d'*, connected with one end of the tank, above and below the perforated partition, as described, the main D, connected with the extended axis of the tank and with the said air-pipes by a revolving air-tight joint, and means for charging and exhausting air through said main and pipes at both sides of the perforated partition, substantially in the manner and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

W. ANDREW.

Witnesses:
L. M. HOSEA,
GEO. B. MUSCHLER.