

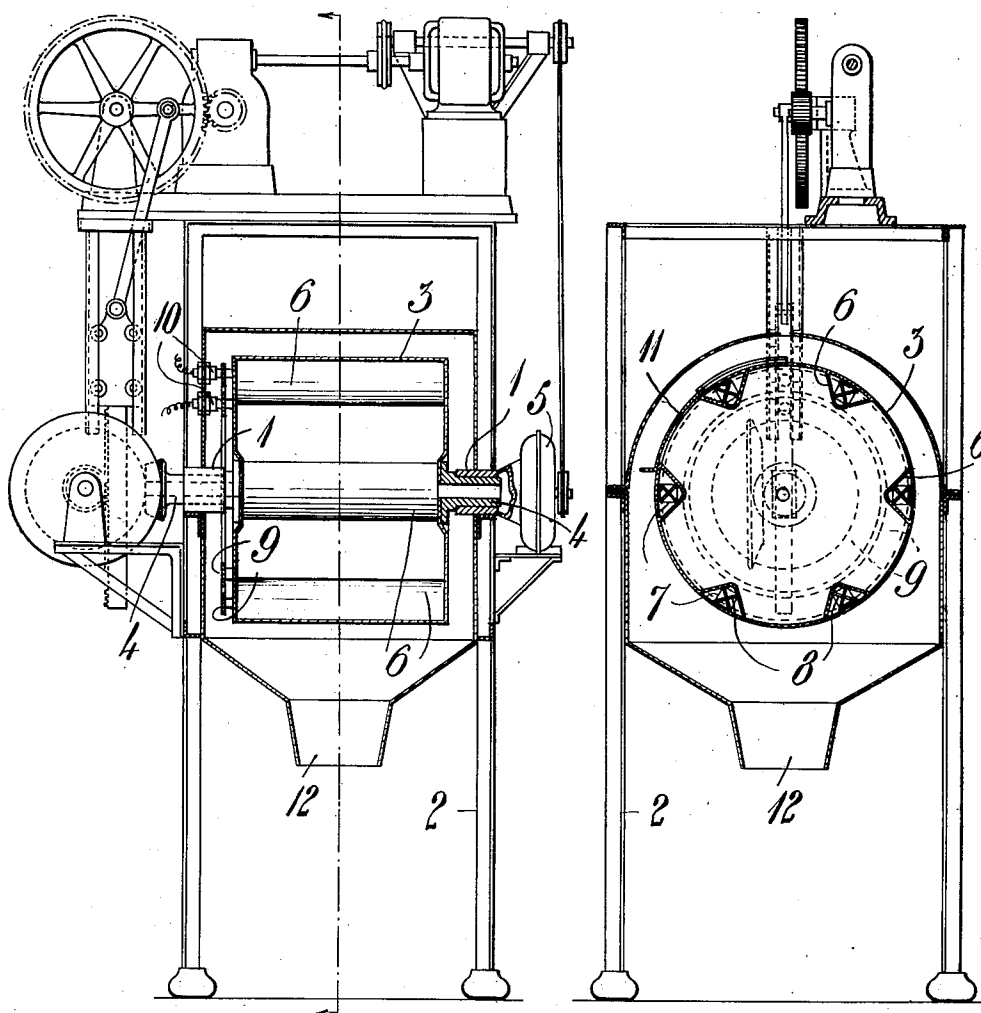
H. LÖFQUIST.
 DRYING OR ROASTING APPARATUS OR THE LIKE.
 APPLICATION FILED JULY 28, 1914.

1,151,203.

Patented Aug. 24, 1915.
 2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.



WITNESSES:

John C. Sanders
M. B. Cottrell

INVENTOR:

Hjalmar Löfquist
 BY *Mr. Allan Black*

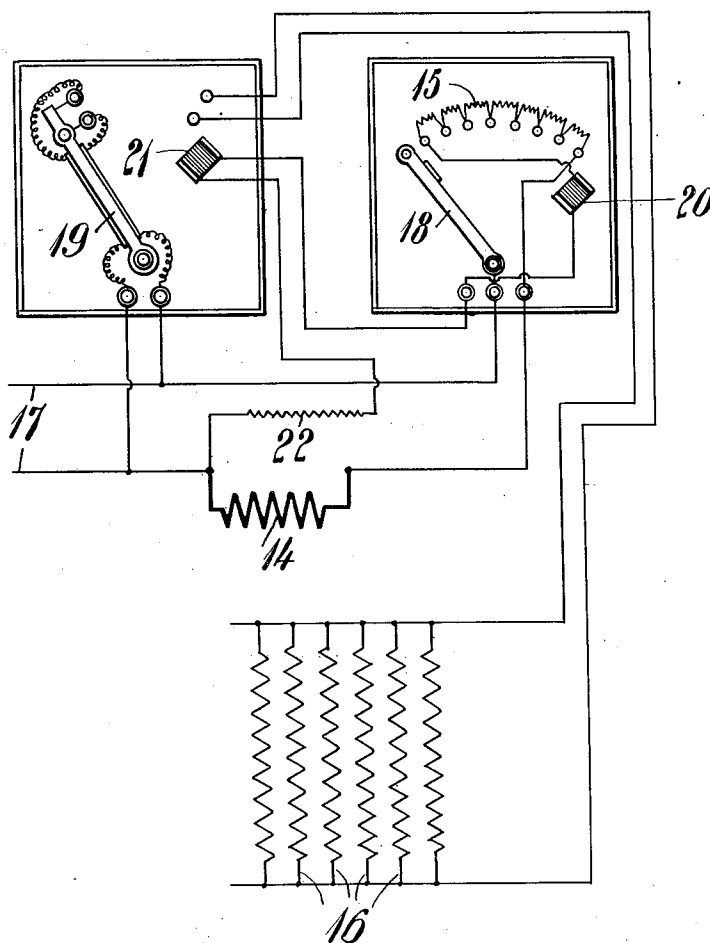
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FIG. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HJALMAR LÖFQUIST, OF STOCKHOLM, SWEDEN.

DRYING OR ROASTING APPARATUS OR THE LIKE

1,151,203.

Specification of Letters Patent.

Patented Aug. 24, 1915.

Application filed July 28, 1914. Serial No. 353,734.

To all whom it may concern:

Be it known that I, HJALMAR LÖFQUIST, a subject of the King of Sweden, residing at 21 Birger Jarlsgatin, Stockholm, Sweden, have invented new and useful Improvements in Drying or Roasting Apparatus or the like, of which the following is a specification.

This invention relates to improvements in apparatus for drying moist cereals, roasting coffee and similar purposes.

The present invention is principally distinguished by the feature that the drying or roasting takes place in a drum that is adapted to rotate continuously or to oscillate around a horizontal shaft and is provided at its periphery with longitudinal hollow webs in which electrical heating elements are placed.

The invention also comprises an automatic cut-out device for said heating elements, which acts as soon as the drum is stopped, for the purpose of preventing a burning of the material therein.

A preferred form of the invention is illustrated in the accompanying drawings in which:

Figure 1 is a central vertical longitudinal section of the apparatus, Fig. 2 is a central cross section and Fig. 3 shows a diagram of the electrical connections of the apparatus.

In bearings 1 in a frame 2 a drum 3 rests by means of journals 4 which preferably should be hollow, so that air can be blown or drawn through the drum by means of a fan 5. Over the periphery of the drum there is distributed a number of hollow webs 6, in the form shown six are employed, consisting of angularly bent plates and containing electric heating elements, such as resistance wires 7 wound on cores 8 of cross-like cross section. The current is supplied to these elements by means of a pair of contact rings 9 arranged on one end wall of the drum, brushes 10 bearing against said rings.

In the form shown, a reciprocatory turning movement is given to the drum by means of a mechanism of a known kind. As before mentioned, the drum may, however, be

continuously rotated in the same direction if desired.

The manner of operation of the drum will be understood without further description. The roasted or dried material is most easily discharged by turning the drum into such a position, that an opening normally closed by a sliding door 11 is turned downward, then by opening the sliding door 11 the material falls down through a hopper 12.

Fig. 3 shows how the electrical parts of the apparatus are connected for preventing the current from remaining on the heating elements, if the motor should stop, which might cause the burning of the material. 14 is the armature, 22 the magnet winding and 15 the starting resistance of the motor. 16 are the heating elements which are connected in parallel with the motor to the mains 17. In the circuit of the motor as well in that of the heating elements there is inserted a minimum current cut-out 18, 19 respectively, the two electromagnets 20, 21 of said cut-outs are connected in series with each other, with the starting resistance and with the magnet winding 22. Thus if the starting device of the motor should return to cut-out position (as shown in Fig. 3) both electromagnets 20, 21 will be without current so that the heating elements will also be cut out.

Having now particularly described the nature of my invention and the manner of its operation, what I claim is:

1. In drying or roasting apparatus, a drum rotatable around a horizontal axis and having a single wall, longitudinal hollow webs on the inner side of the peripheral wall of said drum and projecting therefrom so as to serve as agitators for the material contained in said drum, electric resistance elements contained in said webs and means for rotating said drum.

2. In drying or roasting apparatus, a drum rotatable around a horizontal axis and having a single wall, longitudinal hollow webs on the inner side of the peripheral wall of said drum, electric resistance heating elements contained in said webs, an electric motor in driven connection to said

drum, a starting controller for said motor,
and a minimum cut out for said resistance
elements including an operating coil, the
operating coil of said cut out being connect-
5 ed in series with the starting controller of
the motor.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

HJALMAR LÖFQUIST.

Witnesses:

BIRGER NORDFELT,
GICTA PRIEN.