J. MASSEY.

Grain Drier.

No. 6,322. Patented April 17, 1849.

Fig. 1

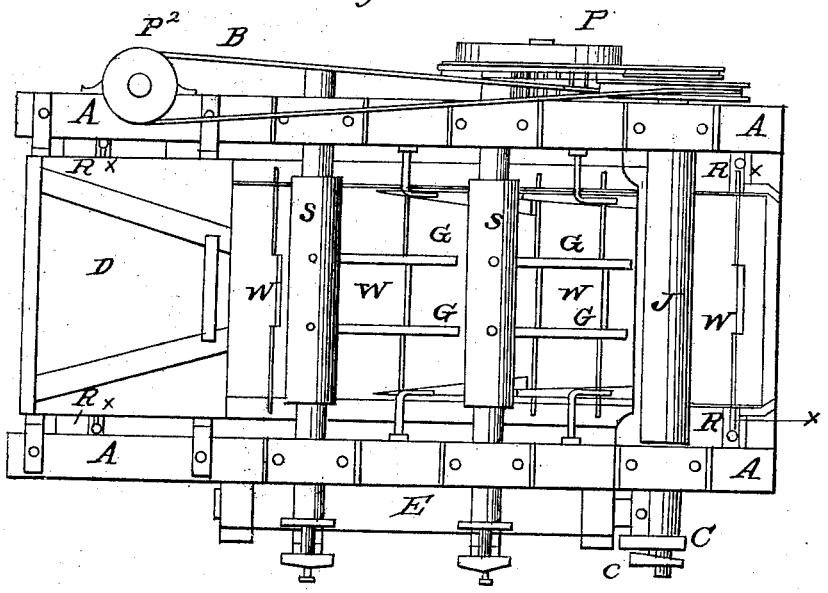


Fig. 2

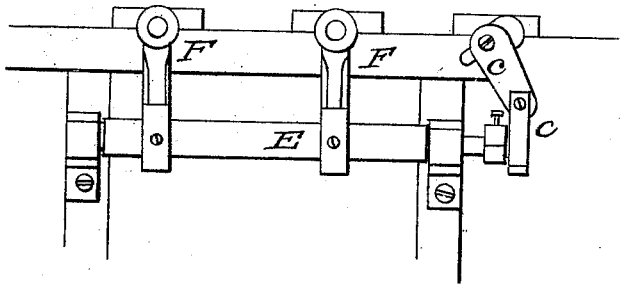


Fig. 3

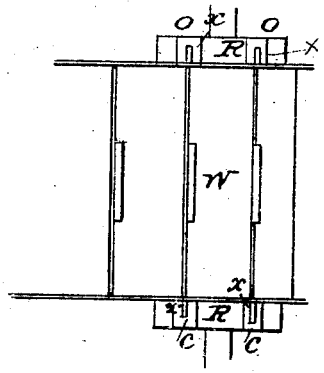
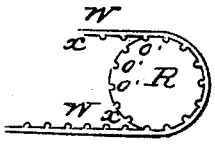


Fig. 4



UNITED STATES PATENT OFFICE.

JOHN MASSEY, OF NEW YORK, N. Y.

ENDLESS BAND FOR GRAIN-DRIERS.

Specification forming part of Letters Patent No. 6,322, dated April 17, 1849; Reissued September 11, 1855, No. 328.

To all whom it may concern:

Be it known that I, JOHN MASSEY, of the city, county, and State of New York, have invented a new and useful Improvement on a Machine for Drying Grain and for Such Like Purposes; and I hereby do declare that the following is a full, clear, and exact description.

The nature of my invention consists in providing an endless web or apron, made of sheets, or plates of metal to be revolved or pass over grooved hexagon metal rollers, for the purpose of carrying grain and such like substances through a hot chamber or kiln, so as to dry said substances where another kind of endless apron, not made of metal, could not be used.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1, is a vertical view of the machine, taken as looking down upon the top of it, Fig. 2, is a view of rocking shaft and cranks, Fig. 3, is a view of a section of the endless web or apron and Fig. 4, is a view, of a section side view, of said endless web or apron in combination with a grooved hexagon roller.

The same letters indicate like parts on the figures.

(A), is the frame of the machine. It is made of upright and longitudinal bars of any of the known forms, and of any kind of metal most suitable.

(R, R,) are two iron hexagon rollers, placed one at each end of the frame with their axles in suitable bearings about two feet or more above the floor. These rollers have grooves, either cast or cut running lengthwise from end to end of them, around the whole outside at certain distances from one another.

(W), is an endless web or apron made of sheet iron, or cast metal plates. Each plate has one or more rims on it, either cast, or folded, or rimmed over. One rim of one plate is made to dovetail into the rim or rims of another plate in such a manner that a straight rod or axle passes or is passed through the center of the rims of the plates forming a hinge joint. A number of metallic plates thus united—all jointed together, composes my metal endless web or apron. The rims are formed on the under side of the web, or apron and the size of each plate of the web, and the planes of the hexagon rollers (R), are made of such relative proportions to one another, that the barrels or rims or joints of the web shall mesh into the grooves of the rollers as the web is revolving. The object of the grooves on the rollers, is to clasp or catch the barrels of the web and thus move or revolve the said web by any power that may be applied to revolve the rollers, either by band or pulley or cog wheel gearing. (X) Fig. 4, and (O), indicate the barrels or joints of (W), the web, and the grooves of (R), (on the said roller).

To dry grain on or by this machine, it (the machine) is placed in a hot chamber or kiln like the drying rooms in woolen factories. The grain is let down upon the web (W), by and through a hopper (D), which may have a spout or tunnel communicating with it from the outside of the chamber. As the web revolves, the grain is carried forward through the hot chamber or kiln, and dried, and may be discharged from the web into a receptacle to conduct the dry grain to the outside of the chamber. The chamber or kiln, may be made of any desired length and so may the endless web, so as to dry the grain &c. in a longer or shorter period of time according to the hotness of the chamber. To dry the grain all equally, it is shifted on the web while passing through the chamber by means of rakes (G), Fig. 1, which have a side to side motion, traversing backward and forward across the web. These rakes are attached to shafts (S), which receive their traverse motion from a rocking shaft (E). This rocking or oscillating shaft (E), is connected with the cross shaft (J,) which has a circular motion. They are connected together by two cranks (C, C,) placed at right angles to one another and connected by a short pitman, so that when the shaft (J), revolves, a rocking motion is communicated to (E), and a traverse motion to the rakes for shifting the grain. (F, F) are stirrups, that connect the rocking shaft with the rake shafts. (P^1,) is the main pulley. It revolves the web and the cross shaft (J), and by a band revolves the hopper pulley (P^2). Thus the grain is received upon the web through or from the hopper and carried forward, being shifted

thereon by the rakes and dried economically and thoroughly.

From the nature of the materials with which my machine is constructed, there is no danger of it being destroyed by fire, and being made strong and so simple, none of its parts are liable to go wrong while in operation, so that no person will be required to enter the hot chamber in which the grain is dried, thus making it a very suitable machine for large bakeries and grain exporting warehouses.

Having thus explained my invention, I do do not claim an endless web or apron made of metal, but

I claim—

The combination of an endless apron made of various pieces of plate metal constructed with joints united by axles which project below the inner surface of the web or apron, with octagon or hexagon rollers constructed with grooves in the said rollers to receive the projection or axles of the endless apron (meshing into one another); the whole constructed and operating in the manner herein set forth.

JOHN MASSEY.

Witnesses:
R. MACFARLAN,
M. MCRAE.

[FIRST PRINTED 1913.]