

W. TOEPFER.

Improvement in Apparatus for Stirring Malt in the Kiln.

No. 115,390.

Patented May 30, 1871.

Fig. 1.

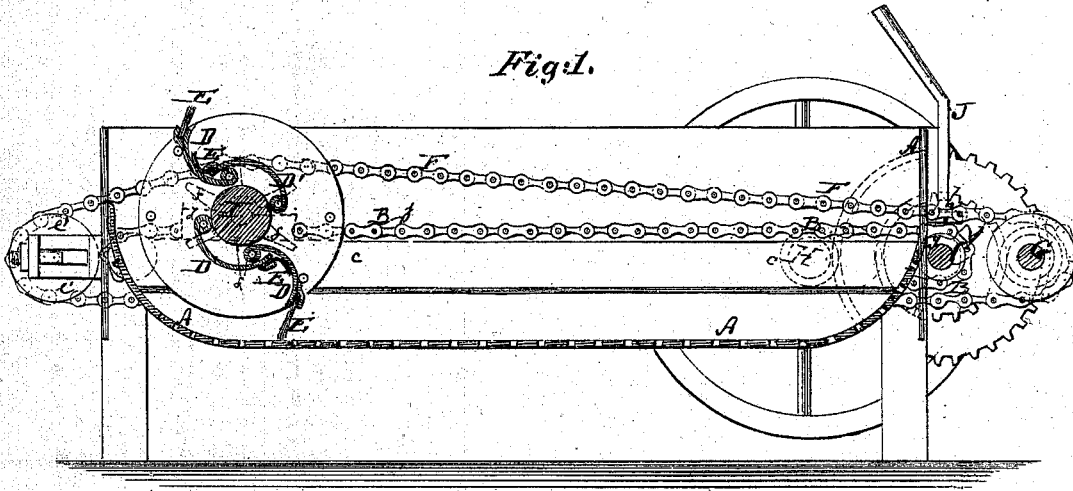


Fig. 2.

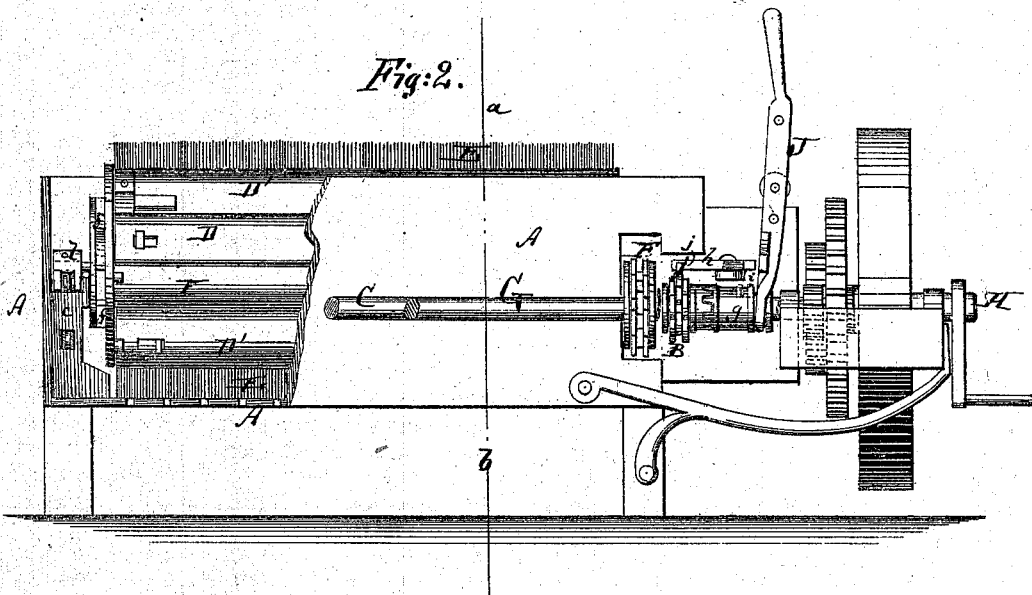
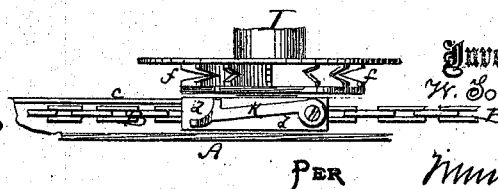


Fig. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN APPARATUS FOR STIRRING MALT IN THE KILN.

Specification forming part of Letters Patent No. 115,390, dated May 30, 1871.

*To all whom it may concern:*

Be it known that I, WENZEL TOEPFER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and Improved Malt-Rotator; and I do hereby declare that the following is a clear, full, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical longitudinal section of my improved malt-rotator, the plane of section being indicated by the line *a b*, Fig. 2. Fig. 2 is an end elevation, partly in section, of the same. Fig. 3 is a detail top view of the roller-lock.

Similar letters of reference indicate corresponding parts.

This invention relates to a new apparatus for agitating and moving malt within the kiln, so as to dispense with the muscular labor heretofore required for the same purpose. The vapors arising from the malt are unhealthy, and produce disease in the workmen, which is prevented by the use of an effective automatic agitator. The heat can, in a kiln which is provided with an agitator, be constantly kept at the most advantageous point, while heretofore it had to be let down, in order to enable the working parties to turn the malt. The malt thus treated will be of better quality, as it can be more frequently and thoroughly turned. Its treatment requires less fuel, and is completed in less time than before. My invention consists in the application to the kiln of a traveling roller, which carries ladles or projecting scoops for agitating and turning the malt.

A in the drawing represents a malt-kiln of suitable size and shape. At its sides are arranged, within the same, longitudinal horizontal rails *c c*, which serve as supports and guides for boxes *d d*, in which the ends of a roller, I, are hung. Each box *d* is connected with the ends of a chain, B, which passes over a pulley on a transverse shaft, C, and over a friction-pulley, *e*, at the opposite end of the kiln. The shaft C is hung in a frame or ears at one end

of the kiln, as shown; as it is revolved in either direction it will move the chains B B, and thereby cause the boxes *d d* to slide on the rails *c c* and carry the roller along. To the roller A are hinged four, more or less, curved plates, constituting ladles D D', for taking up and turning the malt. These ladles are right-and-left, one-half being curved to one side and the other half to the other side. When the roller moves toward the shaft C the ladles D will be in action and project from the roller, while the ladles D' are folded against the roller, as shown in Fig. 1. While the roller moves in the opposite direction the ladles D' will project, while the others fold against the shaft. Steel brushes E are affixed to the ends of the ladles, to properly sweep the bottom of the kiln. A chain, F, deriving its motion from a shaft, G, hung near the end of the kiln, passes over a toothed portion, *f*, of the roller, and tends to impart rotary motion to the same whenever the shaft G is revolved. The shaft G receives rotary motion in the desired direction by gearing or belt from a driving-shaft, H, while a sliding clutch, *g*, is connected with the same gearing to impart motion to the shaft C. The clutch can be thrown into connection with the shaft C or out of gear by means of a lever, J, worked by hand; but it can also be thrown out of gear by a T-shaped link, *h*, which is pivoted to an ear, *i*, projecting from the end of the kiln. From one of the chains B project two ears, *j j*; one of them strikes the shank of the T-link *h* whenever the roller has arrived at one end of the kiln, and throws the clutch out of action to prevent further motion in the same direction. At the end of the opposite movement the other ear *j* strikes the T-link with equal effect. By throwing off the chain F, which revolves the roller, the latter can be used for distributing the malt equally over the bottom of the kiln. For locking the roller so as to hold the lower ladle in the desired position, a locking-bolt, *k*, is pivoted to one of the boxes *d* and can be thrown into the roller, preventing it from turning. When the roller revolves and moves ahead it rotates the malt properly and exposes it fully to the heat.

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

1. The roller I, provided with the pivoted right-and-left ladles D D', to be effective in opposite directions, as set forth.

2. The malt-kiln A, combined with the sliding boxes *d d*, which carry the rotating reciprocating-roller, as set forth.

3. The T-link *h*, combined with the clutch *g* and with the projecting ears *j* of the chain F, substantially as herein shown and described.

4. The bolt *k*, applied to the sliding box *d* for locking the roller I, as set forth.

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Witnesses:

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