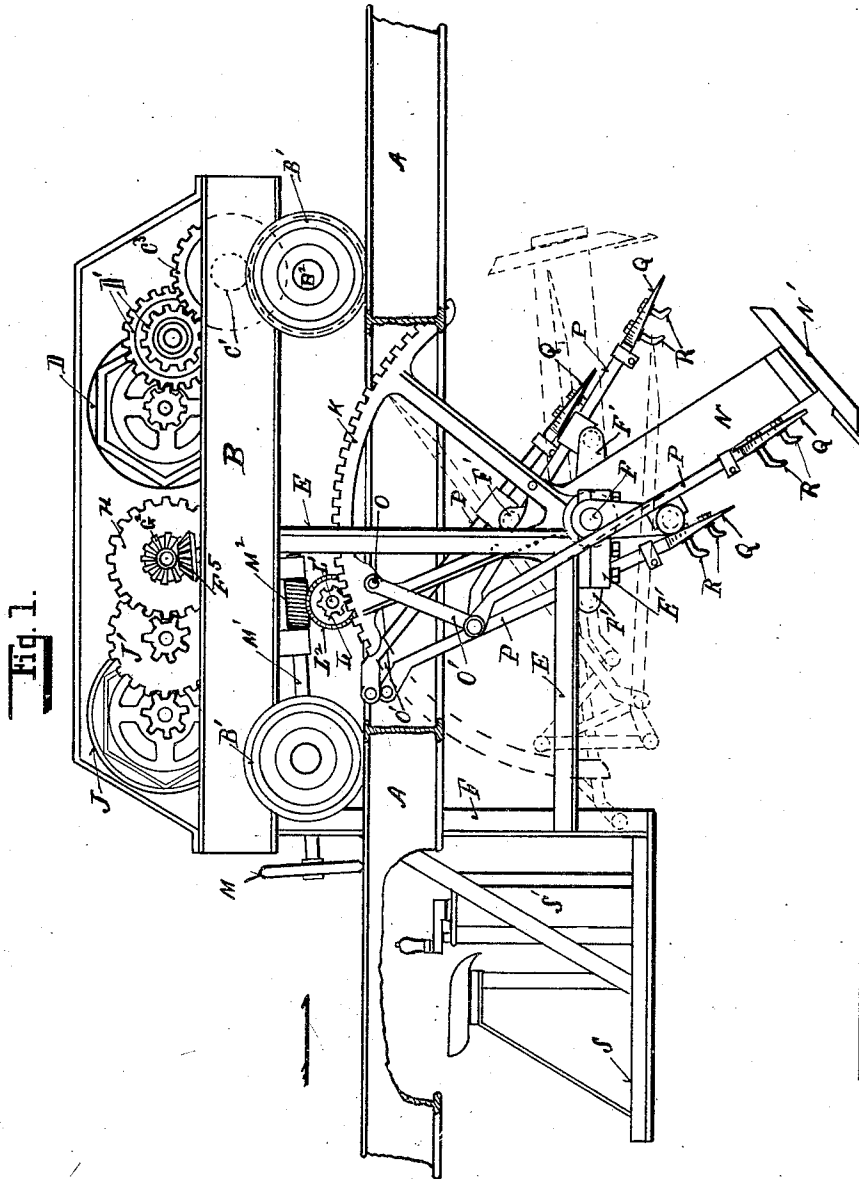


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MALT TURNING MACHINE.
APPLICATION FILED FEB. 6, 1912.

1,056,869.

Patented Mar. 25, 1913.

2 SHEETS—SHEET 1.



Witnesses.

G. J. Mead
Erna Myers

Inventor.

Daniel D. Weschler
By J. C. Mustangion
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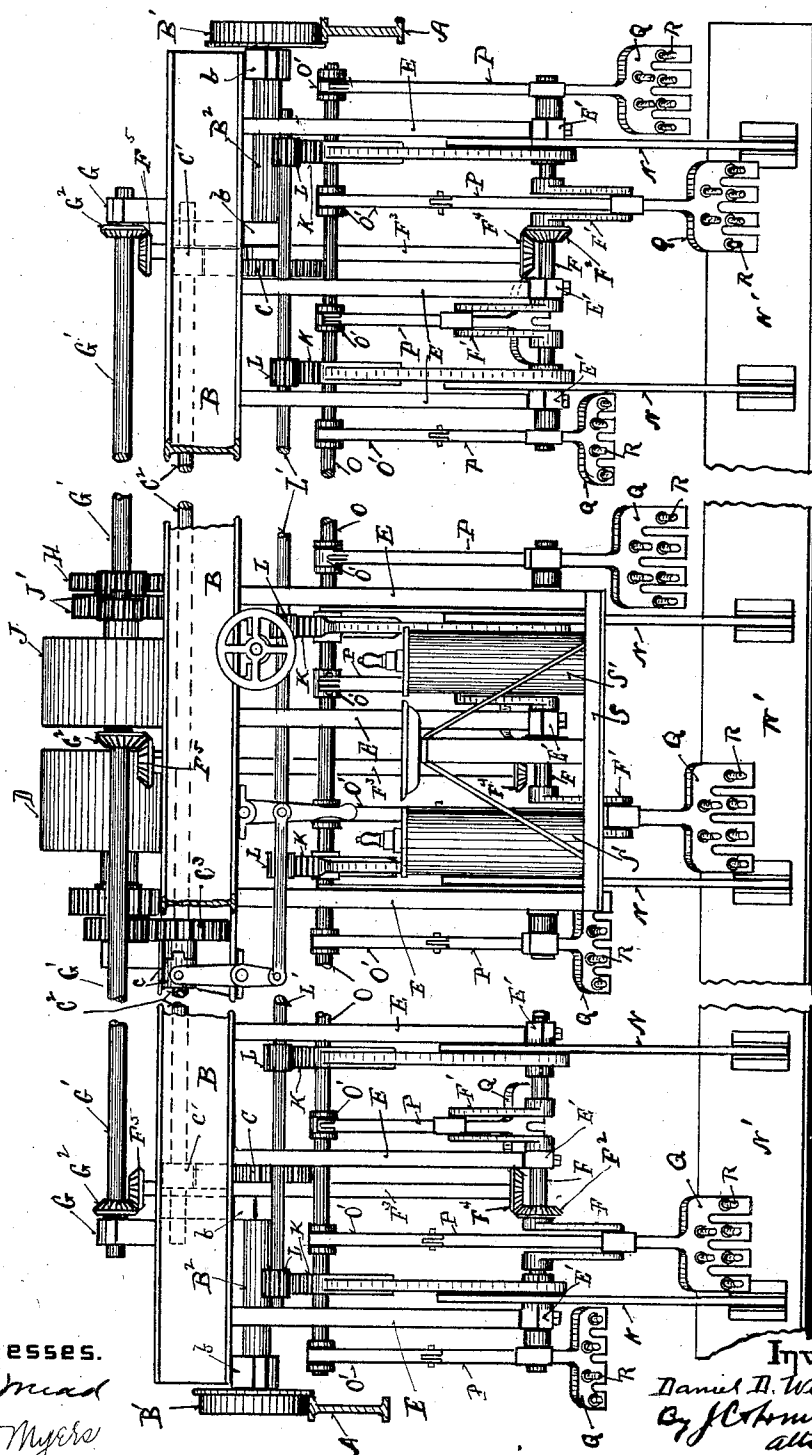
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Fig. 2.



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UNITED STATES PATENT OFFICE.

DANIEL D. WESCHLER, OF MILWAUKEE, WISCONSIN.

MALT-TURNING MACHINE.

1,056,869.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed February 6, 1912. Serial No. 675,879.

To all whom it may concern:

Be it known that I, DANIEL D. WESCHLER, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Malt-Turning Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to malt-turning mechanism of the type shown and described in my U. S. Patent No. 722,785, issued March 17, 1903, and has for its object certain improvements in the mechanism thereof hereinafter particularly pointed out and described and illustrated in the accompanying drawings, in which:

Figure 1, is an end view in elevation of my improved malt-turning machine. Fig. 2, is a rear view in elevation of the same, as indicated by the arrow in Fig. 1, portions thereof being broken away.

In the malting process the grain to be malted is first saturated with water, and is then spread in a uniform layer upon a malting-floor where it is allowed to germinate. During the process of germination in order to prevent heating, and to insure uniform germination throughout the entire mass it is necessary to frequently turn the grain. During the operation of turning the grain it is necessary to break up the mass which by reason of the tiny growing roots, has become knitted together, and loosen the grains constituting the mass thoroughly so that each individual grain will be enabled to move by itself. Prior to my invention the work of turning malt and breaking it up so that the same would be thoroughly aerated was performed by manual labor and required shovelers skilled in this line of work.

In carrying out the objects of my invention I secure to the frame work of the malt-house, intermediate between the malting-floor and the ceiling of the room, track-beams, A, adapted to support a traveling crane, B thereon. This crane B is composed of a rectangular frame supported upon track-wheels B' adapted to engage the crane-tracks A in the usual manner, the

track-wheel shafts B², being secured in bearings b (see Fig. 2) secured to the under side of the crane-frame B, and upon the inner ends of the shaft B², are secured spur gear-wheels C, which inter-mesh with a pinion C' (shown in broken lines) secured upon a shaft C², longitudinally mounted in the crane-frame. Upon this shaft C², is mounted a spur gear-wheel C³, which is provided with a clutch mechanism c, by means of which the shaft C², may be stopped when desired. This gear-wheel C³ receives motion and power from an electric motor D, and intermediate gears D' mounted upon the crane-frame B.

Depending from the crane-frame B, are the frames E, and secured to the lower portion of these frames E, are journal-boxes E', in which is mounted the crank-shaft F, which I have shown in Fig. 2, as being in sections, each section having therein four cranks, F'. This manner of constructing the crank-shaft F, overcomes certain mechanical difficulties incident to a structure of this character. Upon each section of the crank-shaft F, I secure a miter-gear F². Vertically mounted in the machine frame are shafts F³, upon the lower ends of which are miter-gears F⁴, which intermesh with the miter-gears F², on the crank-shafts F. On the upper ends of the shafts F³, are miter-gears F⁵.

Upon the crane-frame B, in suitable bearings G, is mounted a shaft G', upon which there is secured miter-gears G², which intermesh with the miter-gears F⁵. Upon the shaft G', there is secured a spur gear-wheel H, which receives motion and power from the motor J, and gears J', mounted upon the crane-frame B, so that when the motor J, is energized, the crank-shafts F, will rotate.

Mounted at the lower portion of the frames E, upon bearings concentric with the crank-shaft F, are segments of gears, K, of suitable radius for the purpose hereinafter set forth. Intermeshing with these segments of gear K, are pinions L, secured upon a shaft L', longitudinally mounted in the frame of the machine. Secured upon the shaft L', there is a worm-gear L² and for operating this worm-gear L², and shaft L', I have provided the usual hand-wheel M, shaft M', and worm M².

Secured upon the hubs of the segments K, are downwardly and rearwardly extend-

ing arms N, to which is secured a scraper or follower N', which is adapted to contact with the malting-floor for the purpose of raising malt therefrom.

5 Secured in the segments K, adjacent to the periphery thereof is a longitudinal shaft O, which is co-extensive in length with each set of four cranks F', in the crank-shaft F, and upon this shaft O, there are mounted the arms O'.

10 Pivoted upon each of the cranks F', are shovel-handles P, the upper ends of which are pivoted to the lower extremities of the arms O', so that by means of the hand-wheel M, the segments K, may be swung on their axes, thereby changing the pitch of the shovel handles P, and also raising the scraper N' from the floor. Upon the lower ends of the handles P, are shovels Q, preferably slotted as shown in Fig. 2. These shovels Q, reach downwardly nearly to the malting-floor, but do not contact with the same during the operation of the machine. For the purpose of tearing, and breaking up the malt mass, these shovels Q, are provided with hooks R, which extend, or project from the under sides of the shovels Q.

Secured to the rear of the frames E, in the middle portion of the machine, is an operator's platform S, which supports electrical controllers S', of the usual construction.

During the operation of turning malt, this machine travels upon the crane-tracks A, over the malt backwardly, the operator 35 upon the platform S, facing the machine so that he can watch the shovels, and regulate the operation of the machine. By means of the hand-wheel M, the gear-segments K, and the intermediate gear heretofore described the pressure of the scraper N', upon the floor may be regulated, and when it is necessary to raise the shovel and scraper N', up above the malt, the gear-segments K, are moved to the position thereof shown by the broken lines in Fig. 1, by means of the hand-wheel M, and the gears connected therewith, until the shovels Q, and scraper N', are moved to the position thereof shown by broken lines in Fig. 1. This may be done without stopping the revolution of the crank-shaft F.

From the foregoing description and the drawings accompanying this application, the construction and operation of my improved malt-turning machine is so obvious that further description thereof is deemed unnecessary.

Therefore having fully shown and described my invention so as to enable others to construct and utilize the same, what I claim as new and desire to secure by Letters-Patent is:

1. In an apparatus of the character described, a frame capable of being moved over a malting-floor, mechanism for ac-

tuating same, reciprocating shovels and mechanism for operating the same supported by said frame, and means for adjusting the pitch of said shovels, substantially as set forth.

2. In an apparatus of the character described, a frame capable of being moved over a malting-floor, mechanism for actuating same, reciprocating shovels and mechanism for operating the same supported by said frame, a follower adapted to contact with the floor, and mechanism adapted to raise or lower the blades of said shovels and said follower, substantially as set forth.

3. In an apparatus of the character described, a frame capable of being moved over a malting-floor, mechanism for actuating the same, a crank-shaft mounted in said frame, mechanism for operating said crank-shaft, gear-segment mechanism mounted in said frame concentric with said crank-shaft, shovel handles supported by the cranks in said crank-shaft and by pivots supported upon said gear-segment mechanism, and means for operating said gear-segment mechanism, substantially as set forth.

4. In an apparatus of the character described, a frame capable of being moved over a malting-floor, mechanism for actuating same, a crank-shaft mounted in said frame, mechanism for operating said crank-shaft, gear-segment mechanism mounted in said frame concentric with said crank-shaft, shovel handles supported by the cranks in said crank-shaft and by pivots supported upon said gear-segment mechanism, a follower adapted to contact with the malting-floor secured to and supported upon said gear-segment mechanism, and means for operating said gear-segment mechanism, substantially as set forth.

5. In an apparatus of the character described, a frame adapted to be moved over a malting-floor, mechanism for actuating the same, a crank-shaft mounted in said frame, mechanism for operating said crank-shaft, gear-segment mechanism mounted in said frame concentric with said crank-shaft, screw and gear mechanism for operating said gear-segment mechanism, a pivot-shaft supported by said gear-segment mechanism, shovel handles pivoted upon the cranks in said crank-shaft, and links pivoted to the upper ends of said shovel handles and upon said pivot-shaft, substantially as set forth.

6. In an apparatus of the character described, a frame adapted to be moved over a malting-floor, mechanism for actuating the same, a crank-shaft mounted in said frame, mechanism for operating said crank-shaft, gear-segment mechanism mounted in said frame concentric with said crank-shaft, screw and gear mechanism for operating said gear-segment mechanism, a pivot shaft

supported by said gear-segment mechanism, a follower adapted to contact with the floor secured to and supported by said gear-segment mechanism, shovel handles pivoted
 5 upon the cranks in said crank-shaft, and links pivoted to the upper ends of said shovel handles and upon said pivot-shaft, substantially as set forth.

7. In an apparatus of the character described, a crane mechanism traveling on tracks over a malting-floor, mechanism thereon for operating the crane, a rigid frame-work suspended upon said crane, a crank-shaft mounted in said frame-work,
 10 motor and gear mechanism mounted upon said crane and suspended frame-work for operating said crank-shaft, gear-segment mechanism mounted in said suspended frame-work concentric with said crank-shaft, worm and gear mechanism for operating said gear-segment mechanism, a fol-
 15 lowler adapted to contact with the floor secured to and operated by said gear-segment mechanism, shovel handles pivoted upon the cranks in said crank-shaft, a pivot-shaft supported by said gear-segment mechanism, and links extending between and pivoted upon said pivot-shaft and to the
 20 upper ends of said shovel handles substantially as set forth.

8. In an apparatus of the character described a shovel, and means secured thereto adapted to break up and pulverize material operated upon during the operation
 25 of said shovel, substantially as and for the purpose set forth.

9. In an apparatus of the character described a shovel having slots therein, hooks projecting from the under side thereof

adapted to break up and pulverize material
 40 operated upon during the operation of the shovel; substantially as described.

10. In an apparatus of the character described, a crane mechanism traveling on tracks over a malting-floor, motor and gear
 45 mechanism thereon for operating said crane, frame-work suspended upon said crane, a crank-shaft mounted in said suspended frame-work; motor and gear mechanism mounted upon said crane and suspended
 50 frame-work for operating said crank-shaft, an operator's platform secured and supported upon said apparatus, independent controller mechanism upon said platform for controlling the operation of the traveling
 55 mechanism, and the operation of the crank-shaft, gear-segment mechanism mounted in said frame-work concentric with said crank-shaft mechanism for operating said gear-segment mechanism, a follower adapted to
 60 contact with the floor, secured to and operated by said gear-segment mechanism, a pivot-shaft supported by said gear-segment mechanism, shovel handles mounted upon the cranks in said crank-shaft, links piv-
 65 oted upon said pivot-shaft and extending between and pivoted to the upper ends of said shovel handles, shovels on the lower ends of said handles, and spiked projections on the underside of said shovels, substan-
 70 tially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

DANIEL D. WESCHLER.

Witnesses:

WM. BUNTESCHU,
 R. J. WESCHLER.