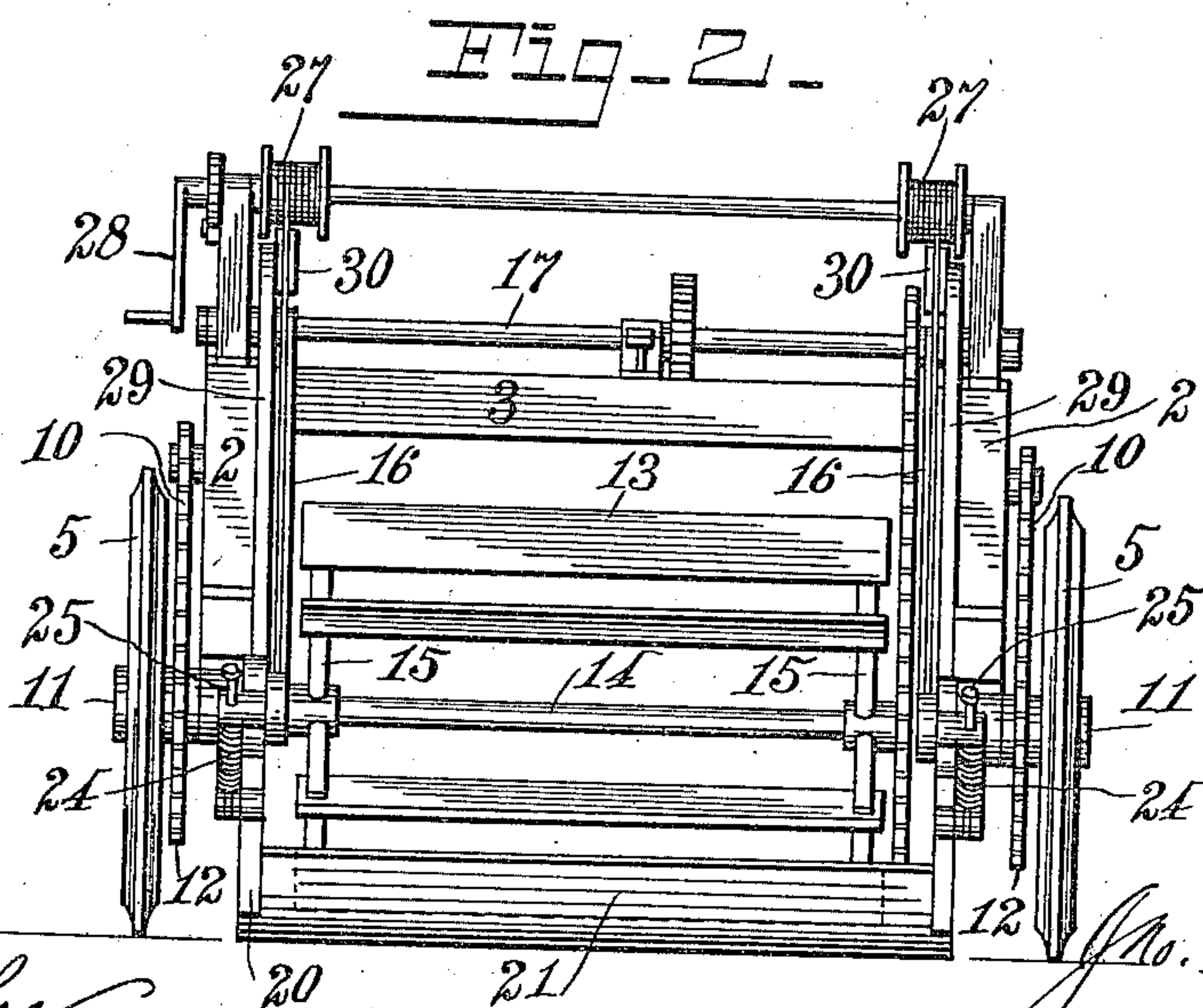
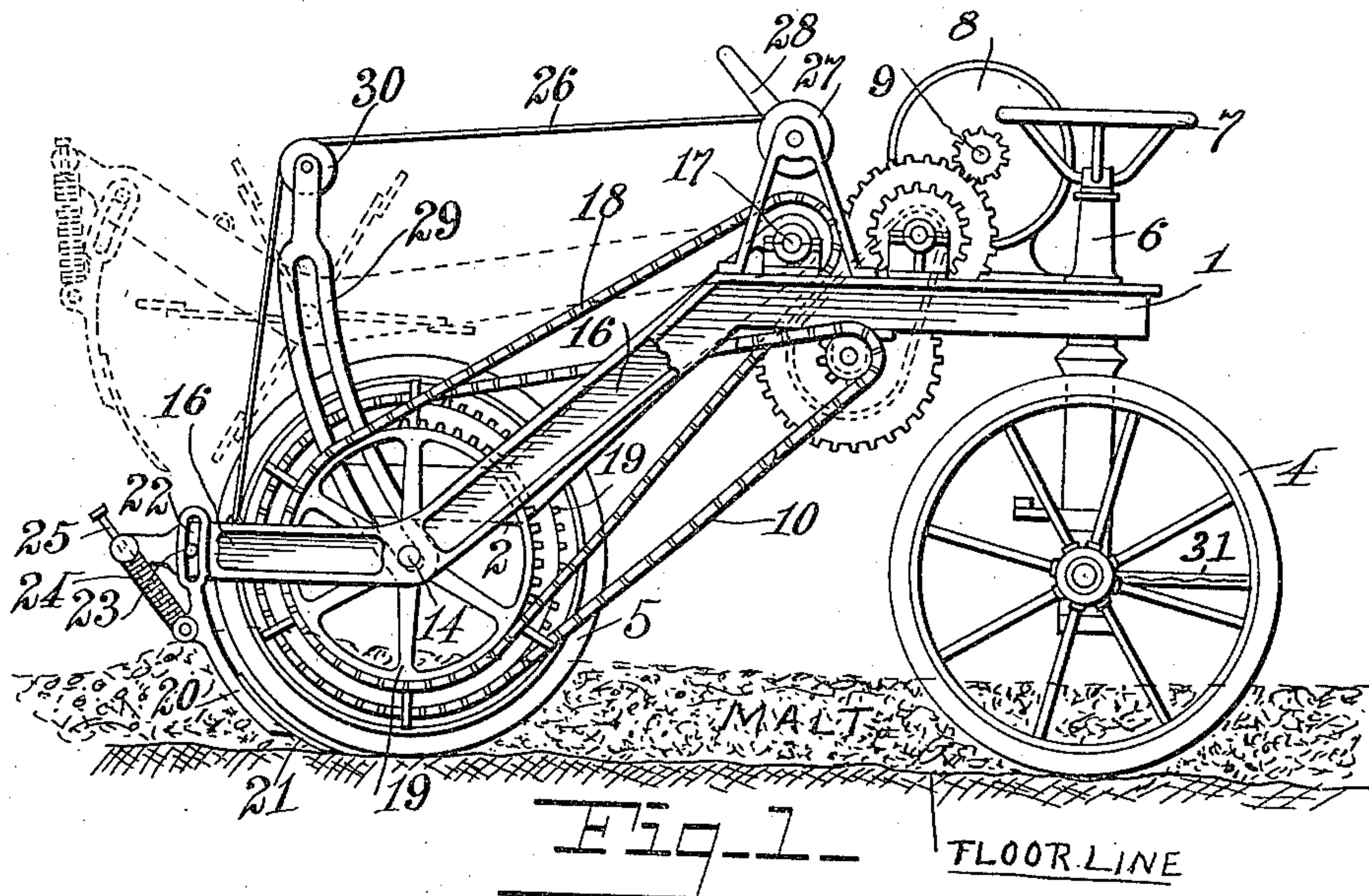


1,167,362.

J. F. O'BRIEN.  
MALT TURNING MACHINE.  
APPLICATION FILED APR. 26, 1915.

Patented Jan. 4, 1916.



Witnesses  
*M. S. L. L. L.*

By

Inventor  
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Attorney  
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# UNITED STATES PATENT OFFICE.

JOHN F. O'BRIEN, OF PIQUA, OHIO, ASSIGNOR TO THE PIQUA MACHINE AND BOILER CO., OF PIQUA, OHIO.

## MALT-TURNING MACHINE.

1,167,362.

Specification of Letters Patent.

Patented Jan. 4, 1916.

Application filed April 26, 1915. Serial No. 23,800.

*To all whom it may concern:*

Be it known that I, JOHN F. O'BRIEN, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Malt-Turning Machines; and I do 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 and figures of reference marked thereon, which form a part of this specification.

This invention relates to a machine for turning malt during the process of germination. In carrying out such process malt is spread upon floors and is constantly subjected to turning.

The object of the invention is therefore to provide a machine for more effectually doing this class of work and in an expeditious manner.

A further object of the invention is to provide a machine that will turn the malt on the floor without bruising or damaging the same; a machine of this character with that portion that engages the malt so constructed and arranged that it will adjust itself readily to the unevenness of the floor upon which the malt is spread.

It is, therefore, a further object to provide a machine of this character which is free from a liability to breakage of the parts thereof which pass over the floor in turning the malt.

These and other objects and purposes are accomplished by the machine, to be hereinafter described in connection with the accompanying drawings.

Of the drawings, Figure 1 is a side elevation of my improved malt turning machine with a portion of the frame of the machine broken away. Fig. 2 is a front elevation of the machine.

In the following description and in the accompanying drawings, similar reference characters are employed to indicate corresponding parts.

The frame work of the vehicle is of a suitable form and structure to meet the requirements of a machine of this character. It consists of two side frames the rear portions 1 of which are elevated and the front portions 2 are dropped. These side frames

so constructed are suitably joined by transverse frame members 3. The vehicle frame so constructed is supported on tractors 4 and 5, the former being the wheels which are connected through the steering post 6 to a hand wheel 7. The peripheries of these tractors are essentially reduced to a narrow tread in order that little or no crushing effect may be imparted to the malt in the operation of turning the same. A motor 8 is suitably mounted on said frame on a convenient part and furnishes the motive power for the vehicle, said power being transmitted from the motor shaft 9 through suitable gearing and chains 10 to the axles 11 of the front tractors 5. The chains 10 pass over chain wheels 12 which are rigidly mounted on the axles of said tractors. The axles of the tractors are suitably journaled in the dropped portions of the side frames 2. A series of turning blades 13 are united upon a shaft 14 by means of spiders 15 which are mounted on said shaft 14. The shaft 14 has its bearings in side frames 16, the upper ends of which are loosely hung upon a driving shaft 17 which is driven from the motor through suitable gearing. The ends of the shaft 14 extend into slotted guides 29 that rigidly extend from the dropped portions 2 of the side frames of the machine. The turning blades 13 united by the spiders 15 and mounted on the shaft 14 constitute a malt turning cylinder which passes over the malt as the machine is driven and effectually turns the same. The turning cylinder is driven by a chain 18 from the shaft 17, said chain passing around chain teeth 19 arranged on the periphery of one of the spiders 15. As shown in dotted lines in Fig. 1, the malt turning cylinder may be elevated wholly from the floor when it is desired to transport the machine to a point from which it begins its operation. In thus elevating the side frames 16 and therewith the turning cylinder, the ends of the shaft 14 move upwardly in the slots in the guides 29, before referred to.

An important element of the machine constitutes the malt deflector blade 20 which lies close to the turning cylinder and has an extension 21 that engages the floor or the surface upon which the malt is spread and turns the same. This deflector is so constructed and mounted that it will accommodate itself to the variable conditions of the floor and



will prevent breaking of the turning blades or their connected parts. The said deflector 20 is connected with the side frames 16 of the turning cylinder by means of ob-  
 5 long slots 22 through which guide pins 23 pass from the ends of the frame members 16. Owing to this connection, it will be readily seen that the deflector blade 20 will yield or  
 10 rise to any unevenness in the floor and will be maintained in contact with the floor. The said deflector blade is maintained in contact with the floor by means of compression  
 15 springs 24 which inclose pins 25 extending from the deflector blade 20 and having bearings at their upper ends in the extreme ends  
 20 of the side frames 16. The compression springs 24 are of a character that exert downward pressure on the deflector blade 20 which is overcome only when the extended  
 25 edge 21 of the blade engages unevenness or rises in the surface of the floor. It will, therefore, be seen that the said deflector blade accommodates itself to the condition  
 30 of the floor. It extends approximately the length of the turning cylinder and lies immediately in front thereof. The frame members 16, together with the parts sup-  
 35 ported thereon, are elevated to the dotted position by means of cables 26 which extend from windlasses 27 and pass over guide  
 pulleys 30 supported on the guides 29 and have suitable connection with the ends of said frames 16. A crank handle 28 affords  
 convenient means for turning the wind-

lasses 27.  
 Having with more or less particularity described my invention, I do not wish it to be understood that in laying so much emphasis on details of construction that these  
 40 are of vital importance. Such details may be varied to a greater or less extent without departing from the fundamental principles of my invention which constitutes new

means for delicately handling malt spread upon a floor during the germinating period 45 and in turning said malt without crushing or bruising the same.

Having described my invention, I claim,

1. In a machine of the character specified, the combination of a main vehicle frame, 50 and tractors upon which said frame is supported having substantially narrow tread portions, of a turning cylinder comprising a series of blades arranged to engage the malt as the vehicle passes thereover, a pivotal 55 frame upon which said turning cylinder is mounted, and a deflector blade mounted adjacent to said turning cylinder and parallel with the blades thereof, the mounting of said deflector cylinder being such as to per- 60 mit of its yielding and conforming to the surface over which it passes and upon which the malt is spread, substantially as specified.

2. In a machine of the character specified, the combination with a vehicle frame having 65 a dropped portion, and tractors upon which said frame is mounted having substantially narrow tread surfaces, of a turning cylinder comprising a series of blades adapted to pass through malt spread upon the surface over 70 which the vehicle traverses, a hanging frame upon which the said turning cylinder is mounted, means for driving said turning cylinder, a deflector blade having a yielding connection with the frame upon which the 75 turning cylinder is supported, and a spring exerting a force upon said deflector blade to keep it in contact with said surface, substantially as specified.

In testimony whereof I affix my signature, 80 in presence of two witnesses.

JOHN F. O'BRIEN.

Witnesses:

CLAUDE SMITH,  
 FORREST C. SIMON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."