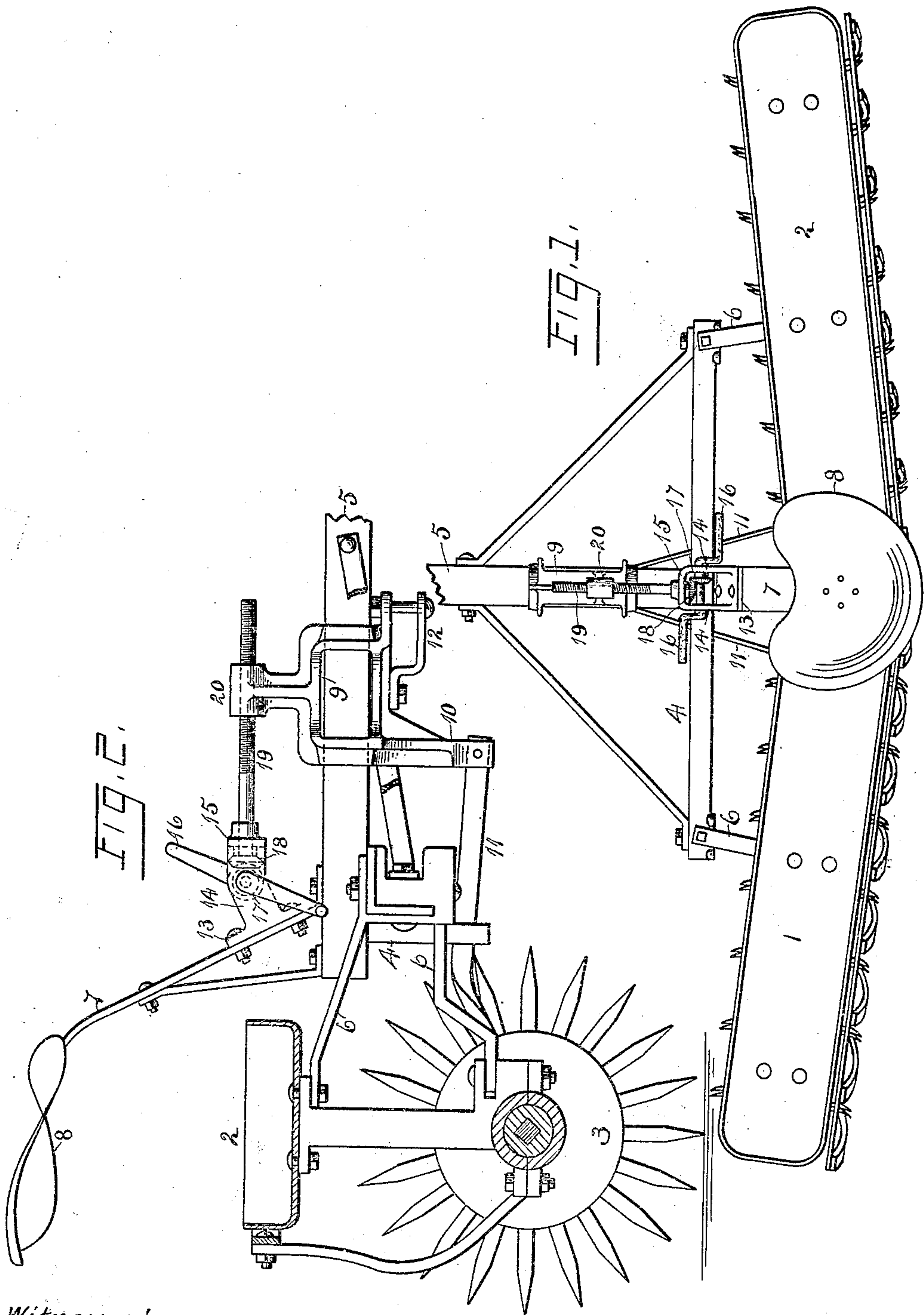


L. E. WATERMAN.
REVOLVING HARROW.
APPLICATION FILED MAY 1, 1908.

930,251.

Patented Aug. 3, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEWIS E. WATERMAN, OF ROCKFORD, ILLINOIS, ASSIGNOR TO EMERSON MANUFACTURING COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS.

REVOLVING HARROW.

No. 930,251.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed May 1, 1908. Serial No. 430,375.

To all whom it may concern:

Be it known that I, LEWIS E. WATERMAN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Revolving Harrows, of which the following is a specification.

The object of this invention is to construct a revolving harrow comprising two gangs which are adjustable to change their angle of inclination with relation to the line of draft, and foot operated means for moving the gangs.

In the accompanying drawings, Figure 1 is a plan view of a harrow containing my improvements. Fig. 2 is a transverse vertical section through one of the gangs, and an elevation of the tongue and parts supported thereby.

The harrow in the main is of a well known construction comprising the two gangs 1 and 2 supporting the frame 4. Each gang is made up of a series of spiked toothed heads 3, united together to revolve in unison. A tongue 5 is supported by the frame 4, and the frame has a connection with the gangs by the bars 6 which act as the pivotal support of the gangs. A seat support 7 has a connection with the rear end of the tongue and a seat 8 is connected to its support. The tongue supports a slidable section 9 which embraces all sides of the tongue and has a projection 10 depending from its under face. To this projection 10 are pivoted the forward ends of the bars 11 which have their rear ends connected to the inner ends of the gangs in the usual manner. To the underface of this slidable section is secured a draft attachment 12. To the seat support 7 is secured a bracket 13 from which extends ears 14 connected by a cross-bar 15. A double foot lever 16 is pivotally supported by the ears 14 and a bevel gear 17 has a fixed connection with the double foot lever. A bevel gear 18 is supported by the cross-bar 15 and meshes with the bevel-gear 17 on the double foot

lever. A screw-threaded shaft 19 has one end fixedly connected to the bevel-gear 18, and the screw-threaded section of the shaft 19 has an engagement with the ear 20 rising from the slidable section 9.

The driver located in the seat 8 can rest his feet on the arms of the double foot lever 16 and rotate the foot lever which will rotate the shaft 19 through the bevel gear connection. In rotating this shaft in one direction the slidable section 9 will be moved rearward which will move the inner ends of the gang sections rearward thereby angling the gang sections with respect to each other as shown at Fig. 1. By revolving the double foot lever in the opposite direction, the gang sections will be moved in alinement for transportation to and from the field. By the employment of the shaft, the gang sections will be held against movement in any of their adjusted positions.

I claim as my invention.

1. In a revolving harrow, the combination of a frame, two gang sections pivotally connected with the frame, a tongue connected with the frame, a bracket slidably connected with the tongue, connections between the bracket and gang sections, a foot lever, and a screw-shaft connection between the foot lever and bracket.

2. In a revolving harrow, the combination of a frame, two gang sections pivotally connected with the frame, a tongue connected with the frame, a bracket slidably connected with the tongue, connections between the bracket and gang sections, a foot lever, a screw-shaft having one end connected with the bracket, and gearing forming a connection between the shaft and foot lever.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEWIS E. WATERMAN.

Witnesses:

A. D. BEHEL,
E. D. E. N. BEHEL.