



No. 8282/32.

APPLICATION DATED

15th July, 1932.

Applicant (Actual Inventor) .. .. ANDREW BROUGH MILNE.  
 Application and Provisional Specification .. Accepted, 3rd August, 1932.  
 Complete Specification .. .. Accepted, 13th July, 1933.  
 Acceptance Advertised (Sec. 50) .. .. 27th July, 1933.

**Class 31.2.**

*Drawing attached.*

COMPLETE SPECIFICATION.

**“Gearless agricultural chipper.”**

I, ANDREW BROUGH MILNE, Manufacturer, of North Side, Mackay, in the State of Queensland, Commonwealth of Australia, hereby declare this invention and the manner in which it is to be performed to be fully described and ascertained in and by the following statement:—

This invention relates to the destruction of weeds on agricultural ground by chipping the surface of the soil, and it consists in a simple agricultural implement whereby this operation may be performed.

The implement comprises a wheel supported frame adapted for animal or mechanical traction or progression and also adapted to be raised and lowered in and by any suitable manner and known means for the purpose of raising the chipping elements (hereinafter described) clear of the ground or bringing them into operative engagement therewith.

The chipping elements consist of a series or several series of radial arms or spokes fitted in wheel formation in a hub or hubs rotatable on a shaft so disposed that the plane of rotation is oblique to the line of travel of the machine thus providing a chipping effect, the ends of the spokes which contact with the ground when in operation being formed in any suitable way to this end. The hub or hubs is or are free to revolve

upon the shaft, the rotation being effected by contact or penetration of the ends of the spokes with or in the soil as the machine progresses.

In the preferred form of machine two spoked hubs or two sets of same are arranged on opposite sides of the centre of the machine and at opposite angles, this arrangement counteracting any tendency to side drift which might occur if all the spoked hubs were arranged to rotate in parallel planes.

To fully explain the invention reference will now be made to the accompanying drawings depicting a machine or implement embodying this invention in its preferred form and adapted for animal traction. In the drawings,

Fig. 1 is a plan view, and  
 Fig. 2 a sectional side elevation.

The machine as depicted comprises a frame composed of side members 1, 1 and a pole 2. This frame is fitted with an axle 3 having cranked ends 3<sup>1</sup> on which are freely mounted wheels 4, 4, the axle being arranged for rotation by means of a lever 5 co-operating with a quadrant 6 so that the frame as a whole may be raised or lowered. On the pole is fitted a driver's seat 7.

Supported centrally as at 8 on the rear end of the pole 2 and at its ends respectively

in the rear ends of the frame members 1, 1, is a bent shaft 9 on which are mounted two sets of hubs 10, 10 each hub being fitted with spokes or tilling arms 11, 11. These hubs 5 are free to rotate on the shaft and may rotate separately or those constituting a set may be arranged to rotate in unison as by the insertion of a dog-key 12 between contiguous hubs.

10 An obvious alternative to the one continuous shaft 9 as shown, is to form the shaft in two separate sections.

For transport purposes the frame is raised by manipulation of lever 5 so that the spokes 15 11 are clear of the ground as shown in full lines in Fig. 2, but in operation the frame is lowered to bring the ends of the spokes into operative contact with the ground surface. The frame may be lowered to the extent of lifting the wheels 4 clear of the ground so that the machine is supported by and travels on the spokes which owing to the obliquity of the plane of rotation effect the required "chipping" of the soil.

25 It will be observed that there are no gears, the rotation of the spoked hubs resulting from progression of the machine.

Having now fully described and ascertained my said invention and the manner in which it is to be performed, I declare that 30 what I claim is:—

1. A gearless agricultural chipping implement adapted for traction or self-propulsion, comprising a frame and supported thereon 35 one or more rotatable hubs fitted with radial spokes each terminally formed to chip the soil on contact therewith, the plane of rotation of said hubs and spokes being oblique to the line of travel of the implement.

40 2. An implement according to Claim 1 hereof in which the frame is equipped with ground wheels and is capable of being raised or lowered for the purpose set forth.

3. A gearless agricultural chipping implement adapted for traction or self-propulsion, comprising a frame equipped with ground wheels, supported on said frame a shaft which for part of its length is set obliquely 5 to the line of travel of the implement, on the oblique portion of said shaft one or more rotatable hubs fitted with radial spokes terminally formed to chip the soil on contact therewith, and means for raising and lowering 10 the frame so that said spokes may be removed from contact with the ground or brought into operative contact therewith.

4. An implement according to Claim 3 hereof, including in addition a spoked hub or 15 set of spoked hubs arranged obliquely and at an opposite angle to that or those referred to in Claim 3.

5. A gearless agricultural chipping implement including two sets of radially spoked 20 hubs arranged respectively as shown in the drawings and adapted to operate as set forth.

6. A gearless agricultural chipping implement adapted for traction or self-propulsion, comprising in combination a frame, an axle 25 with cranked ends, ground wheels fitted on said cranked ends, a shaft with portions of it disposed obliquely to the line of travel of the implement, two sets of rotatable hubs 30 of said shaft, radial spokes fitted to each hub, and means for raising and lowering the frame, all substantially as herein described and shown and adapted to operate as set forth. 35

Dated this 13th day of April, A.D. 1933.

ANDREW BROUGH MILNE,

By his Patent Attorney,

STURT GRIFFITH, B.E.

(Griffith, Hassel & Griffith). 40

Witness—M. Biggs.

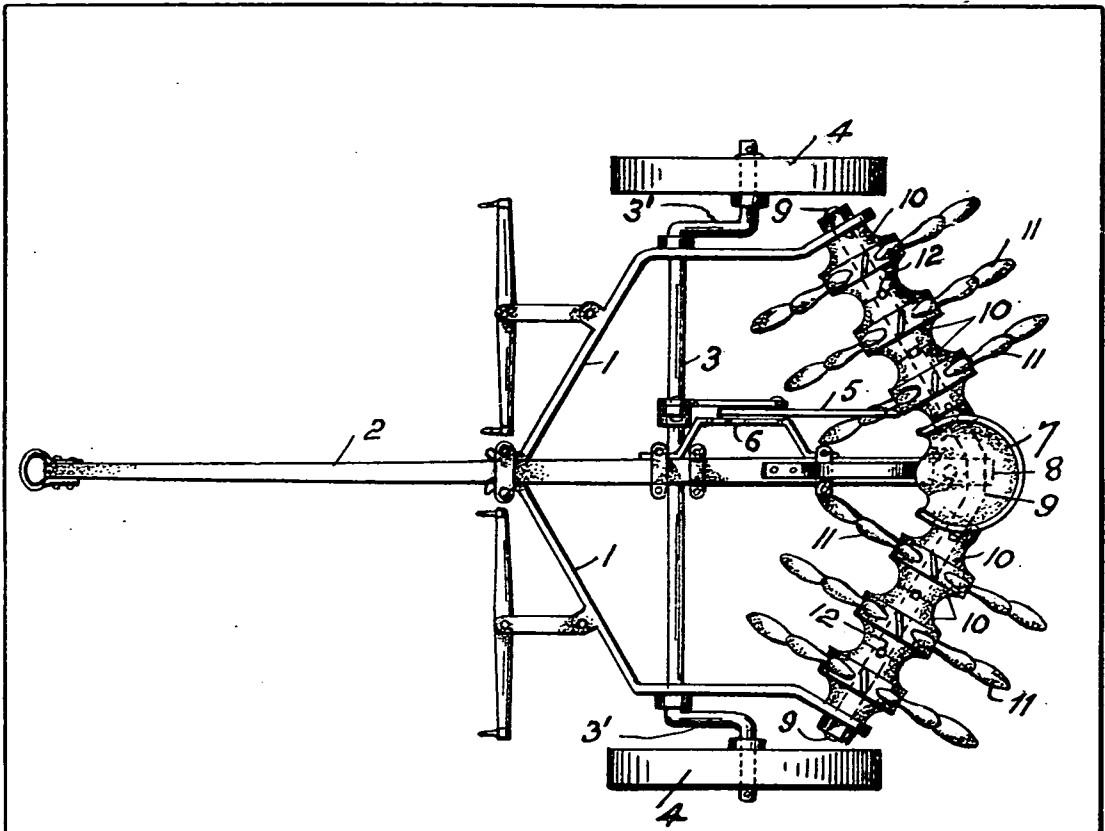


Fig. 1.

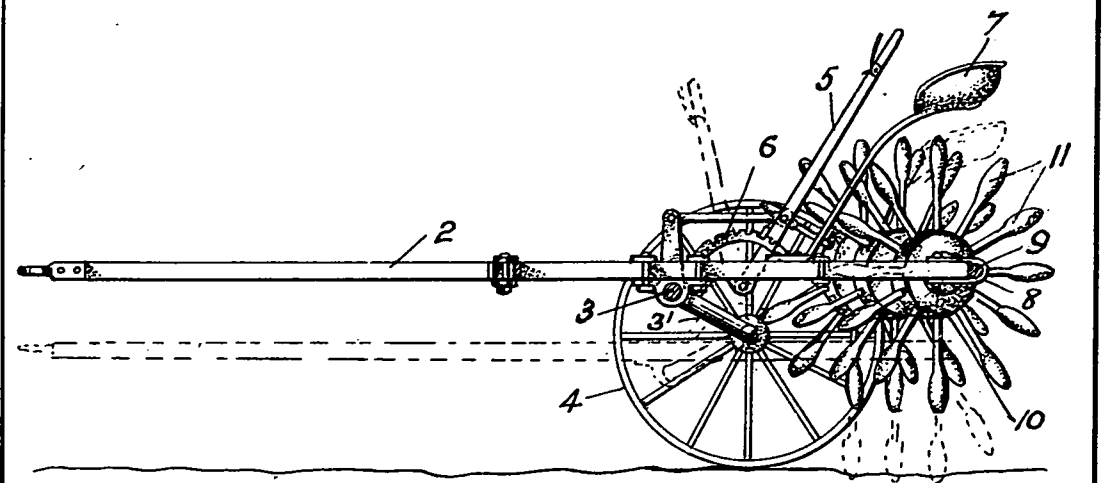


Fig. 2.