

TOBY & BARCALO.

Harrow.

No. 84,656.

Patented Dec. 1, 1868.

Fig. 1.

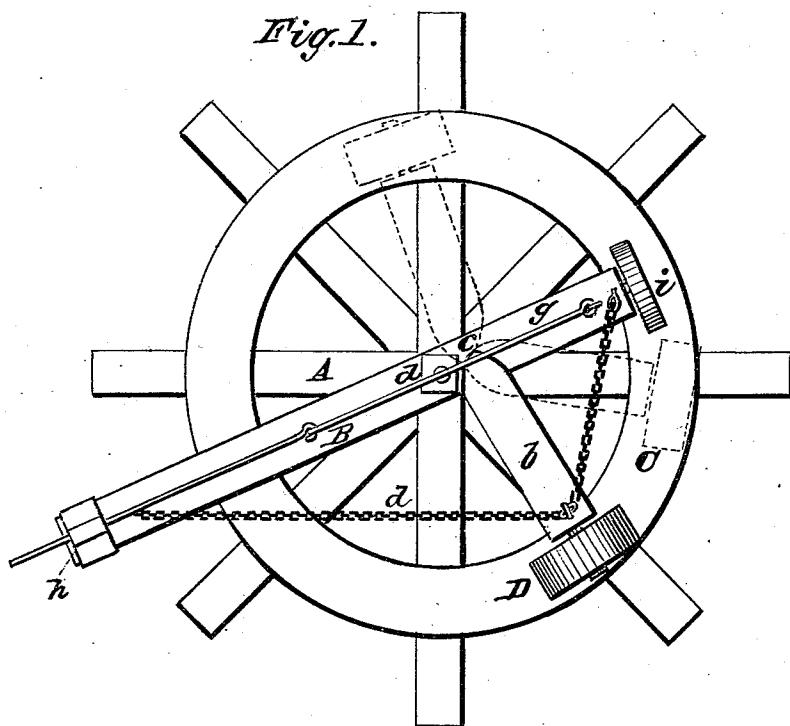
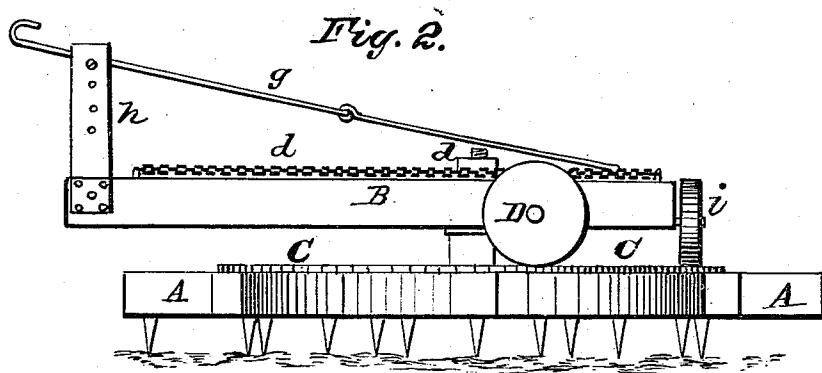


Fig. 2.



Witnesses:

B. F. Bogard  
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Inventors:

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WILLIAM R. TOBY, OF NUNDA, AND MYRON J. BARCALO, OF MOUNT MORRIS, NEW YORK.

*Letters Patent No. 84,656, dated December 1, 1868.*

IMPROVEMENT IN REVOLVING HARROWS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that we, WILLIAM R. TOBY, of Nunda, and MYRON J. BARCALO, of Mount Morris, in the county of Livingston, and the State of New York, have invented certain new and useful Improvements in Revolving Harrows; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan, and

Figure 2, an elevation.

Like letters of reference indicate corresponding parts in both figures.

Our improvement is of that class where the revolving motion is produced by a weight resting on one side; and

The invention consists in attaching the weighted roller to a slack chain in such a manner that the roller can be adjusted forward or back, at pleasure, and be allowed a degree of flexibility or vertical play in passing over rough ground, without becoming displaced.

It also consists in the combination of a draught-rod with the friction-roller and beam, for obviating the great friction at the rear, and producing a more equable draught.

In the accompanying drawings,

A indicates the frame;

B, the beam, which is pivoted at *a* to the frame; and

C, the circle-track, for the weighted roller D to run upon.

The arm *b* of the roller D is swivel-jointed at *c*, (or at *a*, if preferred,) to the beam, so that the roller can be easily swung over to either side of the harrow, as may be desired, as shown in black and dotted lines.

To the slack chain *d* (which is secured at its opposite ends to the beam B) is attached at any point, forward or back, the arm *b* of the weighted roller.

The attachment is made by means of any suitable link-connection that is easily disconnected, so that the roller can be easily adjusted forward or backward, (red

lines) to increase or diminish the amount of revolving motion, the slack of the chain allowing such adjustment.

The chain *d* not only allows the adjustment of the roller horizontally, but also allows it a degree of flexibility or vertical play without being thrown over to the opposite side, or becoming displaced. This is of much importance on rough ground, where the jar would otherwise throw the roller over.

At the rear end of the beam B is secured the end of a draught-rod, *g*, which extends forward on an incline, as shown in fig. 2, with its front end resting in a gauge-bearing, *h*, for adjusting it up or down.

Where the draught is applied directly to the front end of the beam B, the tendency is to produce a great amount of friction at its rear, and thereby retard the free revolving motion of the harrow.

By the employment of this draught-rod the strain upon the rear friction-roller *i* is entirely obviated, by equalizing the draught on both sides of the centre, in such a manner as to keep the beam B evenly balanced, and thereby facilitating the easy working of the parts.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the slack chain *d* with the weighted rollers D, arm *b*, and beam B, arranged as described, and operating substantially as and for the purpose described.

2. The draught-rod *g* and gauge-bearing *h*, in combination with the beam B and friction-roller *i*, arranged and operating substantially as and for the purpose herein set forth.

In witness whereof, we have hereunto signed our names, in the presence of two subscribing witnesses.

WILLIAM R. TOBY.  
MYRON J. BARCALO.

Witnesses:

R. F. OSGOOD,  
ALBERT HAIGHT.