S. W. Moore.

Bean Harvester.

No 66034 Patented Jun. 25, 1867.

Witnesses

J. A. Davis

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Inventor

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SYLVESTER W. MOORE, OF ALBION, NEW YORK.

Letters Patent No. 66,034, *dated June* 25, 1867.

IMPROVEMENT IN BEAN-PULLER.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SYLVESTER W. MOORE, of Albion, in the county of Orleans, and State of New York, have invented certain new and useful Improvements in Bean-Pullers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a plan of my improved machine.

Figure 2, a vertical section of the same.

Figure 3, an end view of a portion of the slatted roller for pulling the beans.

Figure 4, a diagram showing the arrangement for raising and lowering the slatted roller.

Figure 5, a view of one of the shields covering the sliding-bars.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in an adjustable roller for pulling the beans, provided with stationary and sliding slats or bars, having projecting teeth, those of the fixed slats catching the beans, and those of the sliding slats shutting down and intermatching with the others for retaining a firm hold upon the stalks. It further consists in a peculiar arrangement of parts for raising and lowering the slatted roller and retaining it in place, as hereinafter set forth.

As represented in the drawings, A is a main frame, mounted on driving-wheels B B; and C is the axle, bent upward from the sides of the frame, and supporting the driver's seat D. The inner sides of the wheels are provided with spur-gears 1 1, with which gear pinions 2 2, fig. 4, situated on the ends of a shaft, E. The ends of the shaft rest in arms H H, which have their bearings on the axle C, so as to be concentric with the spur-gears, and, therefore, keep the pinions and cog-wheels 1 2 in gear to whatever height they may be raised. To the shaft E is rigidly fixed a roller, I, consisting of two heads *a a*, connected by fixed slats or bars *b b b*, which are bound to the heads by encircling rings *c c*, as clearly shown in figs. 2 and 3. In the spaces *d d*, between the rings and heads, rest movable slats *f f f*, similar in form to the others, and capable of sliding in either direction. At suitable distances apart, to correspond with the rows to be pulled, the fixed slats are provided with fixed teeth *g g*, pointing in the direction of the motion of the machine. The sliding bars are also provided with teeth *g' g'* at corresponding positions, but which point in the opposite direction. I prefer to hinge or joint these teeth at *h*, so that when the bars are rising, as at the right hand, fig. 2, the teeth will be thrown out or extended; but when the bars are falling, as at the left hand, the teeth are thrown over or hang down inside. The action of this arrangement will be readily understood. The roller revolves in the direction of the arrow, fig. 2. The teeth *g*, projecting forward, catch the stalks of the beans beneath the tops, and draw them from the earth. When the fixed bars are in the position to begin to draw on the beans, the sliding bars become so elevated as to fall of their own weight, when their teeth *g'* close and intermatch, as shown at the right hand, fig. 2, and in this condition the beans are closely clasped and cannot, by any possibility, get disengaged during the upward motion. As soon as the sliding bars reach the opposite or down incline, at the left hand in fig. 2, they fall down of their own weight, thus releasing the stalks; and at the same time the hinged teeth drop or hang inward, thus leaving the outward passage open. The motion of the roller and their own weight will then cause the beans to be thrown outward and discharged on to an inclined board, K, when they are finally deposited on the ground.

The hinging or jointing of the teeth *g'*, so as to fall out of the way in coming over, to allow an unimpeded discharge of the beans, is of much importance, for otherwise the beans might catch and be carried around and clog the slats. The roller is provided with ledges or guards *i i*, extending from head to head, and so arranged that as the slats rest back, as in fig. 5, they fall in behind the said ledges, which cover their outer surface. Thus, as the slats are carried around to the beans, they are shielded, and therefore are not liable to be pushed forward in contact with the fixed bars by sticks or other obstructions before the proper time. These guards or shields are essential to the proper working of the bars. To the lower ends of the arms H H are attached connecting-rods L L, passing forward and attaching in a similar manner to disks or crank-arms M M, secured to the ends of a shaft, N. This shaft is provided with a bail or lever, O, within reach of the operator, who, throwing it in opposite directions, can raise or fall the pulling roller, as will be obvious on examination. To

the shaft N is jointed a treadle, P, to turn freely; and to the forward end of this treadle is secured a cross-rod, Q, connecting at its ends with pawls *l l*, which are pivoted at *m*. These pawls connect with ratchet-wheels *n n*, made fast to the shaft N. The front end of the treadle is made to overbalance, and therefore keep the pawls in engagement with the ratchet-wheels, and thus retain the gathering-roller at any desired height in operation. But, at the same time, the driver has it in his power to instantly adjust higher or lower by simply pressing his foot on the treadle, which raises the pawls and gives him a free control of the adjusting movement of the roller by the use of his hands. I am not aware that this treadle movement has ever before been combined with the hand movement for raising and lowering the roller. A stop-rod, T, is employed on each side to prevent the roller from being thrown back too far.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the fixed and sliding bars *b f*, armed with intermatching teeth *g' g'*, operating substantially as and for the purpose herein set forth.

2. Hinging or jointing the teeth *g'*, in the manner and for the purpose specified.

3. The employment of the guides or shields *i*, in combination with the sliding bars *f*, for the purpose set forth.

4. The arrangement of the treadle P, rod Q, pawls *m*, and ratchet-wheels *n n*, in combination with the disks or cranks M, connecting-rod L, and arms H, operating to adjust and retain the roller, as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

S. W. MOORE.

Witnesses:

R. F. OSGOOD,

J. A. DAVIS.