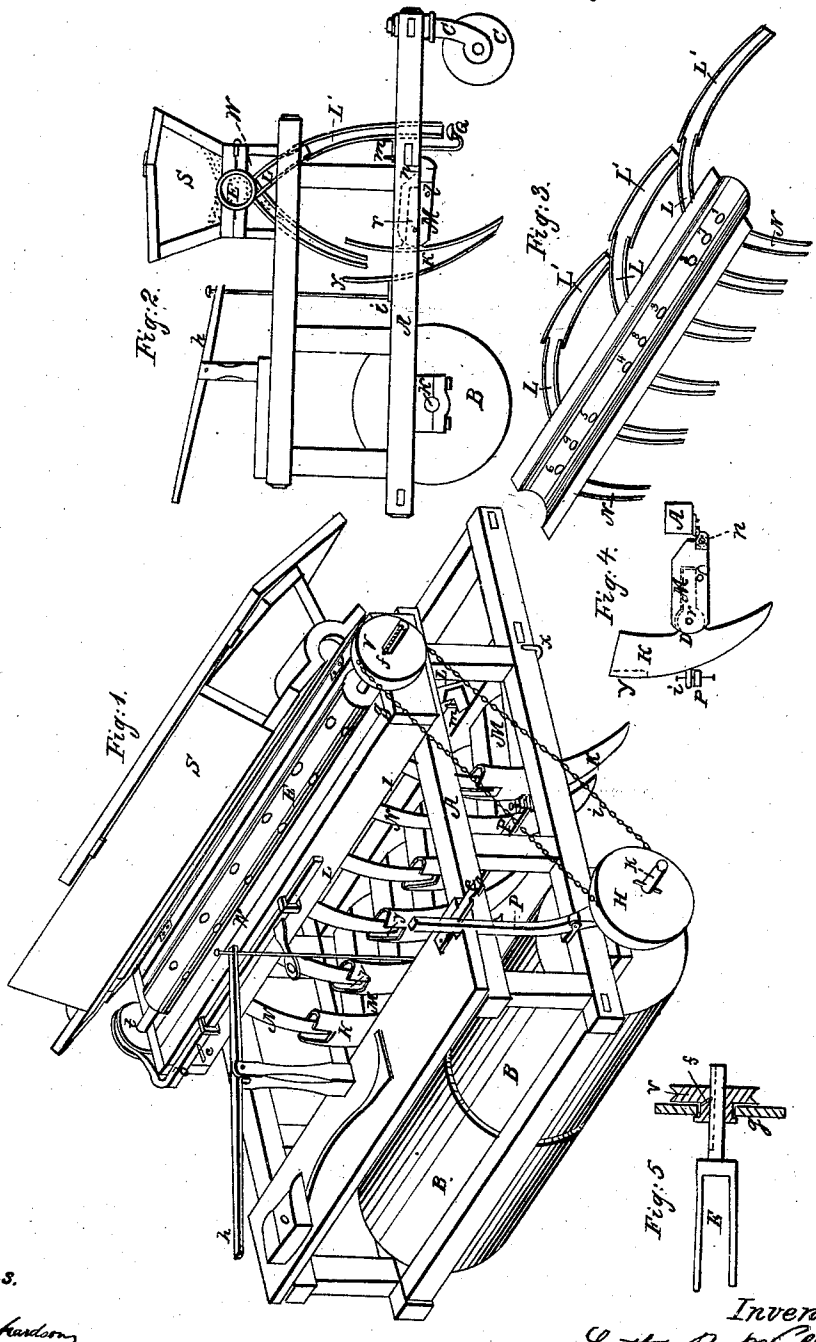
L. R. WALLACE.

Grain Drill and Roller.

No. 78,846. Patented June 9, 1868.



Witnesses.

James H. Cole

Edmond Richardson

Inventor.

Luther R. Wallace.

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United States Patent Office.

LUTHER R. WALLACE, OF ADRIAN, MICHIGAN.
Assignor to Self, Richard B. Robbins & Nelson B. Tassett of the same.

Letters Patent No. 78,846, *dated June* 9, 1868.

IMPROVEMENT IN SEEDER, DRILL, AND ROLLER.

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, LUTHER R. WALLACE, of Adrian, county of Lenawee, and State of Michigan, have invented a new and useful Improvement in a Combined Seeder, Drill, and Roller; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, in which—

Figure 1 is a perspective view of a combined seeder, drill, and roller, embodying my invention.

Figure 2 is a vertical section, and shows the relative position of the seeder, drill, and roller.

Figure 3 is a perspective view of the concave seat for the seed-cylinder.

Figure 4 is a side view of one of the drill-teeth, and of the mode of attaching it to a wooden beam.

Figure 5 is a sectional view of the seed-cylinder, its journal, box, and driving-pulley.

A is the frame of the machine.

B B, the rollers.

C and C′, respectively, a pulley and revolving standard, to hold up the forward end of the machine.

E is the seed-cylinder.

I is the chain or rope belt.

L is the upper, and L′ is the lower part of the broadcast-tubes.

K are the drill-teeth.

M is the beams of the drill-teeth.

N is the drill-tubes.

S is the hopper.

V is the driving-pulley.

H is the chain-pulley.

W is the concave.

P is the cross-bar to elevate the drill-teeth out of the ground.

Y is the perpendicular slot in the upper ends of the drill-teeth.

a is the shift-handle.

b is the shift-lever.

t is the shift-pulley.

h is the lever to elevate the cross-bar P, which raises the drill-teeth.

i is the boss on the back of the drill-teeth, and connects with the cross-bar P.

f is a feather in the driving-pulley V, to prevent it from turning on the shaft of the seed-cylinder E.

m is a small elbow, to stay the lower end of the broadcast-tubes L′.

n is an iron rod running crosswise of the machine, through the eye of each beam of the drill-teeth, and through iron loops, bolted at suitable intervals on the under side of one of the cross-pieces of the frame of the machine.

1 is a wooden safety-pin, to hold the wooden beams M in their proper position with reference to the drill-teeth K.

T is a hand-lever, by which the chain-pulley H may be thrown into or out of gear with a grapple on the shaft of the rollers.

r is an iron pin, which holds the tongue D of the drill-teeth in the slot in the under side of the beams M.

q is a distributer for scattering the seed when sowing broadcast.

D is a tongue or projection of the drill-teeth, which extends lengthwise in a slot made for the purpose in the under side of the beam M.

o is a seat for the operator.

The seed-cylinder E is a round hollow tube, made of sheet or cast iron, or of any other suitable material, and is perforated with holes bored in rows around the cylinder, the rows to be spaced off equal to the spaces

between the drill-teeth. The cylinder turns upon pivots, one of which carries the shift-pulley *t*, and the other the driving-pulley V. The cylinder is then placed, as shown in fig. 1, in the pit of the concave, W, which is also perforated with holes, 1 2 3 4 5 6, equal in number, size, and distance apart to those in the cylinder. These holes form the outlets into the drill-tubes N from the interior of the cylinder E. The concave is also perforated with three other holes, 7 8 9, similar to those in the cylinder. These holes form the outlets into the broadcast-tubes L and L′.

A chain or rope belt, I, runs from the driving-pulley V around the chain-pulley H, to impart a rotary motion to the seed-cylinder E, so that when the machine is drawn along, and the hopper S filled with the seed to be sown, the latter works its way to the interior of the cylinder through the holes in it, and thence (according to the position of the shift-handle *a*,) either through the outlets 1 2 3 4 5 6, and tubes N and drill-teeth K, into the earth in drills, or through the openings 7 8 9, and broadcast-tubes L and L′, upon the distributer *q*, whence it falls in broadcast to the earth.

The spaces between the holes being as great as the diameter of the holes, it follows that the seed can never enter both drill and broadcast-tubes at the same time, but will enter those in communication with the interior of the cylinder E, which, by means of the shift-handle *a*, is capable of being brought at pleasure in communication with either set of tubes.

Should you ever wish to grade the amount of seed drilled in or sown broadcast, you have only to proportionately close the passages into the drill-tubes or broadcast-tubes, which is done by the shift-handle *a*, which moves the seed-cylinder E lengthwise along the pit of the concave, W, thus causing the passages to be partially closed, and in that proportion grading the amount of seed sown.

The driving-pulley V is feathered on the shaft of the seed-cylinder, to prevent it from turning on the shaft, and the chain-pulley H may be moved laterally, by the hand-lever T, out of or into gear, with a grapple on the shaft of the rollers B B, so as to remain without revolving or to turn with the shaft.

The drill-teeth K may be, when desired, elevated out of the ground by the lever *h*. They are held to their beams by the tongue D, which fits into the slots made for that purpose in the under side of the beams. An iron pin, *r*, and a wooden pin, 1, hold the tongue in the slot, the design of the safety-pin 1 being to prevent the breaking of the drill-teeth by the giving way of this wooden pin when the point of the teeth comes in contact with roots, or other obstructions.

There is also a slot, Y, in the upper end of each drill-tooth, to allow this end to pass forward by the tubes N, if the safety-pin should break, and thus avert all danger of accident to that tube. Another object of the slot Y is to enable the operator, while sitting upon the seat *o*, to discern whether or not all the tubes N are performing their functions. I design using the drill-teeth either with or without shovel-points.

One of the rollers is made fast upon the shaft in order to carry the chain-pulley H, while the other roller turns freely upon the shaft, so as to render it more easy to turn the machine around.

As it is not always desirable to roll the ground after sowing it, I have designed the using of temporary wheels in place of the rollers B B, when not wanted, the wheel-shaft to be supplied with a chain-pulley, to drive the seed-cylinder, the same as the shaft of the rollers.

The rollers are made to be readily detached from the frame of the machine, and the wheels substituted in their stead, and *vice versa*. I design, also, using any number of drill-teeth and broadcast-tubes which may be found desirable.

I do not claim the invention of anything new in the simple combination of the drill and broadcast-sower; but

What I do claim as new is—

1. The employment of one hopper and one cylinder, or their equivalent, to supply both drill and broadcast-sower with the seed to be sown, the whole arranged in front of the rollers B B, substantially as set forth and described.

2. The hollow adjustable seed-cylinder E, in combination with the concave, W, broadcast-tubes L, and drill tubes N, substantially as set forth and described.

LUTHER R. WALLACE.

Witnesses:

A. W. BENEDICT,

W. R. EVANS.