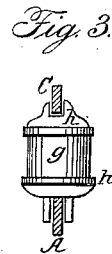
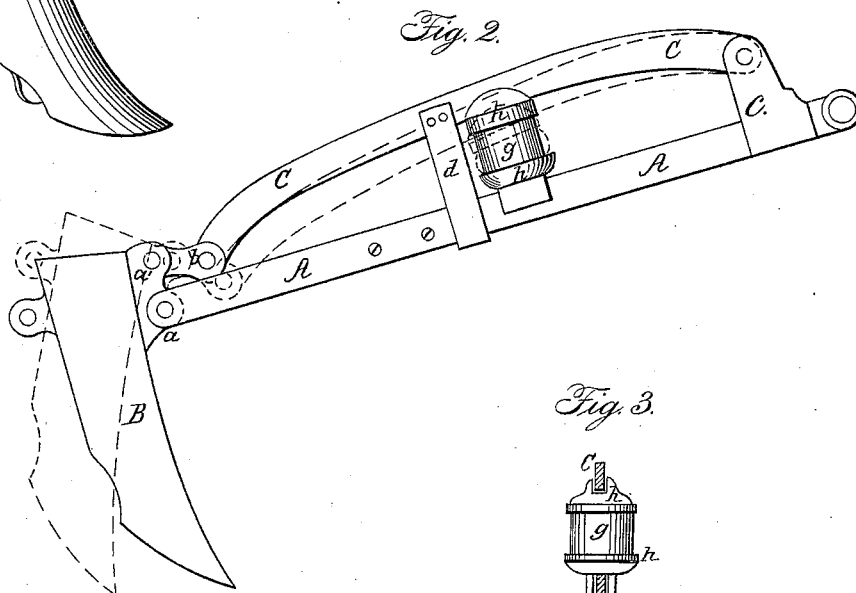
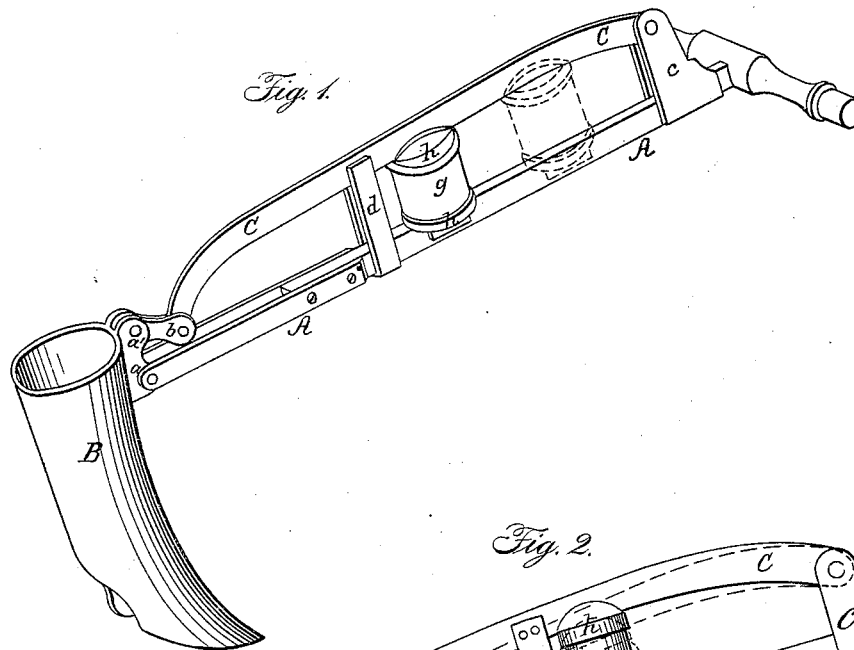


G. M. MURPHY.

Seed-Drill Teeth.

No. 47,153.

Patented Apr. 4. 1865.



Witnesses:

*R. F. Campbell*  
*E. Schafer*

Inventor:

*Griffith M. Murphy*  
*by his Atty*  
*Mason, Hewick Lawrence*

# UNITED STATES PATENT OFFICE.

GRIFFITH M. MURPHY, OF LEWISBURG, PENNSYLVANIA, ASSIGNOR TO  
LYMAN S. PAINE, OF SAME PLACE.

## IMPROVED SEED-DRILL.

Specification forming part of Letters Patent No. **47,153**, dated April 4, 1865.

*To all whom it may concern:*

Be it known that I, GRIFFITH M. MURPHY, of Lewisburg, Union county, State of Pennsylvania, have invented a new and useful Improvement in Seed-Drills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view, showing my improved mode of attaching a drill-tooth to its drag-bar. Fig. 2 is a side elevation of Fig. 1, showing the tooth in two positions. Fig. 3 is a cross-section through the drag-bar and lever, showing the mode of applying a transferable spring thereto.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and useful improvement in applying springs to the teeth of seed-drills, so that should these teeth strike any obstruction in their path they will yield and pass over the obstruction instead of breaking or deranging any of the parts of the machine.

The object which I desire to attain by my invention is to so apply the springs that the power required to throw the teeth out of working position may be increased or diminished at pleasure; also, to so apply said springs that the greatest power of resistance of the teeth to an obstruction in their path shall be exerted at the moment of contact of the teeth with such obstruction, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the accompanying drawings, A represents the drag-bar, which is provided with any suitable contrivance on its forward end, by which it can be pivoted to the frame of a seed-drill.

B represents the tooth, which forms the drill and deposits the seed therein. This tooth, which may be constructed in any suitable manner, is pivoted by means of an ear, *a*, to the rear end of the drag-bar A, so that its lower end can have a forward and backward play or vibrating motion. Above the ear *a* is another ear, *a'*, to which a short link, *b*, is pivoted, and to the forward end of this link a curved lever, C, is pivoted, as shown clearly in Figs. 1 and

2. The forward end of the lever C is pivoted to a standard, *c*, which is secured rigidly to and projects from the upper edge of the drag-bar A. At an intermediate point between the pivoted ends of the lever C a loop, *d*, is secured to it, and encompasses the bar A in such manner as to serve as a guide and stop for said lever in its vibrating movements. Between the loop *d* and the fixed standard *c*, I apply a spring, *g*, which may be made of any suitable substance; but I prefer to use an india-rubber spring, such as I have represented in Figs. 1, 2, and 3. When a rubber spring, *g*, is employed it is compressed between two sliding cups or caps, *h h*, which are constructed in such manner as to keep the spring in place between them. Each one of the cups *h h* has a grooved projection secured to or formed on its outer surface for the purpose of receiving the lever C or bar A and allowing the spring to be moved in a longitudinal direction backward or forward between the two parts *d* and *c*. The object of this spring *g* is to thrust the lever C upward as far as the loop *d* will allow, and thus keep the tooth B in a working position under all ordinary circumstances; but when the point of said tooth meets with an obstruction in its path, which would be liable to break some part of the machine, said spring will yield and allow the lower end of the tooth to move backward and pass over the obstruction, and then by the recoil of the spring the tooth will be brought back to its former position.

In order to prevent the tooth B from casually falling back out of its working position the spring *g* is made adjustable, so as to shorten the fulcrum of lever C, and thus regulate the resistance of the spring according to the character of the soil or the resistance to be overcome. In some kinds of soil it will be necessary to increase the resistance of the tooth, which can be readily done by sliding the spring *g* toward the loop *d*; but where the soil is light and mellow the resistance of the tooth may be diminished by sliding the spring toward the forward end of the lever C. In whatever position the spring *g* may be placed it will allow the tooth to pass freely over any obstruction which would be liable to break the machine, and then retract the tooth to its former position.

As a further provision against the tooth yielding backward, should it meet with clods of earth, &c., which would not be liable to break the machine, and through which it is desired the tooth shall pass, I so arrange the pivot-joints which connect the tooth with the drag-bar A and the lever C that the greatest power of resistance of the tooth to an obstruction in its path shall be exerted at the moment of contact of the tooth with such obstruction, after which the force of the spring is diminished. To obtain this result the link *b* is introduced between the ear *a'* and the rear end of the lever C, so as to form the toggle-joint, which is shown in Figs. 1 and 2. The joints or pivots of this link-connection are allowed to arrange themselves nearly in a line parallel to the drag-bar A, when the tooth B is in a working position, and as the pivots recede from this position the resistance on the tooth diminishes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A sliding or transferable spring, *g*, whereby the power required to throw the drill-tube out of working position may at the will of the operator be increased or diminished, substantially as described.

2. The arrangement of the lever C entirely above the drag-bar A, substantially as described.

3. The combination of the drill-tooth B, drag-bar A, lever C, and spring *g*, substantially as described.

Witness my hand in matter of my application for a patent for improvement in seed-drills.

GRIFFITH M. MURPHY.

In presence of—

J. A. MERTZ,  
G. B. MILLER.