(No Model.)

W. H. TRAPHAGEN.

CULTIVATOR.

No. 327,358. Patented Sept. 29, 1885.

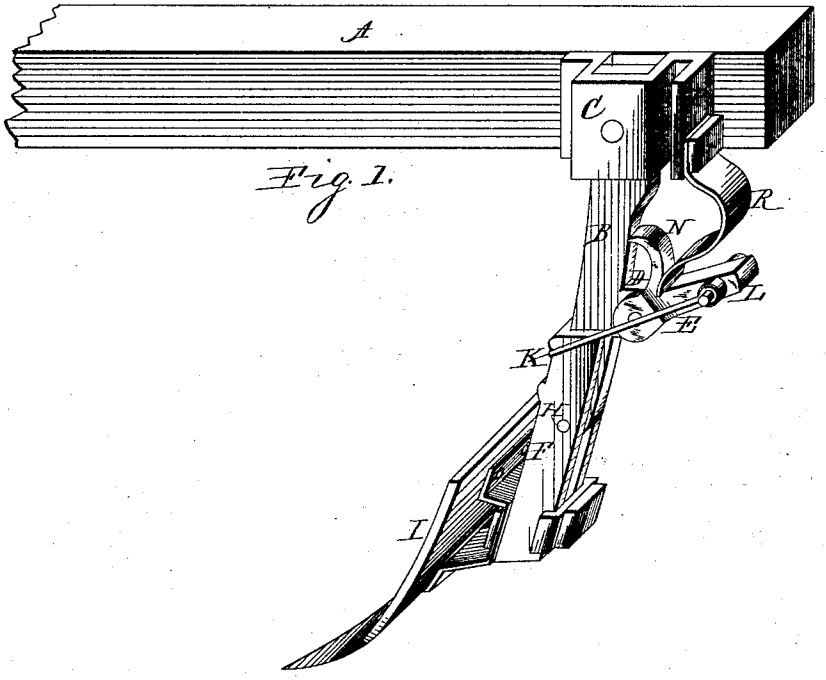


Fig. 1.

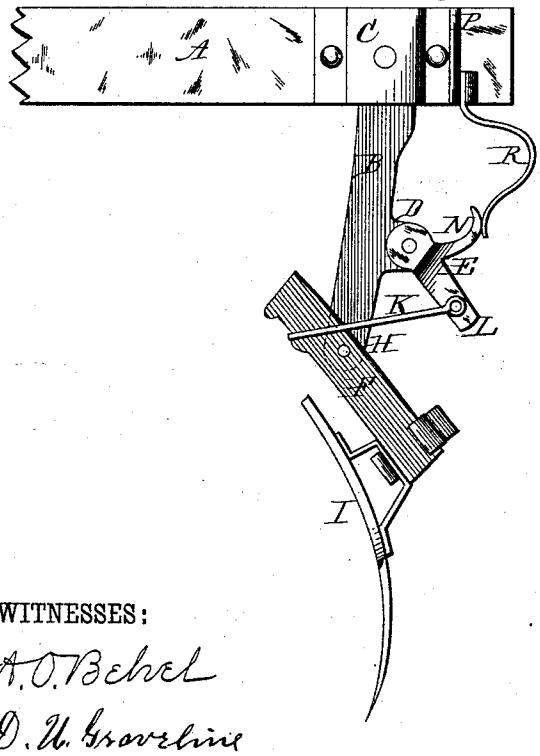


Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM H. TRAPHAGEN, OF ROCKFORD, ILLINOIS, ASSIGNOR TO EMERSON, TALCOTT & CO., OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 327,358, dated September 29, 1885.

Application filed December 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. TRAPHAGEN, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented new and useful Improvements in Cultivators, of which the following is a specification.

This invention relates to cultivators, but more particularly to the connection of the shovel with its standard-support.

The object of this invention is to produce a hinged connection of the shovel with its standard-support capable of yielding to override obstructions, and when liberated will return to its working position. To this end I have designed and constructed the apparatus represented in the accompanying drawings, in which—

Figure 1 is an isometrical representation of an apparatus embodying my invention, and Fig. 2 is a side elevation.

In the figures, A represents a portion of a drag-bar of a cultivator, having a shovel-standard, B, fixed to its rear end by means of a socket-bracket, C, fitted to receive the upper end of the standard, and suitable bolts to connect the bracket to the drag-bar, and a bolt to connect the standard to the bracket. The standard B is provided on its rear edge with a projecting ear, D, to which is pivoted a two-armed trip-lever, E.

At F is represented an extension of the shovel standard, in this instance produced in sleeve form, fitted to embrace the lower end portion of the standard B, with which it is pivotally connected at H in such a manner that its lower end will swing rearward.

A shovel, I, of the usual construction, is fixed in the usual manner to the lower end of the pivoted extension F of the standard. The upper end portion of the pivoted extension F is recessed on its front edge to receive a stirrup-loop, K, which embraces the pivoted extension and standard, and its rear end is pivotally connected to the free rear end portion of the arm L of the trip-lever.

The arm N of the trip-lever is curved to engage the rear edge of the standard B, to limit its movement in such a manner that the line of the stirrup between its end connections shall be slightly below the pivotal center of the trip-lever in its connection with the shovel-standard, making nearly a dead-center, but sufficiently removed therefrom to permit the shovel to yield when subjected to a strain that would otherwise injure the parts. The bracket C is fitted on its rear edge with an outward-projecting flange, P, to which is fixed a spring, R, suitably curved to bring its free end in contact with the outer convex face of the curved arm N of the trip-lever in such a manner that its spring-action operates to hold the parts in their working position, as shown in Fig. 1, with a force sufficient for the purposes of cultivation; but when the shovel encounters an obstruction subjecting the parts to undue strain or to a strain greater than necessary for the purposes of cultivation, the holding force of the spring will be more than counterbalanced by reason of the lever-connection of the parts, and the shovel will turn backward, as shown in Fig. 2, to override the obstruction without injury to the parts, and when the shovel is liberated by raising the drag-bar to lift it from the ground the action of the spring will return the parts to their working position.

From the foregoing it will be seen that the construction of my improved automatic safety-connection of the shovel with its standard-support is such that when the strain upon the shovel is sufficient to cause it to yield, the increased leverage arising from the changed position of the parts will permit the shovel to swing backward with comparative freedom, and when liberated will be carried to its working position with promptness. By this construction and arrangement of the parts I produce a reliable automatic or self-adjusting safety-connection of the shovel with its standard-support at a small cost. In this instance I have represented my improvement in connection with a shovel-standard and connected to a drag-bar; but evidently my improved self-acting safety-connection of the shovel is capable of use in connection with other forms of drag-bars, such as the curved iron drag-bar now in common use in cultivators, in which instance the standard-extension would be pivotally connected with the down-turned portion of the drag-bar.

I claim as my invention—

1. The combination, with a two-part standard having a hinged connection, of a spring-actuated trip-lever pivotally secured to the rigid portion of the standard, and formed with an arm which normally bears against the rigid portion of the standard and another arm connected by a stirrup with the lower section of the standard, which latter is recessed, substantially as set forth.

2. The combination, with the rigid portion of the standard, of a hinged extension whose front side is recessed to receive a stirrup or embracing-link, a spring-actuated trip-lever, and a stirrup connected to said lever, and adapted to have a limited sliding movement on the hinged extension of the standard, substantially as set forth.

WILLIAM H. TRAPHAGEN.

Witnesses:

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