

(No Model.)

S. O. HICKOK.
SPRING TOOTHED SULKY HARROW.

No. 270,067.

Patented Jan. 2, 1883.

Fig. 1

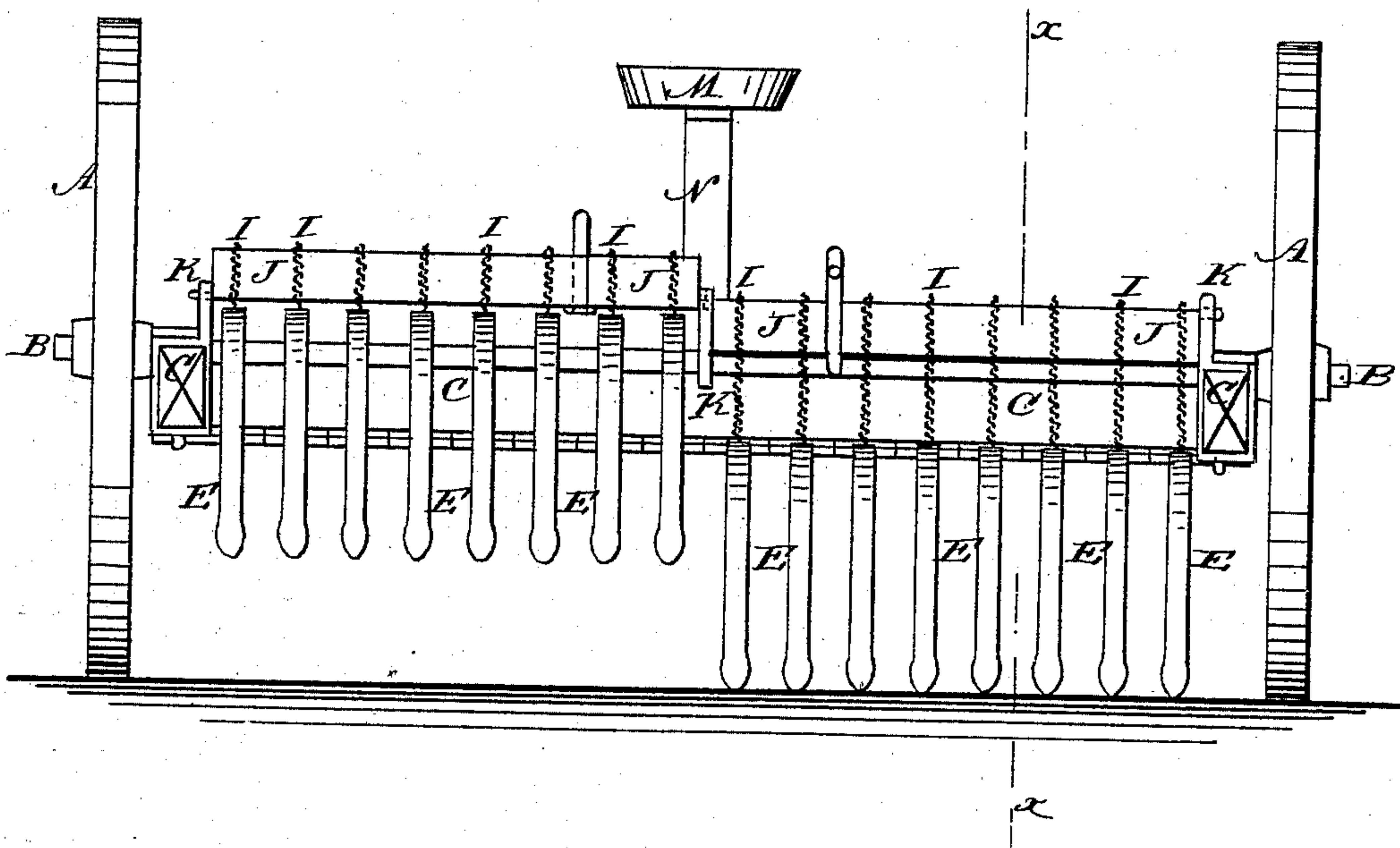


Fig. 2

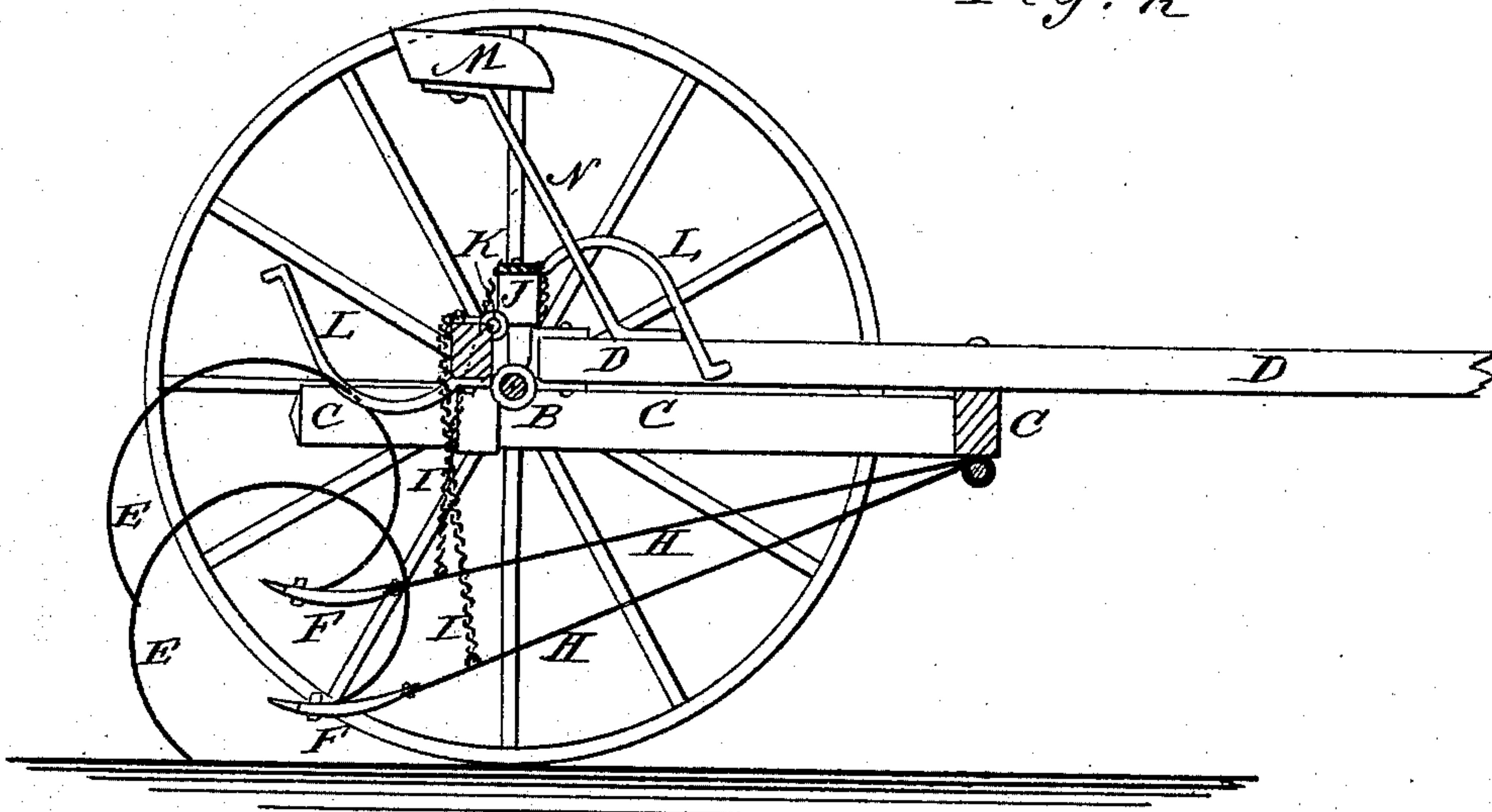
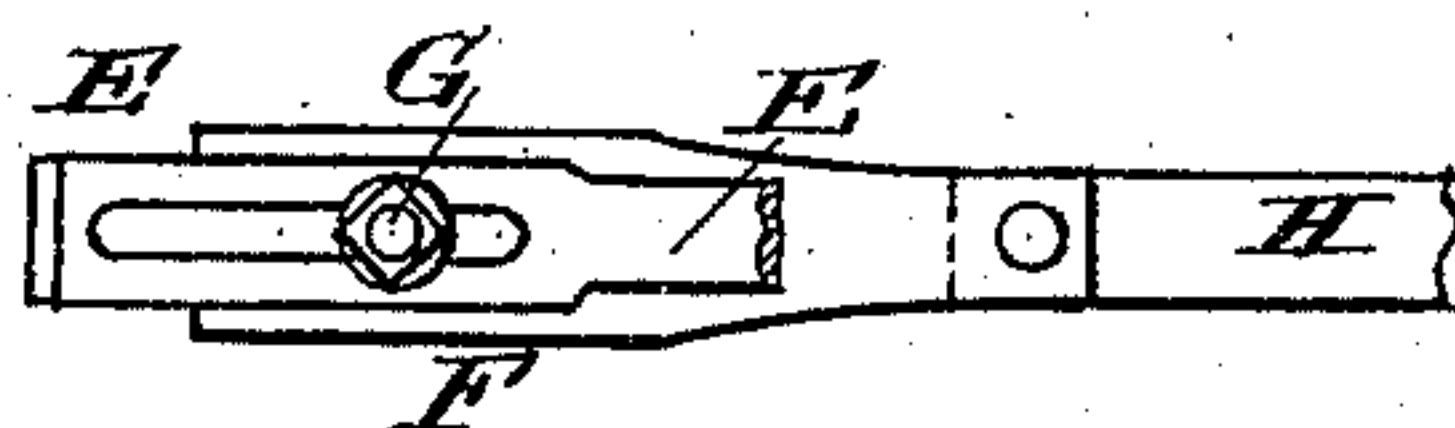


Fig. 3

WITNESSES:
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UNITED STATES PATENT OFFICE.

STEPHEN O. HICKOK, OF ALLEN, MICHIGAN, ASSIGNOR TO HIMSELF AND JOHN HERRING, OF SAME PLACE.

SPRING-TOOTHED SULKY-HARROW.

SPECIFICATION forming part of Letters Patent No. 270,067, dated January 2, 1883.

Application filed April 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN O. HICKOK, of Allen, Hillsdale county, Michigan, have invented a new and useful Improvement in Spring-Toothed Sulky-Harrows, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a rear elevation of my improvement, half of the teeth being shown raised. Fig. 2 is a sectional side elevation of the same, taken through the line *xx*, Fig. 1. Fig. 3 is a plan view of one of the shoes, the upper parts of the tooth and draw-bar being broken away.

The object of this invention is to promote convenience in using harrows, and also to facilitate the repairing of the harrows when worn.

The invention consists in a spring-toothed sulky-harrow constructed with curved spring-teeth attached adjustably to shoes that slide upon the ground, and are attached to draw-bars hinged to the carriage-frame. With the draw-bars are connected chains attached to bars pivoted eccentrically to the carriage, and provided with levers for raising and lowering the teeth, as will be hereinafter fully described.

A represents the wheels of the machine, to the axle B of which are attached the frame C and the tongue D, the said tongue being also attached to the front bar of the said frame C.

E are the teeth, which are bent into nearly circular form, as shown in Fig. 2, and are attached at their upper ends to the shoe F by one or more bolts, G. The tooth E is slotted or has two or more holes formed through it to receive the bolt or bolts G, so that the said tooth can be readily adjusted to work deeper or shallower in the ground, as the work to be done may require. The upper side of the shoe F is recessed to receive the tooth E and hold the said tooth against lateral movement. The lower side of the shoe F is designed to rest and slide upon the ground when the harrow is at work, and is rounded off to cause it to move over the ground easily.

To the forward end of the shoe F is secured by a bolt or other suitable fastening the rear end of the draw-bar H, the forward end of which is hinged to the front bar of the frame C, so that the harrow-tooth E will move up and down readily. With this construction the teeth will yield and rise should they strike an obstruction, and thus readily pass over the said obstruction. With this construction the teeth will conform to an uneven surface, so that all parts of the ground will be properly cultivated.

To the draw-bars H, near the shoes F, are attached the lower ends of chains I, the upper ends of which are attached to bars J. The bars J, each of which extends half across the machine, are placed end to end, and are pivoted eccentrically to supports K, attached to the frame C or axle B, so that the teeth E can be raised from the ground and lowered into working position by turning the bars J upon their pivots. To each of the bars J is attached a lever, L, by means of which the said bars are turned to raise and lower the teeth E. By this construction half the teeth E will be raised and lowered at a time. Any particular tooth can be raised at any time by taking hold of its chain I.

M is the driver's seat, the standard N of which is attached to the rear part of the tongue D, so that the levers L can be readily reached and operated by the driver from his seat. With this construction one or more of the middle teeth can be raised and the machine used for harrowing both sides of a row of plants.

When desired a grain-box can be attached to the forward part of the frame and the machine used as a broadcast seeder.

I am aware that drag-bars and adjustable spring-teeth have before been used in a manner similar to mine, as in Patent No. 258,081, and I do not claim the invention therein shown; but

What I claim, and wish to secure by Letters Patent, is—

1. In a sulky-harrow, the combination of drag-bars H, hinged at their forward ends, and provided with shoes F at their rear ends to slide

on the ground, with teeth adjustably secured to said shoes, so that said teeth may project more or less below the shoes into the ground, as shown and described.

- 5 2. The combination, with the drag-bar H and shoe F, of the curved spring-tooth E, slotted in its shank to slide on its fastening-

bolt for the purpose of setting it more or less deep in the ground below the drag-shoe F, as shown and described.

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Witnesses:

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