

(Model.)

H. L. BROWN.
Grain Drill.

No. 238,845.

Patented March 15, 1881.

Fig. 1.

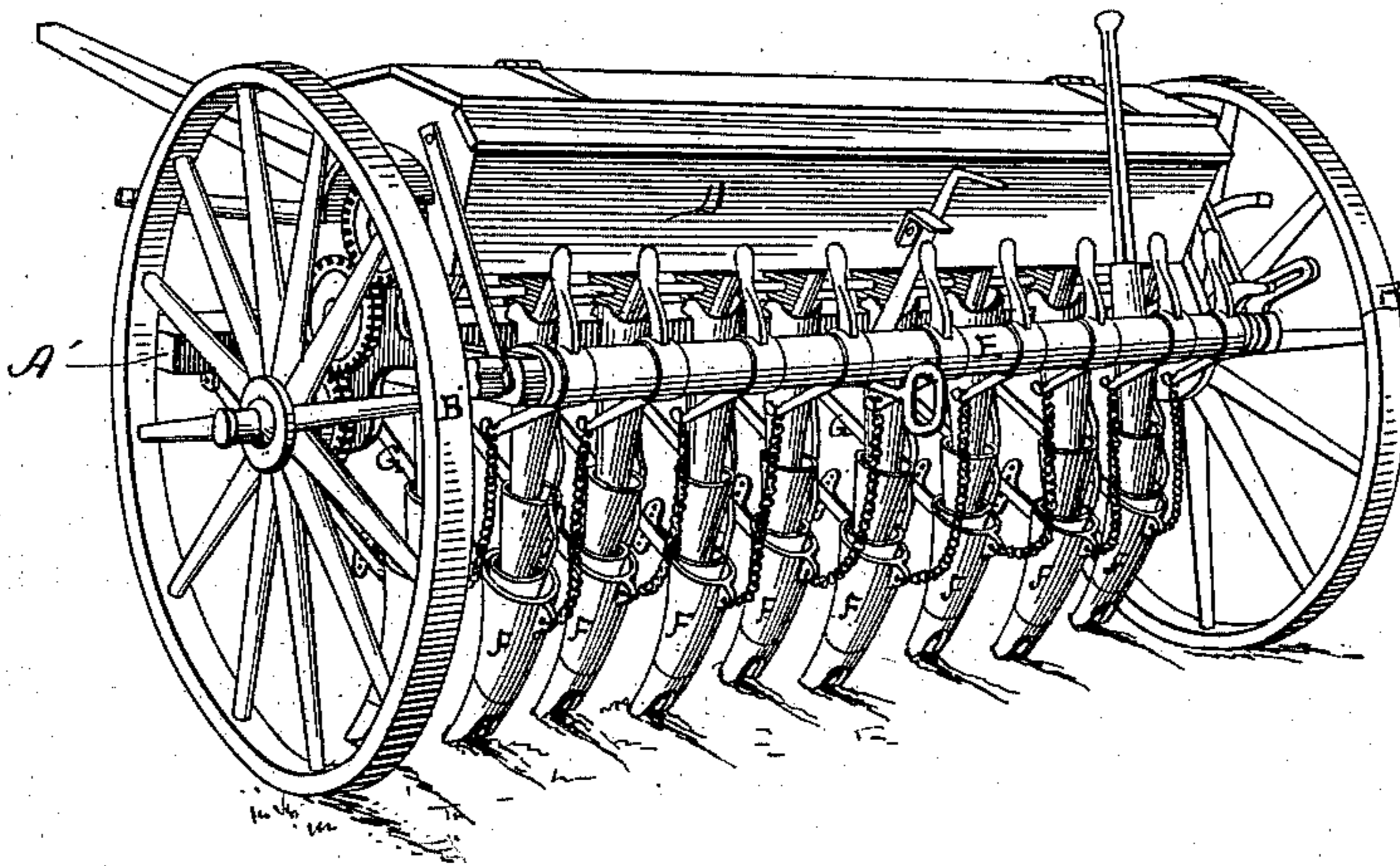
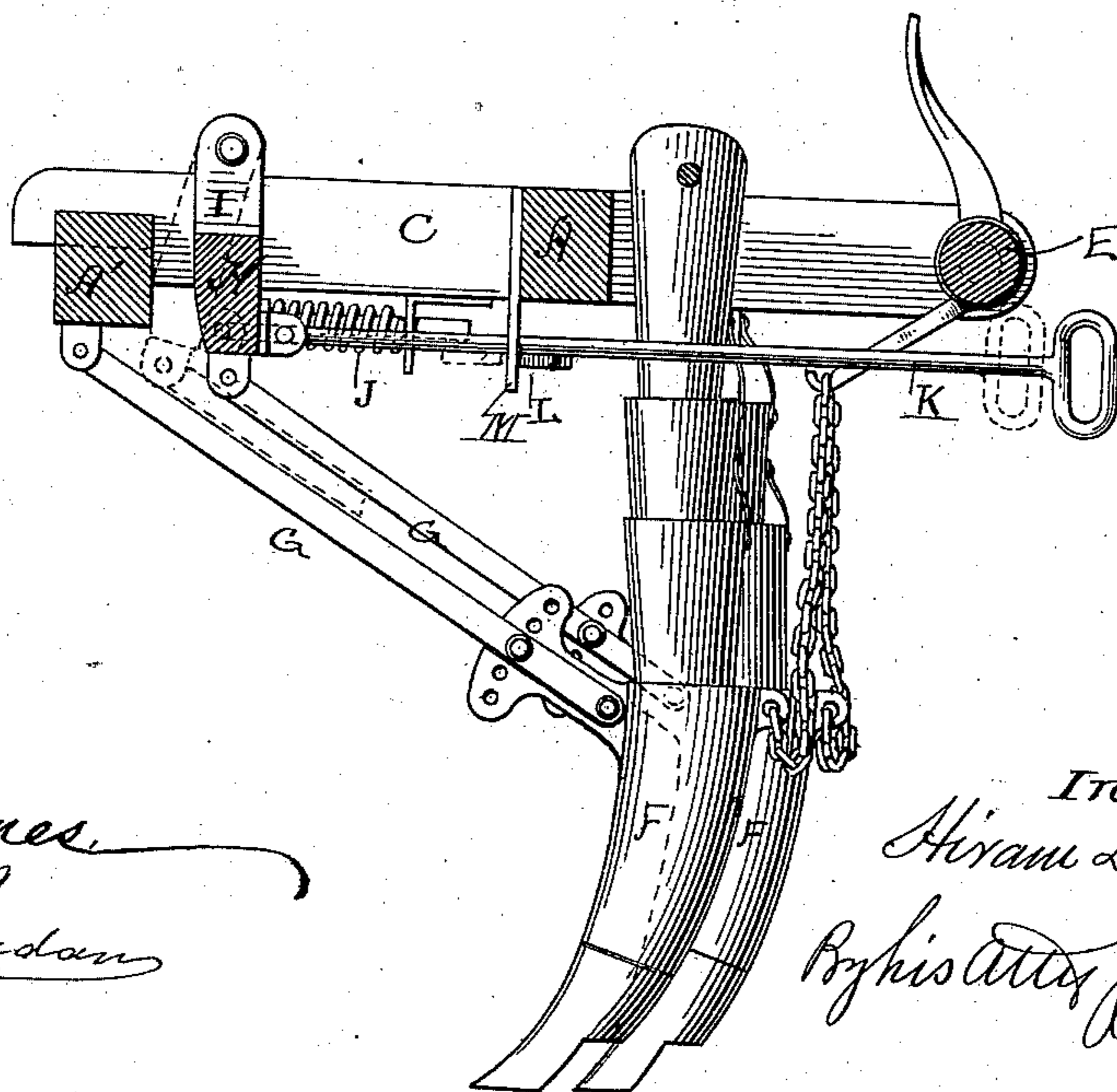


Fig. 2.



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UNITED STATES PATENT OFFICE.

HIRAM L. BROWN, OF SHORTSVILLE, NEW YORK.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 238,845, dated March 15, 1881.

Application filed December 11, 1880. (Model.)

To all whom it may concern:

Be it known that I, HIRAM L. BROWN, of Shortsville, in the county of Ontario and State of New York, have invented a new and useful Improvement in Grain-Drills; and I do hereby declare that the following is a full and exact description of the same.

My invention belongs to that class of grain-drills wherein the teeth are arranged in separate ranks and capable of adjustment as to each other, and therefore known as "adjustable ranks." The drills are divided into two ranks, and sometimes they are both movable, while at other times one rank has been made movable. When both ranks have been made movable they have been coupled so that the retreat of one would be simultaneous with the advance of the other, and in that way they were caused, to a certain extent, to balance each other; but it is evident that two movable parts must be more objectionable than one.

The object of my improvement is to balance the movement of one rank, while the other rank is stationary, and thus reduce the force necessary to effect the change, and at the same time reduce the number of movable parts.

My invention therefore consists of the drill having a drag-bar of one set of teeth attached to a frame capable of movement lengthwise the machine, and a spring or springs interposed to resist said movement with a force slightly in excess of the resistance encountered in dragging the teeth through the soil, so that the application of a slight power will, while the machine is in action, serve to overcome the spring and move the teeth backward or central, overcome the resistance of the ground, and move the teeth forward again.

That others may fully understand my invention, I will particularly describe it, having reference to the accompanying drawings, wherein—

Figure 1 is a perspective view of a drill with my invention attached. Fig. 2 is a longitudinal section of the same.

A is the main axle of the machine, supported upon the bearing-wheels B B.

C C are the bars of the main frame, upon which the seed-hopper D is mounted. At the rear of the frame C there is a lifting-roll, E, to which the drills F are attached by chains, in

the usual way. To this extent the structure does not essentially differ from the ordinary structure of seeding-machines.

The drill-teeth F are severally attached to drag-bars G, and the forward attachments of said bars are alternately to the permanent front bar, A', of the frame and to the movable bar H, so that when said bar is moved to the rear all of the drag-bars which are attached to it are moved backward also, and the drill-teeth attached to said drag-bars also fall behind.

The bar H may be mounted upon swinging arms I, pivoted to the frame; or it may be mounted to slide on guides, or in any other acceptable way, as may be preferred. I think the method shown in the drawings is the most desirable.

Behind the bar H, I place one or more springs, J, which press the bar forward to its farthest position, and the strength of said springs is adjusted to be in excess slightly of the power required to draw the teeth through the ground, so that, notwithstanding the resistance to the advance of said teeth, the springs will maintain the teeth in the forward position.

A hand-rod, K, is attached to the bar H, and extends backward therefrom to some point at the rear of the machine where it will be convenient to the hand of the attendant, and if he desires to break the rank of the drills he will pull backward on said rod. His own strength, added to the resistance of the drills, will readily overcome the power of the springs, and the bar H and the drills attached thereto will be moved backward. A notch, offset, or shoulder, L, on the rod K serves as a latch, either when the drill-teeth are in their forward or backward position, by engagement with the front or rear face of its guide-loop M. The rod K projecting behind the machine is convenient when the attendant walks behind the machine; but if he rides upon the machine it is manifest that a lever may be supplied to enable him to manipulate the device with certainty.

Having described my invention, what I claim as new is—

1. In an adjustable-rank grain-drill wherein a part of the drag-bars are attached to the per-

manent frame, a movable bar to which the alternate remaining drag-bars are attached, combined with one or more supporting-springs, J, whereby draft-resistance upon the bar H is slightly more than counterbalanced, so that the bar and its attached teeth may be moved backward with but slight application of power.

2. In an adjustable-rank grain-drill wherein one set of the drag-bars are attached to the permanent frame of the machine and another and alternating set are attached to a movable bar, H, one or more springs, J, the tension whereof is adjusted to be in excess of the ground resistance to the advance of the drill-teeth, and thereby approximately balance said teeth while in action, combined with mechanism whereby the attendant can at will move said bar H forward or backward, as desired.

3. In an adjustable-rank grain-drill wherein one rank is adjustable and the other non-adjustable, a bar, H, mounted upon swinging arms I, the drag-bars of said adjustable rank being attached to said bar, combined with the counterbalancing-springs J and rod K, whereby the attendant may control the position of said bar H, substantially as set forth.

4. In an adjustable-rank grain-drill wherein one rank is adjustable and the other not, the swinging bar H, to which the adjustable rank is attached, combined with the springs J, rod K, and locking-stop L, as set forth.

HIRAM L. BROWN.

Witnesses:

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