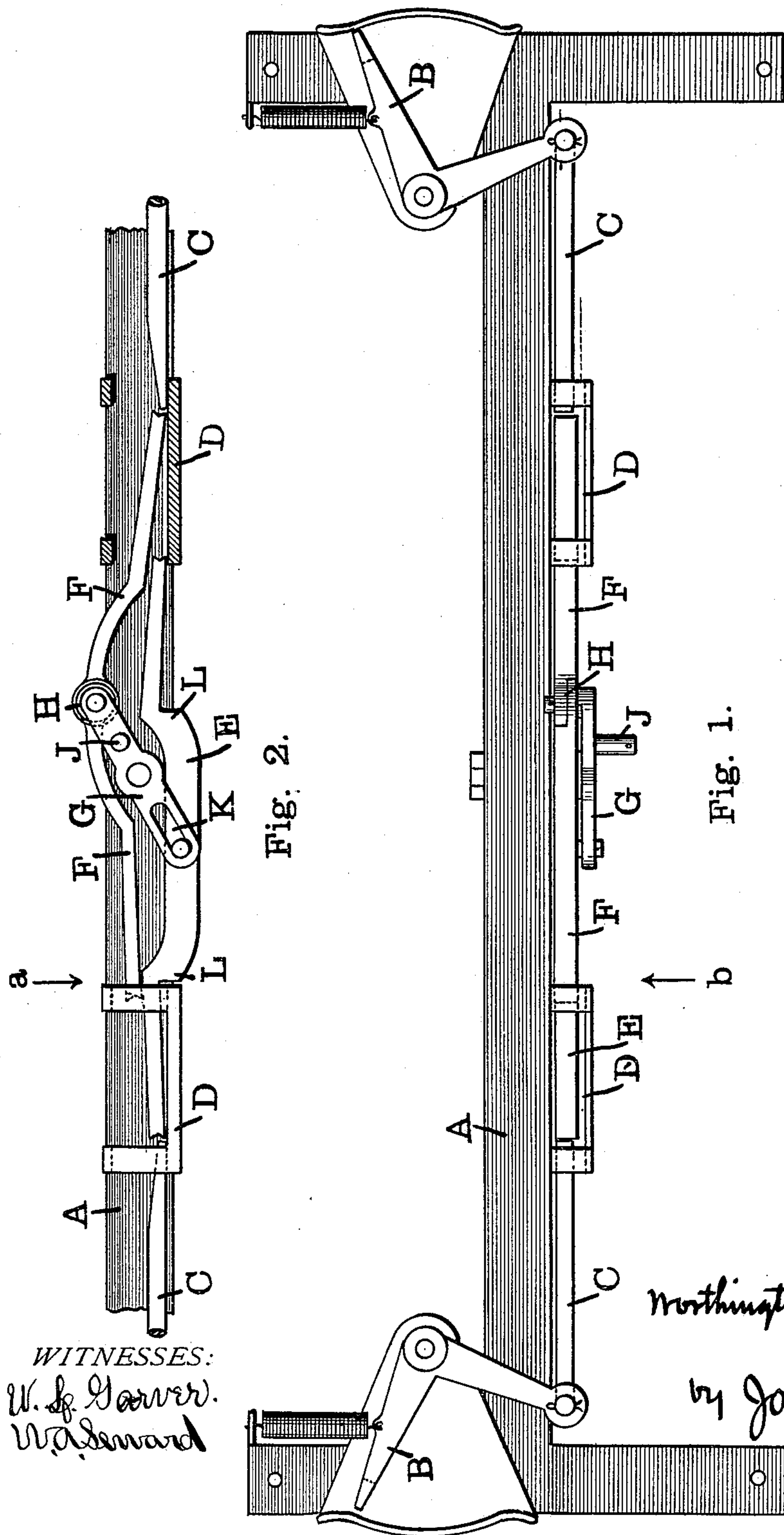


(No Model.)

W. J. SNIDER.  
CHECK ROWING ATTACHMENT.

No. 353,646.

Patented Nov. 30, 1886.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

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## CHECK-ROWING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 353,646, dated November 30, 1886.

Application filed September 13, 1886. Serial No. 213,450. (No model.)

*To all whom it may concern:*

Be it known that I, WORTHINGTON J. SNIDER, of Madison City, (post-office address Heno,) Butler county, Ohio, have invented certain new and useful Improvements in Check-Rowing Attachments, of which the following is a specification.

This invention pertains to check-rowing attachments to seeding-machines; and the invention will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a plan of the attachment, intended to be secured in the usual manner to the proper seeding-machine; and Fig. 2, a face view of the central portion of the same, the right-hand guide appearing in vertical section. The direction of view of Fig. 1 is indicated by the arrow *a* of Fig. 2, and the direction of view of Fig. 2 is indicated by the arrow *b* of Fig. 1.

In the drawings, A represents the frame-piece of the attachment, constructed and intended to be attached in the usual manner; B, vibrating levers, pivoted one at each end of the frame-piece, these levers being constructed in the usual manner, and arranged to be oscillated as each of the buttons upon the check-wire passes, the return oscillation being effected by the usual spring, and either of the two levers being employed, according to whichever side of the machine is nearest the wire employed; C, pawl-rods, one connected to each of the levers B, and adapted to be reciprocated thereby, the inner ends of the pawl-rods pointing toward each other; D, guides secured to the frame-piece, and serving as supports for the reciprocating ends of the pawl-rods; E, a bar having its two ends supported by the guides, this bar being adapted to be reciprocated by the engagement of either pawl-rod with either of its ends; F, a similar bar, but articulated in the center, superposed upon the bar E, the ends of the top bar resting upon the tops of the ends of the lower bar when they are passing, or upon the guides D when the end of the lower bar has moved out from under the ends of the upper bar; G, a lever pivoted to the frame-piece, and having its opposite ends pivoted to the bars E and F; H, the joint of articulation between the two bars F and

the point at which the lever G attaches to these bars; J, a wrist upon the lever G; K, a slot in the lower end of the lever G, by which that lever connects through a pivot-stud with the bar E; and L, stops upon the bar E, adapted to engage alternately the two guides D and limit the degree of reciprocating motion of the bar.

Viewing the parts as they appear in Fig. 2, it is obvious that if the right-hand pawl-rod be pushed inward, as occurs when the wire buttons act upon the lever B of that pawl-rod, it will engage the right-hand end of the top bar and push that bar to the left, at the same time oscillating the lever G. During the stroke of oscillation the lever G will have pushed the bar E to the right, and at the end of the stroke the right-hand end of the bar E will have passed underneath and beyond the advancing right-hand end of the upper bar. The right-hand pawl-rod, in pushing the upper bar to the left, has risen with the end of that bar and has performed a portion of its stroke upon the top of the right-hand end of the bar E, the ends of the bars being notched where the rods engage them, so as to prevent their vertical disengagement. At the end of the stroke referred to, and after the retreat of the pawl-rod, the right-hand end of the lower bar will occupy the extreme right-hand position, and the next stroke of the right-hand pawl-rod will push the bar to the left, thus causing the lever G to oscillate, and at the same time the right-hand end of the top bar will move to the right above the right-hand pawl-rod, and the retreating stroke of the pawl-rod will withdraw the pawl-rod from under the top bar, and will leave the parts again in the position shown. In this manner, at each thrust of the right-hand pawl-rod an oscillation will be given to the lever G, and the same effect will be produced when the left-hand pawl-rod is the one being effected by the wire.

Movement may be transmitted to the seed-dropping mechanism from the wrist J through a suitable connection, or from other points by means of suitable connections.

In all devices of this general character the trouble heretofore experienced has been due to the rebound of some of the parts, resulting



in the undoing of a portion of the work done by the pawl-rods and the consequent mis-performance of the seed-dropping mechanism. My present device is perfectly free from any such defect, each stroke being positive, definite, and perfect. This is due to the peculiarity of structure, and requires some explanation. In Fig. 2 the right-hand pawl-rod may be considered as having just retreated after having pushed the bar E to the left. I use the word "push;" but those who are familiar with the action of wire-operated check-rowers will recognize the act of the pawl-rod as knocking the bar to the left rather than pushing it. The term "slam-bang" is a very appropriate one for application to the action of this general class of check-rowers. When the bar L is violently thrown to the left and the pawl-rod withdrawn, there is a strong tendency on the part of the bar L to rebound and undo a portion of its work, and this tendency has proven almost fatal in most of the contrivances of this class. In my present device, however, there is absolutely no rebound. This is due to the action of the slot K and the stud which engages it. It will be seen in Fig. 2 that the slot lies diagonally, and that any retreat of the bar E would either call for a lifting of the bar E in order that the stud might ride up in the slot or for a lifting of the bar F in order that the lever might oscillate to accommodate the stud as it moved backward. Looking at the

slot and stud as a mere means for transmitting motion between the parts, it will be obvious that the stud might be fast on the lever G and play in the vertical slot in the bar E, and the new arrangement thus form a mechanical equivalent for the arrangement shown; but in the prevention of rebound the described modification would not be an equivalent. I have so constructed the device and experimented with it, and it has proven a total failure, the bar E even bounding half-way back, thus rendering the operation of the parts entirely uncertain.

I claim as my invention—

In a check-rower, a pair of pawl-rods with their ends presenting toward each other, a rigid reciprocating bar arranged in the line of motion of the pawls and provided with a stud, guides serving to restrict the motion of said bar to a right line, an articulated reciprocating bar disposed above the first-mentioned bar and arranged to slide thereon and on said guides, and an oscillating lever articulated to the upper bar and having a slot engaging the stud in the lower bar, combined and arranged to operate substantially as and for the purpose set forth.

WORTHINGTON J. SNIDER.

Witnesses:

J. W. SEE,  
W. A. SEWARD.