No. 700,540. Patented May 20, 1902.

J. R. MULDER.

ATTACHMENT FOR CORN PLANTERS.

(Application filed Dec. 6, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

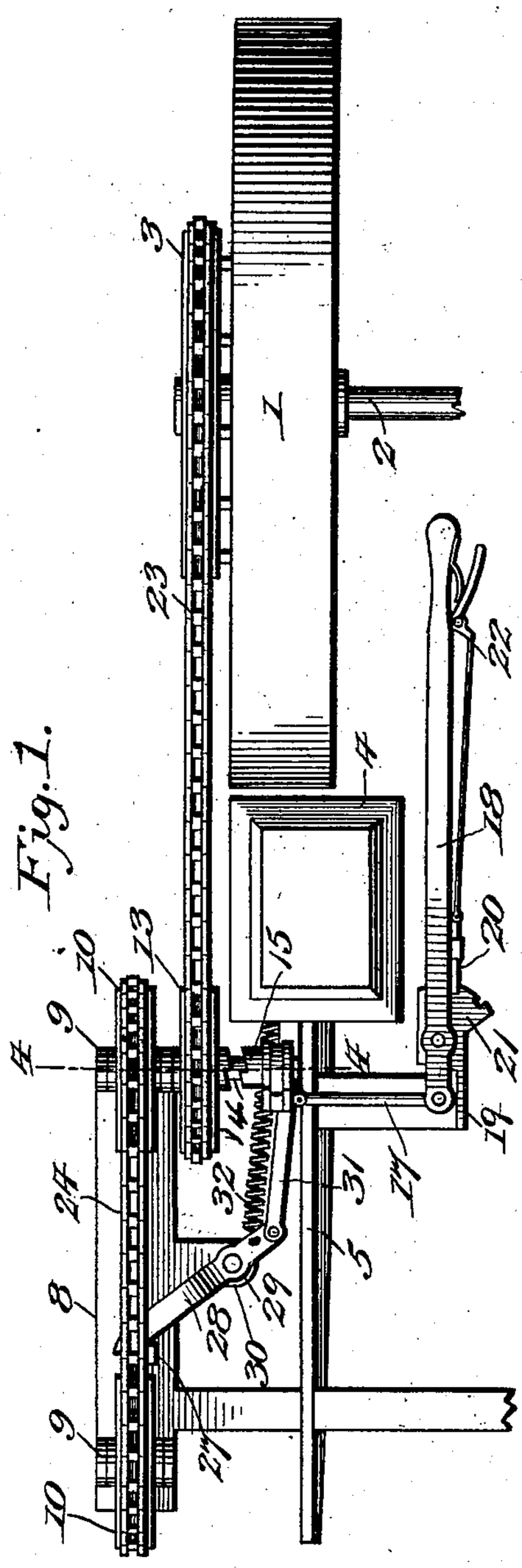
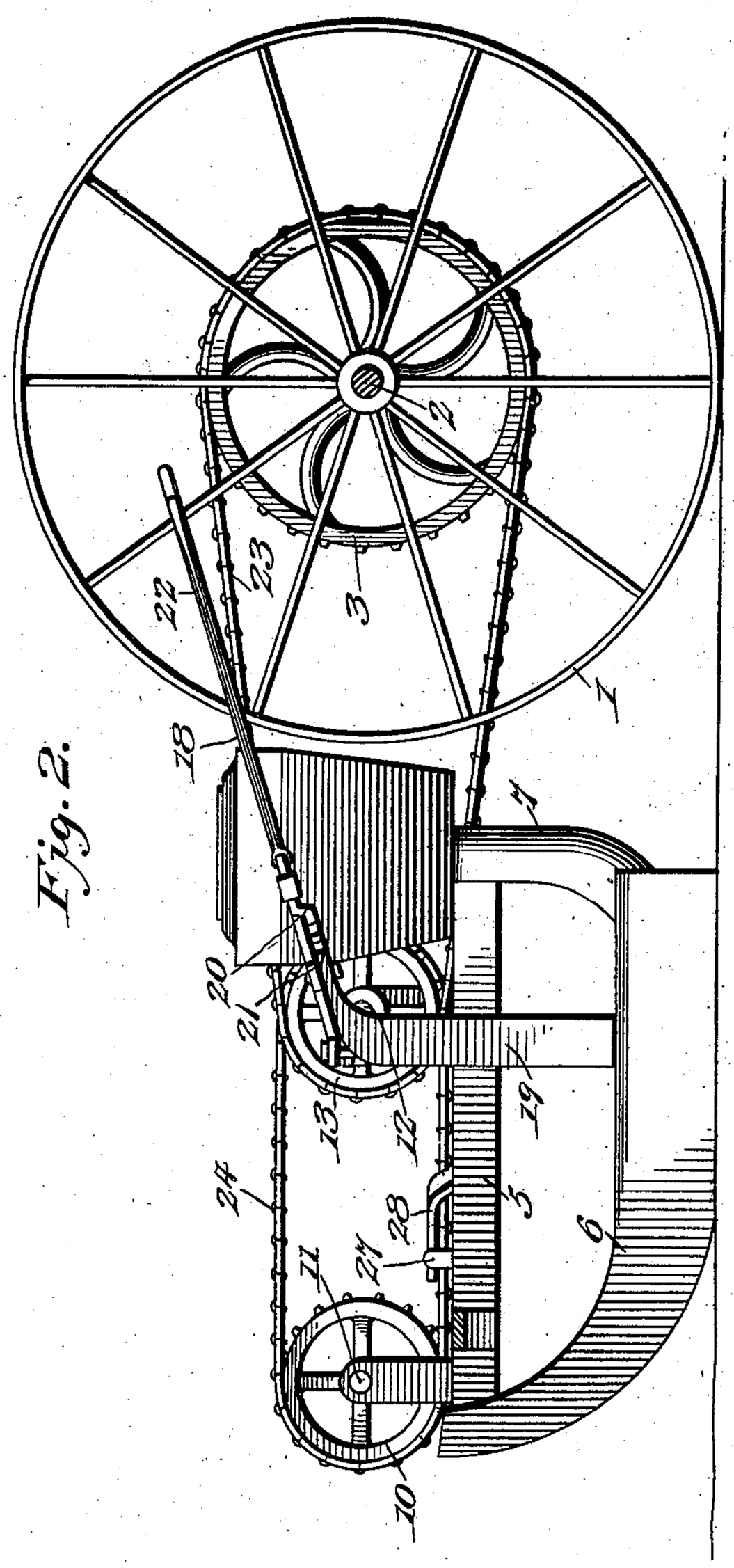


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

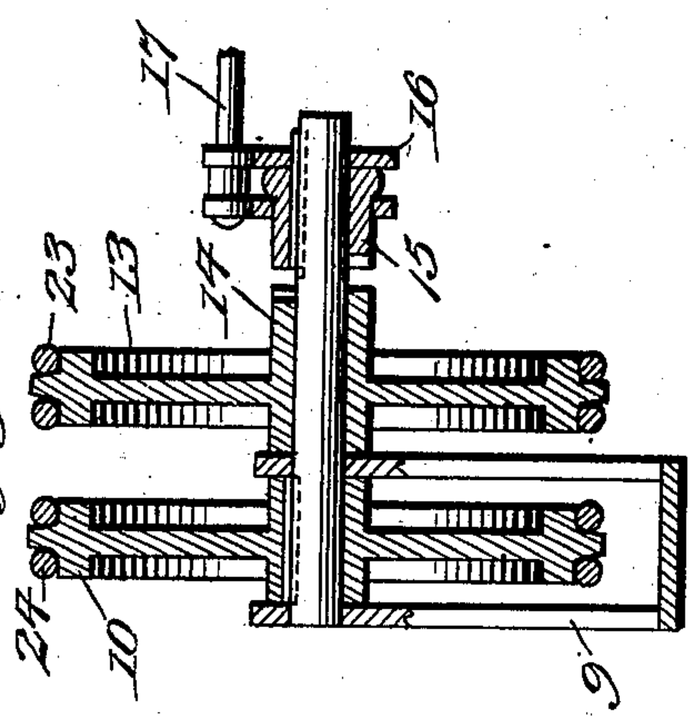

Fig. 3.

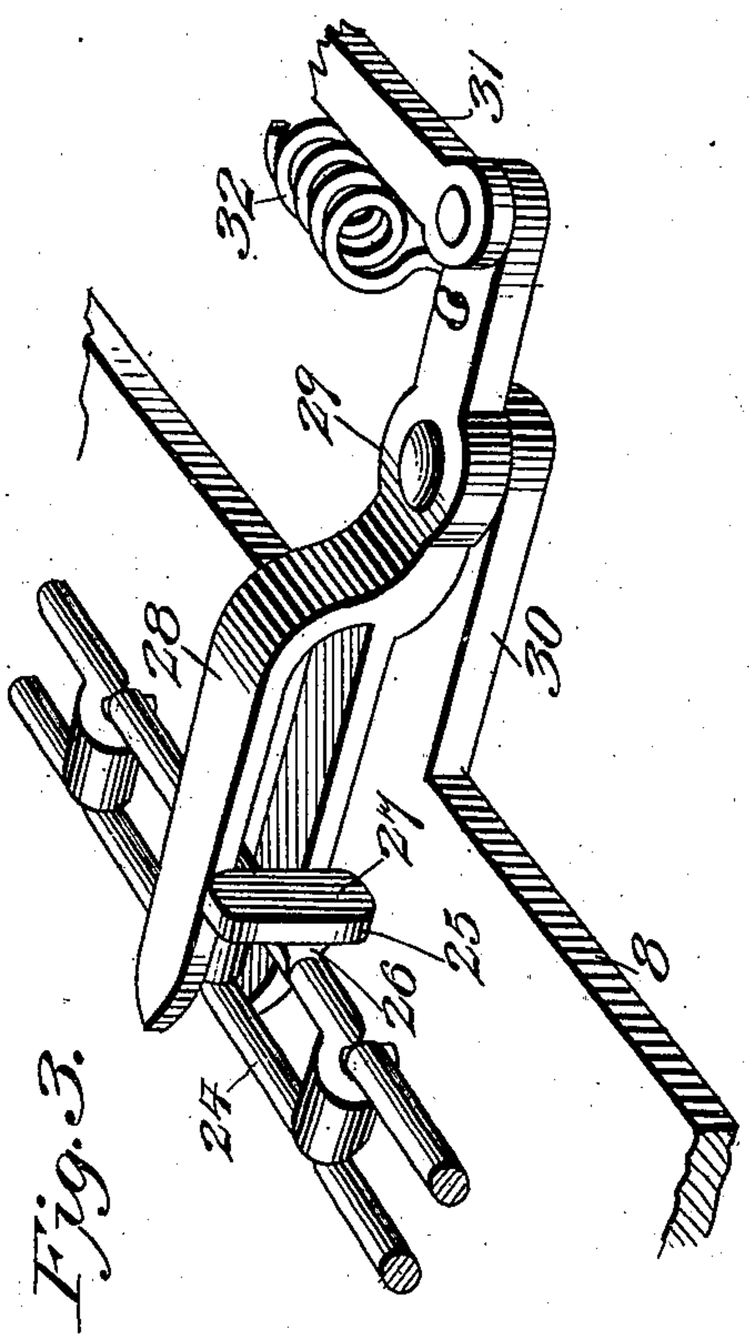

Fig. 5.

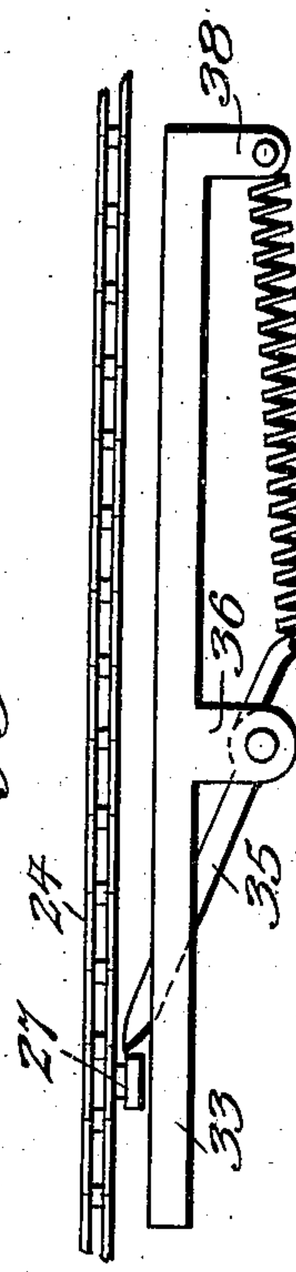

Fig. 6.

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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR CORN-PLANTERS.

SPECIFICATION forming part of Letters Patent No. 700,540, dated May 20, 1902.

Application filed December 6, 1901. Serial No. 84,940. (No model.)

To all whom it may concern:

Be it known that I, JELTE R. MULDER, a citizen of the United States, residing at Roselawn, in the county of Newton and State of Indiana, have invented new and useful Improvements in Attachments for Corn-Planters, of which the following is a specification.

This invention relates to attachments for corn-planters, and particularly to check-row mechanism; and the object of the present improvement is to obviate certain objectionable defects in check-row corn-planters of the class employing a tappet-wire for controlling the seed plate or slide and to overcome the disadvantages incident to the constant jerking and consequent irregular feed of the grain, as well as the frequent breakage of the tappet-wire or analogous devices, and to substitute a positively-acting mechanism that will regularly actuate the feed-slide of whatever nature in the bottom of the hopper, and which will operate to uniformly deposit the same amount of grain irrespective of the irregularity of the ground-surface over which the machine moves, the improved attachment being of such nature that its application does not require a material reorganization of the parts of ordinary corn-planters now in use.

The invention also consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a portion of a corn-planter, showing the improved check-row attachment applied thereto. Fig. 2 is a side elevation of the mechanism shown by Fig. 1. Fig. 3 is a detail perspective view of the main portion of the check-row attachment. Fig. 4 is a transverse vertical section on the line 4 4 of Fig. 1. Fig. 5 is a top plan view showing a modification of the improved attachment. Fig. 6 is an elevation of the device shown by Fig. 5 looking toward the inner side of the same.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The reference-numeral 1 designates a carrying or ground wheel, which is one of a pair of such devices usually employed in a corn-planter and mounted on an axle 2. Secured to the said carrying or ground wheel is a sprocket-wheel 3, and at a suitable distance in advance of the wheel 1 is a seedbox or hopper 4, which will be provided with any suitable form of slide or valve mechanism, and included in the planter organization will be a suitable frame 5 and the usual runners or furrow-openers 6. The hopper 4 will be supplied with the usual boot 7, and the other ordinary equipments will also be provided, such as a driver's seat and draft mechanism, and at times it may be desirable to have the carrying or ground wheels 1 formed with peripheral resistance ribs or projections to prevent them from slipping, which will be readily understood by those skilled in the art.

In applying the improved attachment it is unnecessary to reorganize or materially change any of the parts of the present form of corn-planters, as the attachment will be supported by frame parts capable of securement in operative position to the frame of the machine, and in the preparation of the said frame parts they will be shaped and provided with securing means to adapt them for attachment to different styles or contours of planter-frames without in the least modifying the essential features of the invention.

The auxiliary frame of the attachment comprises a bed-support 8, having bifurcated standards 9, adjacent opposite extremities, to serve as bearings for the spindles of sprocket-wheels 10, the spindle 11 of the foremost sprocket-wheel terminating equally with the outer sides of the upstanding arms of the standard therefor, and the spindle 12 of the rearmost sprocket-wheel is continued inwardly a suitable distance beyond the adjacent supporting-standard and has a sprocket-wheel 13 loosely mounted thereon and the inner portion of the hub thereof projected and terminally formed into a clutch member 14. On the inwardly-extending portion of the spindle 12 a clutch-sleeve 15 is slidingly mounted and held against rotation by a feather-and-groove construction, forming portions of the said engaging parts, as clearly shown by Fig. 4, the said sleeve being actuated by a clutch-fork 16, attached to a connecting-rod 17, running to the forward end of a clutch-lever 18. The said lever 18 is fulcrumed on the upper extremity of an upright 19 and is disposed at a rearward and upward angle of

inclination and supplied with a slidable dog 20 to engage a toothed segment 21 to maintain the adjustment of the clutch mechanism and operative by a lever mechanism and connecting-rod 22 at the rear end of the lever 18, said end of the lever being located adjacent the seat of the driver and within convenient reaching distance.

The sprocket-wheel 3 is surrounded by a chain belt 23, which runs over the loose sprocket-wheel 13, and through the medium of the sprocket-chain 23 the check-row mechanism embodying the features of the improvement is actuated. The sprocket-wheels 10 are operatively engaged by a sprocket or chain belt 24, and thereon is a tappet 25, consisting of a shank 26, secured to one side of one of the links and having a head 27, vertically disposed and extending equally above and below the plane of the link to which the tappet device is secured. Only one of these tappet devices is shown; but it is obvious that they may be increased in number in accordance with the kind of planting desired to be pursued, the increase in number of the said tappets being a readily-appreciable expedient.

The improved mechanism includes a horizontally-disposed fork 28, having a normal oblique position in a forward direction, as shown by Fig. 1, and provided with a shank 29, intermediately fulcrumed on an inwardly-extending arm 30 of the bed-support 8, the said shank 29 being extended inwardly a suitable distance beyond its fulcrum and pivotally connected to a longitudinal connection or lever 31, running to the seed-slide or valve mechanism in the bottom of the hopper or feed-box 4. To return the fork 28 to its normal position, a spring 32 is attached to a shank 29 and runs back and is secured at its rear extremity to a suitable portion of the rear of the seedbox, as desired. The fork 28 extends across the lower portion of the chain belt 24, or, in other words, the said portion of the chain belt passes between the upper and lower horizontal members of the fork, as clearly shown in Fig. 3, and said chain belt 24 is actuated through the medium of the sprocket-wheel 13 when the clutch mechanism heretofore set forth is shifted to fix said sprocket-wheel 13 in rotative relation to the spindle 12. As the planter progresses or moves over the ground-surface to perform the planting operation and the improved check-row attachment is arranged for operation, the movement of the belt 24 causes the tappet 25 to regularly strike the fork 28 and move it rearwardly a distance sufficient to permit the said tappet to clear itself. This rearward movement of the fork draws forwardly on the connection or lever 31 and opens the slide or valve mechanism in the bottom of the seedbox or hopper 4 to permit the grain to drop through the boot 7 into the ground. As soon as the tappet 25 clears itself from the fork 28 the spring 32 immediately restores said fork to its normal position, as shown by Fig. 1, and by having the fork normally projected forwardly in an oblique plane a greater throw or movement of the connection or lever 31 may ensue. By this means the planting operation can be positively and regularly carried on without the disadvantages incident to the use of a check-wire and, moreover, with the material advantage of having the same quantity of grain always deposited in the ground. The attachment is also economical when comparatively considered with the ordinary check-wire attachment, in view of the fact that it is not liable to breakage or disarrangement, and consequently the expense incident to constant repair of check-wires is avoided.

The preferred position of the fork has been described and shown in the main figures of the drawings; but it will be obvious that the same operation can be obtained by varying the position of the fork, as clearly shown by Fig. 5, wherein a supplemental frame 33 is disposed on the support 8 and has a slot 34 therein, through which the fork 35 has movable projection, the said fork 35 being fulcrumed to an inwardly-projecting lug or ear 36 at the top of the frame, and a spring 37, similar to the spring 32, heretofore described, is secured to the shank of the fork at its forward terminal and to an upper lug 38 of the frame 33 at its rear terminal. Other changes without in the least departing from the principles involved may be made, and in some instances the belt might be caused to travel inside of the frame 33 or in a position reverse to that shown by Fig. 5. By illustrating the modification set forth the idea intended to be conveyed is that the practical operation of the improved check-row attachment is not dependent upon any precise position so long as the essential features, consisting of the fork, chain belt, and tappet and connection between the fork and the seed-plate or valve mechanism in the hopper 4, are preserved.

As before set forth, the improved attachment is adapted to be applied to any make of machine, and changes in the minor details may be resorted to in order to effect different applications.

Having thus fully described the invention, what is claimed as new is—

1. In a planter of the class set forth, the combination with a seed box or hopper provided with valve mechanism, of a fork disposed in advance of said valve mechanism and fulcrumed at an intermediate point, a spring attached to the fork to restore it to normal position, a belt movable through the fork and provided with a vertically-disposed tappet having a length greater than the distance between the members of the fork and adapted to slide over side edge portions of the fork and off the ends of the latter, and mechanism for actuating the said belt.

2. In a planter of the class set forth, the combination with a seedbox having valve mechanism, of a horizontally-disposed recip-

rocating fork fulcrumed at an intermediate point and connected to said valve mechanism, the bifurcated extremity of the fork being projected outwardly and elevated above the plane of the device for holding it, a spring attached to the inner extremity of the fork to return the same to normal position, a belt movable through the bifurcated extremity of the fork and provided with a vertically-disposed tappet which engages the side edge portions of the bifurcated extremity of the fork and moves over and around the ends of said extremity, the said belt being located outside of the adjacent portion of the machine and the tappet of greater vertical extent than that of the bifurcated extremity of said fork, and mechanism connected to the carrying-wheel of the machine for actuating the said belt.

In testimony whereof I affix my signature in presence of two witnesses.

JELTE R. MULDER.

Witnesses:
W. JAY WEAVER,
CHARLES HANCOCK.