(No Model.)

2 Sheets—Sheet 1.

F. ROBINSON.

POTATO PLANTER.

No. 475,610. Patented May 24, 1892.

FIG_1_

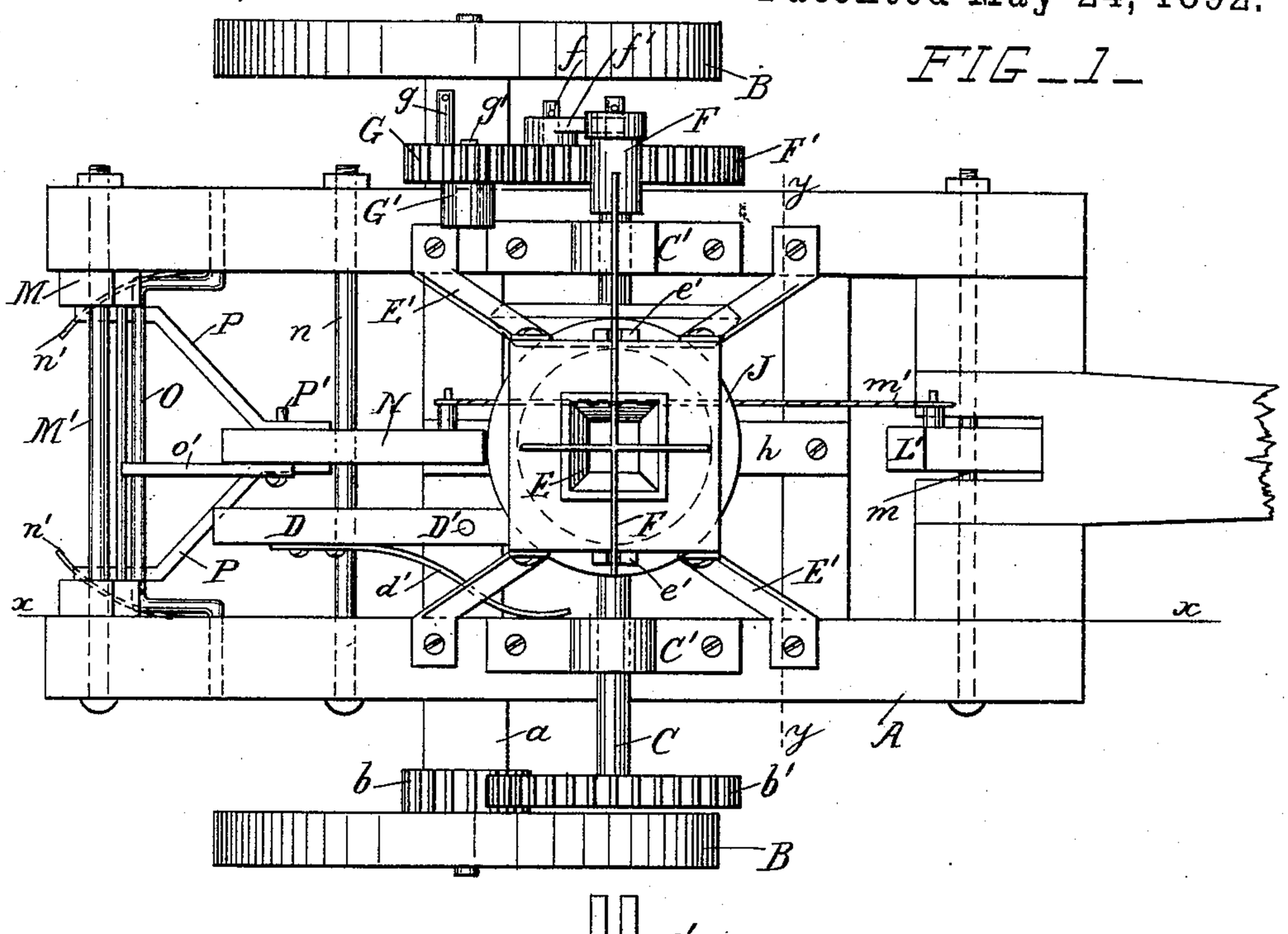
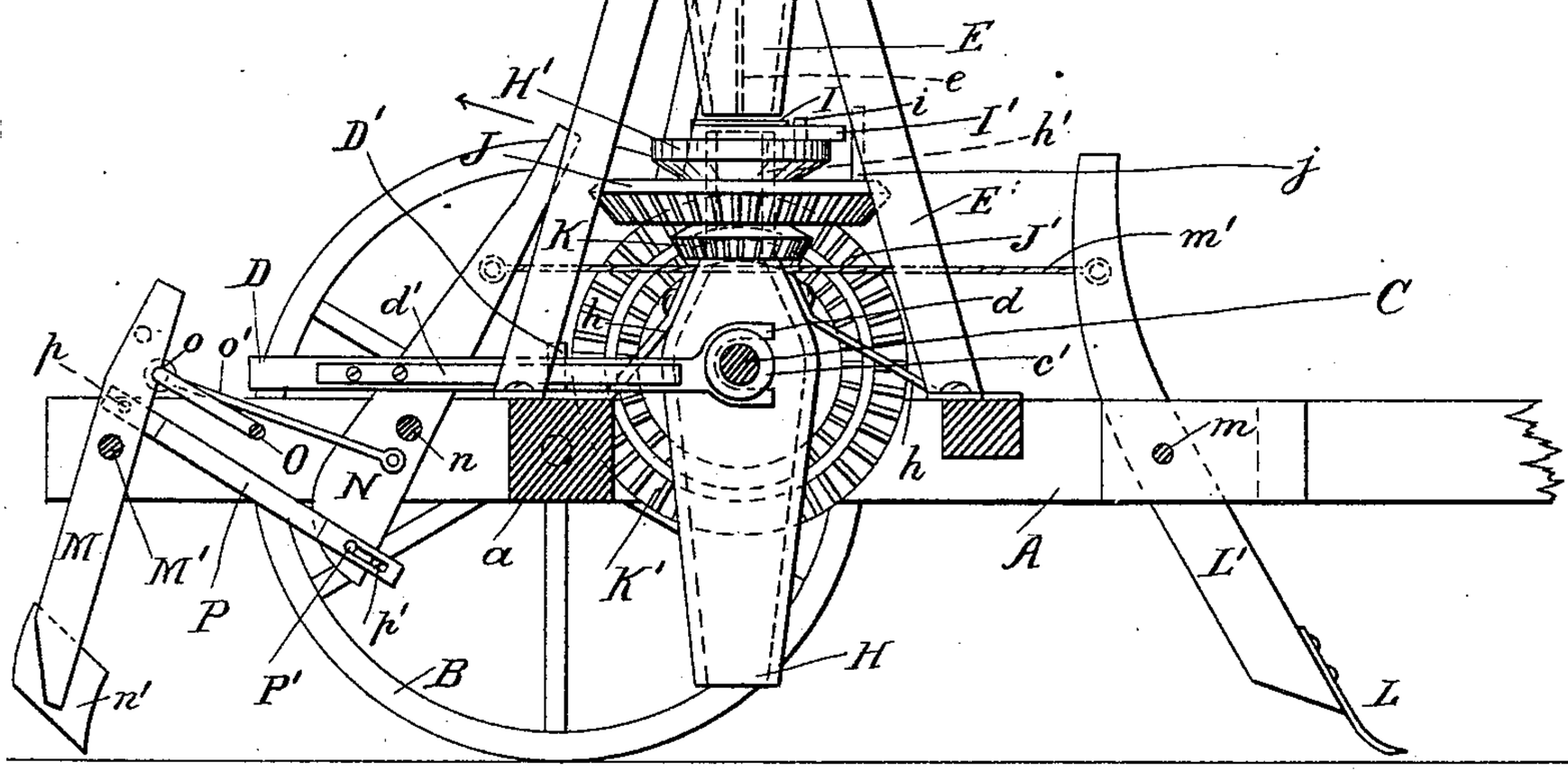


FIG_2_



WITNESSES

C. J. Belt

Walter E. Allen.

INVENTOR

Frank Robinson.

by Herbert W. J. Jenner. Attorney

(No Model.)

2 Sheets—Sheet 2.

F. ROBINSON.

POTATO PLANTER.

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FIG. 3.

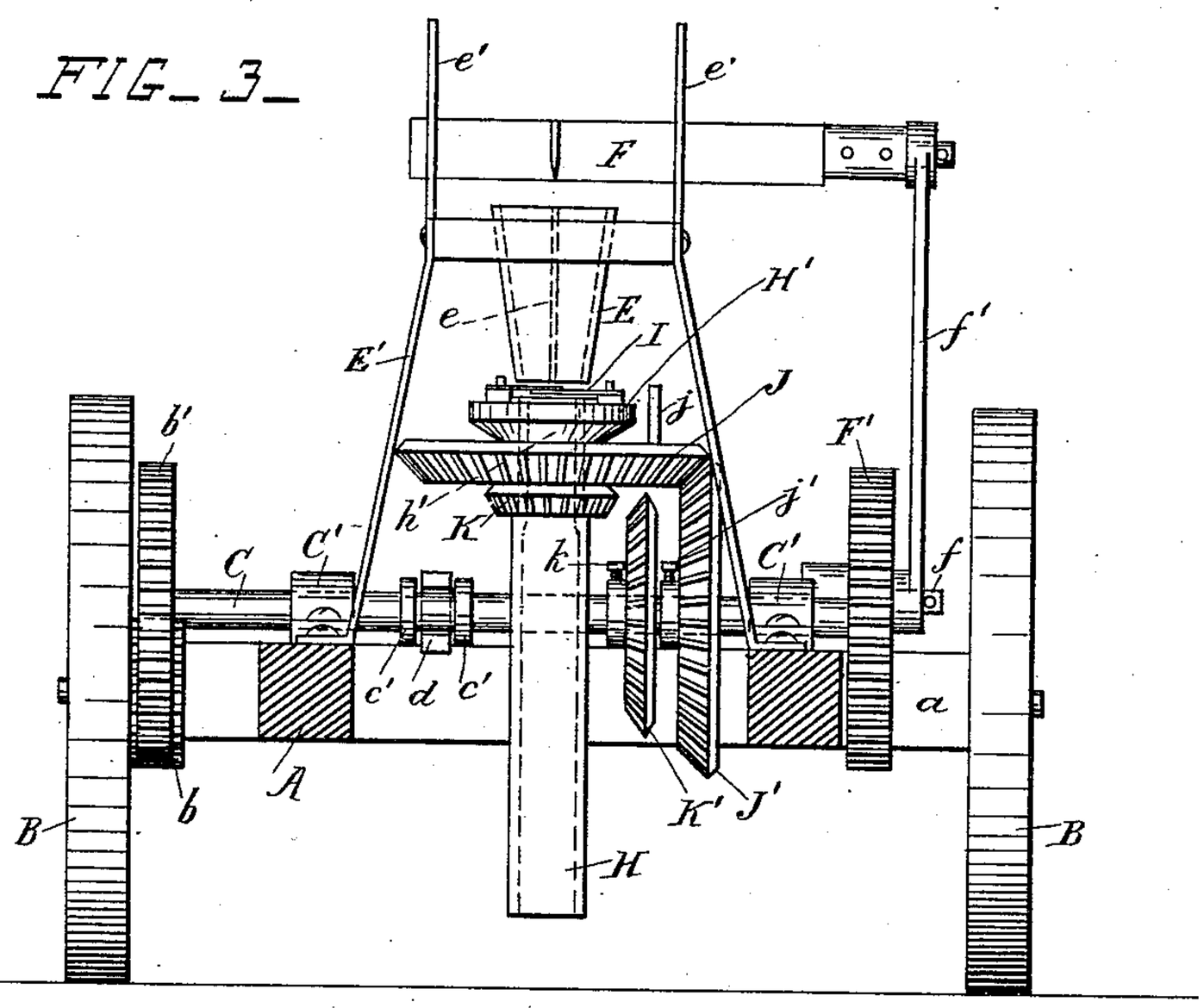
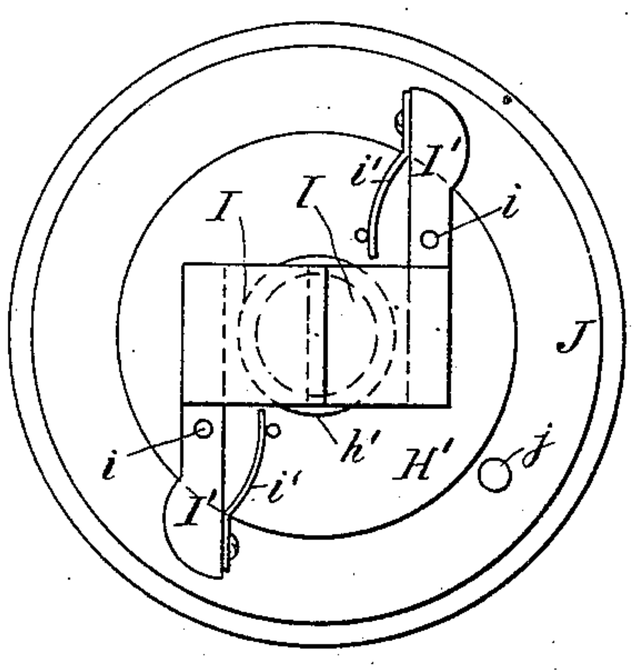


FIG. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK ROBINSON, OF SAND LAKE, MICHIGAN.

POTATO-PLANTER.

SPECIFICATION forming part of Letters Patent No. 475,610, dated May 24, 1892.

Application filed July 31, 1891. Serial No. 401,258. (No model.)

To all whom it may concern:

Be it known that I, FRANK ROBINSON, a citizen of the United States, residing at Sand Lake, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Potato-Planters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to potato-planters; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a plan view of the machine from above. Fig. 2 is a side view of the machine in section on the line *x x* in Fig. 1. Fig. 3 is a front view of the machine in section on the line *y y* in Fig. 1. Fig. 4 is a detail plan view from above of the valves over the feed-spout.

A is the frame of the machine, and *a* is the axle.

B are the ground-wheels, journaled on the ends of the axle, and *b* is a toothed pinion secured to one of the said toothed wheels B.

C is the main shaft, journaled in the bearings C′, secured to the frame, and *b′* is a toothed wheel secured on the shaft C and adapted to gear into the pinion *b*.

D is a hand-lever pivoted on the vertical pin D′, projecting from the axle and provided with a forked end *d*, which engages with collars *c′* on the shaft C. A spring *d′* normally holds the shaft so that the pinion *b* and wheel *b′* are in gear and permits them to be thrown out of gear by moving the lever and sliding the shaft C endwise.

E is the hopper for the potatoes, divided into four parts by the partitions *e*.

E′ are the supports for the hopper, having their lower ends secured to the frame A.

Guides *e′* are secured to the upper part of the hopper E, and F is a knife sliding vertically in the said guides and made in the form of a cross, so as to cut each potato into four portions corresponding with the four divisions of the hopper.

A toothed wheel F′ is secured on the end of the shaft C and is provided with a crank-pin *f*. A connecting-rod *f′* is pivoted to the end of the knife F and to the said crank-pin, so that a vertical reciprocating motion may be imparted to the said knife. A toothed pinion G gears into the wheel F′ and is provided with a crank-pin *g*.

G′ is a support secured to the frame, and *g′* is a pin projecting from the said support for the pinion G to run on A quick reciprocating motion may be imparted to the knife by uncoupling the rod *f′* from the pin *f* and connecting it to the pin *g*.

H is the feed-spout, secured to the frame A by the arms *h* and provided with the circular upper portion *h′*. The spout H is provided with an opening for the passage of the shaft C, and H′ is a flange secured to the upper end of the said portion *h′*.

I are two valves provided with arms I′, pivoted on the vertical pins *i*, projecting from the flange H′. These valves are normally held closed by the springs *i′* and prevent the cut-up potatoes from passing out of the hopper and down the spout H.

J is a beveled toothed wheel journaled on the circular portion *h′* of the spout, and *j* is a pin projecting upwardly from the said wheel and adapted to open the valves I at intervals by striking the arms I′ as the wheel J is revolved.

J′ is a beveled toothed wheel secured to the shaft C by the screw *j′* and gearing into the wheel J.

The wheels J and J′ are of equal diameter and impart a slow motion to the valves corresponding to the slow motion of the knife F. A quicker motion, corresponding with the quicker motion of the knife, may be imparted to the valves I by means of the beveled toothed wheels K and K′. The wheel K is secured to the wheel J, and the wheel K′ is secured to the shaft C by the screw *k*. The two wheels K′ and J′ are adapted to be slid on the shaft C and secured by their respective screws, so that the motion of the valves may be fast or slow, as desired, and the wheel K′ is larger than the wheel K, so as to produce the quicker of the two motions.

I do not confine myself to the use of the toothed wheels shown and described for revolving the feed-valves, as any other approved driving mechanism—such as belt-pulleys or friction-wheels—may be used. The revolving

feed-valves may also be used independent of the mechanism for cutting up the potatoes and the cutting-up mechanism may be dispensed with. In the latter case the potatoes are cut up by hand or by a separate machine, and the pieces are placed in the feed-hopper and are dropped down the spout at appropriate intervals by means of the feed-valves, as hereinbefore described.

A furrow is cut in the soil by means of the blade L, secured on the standard L′, which is pivoted on the pin *m* at the front part of the machine in advance of the feed-spout. The soil is covered over the potatoes by means of the two blades *n*′, secured to the standards M, which are pivoted on the bar M′ at the rear of the machine.

N is a hand-lever pivoted on the bar *n*, and *m*′ is a chain, rod, or cord connecting the lever N with the standard L′.

O is a cranked rod having its ends pivoted in the frame A. This rod O is adapted to engage with a notch or groove *o* in each of the standards M and to hold the blades in position, as shown in Fig. 2. A rod *o*′ is pivoted to the cranked rod O and to the hand-lever N.

P are arms having their upper ends pivoted to the standards M by the pins *p*, and P′ are pins which project from the lower part of the hand-lever N and engage with longitudinal slots *p*′ in the lower ends of the arms P. When the hand-lever is turned in the direction of the arrow in Fig. 2, the cranked rod O is first lifted out of the notches to release the standards M, and the said standards are then turned on their pivots until the blades are clear of the ground. The standard L′ is turned simultaneously on its pivot, so that the blade L is also clear of the ground, and the machine may then be moved about from place to place.

What I claim is—

1. In a potato-planter, the combination, with a hopper and a feed-spout provided with horizontal valves and supported under the hopper, of a reciprocating knife above the hopper, a shaft passing through the feed-spout, a beveled toothed wheel secured on the said shaft, a beveled toothed wheel journaled on the upper end of the spout and provided with a pin for operating the valves, and a connecting-rod and a crank secured to the said shaft and adapted to reciprocate the said knife, substantially as set forth.

2. In a potato-planter, the combination, with the frame, of the hopper, the supports securing the hopper above the frame, the feed-spout provided with brackets and secured to the frame, the driving-shaft passing through the feed-spout, a beveled toothed wheel secured on the said shaft, a beveled toothed wheel journaled on the upper end of the feed-spout and provided with a projecting pin, and the horizontal valves pivoted at the top of the feed-spout and provided with arms projecting into the path of the said pin and operated thereby, substantially as set forth.

3. The combination, with the hopper and the knife above the hopper, of the feed-spout and the spring-actuated valves below the hopper, the toothed wheels J and K, journaled on the upper part of the spout and provided with a pin for opening the valves, the main driving-shaft passing through the said spout, the sliding wheels J′ and K′, adapted to be secured thereon, the intergearing toothed wheels F′ and G, driven by the said main shaft and each provided with a crank-pin, and a connecting-rod pivoted to one end of the knife and adapted to be coupled to either crank-pin, substantially as and for the purpose set forth.

4. The combination, with the two pivoted standards provided with covering-up blades and the cranked rod pivoted to the frame and adapted to hold the said standards in position, of a pivoted hand-lever, a rod pivotally connecting the said cranked rod and hand-lever, and the arms pivoted to the said two standards and provided with slots engaging with pins projecting from the hand-lever, whereby the said two standards may first be released and then turned on their pivots, substantially as set forth.

5. The combination, with the two pivoted standards provided with covering-up blades, of the pivoted standard provided with a furrow-opening blade, the hand-lever arranged between the said standards, a flexible connection pivotally connecting the upper end of the hand-lever with the front standard, and the arms pivotally connecting the lower end of the hand-lever with the two standards at the rear, substantially as and for the purpose set forth.

6. The combination, with the stationary hopper, of the stationary spout provided with a flange at its upper end and arranged below the hopper, the horizontal spring-actuated valves provided with projecting arms and pivoted on vertical pins projecting from the said flange, and a wheel journaled on the upper part of the spout below the said flange and provided with a projecting pin for opening the valves at intervals as the wheel is revolved, substantially as and for the purpose set forth.

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

FRANK ROBINSON.

Witnesses:

EDWARD MILLIGAN,

W. RASCO.