

B. F. LUKE & C. L. ALLEN.
PLANTER.

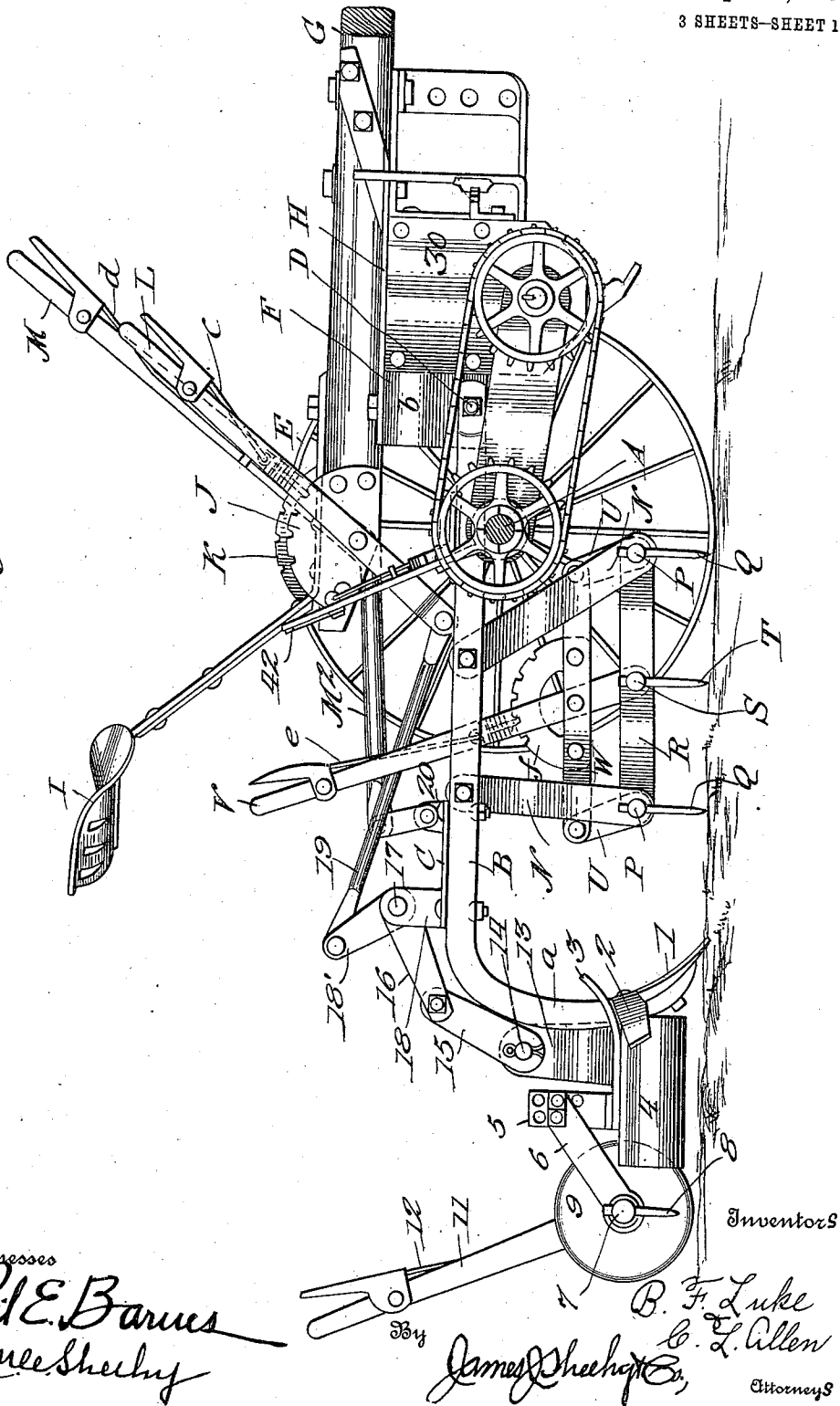
APPLICATION FILED AUG. 17, 1910.

989,376.

Patented Apr. 11, 1911.

3 SHEETS—SHEET 1.

Fig. 1



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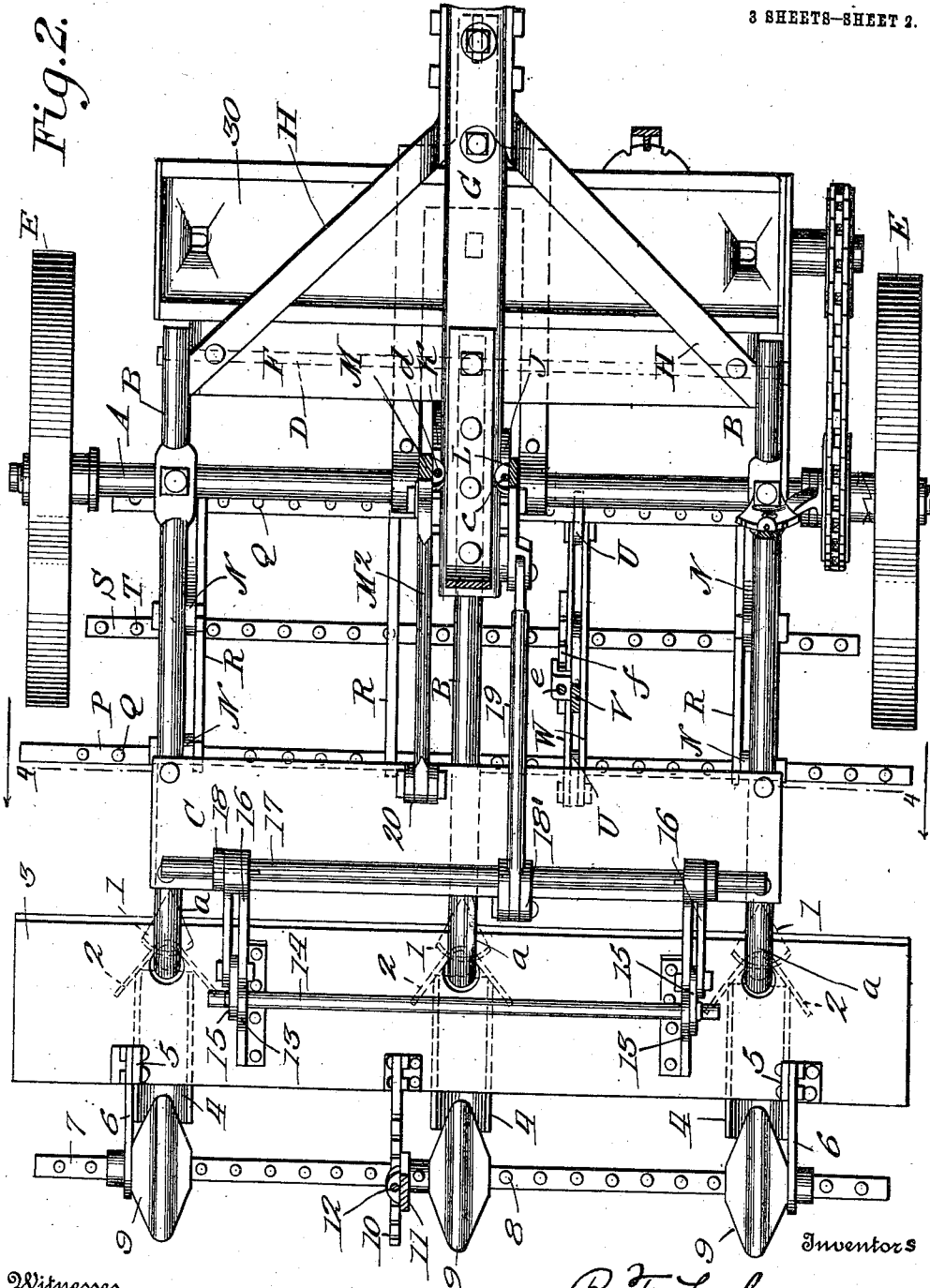
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3 SHEETS-SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

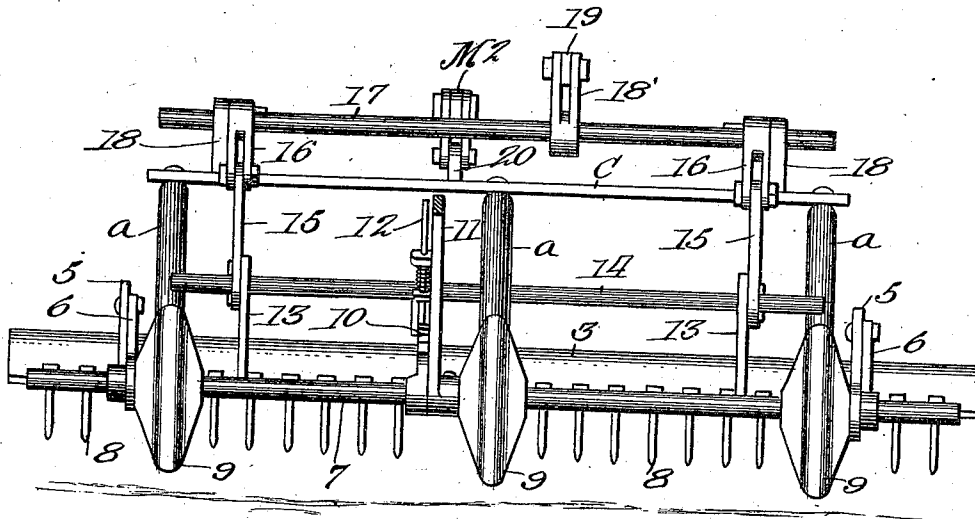
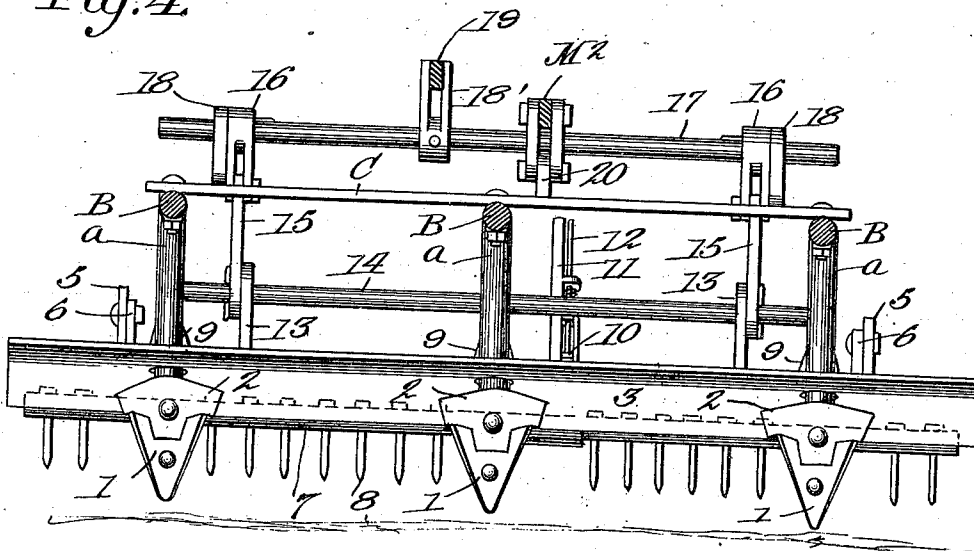


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN F. LUKE AND CHARLES L. ALLEN, OF ORANGEVILLE, UTAH.

PLANTER.

989,376.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed August 17, 1910. Serial No. 577,543.

To all whom it may concern:

Be it known that we, BENJAMIN F. LUKE and CHARLES L. ALLEN, citizens of the United States, residing at Orangeville, in the county of Emery and State of Utah, have invented new and useful Improvements in Planters, of which the following is a specification.

Our present invention pertains to machines for depositing seed and working the same into the ground; and it consists in the peculiar and advantageous machine hereinafter described and definitely claimed.

In the drawings, accompanying and forming part of this specification: Figure 1 is a side elevation of our novel machine with one of the ground wheels removed and the axle in section. Fig. 2 is a plan of the same. Fig. 3 is a detail rear elevation of the machine. Fig. 4 is a transverse section taken in the plane indicated by the line 4—4 of Fig. 2, looking toward the rear.

Similar letters and numerals of reference designate corresponding parts in all of the views of the drawings.

The main frame of our novel machine comprises an axle A, three (more or less) longitudinal bars B fixed to the axle A and having depending portions *a* at their rear ends, a cross-bar or plate C fixed on the bars B, adjacent the depending portions *a* thereof, and a cross-rod D connecting the forward portions of the bars B.

Loosely mounted on the ends of the axle A are ground wheels E through the medium of which the described main frame is supported, while loosely mounted on the cross-rod D of said main frame are the supports *b* of a cross-bar F on which is fixed a tongue G that is braced by bars H, also fixed on said cross-bar. On the rear portion of the tongue G is fixed a driver's seat I, a segmental rack J and a segmental rack K, and fulcrumed at one side of the tongue is a hand lever L which carries a detent *c* for coöperating with the rack J, while fulcrumed at the opposite side of the tongue is a hand lever M, equipped with a detent *d*, arranged to engage the rack K.

Fixed to the outer longitudinal bars B are hangers N, and journaled in said hangers are rock-shafts P equipped with harrow-teeth Q. The rock-shafts P are connected by longitudinally-disposed bars R, and journaled in the said bars R is a third rock-shaft S, carrying harrow-teeth T. The rock-

shafts P are provided with upstanding cranks U, and the rock-shaft S is provided with a lever V, provided with a detent *e*. The said lever V is connected by longitudinally-disposed bars W with the cranks U, and on one of said bars W is fixed a segmental rack *f* for the engagement of the said detent *e*. Thus when the lever V is thrown forward and its detent *e* is engaged with a depression in the rack *f*, the harrow-teeth will be retained in a rearwardly inclined and idle position, while when said lever V is thrown rearward and secured by its detent in a rearwardly inclined position, the harrow-teeth will be fixedly secured in an upright and working position.

On the lower ends of the depending portions *a* of bars B pointed shovels 1 are fixed, and fixed to each of the portions *a*, at a point immediately above the shovel 1, thereon is a pair of rearwardly diverging blades 2. Movable bodily up and down on the said depending portions *a* of bars B is a lump-crushing and ground pulverizing and smoothing plate or shoe 3 which is slightly convex at its underside, and carried at the underside of the said plate 3 are longitudinally-disposed channel-irons 4, of V-shape in cross-section, which are open at their forward and rear ends. When the plate 3 is lowered, each of the channel-irons 4 assumes a position in rear of and in longitudinal alinement with one of the shovels 1, and with its forward end disposed between the blades 2 of the pair above said shovel 1, and then when the machine is drawn forward, the mentioned shovel 1, blades 2 and channel-iron 4 serve to form a furrow designed to conduct and distribute water when the ground is irrigated.

Fixed on the plate 3 are standards 5, and fixed to and extending rearward and downward from the said standards are arms 6 capable of vertical adjustment. These arms 6 carry a rock-shaft 7, equipped with harrow-teeth 8, and on the said rock-shaft 7 are loosely mounted disks 9 which partly rest and are designed to turn in the rear ends of the channel irons 4, this with a view of preventing the harrow-teeth 8 or the plate 3 from filling up the furrows formed by the shovels 1, blades 2 and channel-irons 4 in the manner before described. One of the arms 6 is provided with a segmental rack that is fixed thereon, and to the rock-shaft 7 is fixed a hand-lever 11, equipped with a

detent 12 for coöperating with said rack 10. When said lever 11 is thrown forward and secured in said position, the harrow-teeth 8 will be secured in a rearwardly extending and idle position, while when the lever 11 is adjusted and adjustably-fixed in a rearwardly-inclined position, the harrow-teeth 8 will be secured in a depending and working position. In the latter position, the said teeth 8 serve to pulverize the ground and loosen the surface thereof after the plate 3 has passed over the ground.

The plate 3 is provided with uprights 13 in which is arranged a transverse rod 14. This transverse rod 14 is connected through links 15 with crank-arms 16 on a rock-shaft 17 that is journaled in standards 18 on the cross-bar C of the main frame. The rock-shaft 17, in turn, is provided with a third crank arm 18' that is connected through a rod 19 with the lower arm of the hand lever L. From this it follows that when the upper arm of the lever L is thrown toward the rear, the plate 3 and the parts carried thereby will be raised to an idle position, while when the upper arm of lever L is thrown forward the plate 3 and the parts carried by said plate will be moved down to their working position. It will also be understood that by putting the detent of the lever L in engagement with the adjacent rack J on tongue G, the plate 3 and the parts carried thereby may be secured in the lower and upper positions.

The lever M on the tongue G is provided with a rearwardly-directed arm M², and this arm M² is connected at its rear end to an upright 20 on the cross-bar C of the main frame. Consequently when the lever M is moved forward, the main frame as a whole will be swung upward on the ground wheels E, and when desired the detent of the said lever M may be engaged with the adjacent rack K to secure the main frame and the parts carried thereby in the raised position so as to permit of the machine being readily moved from one point to another.

30 is a seed box which is fixed to the underside of the tongue G.

The practical operation of our novel machine is as follows: The seed box is charged with the seed to be planted, and the harrow-teeth T are lowered to their working position, as are also the plate 3 and the parts carried thereby. Then as the machine is drawn forward, the seeds will be discharged from the spouts of the seed box, and will be harrowed into the ground by the teeth T, after which the ground will be crushed, leveled and pulverized by the shoe 3 and then further pulverized and loosened by the teeth 8. It will also be understood that during the described operation of the shoe 3, the shovels 1, blades 2 and channel-irons 4 will form furrows in the manner before

described. We would also have it understood that when the harrow-teeth T are fixed in their idle position, the shovels 1, blades 2 and channel-irons 4 may be used to form furrows or laterals for the distribution of water, and further that the harrow-teeth T, the shovels 1, and the harrow-teeth 8 may be used to pulverize the ground while furrows or laterals are being formed in the ground as stated. The machine may be further used to advantage in the cultivation of alfalfa.

While we have shown and described one form of our invention, it is to be understood that we are not limited to the details or the form or relative arrangement of parts disclosed, but that extensive modifications may be made therein, without departing from the spirit thereof.

Having described our invention, what we claim and desire to secure by Letters-Patent, is:

1. A machine for the purpose described, comprising a main frame, ground wheels supporting the same, harrow-teeth connected with the main frame, shovels connected with the main frame and arranged in rear of said harrow-teeth, a lump-crushing and ground smoothing shoe arranged above the shovels and connected with the main frame, longitudinally-disposed channel-irons carried at the underside of the shoe and in rear of the shovels, harrow-teeth disposed in rear of and connected with the shoe, and disks connected with the shoe and disposed in the rear ends of the channel-irons.

2. In a machine for the purpose described, the combination with longitudinal, wheel-supported bars connected together and having depending rear portions, of shovels carried at the lower ends of said depending portions, a shoe movable up and down on the depending portions, longitudinally-disposed channel-irons carried at the underside of the shoe and in rear of the said shovels, arms connected with and extending rearward from the shoe, a segmental rack fixed on one of said arms, a rock-shaft journaled in said arms and equipped with harrow-teeth, disks carried by said shaft and disposed in the rear ends of the channel-irons, a lever fixed on the rock-shaft and equipped with a detent for engaging said rack, a lever connected with the main frame, means for adjustably fixing said lever, and a connection intermediate said lever and the shoe for raising and lowering the latter.

3. In a machine for the purpose described, the combination with longitudinal, wheel-supported bars connected together and having depending rear portions, of shovels carried at the lower ends of said depending portions, a shoe movable up and down on the depending portions, longitudinally-disposed

channel-irons carried at the underside of the shoe and in rear of the said shovels, and means for raising and lowering and adjustably fixing the shoe in its raised position.

5 4. In a machine for the purpose described, the combination with longitudinal, wheel-supported bars connected together and having depending rear portions, of shovels carried at the lower ends of said depending
10 portions, a shoe movable up and down on the portions, a shoe movable up and down on the depending portions, longitudinally-disposed channel-irons carried at the underside of the shoe and in rear of the
15 said shovels, means for raising and lowering and adjustably fixing the shoe in its raised position, harrow-teeth connected with and disposed in rear of the shoe, and disks connected with the shoe and disposed in the
20 rear ends of the channel-irons.

5 5. In a machine for the purpose described, the combination of a plurality of shovels, a shoe arranged above and extending in rear of the same, and a plurality of channel-
25 irons carried at the underside of the shoe and arranged in rear of and in alinement with the shovels.

6. In a machine for the purpose described, the combination of a plurality of shovels, a
30 shoe arranged above and extending in rear

of the same, a pair of rearwardly-diverging blades arranged above each shovel, and a plurality of channel-irons carried at the underside of the shoe and arranged in rear of and in alinement with the shovels and the
35 pairs of blades.

7. In a machine for the purpose described, the combination of a plurality of shovels, a shoe arranged above and extending in rear of the same, a plurality of channel-irons carried at the underside of the shoe and arranged in rear of and in alinement with the shovels, harrow-teeth connected with and arranged in rear of the shoe, and disks connected with the shoe and arranged in the
45 rear ends of the channel-irons.

In testimony whereof we have hereunto set our hands in presence of subscribing witnesses.

BENJAMIN F. LUKE.
CHARLES L. ALLEN.

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A. B. IRVINE,
A. N. ROSENBAUM.

Witnesses as to signature of Chas. L. Allen:

E. H. SPARKS, Jr.,
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