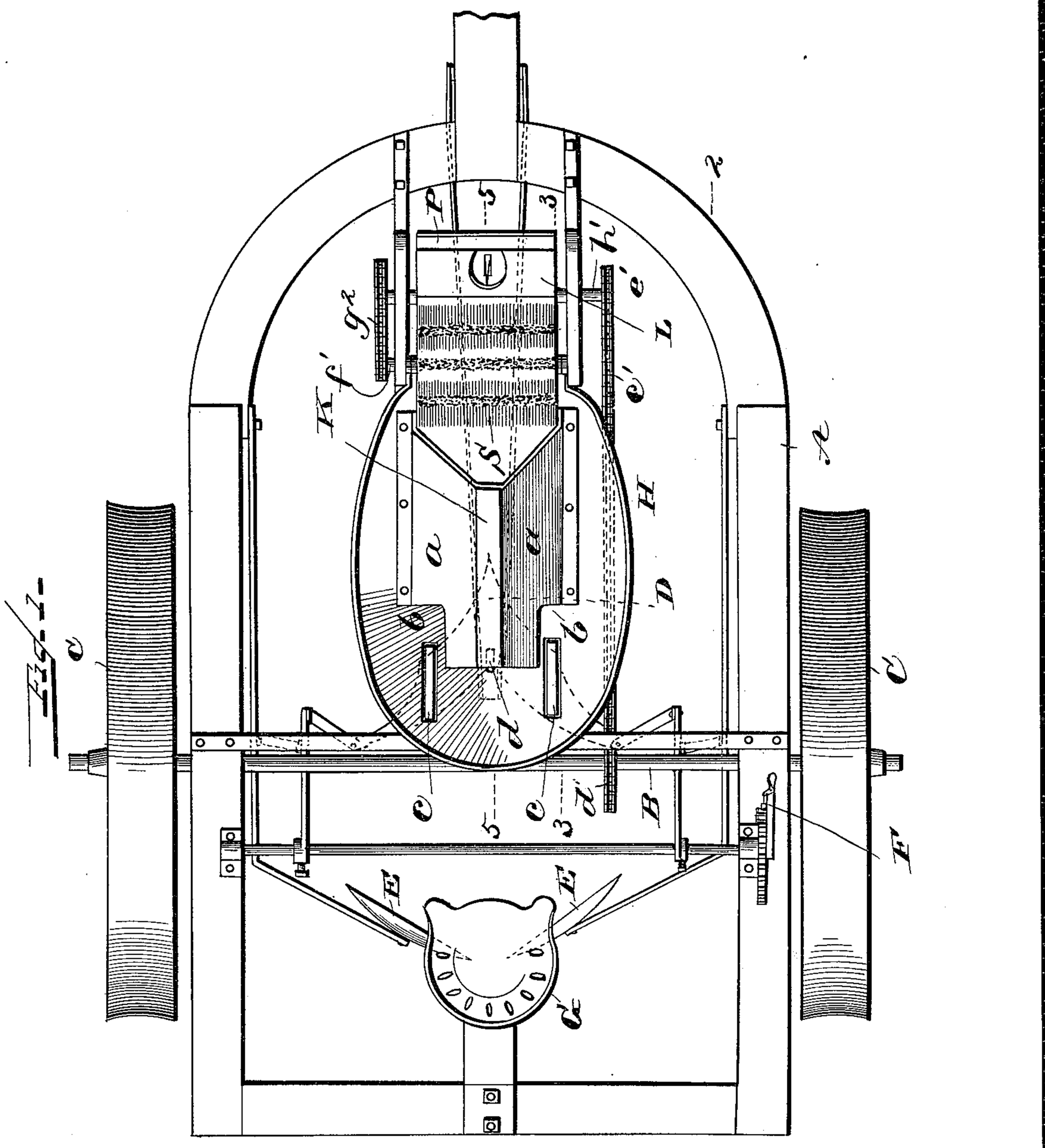
No. 613,212. Patented Oct. 25, 1898.

J. A. MENGEL & G. K. BINKLEY.

POTATO PLANTER.

(Application filed Feb. 9, 1898.)

(No Model.) 5 Sheets—Sheet 1.



Witnesses.

G. A. Paulbeschmidt.

D. Weimar Reinold.

Inventors.

Joseph A. Mengel.
George K. Binkley.
By D. W. Reinold.
Attorney.

No. 613,212. Patented Oct. 25, 1898.

J. A. MENGEL & G. K. BINKLEY.

POTATO PLANTER.

(Application filed Feb. 9, 1898.)

(No Model.) 5 Sheets—Sheet 2.

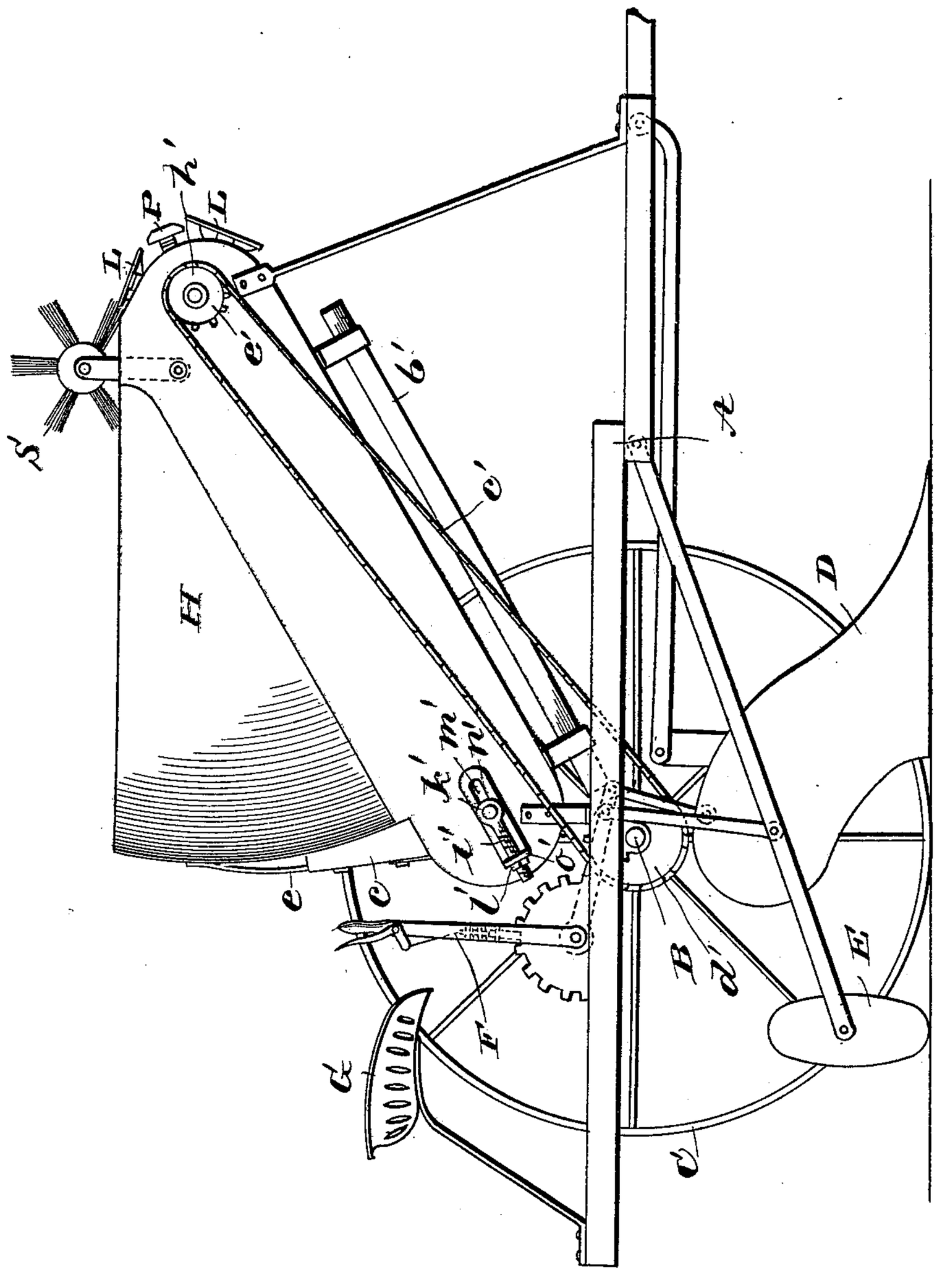


Fig. 2.

Witnesses.

G. A. Fauberschmidt,
D. Weiner Reinold

Inventors

Joseph A. Mengel
George K. Binkley.
By D. W. Reinhold
Attorney.

No. 613,212. Patented Oct. 25, 1898.

J. A. MENGEL & G. K. BINKLEY.

POTATO PLANTER.

(Application filed Feb. 9, 1898.)

(No Model.) 5 Sheets—Sheet 3.

Fig. 3.

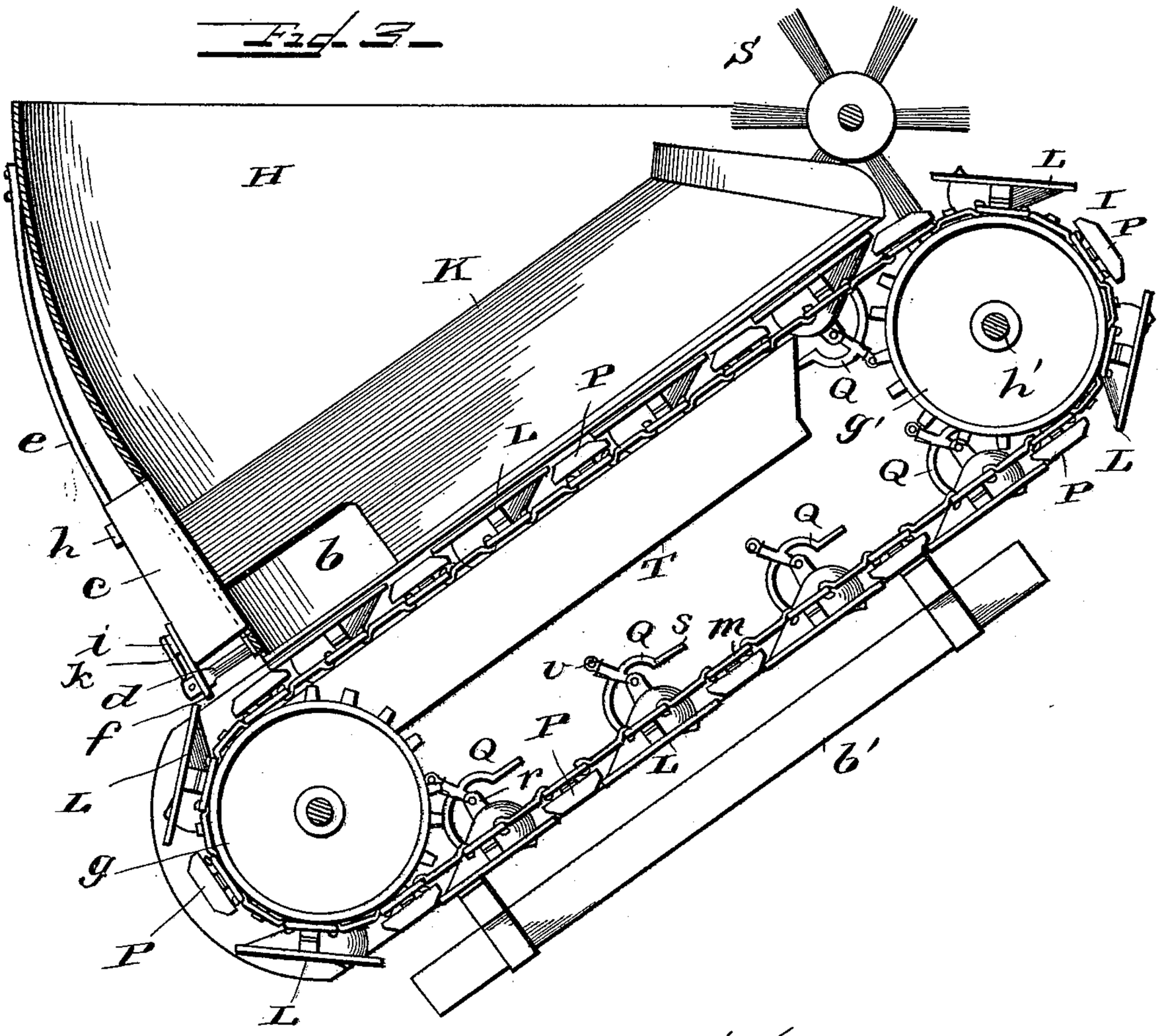
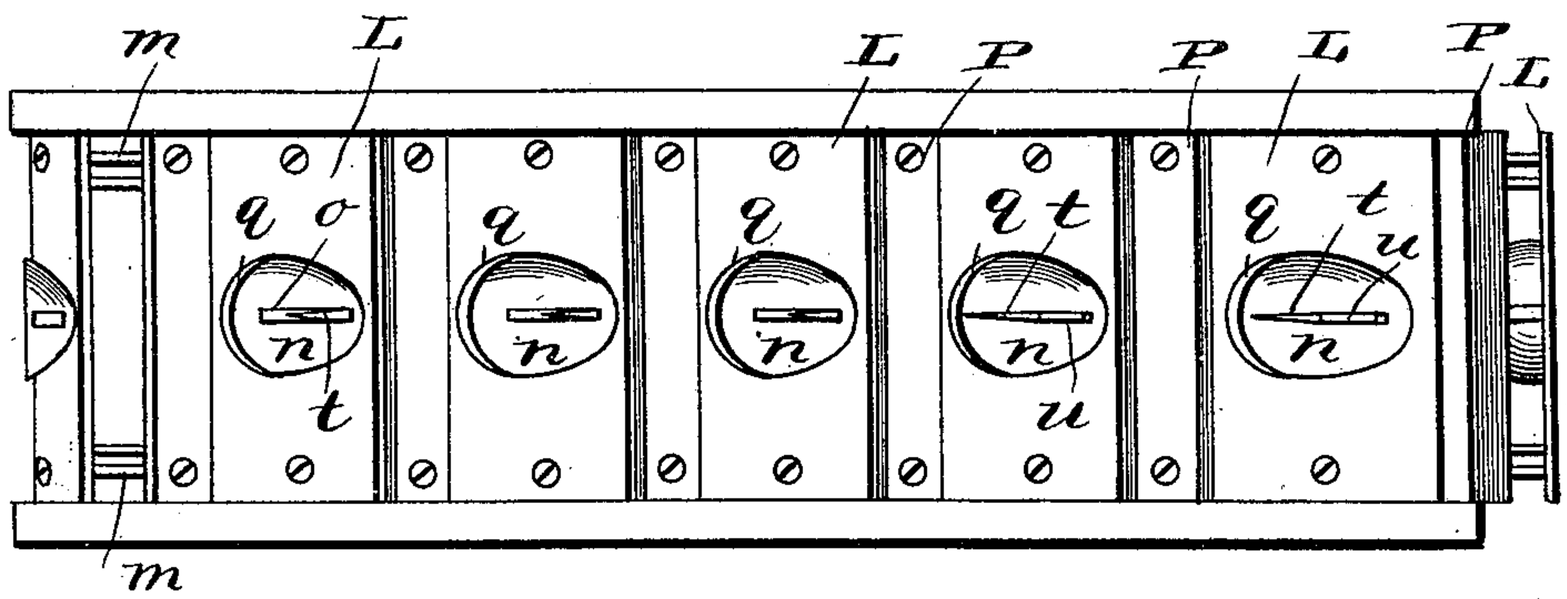


Fig. 4.



Witnesses.

G. A. Tauberschmidt,

D. Weinrich Reinold.

Inventors.

Joseph A. Mengel
George K. Binkley.
By D. L. Reinhl.
Attorney.

No. 613,212. Patented Oct. 25, 1898.

J. A. MENGEL & G. K. BINKLEY.

POTATO PLANTER.

(Application filed Feb. 9, 1898.)

(No Model.) 5 Sheets—Sheet 4.

Fig. 5.

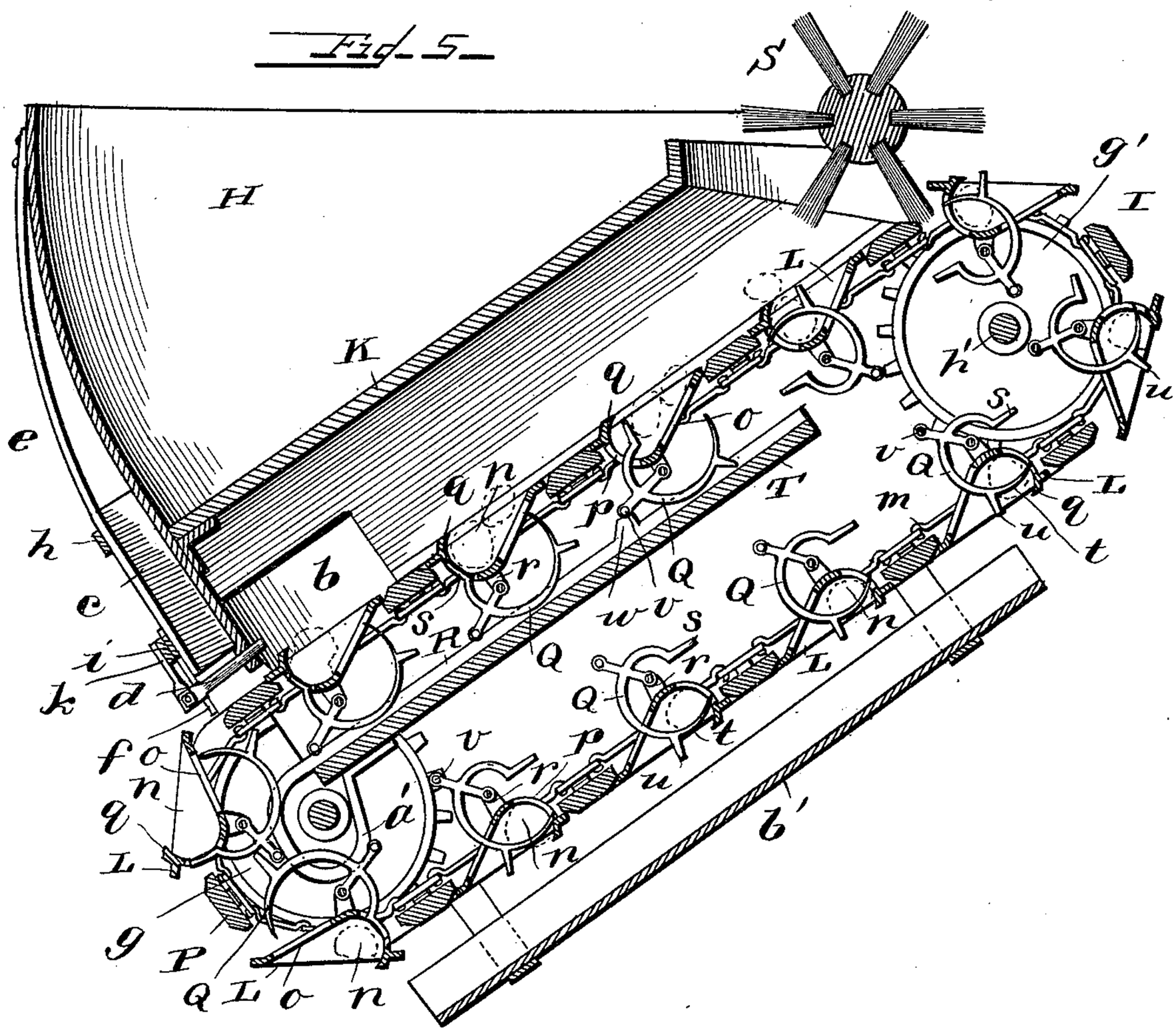
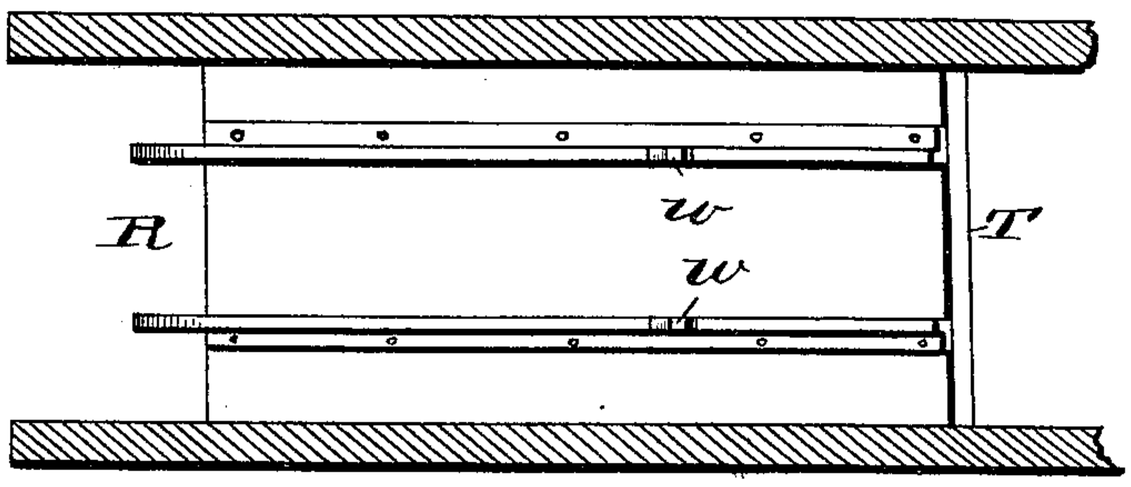


Fig. 6.



Witnesses.

G. A. Pancherschmidt,

D. Warner Reinold.

Inventors.

Joseph A. Mengel.
George K. Binkley.
By D. E. Reinhold.
Attorney.

No. 613,212. Patented Oct. 25, 1898.

J. A. MENGEL & G. K. BINKLEY.

POTATO PLANTER.

(Application filed Feb. 9, 1898.)

(No Model.) 5 Sheets—Sheet 5.

Fig. 7.

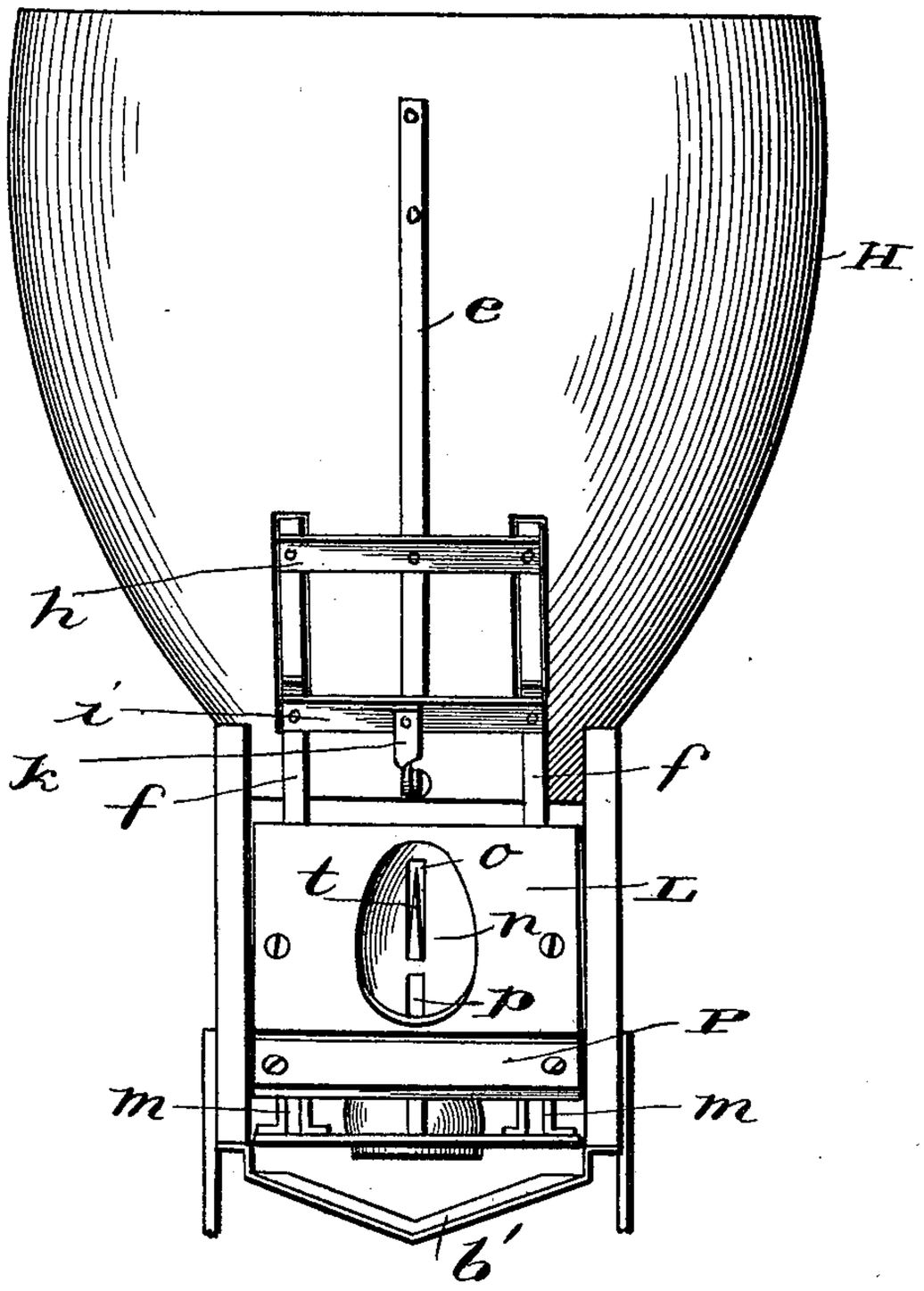


Fig. 8.

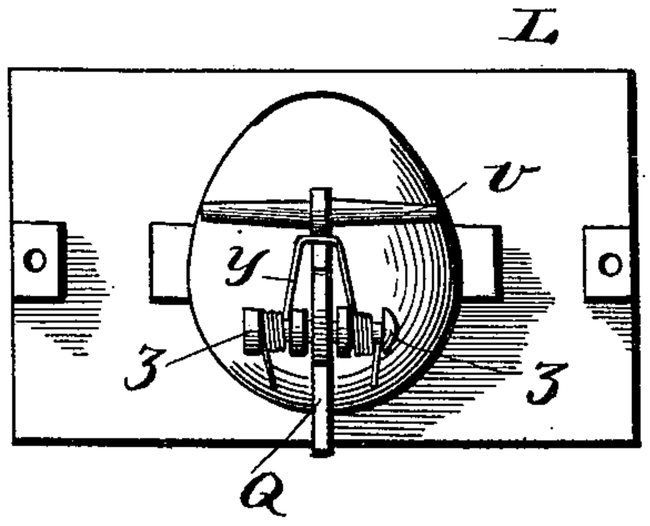
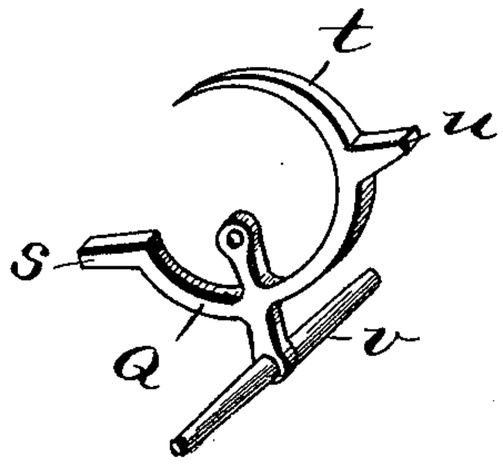


Fig. 9.



Witnesses—

G. A. Tauberschmidt,

D. Weimer Reinohl.

Inventors

Joseph A. Mengel

George K. Binkley.

By D. E. Reinohl

Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH A. MENGEL, OF McKEANSBURG, AND GEORGE K. BINKLEY, OF ORWIGSBURG, PENNSYLVANIA, ASSIGNORS OF ONE-THIRD TO GEORGE H. GERBER, OF POTTSVILLE, PENNSYLVANIA.

POTATO-PLANTER.

SPECIFICATION forming part of Letters Patent No. 613,212, dated October 25, 1898.

Application filed February 9, 1898. Serial No. 669,680. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH A. MENGEL, residing at McKeansburg, and GEORGE K. BINKLEY, residing at Orwgisburg, in the county of Schuylkill and State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Potato-Planters; and we 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.

Our invention relates to agricultural implements, has especial reference to potato-planters, and consists in certain improvements in construction, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a top plan view of a potato-planter provided with our improvements; Fig. 2, a side elevation on line 2 2, Fig. 1; Fig. 3, a vertical longitudinal section on line 3 3, Fig. 1, showing that part only of the machine above the supporting-frame; Fig. 4, a top plan view of the same; Fig. 5, a vertical longitudinal section on line 5 5, Fig. 1; Fig. 6, a top plan view of the tracks over which the needles travel; Fig. 7, a rear elevation; Fig. 8, an inverted plan of one of the cup-plates detached and on an enlarged scale, and Fig. 9 an enlarged perspective of one of the needles.

Reference being had to the drawings and the letters thereon, A indicates the frame of the machine, B the axle, C C the wheels, D the plow, E E the coverers, F the lever for raising and lowering the coverers, and G the seat, all of which may be of any approved form of construction.

H is the hopper, under which is an endless conveyer I, and in the bottom of the hopper, directly over the center of the conveyer, is a housing K, provided with inclined sides *a a* and openings *b b* in said sides and at the rear or lower ends thereof, through which potatoes are discharged from the hopper upon the conveyer, and to insure the regular discharge of the potatoes an agitator *c* is provided on each side of the housing and adjacent to each opening and an agitator *d* in the center, beneath the housing and directly over the potato-pockets in the conveyer. The agitators *c* and *d* are connected to a spring or resilient bar *e*, and the agitators are vibrated by the plates L on the conveyer I striking the extensions *f f* as the plates pass over the lower support *g* of the conveyer, as shown in Figs. 3, 5, and 7. The bar *e* is connected to the agitators through the medium of bars *h*, *i*, and *k*.

The conveyer I is mounted upon two revoluble supports *g g*, and consists of two chains *m m*, to which are attached the transverse plates L and bars P. In each plate L is a pocket *n* to receive potatoes, and in the bottom of the pocket is a longitudinal slot *o* and like slot *p*, and the rear wall of the pocket is made to overhang at *q* to prevent the potato in the rear end of the pocket falling or rolling out as the conveyer travels in its inclined path. The bars P prevent potatoes falling into the space between the upper and lower sides of the conveyer and also form a support for the front and rear edges of the plates L.

To the lug *r* on the lower side of each cup is pivotally attached a curved needle Q, which is projected through the slots *o p* in the pocket. At one end of the needle is an arm *s*, which serves to agitate the potatoes in the pocket should more than one potato rest in the pocket, and at the opposite end of the needle and adjacent to the point *t* thereof is another arm *u*, which serves to forcibly eject or throw out any surplus potatoes from the pocket, as shown in Fig. 5.

The first action—namely, agitating the potatoes—is effected by the transverse bar *v* on the needle coming in contact with lugs *w* on the rails of track R, which projects the arm *s* through the slot *p*, as shown in Fig. 5, the needle having been held back out of the slots *o p* by the bar *v* being in contact with the track R, which track is provided with two rails, as shown in Fig. 6. As soon as the bar *v* has passed lugs *w* the arm *s* will return out of the slot and a potato, if there be more than

one in the pocket, will gravitate to the center of the pocket directly over the slot *p*, and as the pocket travels on as soon as the bar *v* leaves the rails of the track on the front and upper end thereof the needle Q is projected through the slot *o*, the arm *u* striking any surplus potato in its path and ejecting or displacing it from the pocket, and the point *t* of the needle piercing the potato remaining in the pocket.

The needle Q is projected to engage a potato by a spring *y*, secured to studs or pins *z z* and engaging the lower side of the needle, as shown in Fig. 8.

Should one or more potatoes escape the arms *u* on the several needles, they are removed by the revoluble brush S as the plates L, with their pockets *n*, pass under the brush.

The rails of the track R are supported upon a platform T, and the potatoes are held in the pockets *n* by the needles Q until the bar *v* reaches and strikes the lower and curved side of the rails of the track R at *a'*, when the needle is thrown back and the potato released, as shown in Fig. 5.

Under the conveyer may be placed a trough *b'* to catch any potatoes that may break off or otherwise become detached from the needles in the pockets.

The potatoes as they are released from the pockets may fall into a suitable conductor (not shown) or they may fall directly into a furrow.

The conveyer I is driven by a belt *c'*, engaging a pulley *d'* on the axle B and a pulley *e'* on shaft *f'*, and the brush S is driven by a belt g^2, connected to shaft *f'* and shaft *h* by suitable pulleys, over which it travels.

The support *g* is adjusted to keep the chains *m m* taut by bolts *i'*, only one of which is shown in Fig. 2, which engages the axle *k'* of the support and nut *l'*, the axle working or sliding in slot *m'* in plate *n'*, against the flange *o'* of which the nut *l'* bears.

It is obvious that a cylindrical conveyer may be substituted for that shown and described without departing from the spirit of our invention.

Having thus fully described our invention, what we claim is—

1. In a potato-planter, a hopper provided with means for discharging potatoes from both sides of the center of the hopper, an agitator for each discharge and an intermediate agitator, in combination with a conveyer for delivering potatoes.

2. In a potato-planter, a hopper provided with discharge-openings on both sides of the center of the hopper, an agitator for each opening and an intermediate agitator, in combination with a conveyer provided with pockets, means for engaging a potato in each pocket and means for releasing the potatoes.

3. In a potato-planter, a hopper provided with agitators projecting through the wall of the hopper and suitable discharge-openings, in combination with a conveyer constructed to operate said agitators in its rotation.

4. In a potato-planter, a hopper, in combination with a conveyer provided with pockets, means operating in each pocket to agitate potatoes in the pocket and engage one potato, and means for releasing the potatoes.

5. In a potato-planter, a hopper, in combination with a conveyer provided with pockets, means operating in each pocket to agitate potatoes in the pocket and engage one potato and a track with which said means engage to agitate and release the potatoes.

6. In a potato-planter, a hopper, in combination with a conveyer provided with pockets, means operating in each pocket to agitate potatoes in the pocket, eject surplus potatoes and engage one potato, and means for releasing the potatoes.

7. In a potato-planter, a hopper, in combination with a conveyer provided with pockets, means operating in each pocket to agitate potatoes in the pocket, eject surplus potatoes and engage one potato and a track with which said means engage.

8. In a potato-planter, a conveyer provided with pockets having a slot in the bottom thereof, in combination with a curved needle in each pocket working in said slot and means for operating said needle to engage and release a potato.

9. In a potato-planter, a conveyer provided with pockets having a slot in the bottom thereof, in combination with a needle in each pocket having an arm for agitating potatoes in the pocket, and means for operating the needle.

10. In a potato-planter, a conveyer provided with pockets having a slot in the bottom thereof, in combination with a curved needle in each pocket having an arm for agitating potatoes in the pocket, and means for operating the needle.

11. In a potato-planter, a conveyer provided with pockets having a slot in the bottom thereof, in combination with a needle in each pocket provided with an arm for agitating potatoes in the pocket, an arm to eject surplus potatoes, and means for operating the needle.

12. In a potato-planter, a conveyer provided with pockets having a slot in the bottom thereof, in combination with a curved needle in each pocket provided with an arm at one end for agitating potatoes in the pocket, an arm to expel surplus potatoes, and means for operating the needle.

13. In a potato-planter, a conveyer having pockets, in combination with means for agitating and ejecting surplus potatoes and engaging one potato in each pocket and means for releasing the potato.

14. In a potato-planter, a conveyer provided with pockets having a slot on each side of its center, in combination with a curved needle in each pocket provided with an arm

at one end for agitating potatoes in the pocket and an arm near the opposite end to expel surplus potatoes from the pocket.

15. In a potato-planter, a conveyer provided with pockets, in combination with a curved needle having a transverse bar, and a track with which said bar engages.

16. A potato-planter provided with a conveyer having pockets, means operating in each pocket to remove surplus potatoes, a supplemental device separate from the pockets to remove surplus potatoes, means for engaging a potato in the pocket and means for releasing potatoes.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH A. MENGEL.
GEORGE K. BINKLEY.

Witnesses:
ROBERT L. BOCK,
ROBERT S. FEY.