

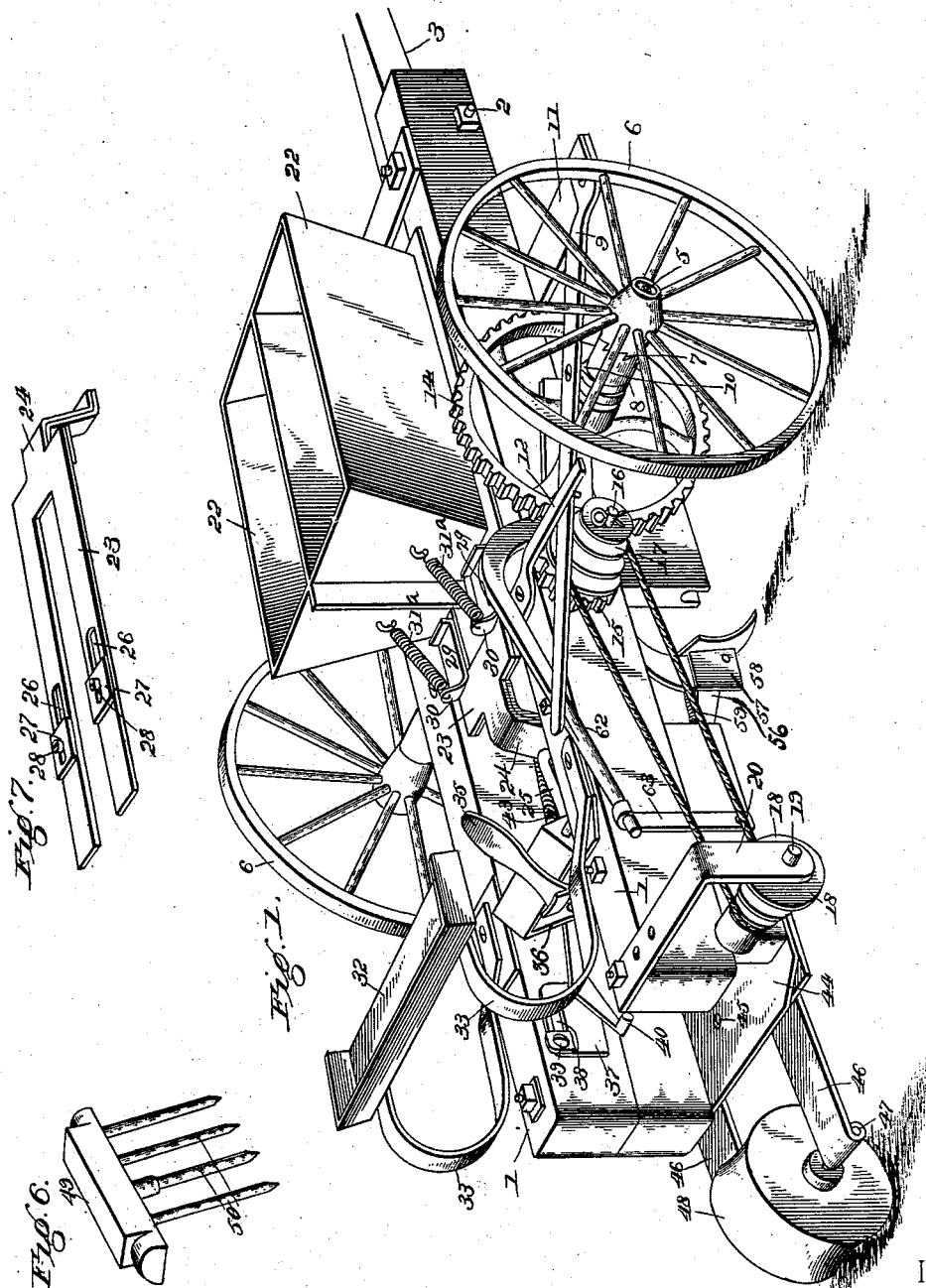
(No Model.)

2 Sheets—Sheet 1.

T. L. GRAY.
COMBINED PLANTER AND TOBACCO HILLER.

No. 522,367.

Patented July 3, 1894.



Inventor

Thomas L. Gray

Witnesses

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W. S. Duwall

By his Attorneys.

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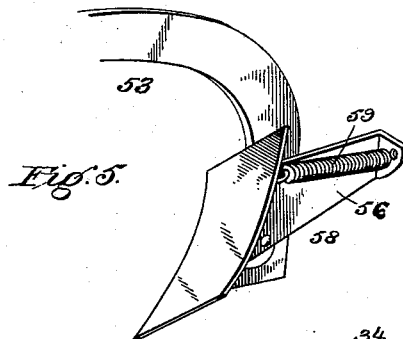
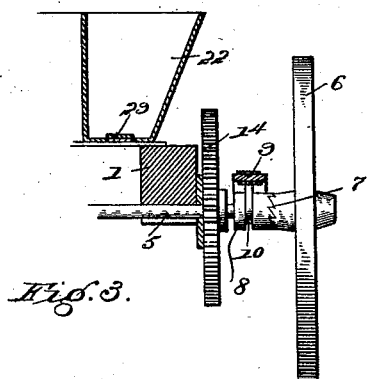
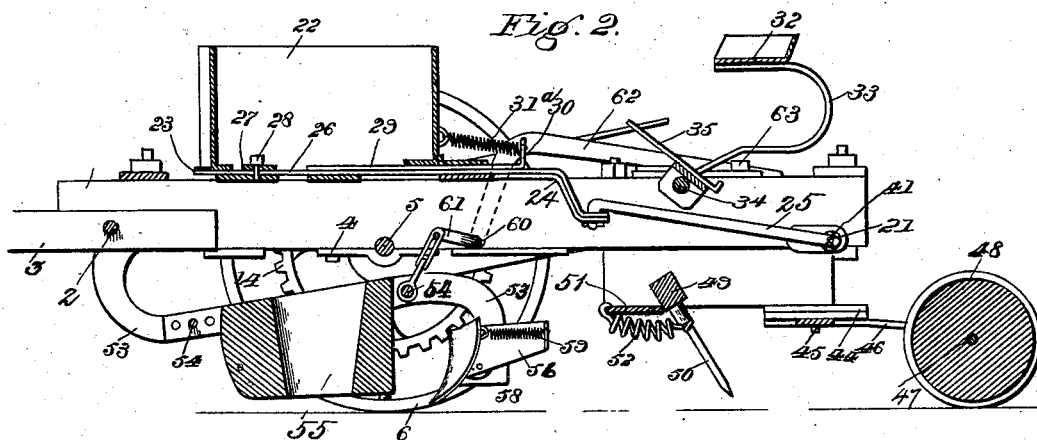


Fig. 8.

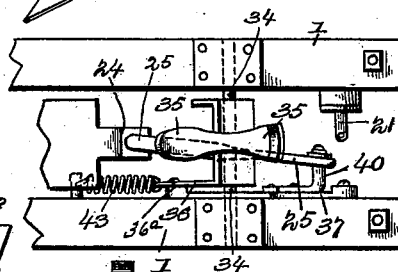
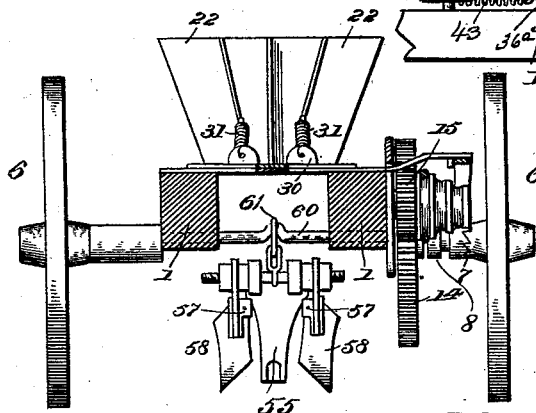


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS LOGAN GRAY, OF HINSLEYTOWN, ASSIGNOR OF ONE-HALF TO
THOMAS P. ALLEN, OF ELMO, KENTUCKY.

COMBINED PLANTER AND TOBACCO-HILLER.

SPECIFICATION forming part of Letters Patent No. 522,367, dated July 3, 1894.

Application filed September 21, 1893. Serial No. 486,095. (No model.)

To all whom it may concern:

Be it known that I, THOMAS LOGAN GRAY, a citizen of the United States, residing at Hinsleytown, in the county of Christian and State of Kentucky, have invented a new and useful Combined Planter and Tobacco-Hiller, of which the following is a specification.

My invention relates to improvements in planters, the objects in view being to produce a machine of cheap and simple construction adapted to hill tobacco and distribute fertilizer and also to be converted from such a machine to an automatic planter and fertilizer distributor.

Various other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a rear perspective of a machine embodying my invention. Fig. 2 is a vertical longitudinal sectional view through one of the hoppers. Fig. 3 is a transverse sectional view through one of the hoppers. Fig. 4 is a similar view in rear of the hoppers. Fig. 5 is a detail in perspective of one of the plows and a portion of its standard. Fig. 6 is a similar view of the harrow. Fig. 7 is a detail of the seed-slides. Fig. 8 is a plan view of the rear portion of machine, the driver's seat removed.

Like numerals of reference indicate like parts in all the figures of the drawings.

In the practice of my invention I employ a pair of opposite longitudinal beams 1, which are connected by suitable cross-bars, and at their front ends by a transverse bolt or rod 2 upon which is pivoted the tongue 3. The under sides of the beams are provided with transversely opposite bearings 4, and in the same is journaled for loose rotation a transverse axle 5, the ends of which carry ground-wheels 6. The hub of one of the ground-wheels, namely, at the right of the machine, is provided with ratchet teeth 7, the said hub being loose upon the shaft, and at the inner side thereof and designed to engage with the said teeth is a splined clutch-sleeve 8, the said clutch being connected to a lever 9 through the medium of a yoke 10, the said lever being fulcrumed at its front end to a bracket 11. A locking standard 12 projects from the ad-

jacent beam, and is provided upon its under side with a stud. By throwing the lever to either side of the stud, the aforesaid clutch will be thrown in or withdrawn from engagement with the hub of the wheel. The axle is provided with a master-gear 14 which engages with a spur-gear 15, which is mounted upon a short stub-shaft 16 that projects from the beam 1 in rear of the master-gear. The said stub-shaft is further provided with a cone-pulley 17 which is loose upon the shaft and fastened to the said spur-gear 15. This cone-pulley is connected to a similar though oppositely disposed pulley 18 located upon a stub-shaft 19 at the rear end of the machine and whose outer end is supported by an inverted L-shaped bracket 20. The inner end of the shaft 19 is provided with a crank-pin 21.

A pair of hoppers 22 are supported upon the beams 1 though a single hopper may be employed if desired, and mounted for sliding in ways in said hoppers is a seed-slide 23 having a rear depending tongue 24 which is connected to one end of a pitman rod 25, the said rod having its rear end connected to the crank-pin 21, whereby motion imparted from the ground-wheel is transmitted through the gearing described to the seed-slides. The seed-slides are mounted over openings formed in the bottom of the hopper and they themselves are provided with elongated slots 26 over each of which is mounted a gage-plate 27 regulated by a set-screw 28. By moving the plate the slot in the slide may be increased or decreased as will be obvious. A pair of cut-off plates 29 are arranged over the slides within each hopper and project from the rear ends thereof, at which points they are upturned as at 30 and yieldingly connected to the rear walls of the hopper by coiled springs 31^a, whereby they are consequently pressed forward, but not to such a point as to cover the seed-slots in the seed-slides when the latter are moved forward to their fullest extent. Thus far it will be seen I have provided a planter that is capable of planting either fertilizer or grain, or both, automatically, said slides being operated simultaneously by the revolutions of the ground-wheel.

At the rear ends of the two beams a driver's seat 32 is supported upon standards 33, and

between the standards and the beams there is fulcrumed on a shaft 34 a foot-lever 35. This foot-lever is provided at its left side with a depending terminal or arm 36, and the same
 5 engages pivotally at 36^a, with a sliding plate 37 that is slotted near its rear end as at 38, and supported at the inner side of the adjacent beam by a bolt 39. This plate is provided below its slot with a crank-pin 40 and
 10 with which the pitman-rod 25 may be connected when it is desired to operate the slides merely by foot power and at intervals. Whether secured to the crank mentioned or to the crank 21 a split-pin and washer 41
 15 will serve the purpose of securing the two together. The lower end of the arm 36 beyond the point of pivotal connection 36^a with the plate 37 is connected to a stationary portion of the framework by means of a coiled spring
 20 43, whereby the front end of the foot-lever is normally maintained upwardly inclined. A transverse plate 44 connects the rear ends of the two beams, and pivoted to the same by a bolt 45 is a pair of rearwardly disposed bearing-arms 46 in which are journaled the opposite ends of a shaft 47 carrying a packing-roller 48, whose periphery is concaved, as usual. A rake-bar 49 carrying teeth 50 has its opposite ends reduced and journaled in
 30 blocks depending from the beams 1, and in advance of the same is arranged a stop-plate 51 which is connected to the rake or harrow-teeth by means of a coiled spring 52, whereby the said harrow-teeth are yieldingly drawn to
 35 the front.

A pair of compound curved beams 53 are pivoted to a front transverse draft-bolt 2 and are connected at intervals by the transverse tie-bolts 54, of which the front one passes
 40 through ears projecting from the front end of a seed-conductor 55 disposed between the beams and held in position by said tie-bolts. The rear ends of the beams 53 are provided at their inner sides with L-shaped arms 56 and pivoted to said beams at their rear ends and in advance of the arms are the rear vertical flanges 57 of a pair of covering plows 58, the inner or moldboard side of the plows being connected by coiled springs 59 which
 50 by drawing the upper ends to the rear, yieldingly press the lower ends of the plows to the front. Thus, in case of meeting with an obstruction, the plows will yield and pass over the same instead of becoming broken.

A transverse shaft 60 is journaled in the beams 1 in rear of the axle 5, and has an intermediate crank portion 61 that is connected with the rear tie-rod that connects the plow-carrying beams, while the outer end of the
 60 shaft is upwardly bent to form an angular lever 62 designed to engage under a hook 63 when it is desired to support the beams together with the plows and runner out of operative position.

65 This completes the construction of the machine and the operation thereof is as follows:—If it is desired to fertilize the tobacco

hills as they are formed, the land is first laid off one way and the seed-plates in the slides projected so as to expose more or less of the
 70 slots, and the hopper filled with fertilizer. The pitman is now connected to the left crank shaft, whereby the said slides may be operated by the foot of the driver at proper intervals. If, on the other hand, it is desired
 75 to plant seed and at the same time drop fertilizer, seed is placed in one hopper and fertilizer in the other and the position of the pitman shifted so as to be engaged with the crank 21; the clutch is then moved so as to
 80 throw the clutch-sleeve into engagement with the ground-wheel and the machine becomes an automatic planter, discharging the grain at intervals.

From the foregoing description in connection with the accompanying drawings it will be seen that I have provided a very simple machine that is adapted to drop grain and fertilizer simultaneously and hill the same
 90 by the plows following thereafter, and to subsequently harrow or rake the hill, and to finally mold the same by the roller following after the machine; that the machine is adapted for planting grain as well as forming tobacco hills, and that the quantities delivered at each
 95 movement of the reciprocating seed-slides may be regulated at will; and finally that in traveling to and from the field of operation the machine may be thrown out of operative connection.
 100

Having described my invention, what I claim is—

1. In a machine of the class described, the combination with a framework, a superimposed hopper having an opening in its bottom,
 105 a seed-slide arranged in the hopper, a foot-lever in rear of the seed-slide, a seat in the rear of the foot-lever, an arm depending from the foot-lever, a spring connected to the arm and serving to draw the same forward, a pivoted plate connected at one end to the arm and provided at its opposite end with a crank-pin, and a pitman connecting the rear end of the seed-slide with said crank-pin, substantially as specified.
 115

2. In a machine of the class described, the combination with a framework, a superimposed hopper having an opening in its bottom, a seed-slide having a slot, a gage-plate and regulating-screw supported in the slot, of
 120 a yielding cut-off plate mounted for horizontal movement over the slide, and means for operating the slide, substantially as specified.

3. In a machine of the class described, the combination with a framework, a superimposed hopper having an opening, a seed-slide arranged in the hopper over the opening and having a discharge opening, and means for operating the slide, of a cut-off plate arranged in the bottom of the hopper over the slide and
 130 having a rear upturned end, and a coiled spring connecting said upturned end with the rear wall of the hopper, substantially as specified.

4. In a machine of the class described, the combination with a framework, and a subdivided hopper arranged thereon, of a pair of seed-slides having openings connected at their rear ends and located in the hoppers and provided at their rear connected ends with a depending shank or arm, a foot-lever arranged in rear of the hoppers, a crank-shaft arranged in rear of the hoppers, a ground-wheel, and axle, means for communicating motion from the ground-wheel and axle to the crank-shaft, and connecting devices between the crank of the seed-plate and adapted for connecting with either the crank-shaft or the foot-lever, substantially as specified.

5. In a machine of the class described, the combination with a framework, a superimposed hopper, a reciprocating seed-slide, and a pitman at the rear end thereof, of a foot-lever adapted to be connected with the pitman, a rear shaft also adapted to be connected with the pitman an axle, ground-wheels, and means for communicating motion from one of the ground-wheels to the said shaft, substantially as specified.

6. In a machine of the class described, the combination with a framework, a superimposed hopper, a seed-slide, a pitman connected therewith, a transverse shaft having a crank-pin engaging the pitman, and a pulley on said shaft, of an axle, ground-wheels arranged on the axle, an intermediate shaft, a

spur-gear thereon, a master gear on the axle engaging with the spur-gear, a pulley on the intermediate shaft, and a belt between the pulley of the intermediate shaft and the crank-shaft, substantially as specified.

7. In a machine of the class described, the combination with the framework, the superimposed hopper, the reciprocating slide, and the pitman, of a rear crank-shaft having a cone-pulley, the intermediate shaft having a reversely disposed cone-pulley, and a spur-gear connected therewith, the belt connecting the pulleys, the axle, the ground wheels, and the master-gear arranged on the axle, and engaging with the spur-gear, substantially as specified.

8. In a machine of the class described, the combination with the framework, of the beams pivoted thereto and extending thereunder and provided with rearwardly extending arms, the shovels having vertical flanges pivoted to the beams, and connecting springs between the shovels and arms, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS LOGAN GRAY.

Witnesses:

F. A. KARNS,

E. H. GARROTT, Sr.