SIGNER & SHIPTON.

Grain Drill.

No 7,831. Patented Dec. 10, 1850.

Fig. 1.

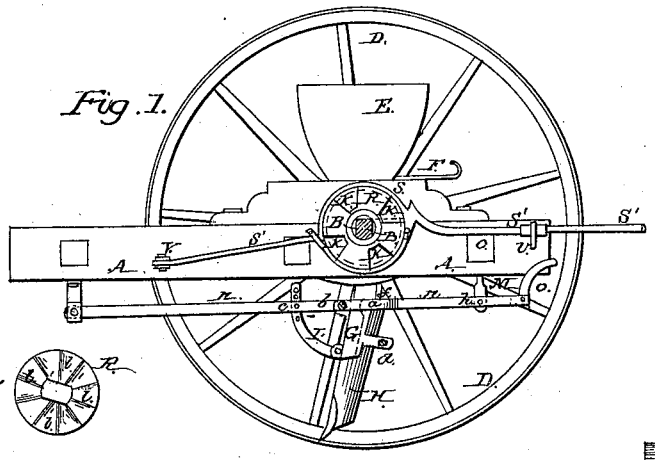

Fig. 7.

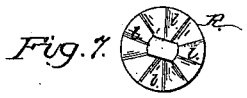

Fig. 2.

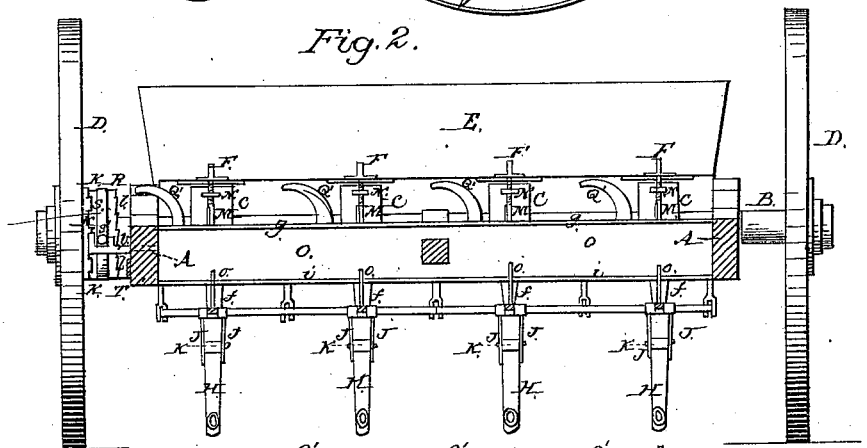

Fig. 3.

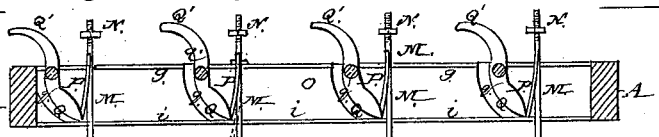

Fig. 4.

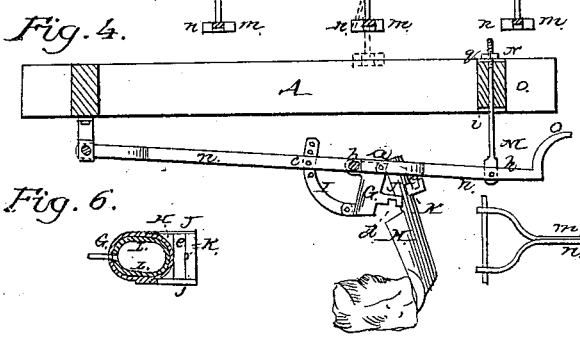

Fig. 5.

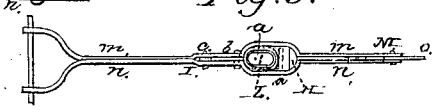

Fig. 6.

UNITED STATES PATENT OFFICE.

JOHN SIGNER AND THOS. N. SHIPTON, OF KISHACOQUILLAS VALLEY, PA.

IMPROVEMENT IN SEED-PLANTERS.

Specification forming part of Letters Patent No. **7,831**, dated December 10, 1850.

To all whom it may concern:

Be it known that we, JOHN SIGNER and THOMAS N. SHIPTON, of Kishacoquillas Valley, in the county of Mifflin and State of Pennsylvania, have invented certain new and useful Improvements in the Seeding-Machine; and we do hereby declare the following to be a full and clear description thereof, reference being had to the annexed drawings, constituting part of this specification.

Figure 1 represents a side elevation of the machine, the drill-teeth or depositing-tubes being raised and the near wheel omitted for the purpose of showing the clutch-plate. Fig. 2 is a rear elevation of the machine, the drill-teeth being elevated. Fig. 3 is a vertical section through the rear transverse timber of the frame, showing the arrangement of the levers and springs attached to the gage-rods of the drag-bars and one of the drill-teeth or depositing-tubes. Fig. 4 is a view showing one of the drag-bars with its drill-tooth or depositing-tube lowered and in the position assumed immediately after having struck against an obstruction and caused the wooden pin to be broken. Fig. 5 is a plan of the drag-bar and drill-tooth. Fig. 6 is a horizontal section of the drill-tooth or depositing-tube, showing the loop therein for receiving the lower end of the flexible conducting-tube. Fig. 7 is a view of the side of the clutch-plate for engaging with the tooth projecting from the frame for stopping the rotation of the seeding-roller.

Similar letters on the several figures refer to like parts.

The main body of this seeding-machine is made and arranged in the usual manner, such as the frame A, axle B, seeding-rollers C, supporting and propelling wheels D D, hopper E, and regulating-slides F.

Our improvements consist in dividing the drill-teeth or depositing-tubes, each transversely and vertically from the head to near the middle thereof, into two semi-oval sections or parts, G H, and then horizontally from the middle to the front. The upper and short section, G, is hinged or connected to the rear and longest section, H, of the drill-tooth by horizontal pins *a*, or otherwise, and also to the drag-bar by the usual projecting ear, *b*, and provided with the usual curved brace, I, extending from its lower end through an opening in the drag-bar, to which it is attached by a pin, *c*. From the sides of the short section G project two arms, J J, embracing the rear and longest section, H, and provided with notches *d* on their under edges to receive the ends of a wooden pin and allow it to fall therefrom when broken.

An arm or projection, K, is cast with and extends horizontally from the rear portion, H, of the drill-tooth, and having a notch, *e*, in the upper side, which, when the two sections G H of the drill-tooth are properly adjusted, becomes coincident with the notches *d* in the arms J J, into which a wooden pin is to be inserted that is intended to break when the drill-tooth strikes against a stone or meets with such resistance as would endanger the breaking of the drill-tooth or depositing-tube, it being intended that this pin should break rather than the tooth, and thus permit the rear section, H, to turn on its connecting-pins *a*, while the front section, G, containing the lower portion of the flexible conducting-tube *f*, shall retain its proper position in connection with the drag-bar, and thus prevent the flexible conducting-tube *f* from being disturbed, while the rear portion, H, of the drill-tooth turns back or recedes in disengaging itself from the obstruction against which it strikes.

An oval loop, L, is cast or secured on the inside of the upper short section, G, of the drill-tooth, for the purpose of receiving the lower part of the flexible tube *f* for holding it therein steadily and preventing it coming in contact with the turning section H while receding. This feature of retaining the flexible conducting-tubes *f* in an upright and proper position while the drill-tooth is permitted to separate and one of its sections recede or turn upon its connecting-pins *a* to disengage itself when in contact with an obstruction is deemed important and useful in the construction of the drill-teeth or depositing-tubes of seeding-machines.

Each drag-bar is composed of two plates of wrought-iron, *m n*, of the form represented in Fig. 5, and when united and secured firmly together form an oval opening for the reception of the head or upper portion of the drill-tooth or depositing-tube, and for allowing the section H to turn back on its connecting-pins *a*, and spaces to admit the ear *b* of the upper section, G, of the drill-tooth and end of the curved brace I, gage-rod M, and handle *o* of

the drag bar. The front portions of the plates *m n* are branched and curved and formed into two arms, by which the drag-bar is attached to the front timber of the frame in the usual manner.

Another of our improvements consists in the arrangement of levers, springs, and vertical gage-rods attached to the drag-bars for gaging the depth of the drill-teeth according to the nature of the soil, and by which they are held in an elevated position when the machine is not in operation.

From near the rear ends of the drag-bars project vertically (through openings in the transverse timber O of the frame) gage-rods M, on whose upper ends are formed screw-threads to receive nuts N, which, when the drill-teeth are lowered, rest upon a plate, *g*, as seen in Fig. 4, secured to the top of the transverse timber O. the screw-rods M being secured between the plates *m n* of the drag-bars by pin *h*, upon which they turn slightly in raising and lowering the drill-teeth.

To the side of each vertical screw-rod is attached a spring, P, which fits in the opening in which the vertical rod moves, and when the drill-teeth are lowered, as represented by dotted lines in Fig. 3, the springs project through openings with the screw-rods formed in a plate, *i*, secured to the under side of the timber O, and made to bear against the same for the purpose of preventing the rising of the drill-teeth during the operation of drilling the seed into the earth, the springs P being sufficiently strong for that purpose; and when the drill-teeth are elevated the springs P are made to serve as catches, to hold the drill-teeth or depositing-tubes in an elevated position when raised, by extending themselves after passing through the openings in the plate *i* and resting upon the inner side of the same, as seen in Fig. 3.

In order to disengage the springs P from the plate *i* when it is desired to lower the drill-teeth, there is employed a series of levers, Q, inserted into recesses formed in the transverse timber O, adjacent to the springs P, said levers Q turning on pins *q* as their fulcra, passed through the transverse timber directly beneath the plate *g*, the lower end of each lever being so placed that it shall act against the spring P, while its upper end projects above the timber O and curves to the left, and forms a handle, Q′, by which the attendant lays hold and depresses the same, which causes its lower end to bear against and contract the spring P against the screw-rod M, and thus disengage it from the plate *i* when it descends with the drag-bar and vertical rod M through the opening in said plate *i* of the transverse timber O.

Our improvements also relate to the use of a double-clutch plate, R, for engaging with and disengaging it from the main axle B of the seeding-rollers at pleasure, and thus stop and start the motion of the seeding-rollers. It is made circular and placed on the axle B, between the side timber of the frame and hub of the propelling-wheel, and is channeled on its circumference to admit the ring or collar S of the changing hand-lever S′, and toothed on its sides, as seen in Figs. 1, 2, and 7, and pierced with an oval opening in its center to correspond with the oval portion of the axle which enters the same. The teeth *k* on the side of the plate next to the propelling-wheel are for the purpose of engaging with like formed teeth or projections on the adjacent side of the hub of the propelling-wheel D to lock or gear the wheel to the axle B and cause them to turn together for rotating the seeding-rollers. The teeth *l*, formed on the opposite side of the plate R, (seen in Fig. 7,) inclined on one side and straight on the opposite, are for locking the axle B to the frame by engaging with a tooth, T, on the side of the frame A, and thus arrest the motion of the axle B and consequently the seeding-rollers when unlocked from the propelling-wheel. This is effected by moving the handle of the lever S′ to the right, and held in that position by fitting into notches or teeth formed on a plate, *v*, projecting from the frame, the fulcrum of the lever being the pin V, that connects its front end with the frame. If the opening in the clutch-plate should be made square, the part of the axle over which it is to slide must be made to correspond.

The operation of this seeding-machine is like others in use, the seed being placed in the several apartments of the hopper E and the slides F drawn rearward. The beasts of draft are driven forward and the seed dropped through the openings in the slides into the cavities or seed-cells in the rollers C, and discharged through the flexible conducting-tubes and drill-teeth into the earth.

Having thus described the nature of our improvements and the construction of the same, what we claim as new and of our invention, and desire to secure by Letters Patent, is—

1. Dividing the drill-teeth or depositing-tubes into two separate sections, G H, and hinging or connecting the two sections at their upper ends in such a manner as to permit the longest or rear section, H, to recede or turn on its connecting-pins *a*, while the upper or short section retains its proper position in relation to the drag-bar and flexible conducting-tube, and providing the upper or short section, G, with two arms, J J, having notches therein, which, when the two sections of the drill-tooth are closed, become coincident with a notch formed in an arm, K, projecting from the rear or longest section, H, into which is inserted a wooden pin, which it is intended shall break when the rear or longest section of the drill-tooth shall strike against a rock or other obstruction, and thus separate the sections and permit the longest section, H, to recede and clear itself from the obstruction, while the flexible conducting-tube is held in its proper position by an oval loop on the inside of the section G, as herein fully set forth and represented.

2. Providing the clutch-plate R with an ad-

ditional row of teeth, *l*, adjacent to the side beam of the frame, for engaging with a tooth, T, projecting therefrom, for arresting the motion of the seeding-rollers simultaneously with unlocking the axle from the propelling-wheel, and thus stop the operation of the machine, as fully set forth.

In testimony whereof we have hereunto signed our names before two subscribing witnesses.

JOHN SIGNER.
T. W. SHIPTON.

Witnesses:
WM. P. ELLIOT,
J. S. SMITH.