(No Model.)

E. L. DUNLAP.

PLANTER AND FERTILIZER DISTRIBUTER.

No. 585,088. Patented June 22, 1897.

Fig. 1.

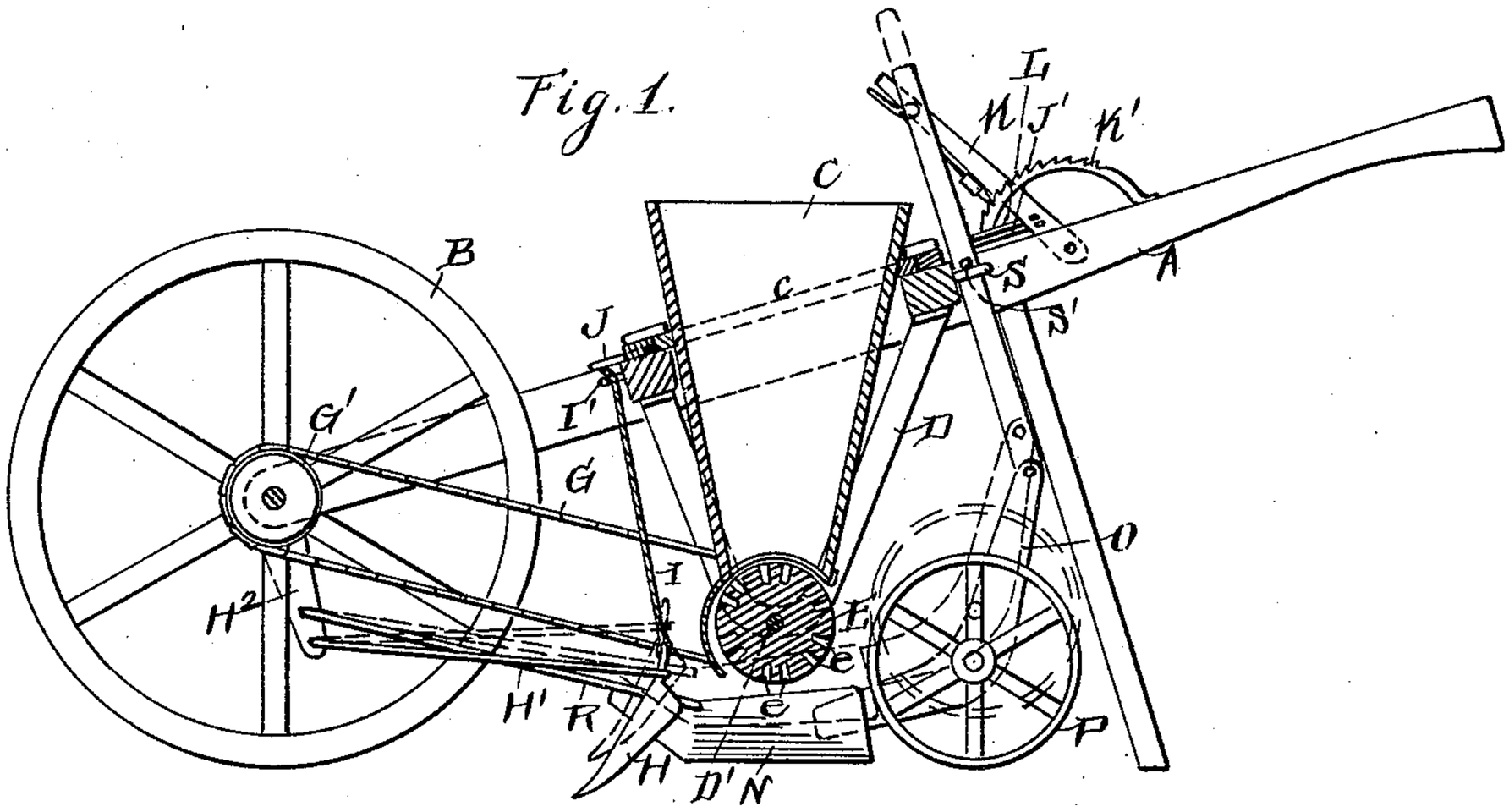


Fig. 2.

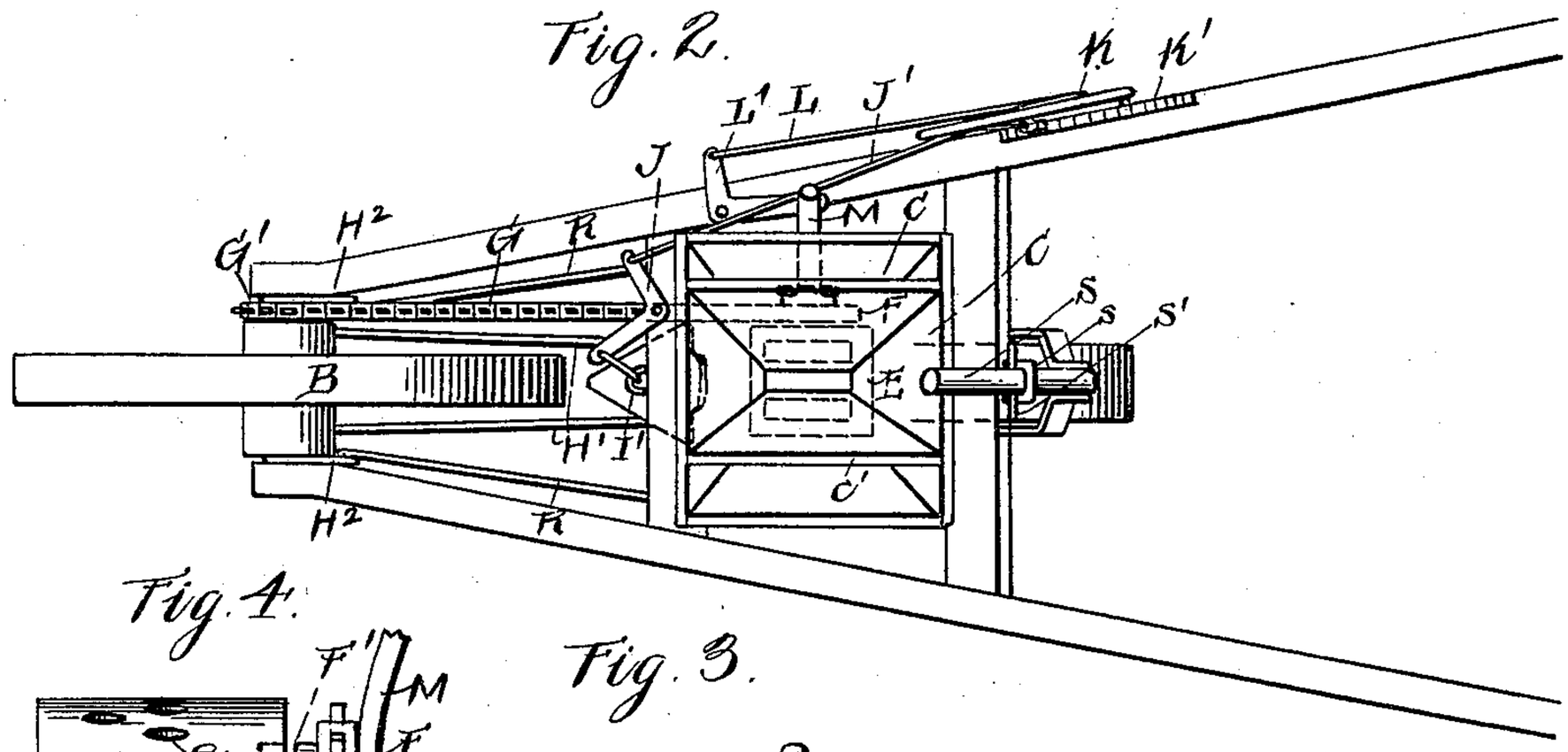


Fig. 4.

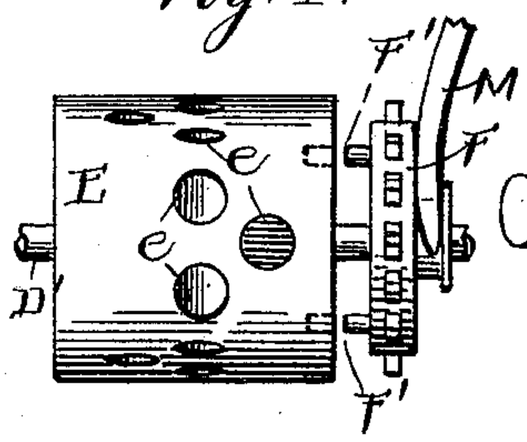
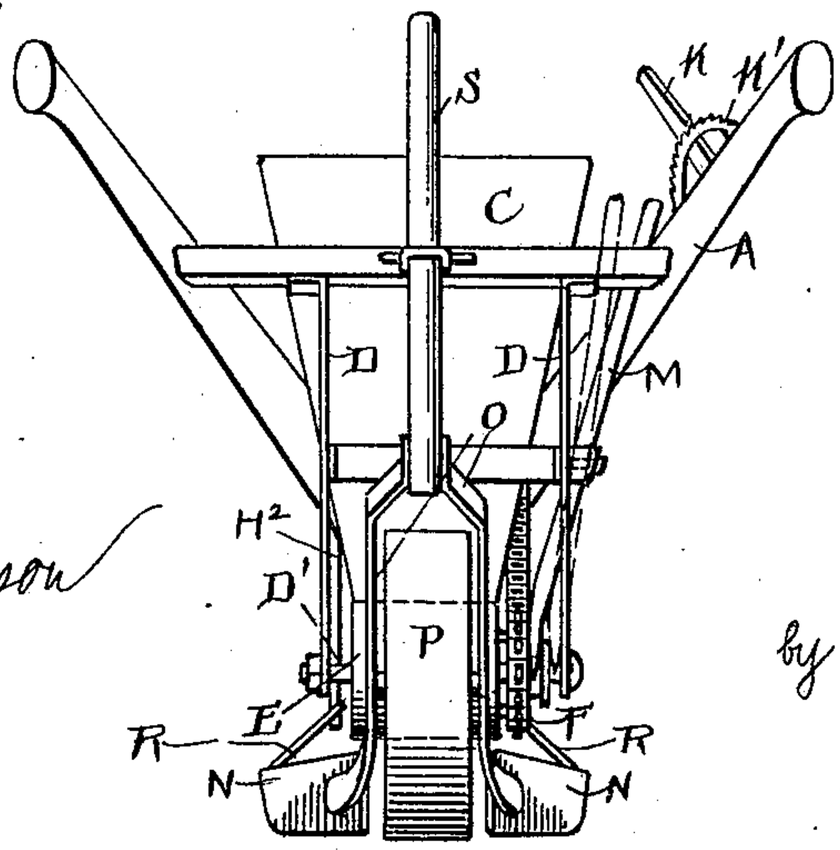


Fig. 3.



Witnesses.
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Inventor.
E. L. Dunlap
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UNITED STATES PATENT OFFICE.

EPHRAIM L. DUNLAP, OF KINGFIELD, MAINE.

PLANTER AND FERTILIZER-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 585,088, dated June 22, 1897.

Application filed January 18, 1897. Serial No. 619,593. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM L. DUNLAP, a citizen of the United States, and a resident of Kingfield, in the county of Franklin and State of Maine, have invented certain new and useful Improvements in a Combined Corn-Planter and Fertilizer-Distributer; and I do 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a central vertical section through the machine. Fig. 2 is a plan view of same. Fig. 3 is a rear end view of same, and Fig. 4 is a detail view of cylinder and clutch therefor.

This invention is designed to provide a combined seed-planter and fertilizer-distributer of improved character; and it consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the frame, and B the supporting or drive wheel of the machine, said frame and wheel being similar to the corresponding parts of any ordinary wheelbarrow and designed to be pushed in the same manner. C is the hopper, which is rigidly supported in said frame and which is divided into a central and two end compartments by vertical partitions *c c'*, the central compartment being larger than the end compartments. The bottom of the hopper is concaved on the under side and journaled in depending brackets D of the frame. On a shaft D' is a cylinder E, whose upper portion turns neatly in said concaved portion. The surface of this cylinder is formed at points corresponding to the discharges of the several compartments of the hopper, with depressions or pockets *e*.

The central compartment of the hopper is designed to contain fertilizer, while the end compartments are for different kinds of seed, one, for instance, being for corn and the other for beans. The pockets or recesses of the cylinder E, corresponding to each compartment, are of proper size to receive the particular kind of seed which the compartment is designed to contain, while those underneath the central compartment are designed to receive therein a small quantity of fertilizer. Said cylinder is loose on the shaft D, and different cylinders, each of which is adapted for different kinds of seed, are furnished with each machine to be used interchangeably as occasion requires. Fast on the said shaft is a chain gear-wheel F, having a suitable clutch device F' for engagement with the cylinder, and this gear-wheel is designed to be driven by a chain belt G from a wheel G' on the hub of the front wheel B, or any other suitable gear connection may be provided for positively rotating the said cylinder.

Directly in front of the cylinder is a drill-opening shoe or share H, which is carried by two rods H', whose forward ends are loosely connected to depending arms or brackets H^2 upon opposite sides of the wheel B. Connected also to said shoe is a cable I or its equivalent, which passes up through a bearing I' and is connected to one end of a horizontally-pivoted bell-crank lever J. Connected to the opposite arm of said lever is a link rod J', whose opposite end is connected to a hand-lever K, working against a segment bar or rack K'. A second link rod L is also connected to said lever and at its opposite end to one arm of a bell-crank L'. The other arm of the bell-crank is arranged upon movement thereof in one direction to impinge against a clutch-shifting lever M, which is attached to the hub of the chain-wheel F. Proper movement of the hand-lever therefore not only raises the shoe or share, but also throws the cylinder out of operation.

N designates two covering-shoes which are arranged below and adjacent to the ends of the said cylinder. These shoes converge rearwardly, and their rear portions are rigidly secured to the arms of a forked bracket O, in which is journaled a covering or pressing wheel P. The forward portions of said shoes are connected by rods R with the bracket-arms H^2 above referred to, the engagement of said rods with these arms being a pivotal one, in order to permit vertical movement of the said shoes. Connected to the bracket O is a vertical lever S, which works loosely in a guide *s* of the frame at the rear of the

hopper and is provided with suitable means, such as an adjustable pin S′, whereby it may be secured at different points to give the proper vertical adjustment to the covering wheel and shoes. This is necessary for the obvious reason that different seeds require to be covered at different depths. By changing the length of the cable I the shoe or share H may also be set to open a drill of any desired depth.

In order to prevent the seed from being deposited too near the fertilizer, the pockets or recesses in the cylinder, which receive such fertilizer from the hopper, are preferably arranged alternately of the pockets or recesses which receive the seed. In this manner fertilizer will be deposited in the drill upon each side of the seed and not too near the same. By providing different cylinders of different diameters or in which the pockets are at different distances from each other the distance between the hills may be varied. The machine is, however, more especially intended for planting in close drills.

It will be readily seen that in using the above machine a man can open the drills, distribute the fertilizer therein, drop the seed, and cover same all at one operation and as fast as he can walk, thus doing the work of several men planting by hand.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the class described, the combination of the hopper having independent compartments, the distributing-cylinder in connection therewith, the driving-gear for actuating said cylinder, a clutch device for controlling the operation of the said gear, lever mechanism and connections for operating said clutch device, a vertically-adjustable drill-opening shoe or share in front of the said cylinder, and a connection between the said shoe or share and the said lever mechanism whereby the former is raised by the same action which throws the driving-gear out of operation, together with covering-shoes and a presser-wheel, substantially as specified.

2. In a machine of the class described, the combination of the hopper having independent compartments, the cylinder arranged to turn in close relation to the discharges of said compartment and having pockets or recesses in its surface, gear for rotating said cylinder, a clutch device for controlling the operation of the gear, the shifting-lever, the hand-lever, the bell-crank connected thereto and arranged to impinge against the said shifting-lever, the vertically-adjustable drill-opening shoe or share in front of the said cylinder, and a connection between said shoe or share and the said hand-lever, whereby the former is raised at the same time the said hand-lever is operated to throw said driving-gear out of operation, together with devices for covering the seed deposited in the drill by said cylinder, substantially as specified.

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

EPHRAIM L. DUNLAP.

Witnesses:

HARRIS VOSE,

C. B. HUNEWELL.