T. W. S. KIDD.

Harvester Dropper.

No. 110,246. Patented Dec. 20, 1870.

Fig: 1.

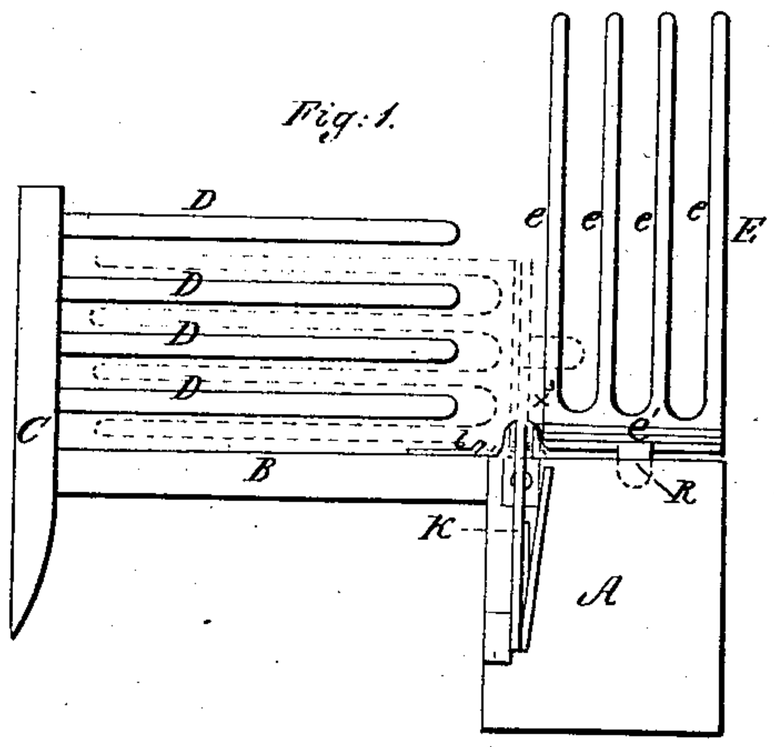


Fig: 2.

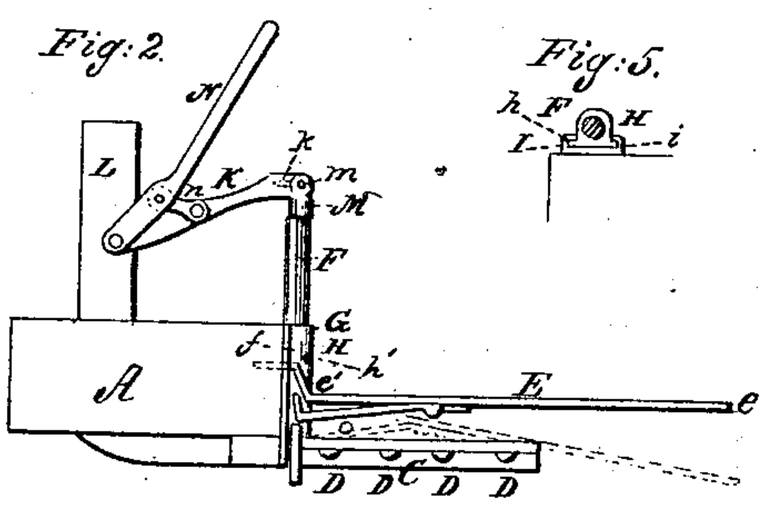


Fig: 5.

Fig: 3.

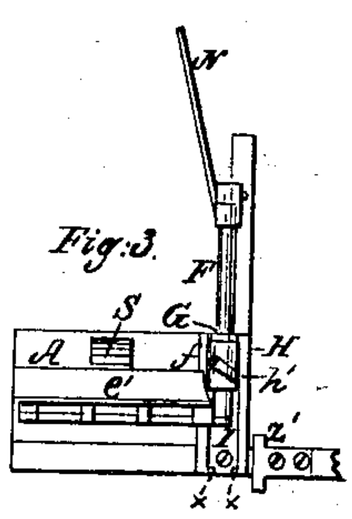
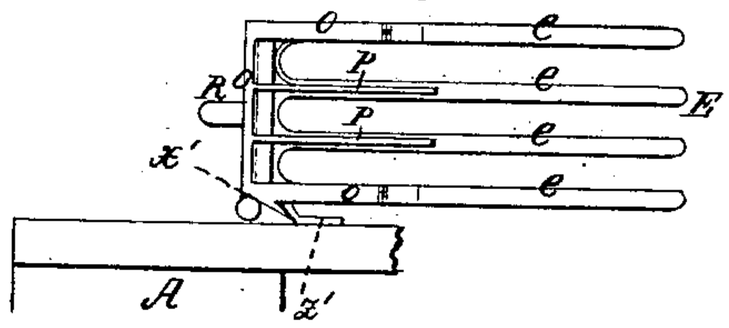


Fig: 4.



Witnesses.

C. H. Poole

Inventor:

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Attys

UNITED STATES PATENT OFFICE.

THOMAS W. S. KIDD, OF SPRINGFIELD, ILLINOIS.

IMPROVEMENT IN HARVESTER-DROPPERS.

Specification forming part of Letters Patent No. **110,246**, dated December 20, 1870.

To all whom it may concern:

Be it known that I, THOMAS W. S. KIDD, of Springfield, in the county of Sangamon, and in the State of Illinois, have invented certain new and useful Improvements in Side Drops for Delivering the Grain from Reaping-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a plan view of the upper side of my device. Fig. 2 is a side elevation of the same. Fig. 3 is a rear elevation of the dropper and its operating devices. Fig. 4 is a plan view of the lower side of the dropper, and Fig. 5 is a horizontal cross-section of the axial bar and its guide.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to remove grain from the rear of the cutting apparatus to one side of a reaper as rapidly as cut; and it principally consists in the means employed for giving to the dropper a vertical and semi-rotary movement, substantially as is hereinafter specified.

It also consists in the means employed for tilting the dropper to the rear, substantially as is hereinafter shown and described.

In the annexed drawing, A represents the platform or foot-board of a reaper; B, the support for the cutter-bar, and C the shoe, the latter of which is extended rearward in a line with the draft, and furnishes a support for one end each of a series of slats, D, placed parallel with and equidistant from each other, and extending inward in a line with and in rear of the cutter-bar. E represents a dropper, consisting of a series of parallel bars, *e*, secured, at equidistant points, to or upon the head *e'*, the latter of which is attached at one end to a round shaft or bar, F, said shaft being placed perpendicular to the plane of the dropper.

The shaft F is journaled within a bearing, G, secured to the platform A, and also within a sleeve, H, provided with two wings, *h*, that fit into corresponding grooves *i*, formed within a vertical guide, I, attached to said platform, by means of which said sleeve is confined in position horizontally, while allowed free vertical movement from the bearing G to or near the lower end of said guide, where a suitable stop, *x*, is placed.

A spiral groove, *h'*, is cut within the rear wall of the sleeve H, its lower end commencing near the lower end of said sleeve, upon the side of the cutter-bar, and from thence passing upward and across, as shown in Fig. 3, and serving to contain a stud or pin, *f*, secured within and projecting radially from the shaft F. As thus arranged, if the shaft be raised or depressed, the sleeve H will be carried with it until the movement of said sleeve is arrested by the bearing G or the stop *x*, when a further movement of said shaft in the same direction will cause the pin to slide through its groove, and thereby cause a partial rotation of the shaft and dropper.

In order to permit the shaft and dropper to be readily operated, a lever, K, is pivoted at one end upon a vertical post, L, secured to and projecting upward from the platform A, while its opposite end is provided with a slot, *k*, that embraces a pin, *m*, secured horizontally within a block, M, swiveled upon the end of said shaft.

A second lever, N, is pivoted at one end upon the post L, and, extending rearward and upward, is connected with the lever K by means of a short bar, *n*, so that by raising or depressing said lever N a corresponding vertical movement will be imparted to the shaft and dropper without in the least interfering with their horizontal movements.

As thus constructed, the device is operated as follows: Being swung to the rear, the dropper and shaft are depressed until the sleeve strikes against the stop *x* at the bottom of the guide, when the pin *f*, following the course of the groove *h'*, causes a partial rotation of the shaft, and throws said dropper beneath the slatted platform. If, now, the shaft be raised, the dropper will pass vertically upward between the slats D, so as to lift from them any hay or grain deposited thereon, until the sleeve is arrested by the bearing G, when the pin *f*, following upward through its slot, will rotate the shaft and turn said dropper to the rear, where, after depositing its load, the latter is ready for a second operation.

In order to prevent the dropper from accidentally turning rearward until it has attained a sufficient height to clear the platform, a stud,

x', is secured to and projects outward from the inner end of the head e', and engages with a vertical guide, z', secured to the frame of the reaper, the length and position of said guide being such as to hold the dropper in position from a point below the platform until the upward movement of the sleeve is arrested and said dropper is about to turn to the rear.

It being necessary that, when the dropper is turned to the rear, its rear end should be depressed so as to cause its load to slide off, the following-described means are employed for effecting such object: A false dropper-head, O, is secured to the lower end of the shaft F, and is provided with two short bars or slats, *o*, projecting horizontally outward in parallel lines, to which the outer slats of the dropper are hinged, as seen in Figs. 2 and 4. One or more springs, P, are secured at their front ends to the head O, and from thence extending rearward with their opposite ends bearing against the center slats of the dropper, forward of the points at which it is hinged, serve to hold said dropper in a horizontal position, except when purposely tilted. A lug, R, projecting forward from the center of the real dropper-head e', and engaging with a recess, S, formed within the rear face of the frame, completes the device, which is operated as follows: Upon elevating the dropper so as to cause it to swing to the rear, the lug R enters the recess S, (placed at just the necessary height to receive said lug.) Upon depressing the shaft, the lug, engaging with the lower end of the recess, holds the front end of the dropper in position until its rear end has been tilted downward to the desired angle to cause its load to slide off, upon which said lug slips out of the recess, and by means of the springs said dropper resumes its horizontal position.

It will be seen that by means of the mechanism before described, by imparting vertically-reciprocating movement of the hand-lever, the dropper is turned beneath the slatted platform upon which the grain falls, passes upward through said platform, carrying with it said grain, turns rearward, and deposits its load entirely out of the track of the reaper upon its next circuit.

Although, for convenience, the mechanism is shown as attached to a side or back cut machine, it is equally applicable to one having a front cut, and its employment thereon would not require any substantial change in the mechanism used.

The principal object sought to be accomplished by my invention is the peculiar vertical and semi-rotary horizontal movement of the dropper, to produce which the mechanism before described is preferably employed; but while claiming said mechanism as novel in its construction and combination, I do not confine myself to its use, as a variety of other devices for accomplishing said result would readily suggest themselves to any mechanic skilled in this branch of the art.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the dropper E, the means employed for imparting thereto a vertical and a semi-rotary horizontal movement, consisting of the shaft F, the sleeve H, provided with the slot *h*, the stud *f*, the guide I, provided with the stop *x*, the levers K and N, the swiveled block M, and the connection *n*, substantially as shown and described.

2. In combination with the dropper E, the means employed for tilting the same downward at its rear end, consisting of the false head O, provided with the slats *o* and springs P, and hinged to or upon said dropper, the lug R, and recess S, substantially as shown and set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of October, 1870.

THOS. W. S. KIDD.

Witnesses:

WM. RIDGELY,

S. N. CULLEM.