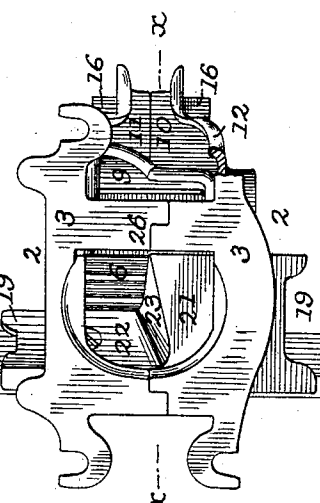
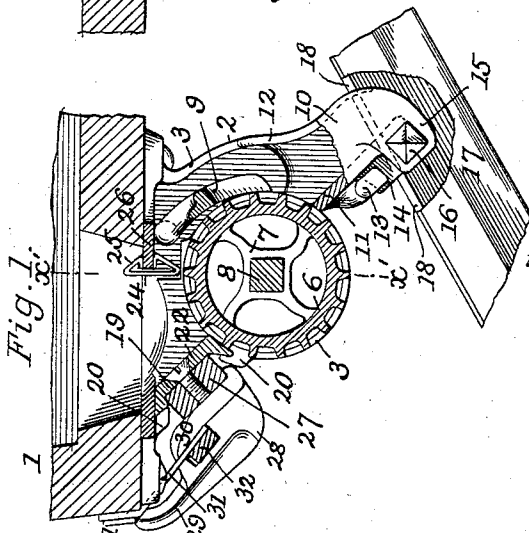
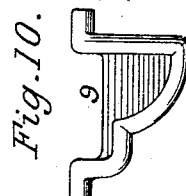
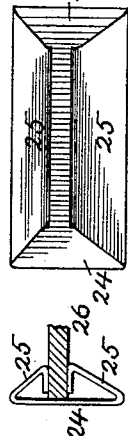
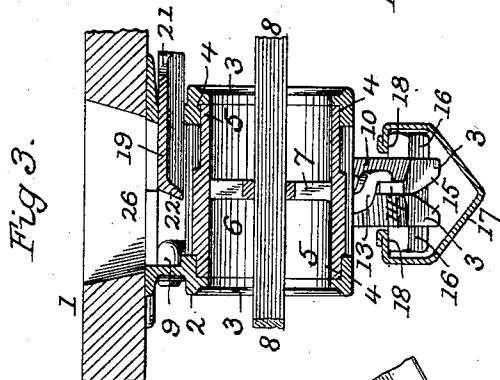
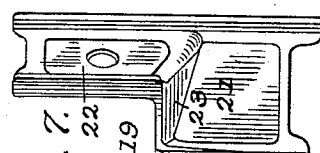
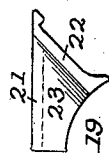
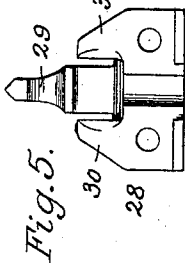
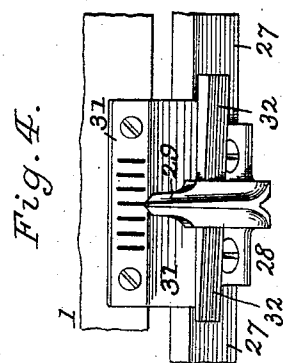


(Model.)

P. M. GUNDLACH.
GRAIN DRILL.

No. 536,337.

Patented Mar. 26, 1895.



Attest:

James Ravallin
J. Coleman

Inventor:
Philip M. Gundlach,
by Robert Burns Atty.

UNITED STATES PATENT OFFICE.

PHILIP M. GUNDLACH, OF BELLEVILLE, ILLINOIS.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 536,337, dated March 26, 1895.

Application filed November 3, 1894. Serial No. 527,814. (Model.)

To all whom it may concern:

Be it known that I, PHILIP M. GUNDLACH, a citizen of the United States, residing at Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Grain-Drills; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to that type of grain drills, and the feeding mechanism therefor, that forms the subject matter of my prior Letters Patent, No. 351,047, dated October 19, 1886; and the present improvements have for their objects, first, to provide a simple and effective construction of the individual feed cylinder housings of a grain drill embodying the features of a simple and efficient construction of the inclined conveyer spout of such housing so that the fed grain in its passage down through such spout will be protected from the wind, and a spilling or wasting of such grain prevented; a simple interlocking sectional construction of such housing so that the parts will fit together and interlock without the use of fastening bolts or rivets; and a cheap and durable means for securing the housing parts in their interlocked condition, and which at the same time affords means for supporting the rear end of the carrier chute of the drill flukes, in a pivotal and slidable manner; second, to provide a strong and durable construction of the intermediate chute that connects the grain drill fluke with the discharge spout of the feed mechanism, and with which the passing grain is protected in a very perfect manner from the wind, and at the same time a very strong and substantial sliding and pivotal connection is made between the rear end of such chute and the discharge spout of the feed mechanism; third, to provide a readily removable and reversible gage plate formed of spring metal that is adapted to change the area of the outlet orifice of the feeding mechanism, and thus gage the amount of grain that is fed by the same; fourth, to provide a simple and effective means for securing the cut off plates of the feeding mechanism at their required adjustment. I attain such objects by the construction and arrangements of

parts illustrated in the accompanying drawings, in which—

Figure 1, is a longitudinal sectional elevation, mainly on line $x-x$, Fig. 2, of an individual feed mechanism and its connections; Fig. 2, a plan view of the same; Fig. 3, a transverse section at line $x'-x'$ Fig. 1; Fig. 4, a detail elevation of the mechanism for securing the cut off plates of the feeding mechanism at their required adjustment; Fig. 5, a view of the pointer portion thereof, detached; Fig. 6, an end elevation of the cut off plate, detached; Fig. 7, a bottom view of the same; Fig. 8, an enlarged end elevation of the removable and reversible gage plate; Fig. 9, a side elevation of the same; Fig. 10, an elevation of the hinged tongue or plate that has bearing against the fluted periphery of the feed cylinder to retain the grain in the flutes of the same.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents a portion of the bottom of the grain box, on the under side of which are secured the series of grain feed mechanisms by means of their housings 2, as usual. Each housing 2, will consist of two substantially counterpart members having a horizontal plane surface that fits against the bottom of the seed box and is provided with the usual opening for the down passage of the seed into the feed mechanism proper, as in my former patented construction, and in the present improved construction each pendent side plate 3, will be formed with an annular shouldered recess 4, to constitute a bearing for the plain cylindrical ends 5, of the longitudinally fluted feed cylinder 6, so as to support the said cylinder in proper operative position.

The feed cylinder 6, is of an annular cylindrical form, with its outer surface fluted longitudinally, so as to form grain feeding cavities, its extreme ends 5, being left plain so as to form bearings as above set forth. At its center it is provided with a spider 7, the hub of which embraces the non-circular operating shaft 8, that is common to the whole series of feeding mechanisms, and is driven in the usual manner by connections with the driving wheels of the grain drill.

9, is a bevel ended tongue or plate pivoted at its upper end in the pendent side plates 3,

and adapted to bear against the fluted periphery of the feed cylinder to hold the grain in the flutes of the same until the proper point of discharge is reached.

5 10, is a rearwardly and downwardly projecting spout formed by inwardly deflected portions of the pendent plates, and by a bottom portion 11. As thus formed the spout 10, will be of a narrowed nature transversely, the
10 purpose of which will be hereinafter more fully set forth.

12, are inturned lips on the side plates 3, partly closing the top of the spout 10, so as to shield the interior of such spout from the
15 wind, and in connection with the narrowed nature of such spout as heretofore described, preventing in a very perfect manner any spilling or wastage of the grain.

13, is a hook on one side plate 3, beneath
20 the spout portion that engages over a lug portion 14, on the other side plate, so as to lock the two plates together against an outward movement away from each other.

15, are eyes at the extreme lower end of the
25 spout portions of the side plates 3, that are adapted to receive a cross pin 16, that is intended to be driven into place, to prevent a movement of the one housing part past the other in a circular direction.

30 With the above improved construction the two housing members are engaged with the bearing ends of the feeding cylinder, and with such cylinder as a fulcrum the side plates are turned circularly until their hook
35 13 and lug 14, are engaged to prevent lateral disengagement. With the hook and lug 13 and 14 in proper engagement, the eyes 15 on each side plate will be in line to receive the pin 16, that locks the two housing members together against movement one past the other.

By the above improved construction the housing members are substantially secured together in a readily detachable manner without the use of screws or rivets, and as so constructed admit of the ready casting of the parts without cores and requiring but little if any finishing previous to assemblage together.

The cross pin 16, in addition to its function
50 above described is adapted to project at each side of the eyes 15, to form a support for the intermediate chute 17, that conducts the grain from the spout 10, into the bottom passage of the grain drill fluke. In the present invention this intermediate chute 17, is formed with reinforced inturned flanges or lips 18, along its top length, that rest upon the outer ends of the cross pin 16, to be supported thereby in a pivotal and slidable manner, so
60 as to admit of the necessary movement of such chute 17, in the usual movements of the grain drill flukes. This chute is preferably made with straight sides and an angular bottom, as shown, as best adapted to its present
65 particular uses. Other shapes may however be imparted to such chute without departing from the spirit of my present invention.

19, is the horizontally sliding cut off, for regulating the quantity of grain fed by the feed cylinder 6, and which is guided in its
70 movement by guide lugs 20, on the end plates 3. This cut off plate is divided into a horizontal table portion 21, that in the adjustment of the cut off plate, changes the area of the opening, down through which the grain
75 passes to the feed cylinder, and an inclined hopper portion 22, that in the aforesaid adjustment of the cut off plate covers more or less of the fluted feed cylinder and affords means in addition to the table portion 21, for
80 regulating the quantity of grain fed by the fluted feed cylinder. In the present construction the table portion 21, and the hopper portion 22, of the cut off 19, are connected together by a connecting web 23. In the present
85 construction the web 23, forms one of the walls of a grain containing hopper above the feed cylinder 6, and which has such cylinder as a bottom, and an end plate 3, the portion 22, and a vertical gage plate 24, as the other
90 sides of such hopper.

The vertical gage plate 24, in the present invention is formed of spring or sheet metal, bent so as to form a flat main portion and a pair of clips 25, that engage the horizontal
95 portion 26, of the main housing 1, to effect an attachment. These spring clips are so positioned with relation to the opposite edges of the gage plate, as to be nearer one edge than the other, so that by a reversal of said plate,
100 a greater or less opening will be formed between the feed cylinder and the adjacent edge of such gage plate.

The series of adjustable cut offs used in the grain drill will be attached to the usual adjusting bars 27, common to all; and the adjustment of the same and the securing of the same at the required adjustment are effected by the following means:

28, is an index or pointer piece, secured to
110 the bar 27, and provided with a pointer finger 29, raised above the pair of lugs 30.

31, is an index plate secured to the grain box of the drill with its free end arranged between the pointer 29, and the lugs 30.
115

32, is a wedge adapted to be driven between the pointer finger 29, and the plate 31, to firmly clamp the parts together, and secure the sliding cut off of the feeding mechanisms at the required adjustment.
120

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

1. A grain drill feed mechanism comprising in combination a fluted feed cylinder, an enclosing housing forming a bearing therefor,
125 and consisting of two members the one provided with an engaging hook 13, and an eye 15, and the other with a lug 14 and an eye 15, and a cross pin 16 passing through the eyes
130 15, substantially as set forth.

2. A grain drill feed mechanism comprising in combination, a fluted feed cylinder, an enclosing housing forming a bearing therefor,

and provided with a spout portion 10, narrowed transversely, and provided on its outer sides with means for supporting the intermediate chute 17, of the drill fluke, substantially as set forth.

3. A grain drill feed mechanism, comprising in combination a fluted feed cylinder, an inclosing housing forming a bearing therefor, and provided with a spout portion 10, narrowed transversely and provided on its outer sides with means for supporting the intermediate chute 17, of the drill fluke the upper edges of such spout portion being intumed, substantially as set forth.

4. A grain drill feed mechanism comprising in combination, a fluted feed cylinder, an inclosing housing therefor, formed with a spout portion narrowed transversely and provided with projections on its outer sides, and an intermediate chute 17, having intumed flanges 18, that are adapted to rest upon and be supported on said projections in a pivotal and slidable manner, substantially as set forth.

5. A grain drill feed mechanism, comprising in combination a fluted feed cylinder, an inclosing housing forming a bearing therefor, and consisting of two members, the one provided with an engaging hook 13 and an eye 15, and the other with a lug 14, and an eye 15, a cross pin 16 passing through the eyes 15, and projecting at each side of the housing, and an intermediate chute 17, having intumed flanges 18, that are adapted to rest upon and be supported on said cross pin in a pivotal and slidable manner, substantially as set forth.

6. A grain drill feed mechanism, comprising in combination, a fluted feed cylinder, an inclosing housing therefor formed with guide lugs 20, and the horizontally sliding cut off 19, having a table portion 21, a hopper portion 22, and a connecting web 23, substantially as set forth.

7. A grain drill feed mechanism, comprising in combination, a fluted feed cylinder, an in-

closing housing therefor, and a reversible gage plate 24, having means for engaging the part 26, of the housing, such means being arranged closer to one edge of the plate than to the other, substantially as set forth.

8. A grain drill feed mechanism, comprising in combination, a fluted feed cylinder, an inclosing housing therefor, and a gage plate 24, formed of sheet metal and provided with spring clips 25, adapted to engage the part 26, of the housing, substantially as set forth.

9. A grain drill feed mechanism, comprising in combination, a fluted feed cylinder, an inclosing housing therefor, and a gage plate 24, formed of sheet metal and provided with spring clips 25, adapted to engage the part 26, of the housing, such spring clips being arranged closer to one edge of the plate than to the other, substantially as set forth.

10. A grain drill feed mechanism, comprising in combination, a fluted feed cylinder, an inclosing housing therefor, a sliding cut off, a bar carrying the sliding cut off a pointer finger rigidly secured to the said bar and affording means for effecting an adjustment of the same, an index plate secured to the grain box, and a means for clamping the said plate and pointer finger together, substantially as set forth.

11. A grain drill feed mechanism, comprising in combination, a fluted feed cylinder, an inclosing housing therefor, a sliding cut off, a bar carrying the sliding cut off, a pointer piece rigidly secured to said bar and provided with a raised pointer finger, and a bearing lug or lugs, an under plate secured to the grain box, with its free end between the pointer and lugs aforesaid, and a wedge adapted to clamp the parts together, substantially as set forth.

In testimony whereof witness my hand this 18th day of October, 1894.

PHILIP M. GUNDLACH.

In presence of—

E. W. MERZ,

H. R. HEIMBERGER.