No. 647,749. Patented Apr. 17, 1900.

T. F. HALL.

GRAIN DISTRIBUTER.

(Application filed Dec. 2, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

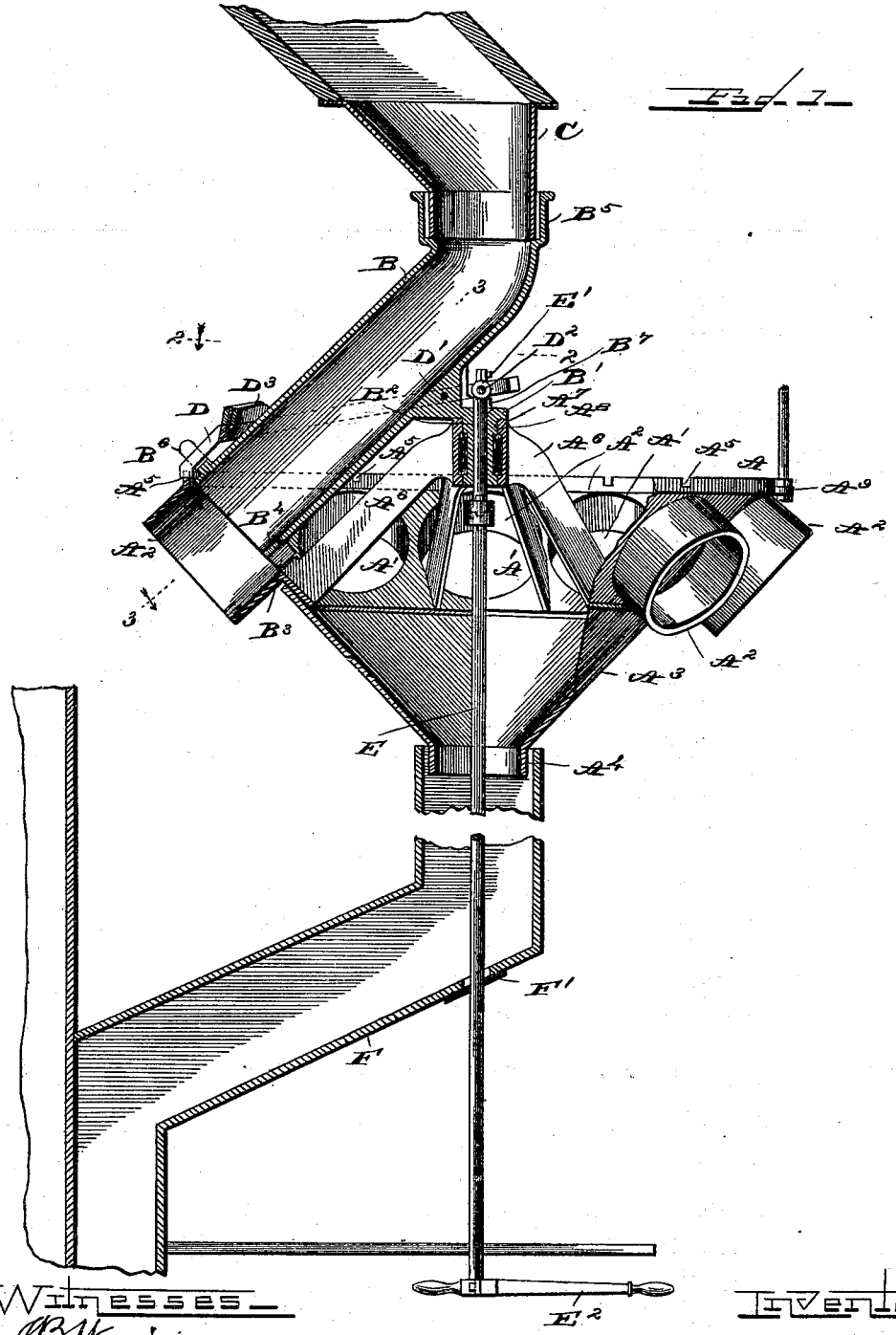

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Fig. 2.

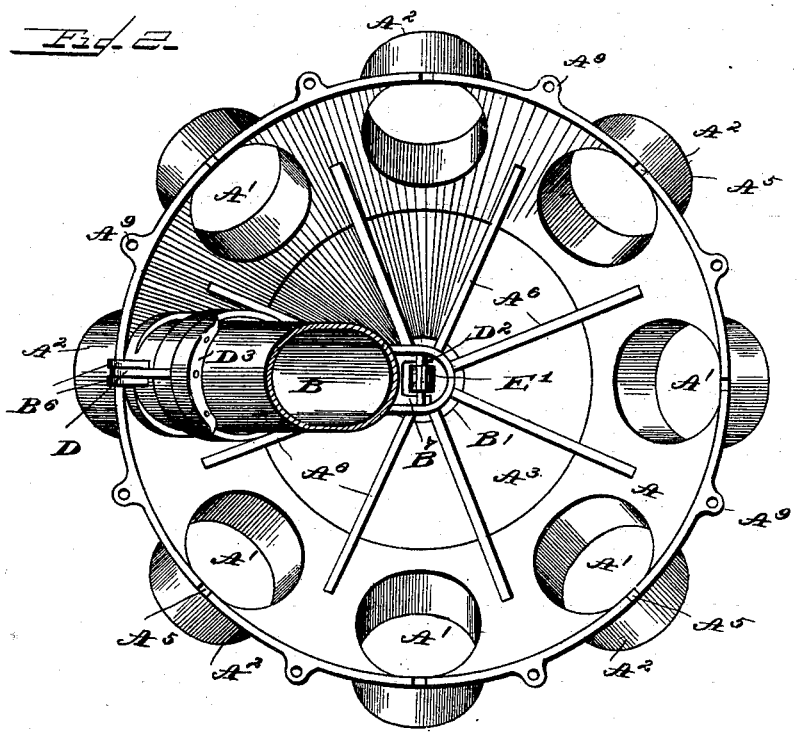


Fig. 3.

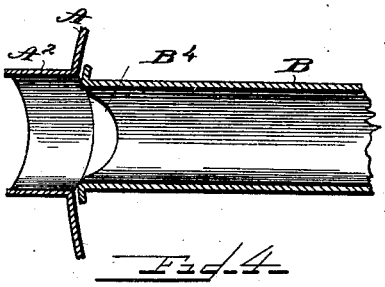


Fig. 4.

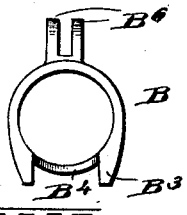


Fig. 5.

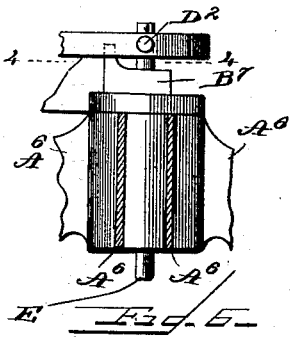
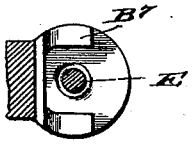


Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMAS F. HALL, OF OMAHA, NEBRASKA, ASSIGNOR TO AMELIA J. HALL, OF SAME PLACE.

GRAIN-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 647,749, dated April 17, 1900.

Application filed December 2, 1899. Serial No. 738,978. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. HALL, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Grain-Distributers, of which the following is a specification.

The object of this invention is the production of an improved grain-distributer for grain-elevators.

In the embodiment herein shown of this invention I provide a pivotally-mounted delivery-spout and upon the circle described by the lower end of said spout when the spout is rotated fix a distributing-case having a plurality of chute-openings so arranged that said delivery-spout may be turned to coincide with any one of said openings. This distributing-case partakes somewhat of funnel form. The lower end of the delivery-spout extends into said case, and its mouth conforms substantially to the curve and angle of the inner walls thereof. The distributing-case is provided at proper intervals with notches and the delivery-spout with a latch, whereby said spout is firmly held in coincidence with any one of the chute-openings in said distributing-case during a delivery of grain through the spout. A rod operated from the floor of the elevator-building is arranged to raise said latch from any one of the notches in the distributing-case and to turn the delivery-spout to any desired position. The delivery-spout is somewhat less in diameter than the chute-openings in the distributing-case, and the lower side of said spout is provided with an opening which acts as an overflow-alarm when the bin into which the grain is being delivered is filled. So long as the grain passes through the chute it is carried by the momentum of the falling stream of grain safely over the overflow-opening; but when its progress is obstructed and it accumulates in the chute it overflows through the opening in the spout, and passing downward through the center of the distributing-case enters a spout which conducts it to a point within the hearing of the operator.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of this grain-distributer. Fig. 2 is a plan view of the same on dotted line 2 2 of Fig. 1. Fig. 3 is a longitudinal central section through the lower end of the delivery-spout and the adjacent portion of the distributing-case on dotted line 3 3 of Fig. 1, showing the overflow-opening in the lower end of said spout. Fig. 4 is an end view of the delivery-spout. Fig. 5 is an elevation, partly in section, showing the central bearing-hub of the distributing-case, showing also portions of the locking-latch and the operating-rod. Fig. 6 is a horizontal section of the hub shown in the next-preceding figure, on dotted lines 4 4 thereof.

Like letters of reference indicate corresponding parts throughout the several views.

In the construction of this grain-distributer I mount rigidly in the upper part of the elevator-building a distributing-case A, which is in funnel shape, open at its top, and is provided in its sides with a series of chute-openings A′, each of which openings is surrounded by a collar A^2. To the lower circular edge of the distributing-case A is attached the funnel A^3, having the collar A^4 at its lower end, and the upper edge of the distributing-case A is provided with the several notches A^5, one of which notches is situated directly over each of said chute-openings A′. A spider A^6 is formed integral with said distributing-case, which spider has the central bearing-hub A^7, provided with the axial opening A^8. The perforated ears A^9, about the upper edge of the distributing-case A, provide means for supporting said case in the elevator-building.

The delivery-spout B has an integral downwardly-extending supporting-stud B′, intended to lie in the axial opening A^8 of the bearing-hub A^7, the lower end of which spout is free to be rotated into coincidence with any one of the chute-openings A′ in said distributing-case A. The stud B′ has the axial opening B^2 to permit the passage of the operating-rod, to be later described herein. The diameter of the delivery-spout B is somewhat less than that of said chute-openings A′, its lower end being provided with the annular flange B^3 to entirely close that portion of said chute-openings A′ not covered by the end of said delivery-spout B, excepting at the under side of said spout, where an opening B^4 is provided in the latter. This opening permits the grain to overflow into the distributing-case A and the funnel A^3 and thence

downward, alarming the operator when the chute being delivered into is filled. The upper end of the delivery-spout B is curved upward into a vertical position and is provided at its upper end with the annular flange B^5.

B^6 are two guide-ears on the spout B, on the upper side of the lower end thereof, and B^7 are two stop-blocks formed integral with the upper end of the supporting-stud B', the purpose of which guide-ears and stop-blocks will be mentioned hereinafter.

C is a pipe for conducting the grain from the elevating mechanism to the upper end of the delivery-spout B. This pipe enters the flange B^5 at the upper end of the delivery-spout B, but has no connection or contact therewith.

D is a pivoted locking-latch, its body portion being in loop form to encircle the delivery-spout B. It is mounted upon the pivot D', extending through a portion of said delivery-spout. Its forward end lies between the guide-ears B^6, and it has at its rear end the bearing-pin D^2. The weight D^3 is secured to the forward end of the latch D to counterbalance the weight of the operating-rod, to be next described.

E is an operating-rod having a sleeve E' surrounding the bearing-pin D^2 of the pivoted locking-latch D. This operating-rod extends through the axial opening B^2 in the stud B' of the delivery-spout B and downward in the elevator-building to a point within convenient reach of the operator, where it is provided with the hand-lever E^2. When it is desirable to shift the delivery-spout from one of the chute-openings A' into coincidence with another of said chute-openings, the operating-rod E is pulled downward by means of the hand-lever E^2, lifting the forward end of the latch D from engagement with the notches A^5, and thus permitting the delivery-spout to be rotated into coincidence with any one of said chute-openings A'.

F is an overflow-spout leading from the funnel A^3 to any convenient point within the hearing of the operator, so that grain entering the distributing-case through the overflow-opening B^4 of the delivery-spout B will be conducted through said spout F to a point within the hearing of the operator.

F' is a closure, preferably of leather or other flexible material, tightly fitting the operating-rod E and preventing leakage at the point where said rod passes through said spout F.

In practical use this distributer is secured in the upper part of an elevator-building in such position that the grain from the elevator-buckets is emptied into the pipe C or into a bin or hopper connected therewith. The collars A^2 of the distributing-case A are severally provided with a pipe leading to each one of the various bins intended for the storage of grain in the lower part of the elevator-building. The delivery-spout B is turned into coincidence with one of the chute-openings A' and locked in that position by the engagement of the forward end of the latch D with one of the notches A^5 of the distributing-case. Grain is then admitted to the delivery-spout B and flows through said spout and through the chute-opening A' to its proper bin. When said bin is filled, the pipe leading thereto also fills until the grain rises therein to the level of the opening B^4 in the lower end of the delivery-spout B. When it reaches this point, a portion of the grain in said spout escapes through said opening B^4 and passes through the funnel A^3 into the spout F and by its falling in the lower part of the elevator-building apprises the operator that the bin is filled. The flow of grain into the delivery-spout B is then suspended until said delivery-spout is turned into coincidence with another one of the chute-openings A'. This is done by grasping the hand-lever E^2 with both hands and pressing downward on the same. This downward pressure upon said lever raises the forward end of the pivoted locking-latch D from engagement with the notch A^5. The hand-lever, still being depressed, is turned until the delivery-spout B is nearly in coincidence with the chute-opening A', through which it is desirable to deliver grain. The downward pressure upon the operating-rod is then released, and the forward end of the locking-latch falls upon the upper edge of the distributing-case, upon which said locking-latch slides until it engages the notch A^5 in said edge corresponding with the desired chute-opening, into which it drops, locking the delivery-spout in coincidence with said chute-opening. The weight upon the forward end of the locking-latch is sufficient to overcome the weight of the operating-rod E and the hand-lever E^2. The stop-blocks B^7 limit the downward movement of the rear end of the locking-latch D and prevent the withdrawal of the forward end of said latch from between the guide-ears B^6, and said guide-ears hold the forward end of said locking-latch from lateral movement with relation to said delivery-spout.

I claim as my invention—

1. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a locking device for holding said spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for operating said locking device.

2. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a locking device for holding said spout in coincidence with one of said chute-openings; and a rod extending through the pivotal center upon which said spout is mounted, for operating said locking device.

3. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a locking device for holding the pivoted spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for operating said locking device, and for moving said spout on its pivot.

4. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a delivery-spout pivotally mounted on said distributing-case, which spout is adapted to be turned to coincide with any one of said chute-openings; a locking device for holding said delivery-spout in coincidence with one of said chute-openings; and a rod extending through the pivotal center upon which said spout is mounted, for operating said locking device, and for moving said spout on its pivot.

5. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a pivoted latch for holding the pivoted spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for moving said latch upon its pivot, and for moving said spout.

6. In a grain-distributer, in combination, a distributing-case of funnel shape, having a plurality of chute-openings in its side walls; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings which delivery-spout is provided with an overflow-opening; a locking device for said delivery-spout; and means for operating said locking device, and for moving said spout on its pivot.

7. In a grain-distributer, in combination, a distributing-case of funnel shape, having a plurality of chute-openings in its side walls; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a locking device for holding said delivery-spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for operating said locking device.

8. In a grain-distributer, in combination, a distributing-case of funnel shape, having a plurality of chute-openings in its side walls; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a locking device for holding the pivoted spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for operating said locking device, and for moving said spout on its pivot.

9. In a grain-distributer, in combination, a distributing-case of funnel shape, having a plurality of chute-openings in its side walls; a delivery-spout pivotally mounted on said distributing-case; a locking device for holding the pivoted spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for operating said locking device, and for moving said spout on its pivot.

10. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a funnel for said distributing-case; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a pivoted latch for engaging with said distributing-case, to hold the pivoted spout in coincidence with one of said chute-openings; and a rod extending through the pivotal center upon which said spout is mounted, and having an engagement with said pivoted latch, for moving said latch.

11. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a pivoted latch for engaging with said distributing-case, to hold the pivoted spout in coincidence with one of said chute-openings; and a rod extending through the pivotal center upon which said spout is mounted, and having an engagement with said pivoted latch, for moving said latch, and for moving said spout on its pivot.

12. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings and a series of notches therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a pivoted latch mounted on said spout, adapted to engage said notches in the distributing-case; a rod extending through the pivotal center upon which said spout is mounted, and having an engagement with said latch, for moving the latch, and for turning said spout on its pivot.

13. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings and a series of notches therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a pivoted latch mounted on said spout, adapted to engage said notches in the distributing-case; guide-ears and a stop-block for said latch; a rod extending through the pivotal center upon which said spout is mounted, and having an engagement with said latch, for moving the latch, and for turning said spout on its pivot.

14. In a grain-distributer, in combination, a distributing-case of funnel shape having a plurality of chute-openings therein; a spider and a hub for said case; a delivery-spout pivotally mounted in said hub, and adapted to

be turned to coincide with any one of said chute-openings which delivery-spout is provided with an overflow-opening; a locking device for holding the pivoted spout in coincidence with one of said chute-openings; and means for operating said locking device, and for moving said spout on its pivot.

15. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a spider and a hub for said case; a delivery-spout pivotally mounted in said hub, and adapted to be turned to coincide with any one of said chute-openings; a locking device for holding the pivoted spout in coincidence with one of said chute-openings; and means extending through the pivotal center upon which said spout is mounted, for operating said locking device, and for moving said spout on its pivot.

16. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein and a series of locking-notches, also having a spider and a hub; a delivery-spout having a pivotal stud for lying in said hub, which stud has an axial opening therein; a latch pivotally mounted on said delivery-spout, adapted to engage said locking-notches; and a rod extending through the opening in said stud, which rod has a pivotal engagement with said latch, and is adapted to operate the latch, and move said spout on its pivot.

17. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings; a latch in loop form surrounding said delivery-spout and having a pivotal engagement therewith, which latch is adapted to engage the distributing-case to hold the pivoted spout in coincidence with one of said chute-openings; and an operating-rod extending through the pivotal center upon which said delivery-spout is mounted, and having a pivotal engagement with said latch.

18. As a new article of manufacture, a grain-spout through which the grain passes by the force of gravitation, having a telltale overflow-opening permanently open, intermediate its ends, for permitting the escape of grain from the spout when a portion of the spout below said opening is filled.

19. As a new article of manufacture, a rotatable delivery-spout having a pivotal bearing-stud and a telltale overflow-opening for permitting the escape of grain from the spout when a portion of the spout is filled, the general direction of said spout being at an angle with the line of its pivotal axis.

20. As a new article of manufacture, a delivery-spout having a hollow, pivotal stud and an overflow-opening, one of the ends of which spout extends on the axial line of said pivotal stud, and the other end extends at an angle therewith.

21. As a new article of manufacture, a delivery-spout having an integral, hollow, pivotal stud, one end of which spout has an enlarged annular flange, the axial line of which end concurs with that of the pivotal stud, which delivery-spout also has a flange and an overflow-opening at its opposite end, which last-mentioned end extends at an angle with the axial line of said pivotal stud.

22. In a grain-spout, in combination, a delivery-spout and a continuing grain-spout coinciding therewith, one of which spouts is provided with an overflow-opening intermediate the extremities of both spouts.

23. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; and a pivotally-mounted delivery-spout provided with an overflow-opening.

24. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; and a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-openings, and is provided with an overflow-opening.

25. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; and a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-openings, and is provided with an overflow-opening and with an annular flange, the latter being at the end of said delivery-spout adjacent to the chute-openings.

26. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-openings, and is provided with an overflow-opening; and a locking device for holding the delivery-spout in coincidence with one of said chute-openings.

27. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-openings, and is provided with an overflow-opening; and a spout for receiving the overflow from said overflow-opening.

28. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-openings, and is provided with an overflow-opening; a locking device for holding the delivery-spout in coincidence with

one of said chute-openings; and means for operating said locking device, and for moving said spout on its pivot.

29. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-openings, and is provided with an overflow-opening; a spout for receiving the overflow from said overflow-opening; and a locking device for holding the delivery-spout in coincidence with one of said chute-openings.

30. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout is provided with an overflow-opening; a spout for receiving the overflow from said overflow-opening; a locking device for holding the delivery-spout in coincidence with one of said chute-openings; and means for operating said locking device, and for moving said delivery-spout on its pivot.

31. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout is provided with an overflow-opening; a spout for receiving the overflow from said overflow-opening; a locking device for holding the delivery-spout in coincidence with one of said chute-openings; and a rod for operating said locking device, and for moving said spout on its pivot.

32. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a pivotally-mounted delivery-spout adapted to be turned to coincide with any one of said chute-openings, which delivery-spout has a diameter less than that of said chute-opening, and is provided with an overflow-opening; a locking-latch for engaging the distributing-case and holding the delivery-spout in coincidence with one of said chute-openings; and a rod extending through the pivotal center upon which said delivery-spout is mounted for moving said locking-latch, and for turning said spout on its pivot.

33. In a grain-distributer, in combination, a distributing-case having a plurality of chute-openings therein; a spider and a hub for said case; a delivery-spout having a pivotal stud for lying within said hub, which stud has an axial opening therein; a latch pivotally mounted on said delivery-spout, having an engagement with said distributing-case, and holding said delivery-spout in coincidence with one of said chute-openings; and a rod extending through the axial opening in said stud, and having a pivotal connection with said latch, which rod is adapted to move said latch on its pivot, and turn said delivery-spout.

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