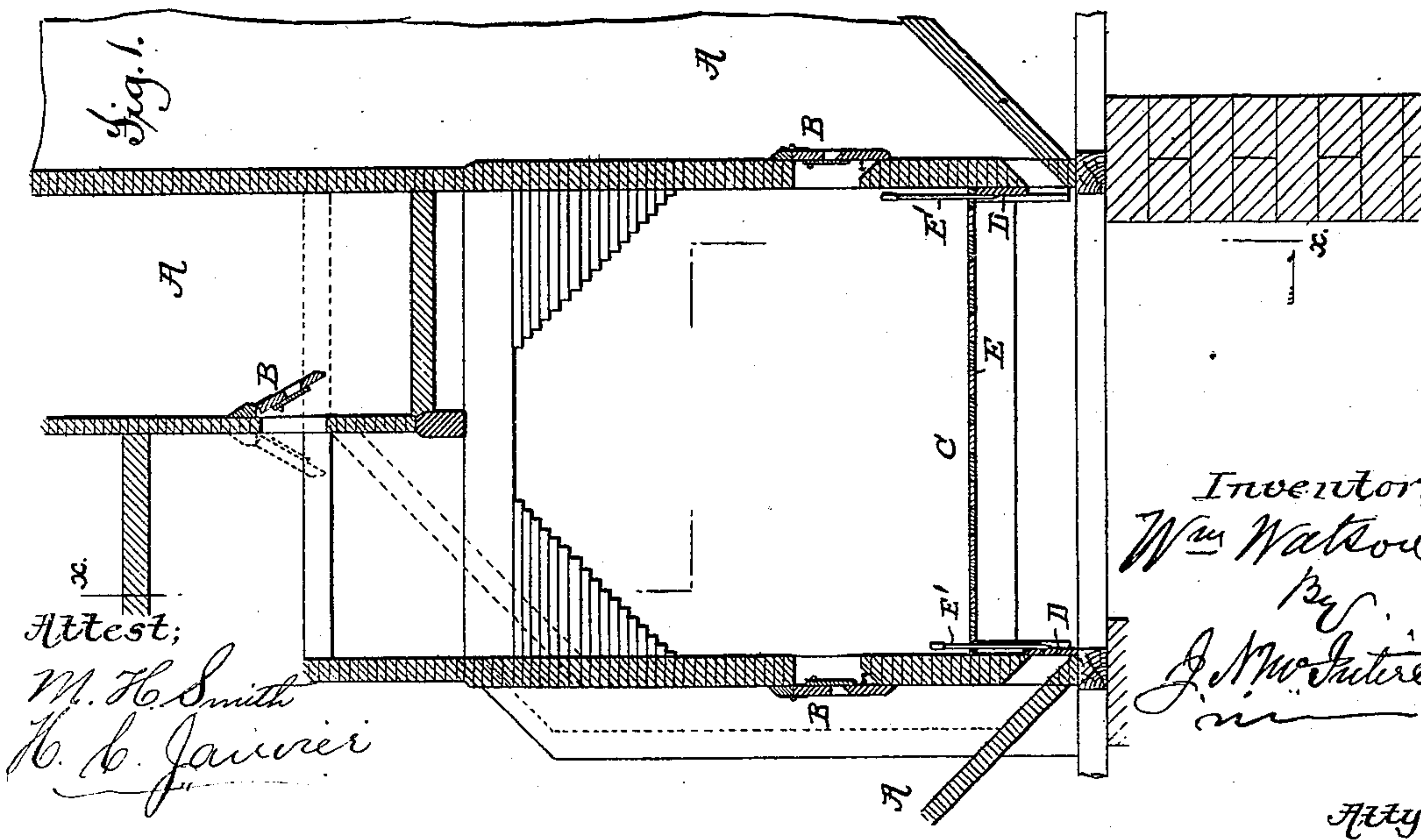
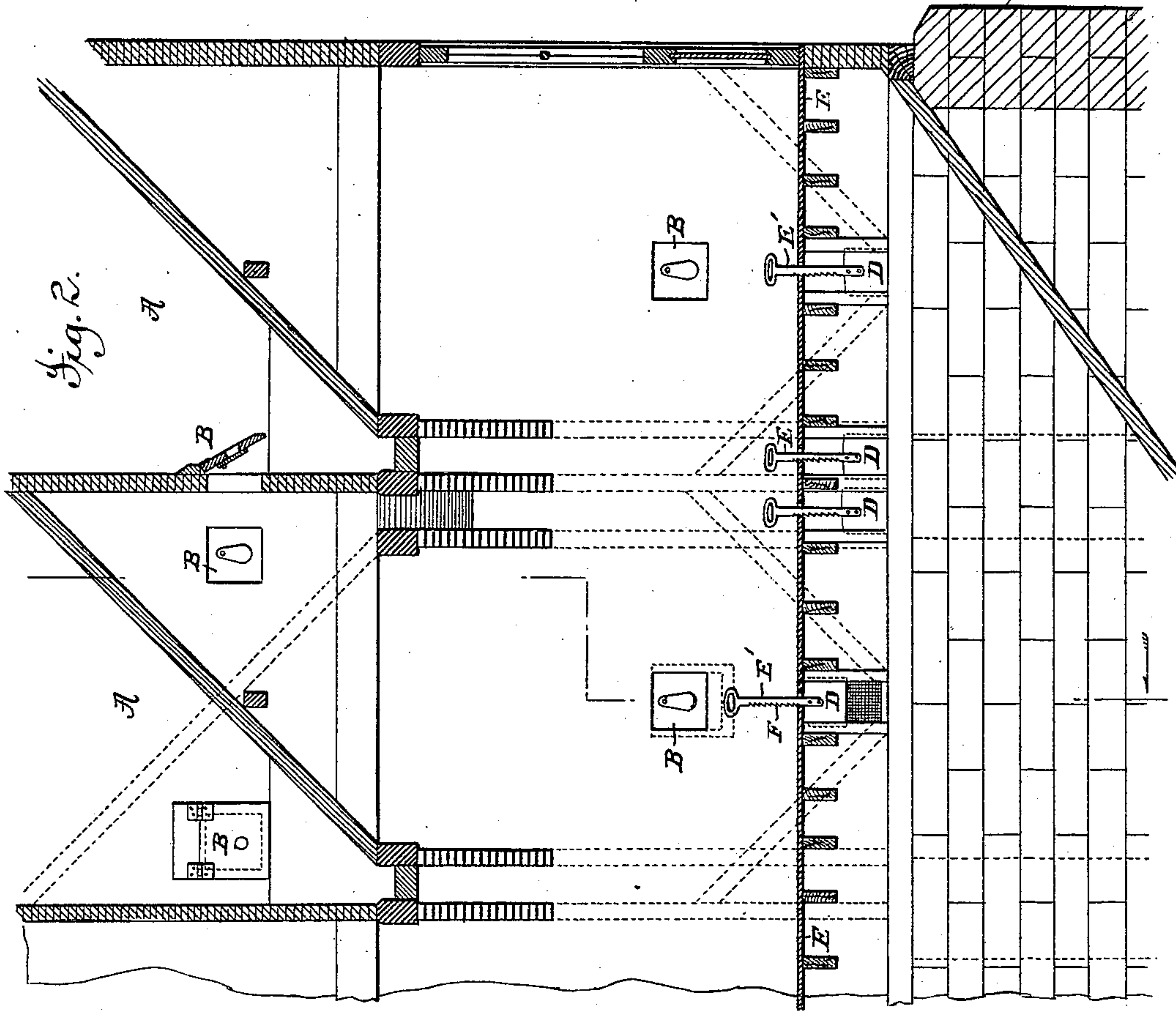


(No Model.)

W. WATSON.
GRAIN ELEVATOR.

No. 282,812.

Patented Aug. 7, 1883.



UNITED STATES PATENT OFFICE.

WILLIAM WATSON, OF MEMPHIS, TENNESSEE.

GRAIN-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 282,812, dated August 7, 1883.

Application filed March 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WATSON, of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Grain-Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to certain new and useful improvements in grain-elevators, and has reference more particularly to the means employed for obtaining access to the interior of the bins for the usual well-known purposes, and to the means for effecting the discharge of the contents of the bins.

Previous to my invention it has been customary in the construction of grain-elevators to have the bins entirely closed at their lower ends and in the vicinity thereof, with the exception of the discharge orifice and valve used for the purpose of drawing off the grain, and to have the bins provided with ladders or ladder-like rungs arranged at the vertical corners of the bins, and extending from the top to the bottom of the latter, for the purpose of permitting the descent of an attendant or workman from the top of the bin to the bottom. Such construction of the bins and such mode of access to their lower ends has of course involved not only the necessary expense of the ladder-like structures referred to, but has also involved an unnecessary amount of time and labor on the part of the attendants and workmen, besides more or less risk or danger whenever it has been necessary for the attendant to descend to the bottom of the bin for the purpose of examination thereof, cleaning out the same, &c.

I propose to overcome these objections to the bins as heretofore constructed, and avoid all unnecessary expense of time and risk of danger by providing means for the free entrance to and exit from the bins at the vicinity of their lower ends or bottoms; and to this main end and object my invention consists, primarily, in the construction of the bins of an elevator with doors near their lower portions, arranged, preferably, to open inwardly, and hinged at their upper sides for the purpose of access to the bins when they may be empty

for cleaning out the bins, and for such other purposes as it may be desirable to have the workmen enter the bins for.

Previous to my invention it has been customary in the construction of grain-elevators to have the lower ends of the bins provided with means by which the discharge of the grain from the bins might be permitted or stopped at the will of the attendant; but the means provided for this purpose have, so far as my knowledge extends, been such that the attendant could not, at pleasure and with any definiteness, regulate the amount of flow or quantity of grain desired to be discharged from any particular bin for the purpose of effecting a definite admixture of different kinds of grain which it might be desired to draw simultaneously from different bins into a common receptacle.

My invention consists, secondarily, in providing bins of a grain-elevator with discharge-valves and suitable means connected therewith by which the attendant can perfectly gage or regulate the flow or discharge from any one of the bins, and by which he can, therefore, effect a given mixture of grains from two or more bins for the purpose of discharging into a common receptacle for transportation what are known, for instance, as "high-mixture" and "low-mixture" corn, &c.

To enable those skilled in the art to which my improvements relate to make and use grain-elevators embracing the same, I will now proceed to more fully describe my invention, referring by letters of reference to the accompanying drawings, which make a part of this specification, and in which I have illustrated so much of a grain-elevator as it is necessary should be shown for the purpose of fully explaining my said invention.

In the drawings, Figure 1 is a partial vertical section of a grain-elevator made according to my present invention. Fig. 2 is a partial vertical section taken in a plane at right angles to the plane of section of Fig. 1, and designed, principally, to show the arrangement of the discharge-valves of the bins and the means by which the flow of grain may be regulated by the attendant for mixing grains from different bins.

In the several figures the same part will be

found designated by the same letter of reference.

A represents the bins of a grain-elevator, constructed in about the usual manner, except
5 that no ladder-like means are provided for the descent into the bins from their open tops of the attendant or workman.

B is a door hinged at its upper edge or side, as illustrated, and adapted to open inwardly
10 after the fashion of a trap-door, and arranged near the bottom of the bin and conveniently to the first floor, C, of the building, so that the workmen can from that floor conveniently enter the bin when empty for the purpose of inspection, cleaning the bin, &c. The door B
15 may be fastened by any suitable appliance, and is arranged so as to close from within against the interior surface of the wall of the bin, so that when the latter is full the pressure of the contents tends to keep the said door
20 always closed.

D are the valvular devices or discharge-slides, the opening and closing of which, respectively, permit and estop the flow of the
25 grain from the bins. These valves or slides, as shown in the present instance, are arranged below the platform E, upon which walk or stand the workmen employed on the first floor of the building for manipulating the drawing
30 off of the grain from the different bins into any of the desired receptacles. Each of said valves or slides is provided, as shown, with a vertical bar or rod, E', formed with notches or serrations F', and with a handle at its upper end,
35 and by the movement of this bar up or down the workman is enabled thereby to open or close, to any desired extent, the valvular slide D. The notches along the bar E engage with the floor on which the workman stands, and
40 hold the slide-valve up in the position desired, as shown, and it will be seen that by means of these notches the workman can at a glance understand whether the valve is adjusted or set so as to open the discharge-aperture to the extent of one-quarter or one-half,
45 or more or less, of its whole capacity.

Of course any other suitable means than that shown may be employed for opening and closing the slide-valve of each bin, and, if deemed
50 expedient, the series of appliances for opening and closing the valves may have arranged in connection with them some device or devices by which the operator can manipulate the valves at some point distant from their locality. Having this knowledge as to the extent to which any one or more of the bin-valves may be open, he will know, of course, in the event of effecting a discharge from two or more bins at the same time into a common receptacle, exactly in what proportions the contents
60 of such bins are being discharged relatively,

and by means of the facility thus afforded he can, it will be seen, open and close and regulate the discharge-valves of two or more bins, so as to discharge into a common receptacle
65 and in a mixed condition grains of different qualities taken from different bins.

It will be understood, of course, that in carrying out my invention with reference to the use of doors near the lower ends of the bins,
70 the precise arrangement, construction, and operation of such doors may be varied without departing from the novel particular of construction forming the subject-matter of this part of my invention, the gist of which rests in
75 the idea of the employment, in combination with the bins, of some suitable means for permitting ingress to and egress from the bottoms of the bins without the necessity of any ladder-like device within the bins, and without
80 having to enter the bins from their upper ends.

It will also be understood with reference to the second part of my invention that the same may be carried out under various modifications, and by means varying in the details of
85 construction from those which I have herein shown and described, the pith of my invention in this particular consisting, essentially, in the use and combination, with the discharge-gates of the bins of a grain-elevator, of suitable
90 means by the use of which the workmen or attendants may perfectly regulate the flow or discharge of grain from each of two or more bins, relatively, for the purpose of mixing in any
95 desired proportions in a common receptacle grains of different qualities stored in separate bins.

Having now so fully explained the nature and operation of my improvements in grain-elevators that any one skilled in the art can
100 readily understand and practice my invention, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a grain-elevator, the use, in combination with the bins, of doors located near the
105 lower ends of the bins, in substantially the manner and for the purposes set forth.

2. In combination with the bins of an elevator and the discharge-valves of said bins, suitable means by the use of which the work-
110 men or attendants can, without visual observation of the valves, set the latter so as to effect the discharge of the grain from two or more bins at the same time in any desired proportions, substantially as described, and for the
115 purposes specified.

In testimony whereof I have hereunto set my hand this 23d day of February, 1883.

WILLIAM WATSON.

In presence of—

F. P. POSTON,
W. K. POSTON.