

No. 615,328

Patented Dec. 6, 1898.

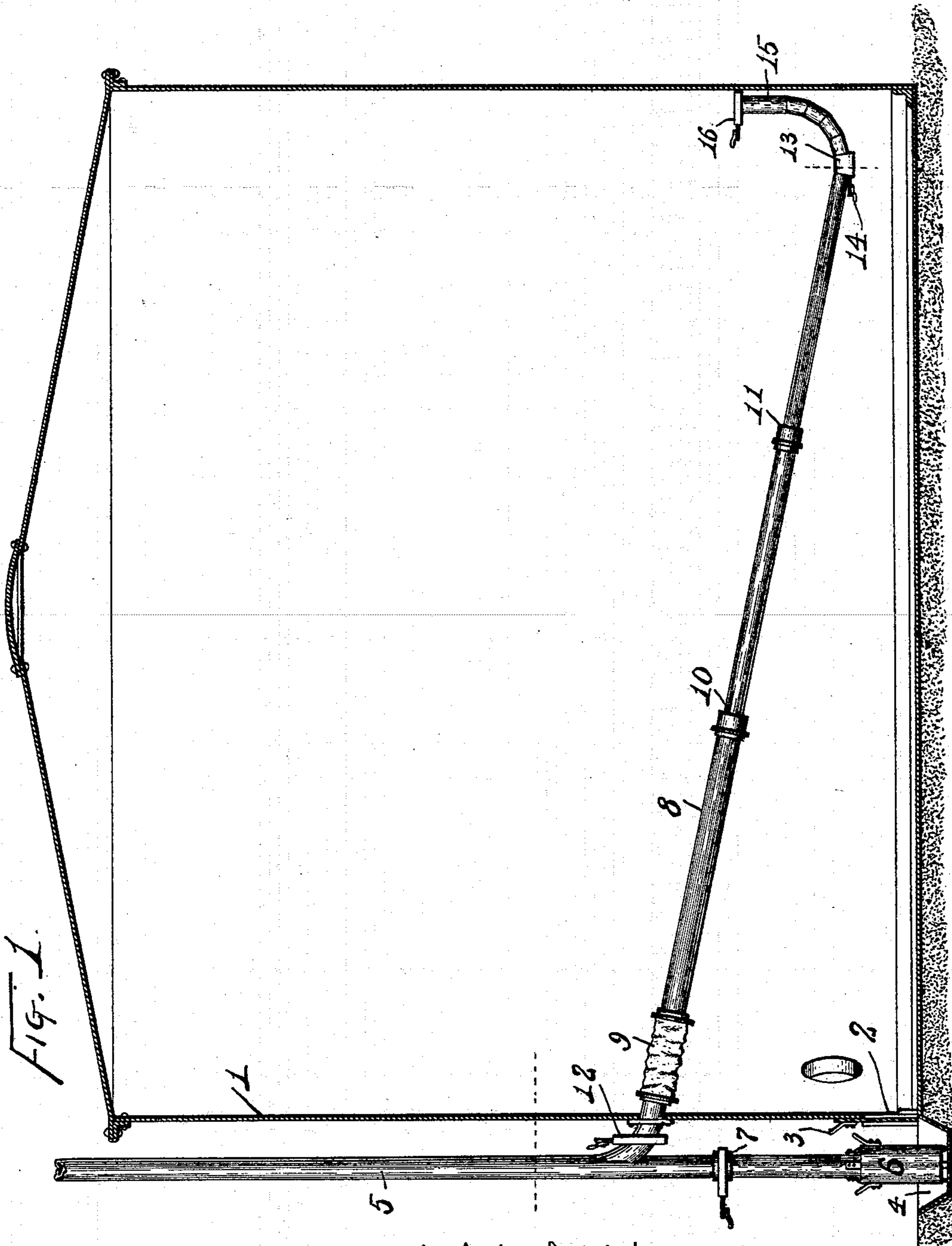
F. J. WEBER.

PNEUMATIC GRAIN TANK EMPTYING DEVICE.

(Application filed May 5, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
Elmer R. Shipley.
M. S. Belden.

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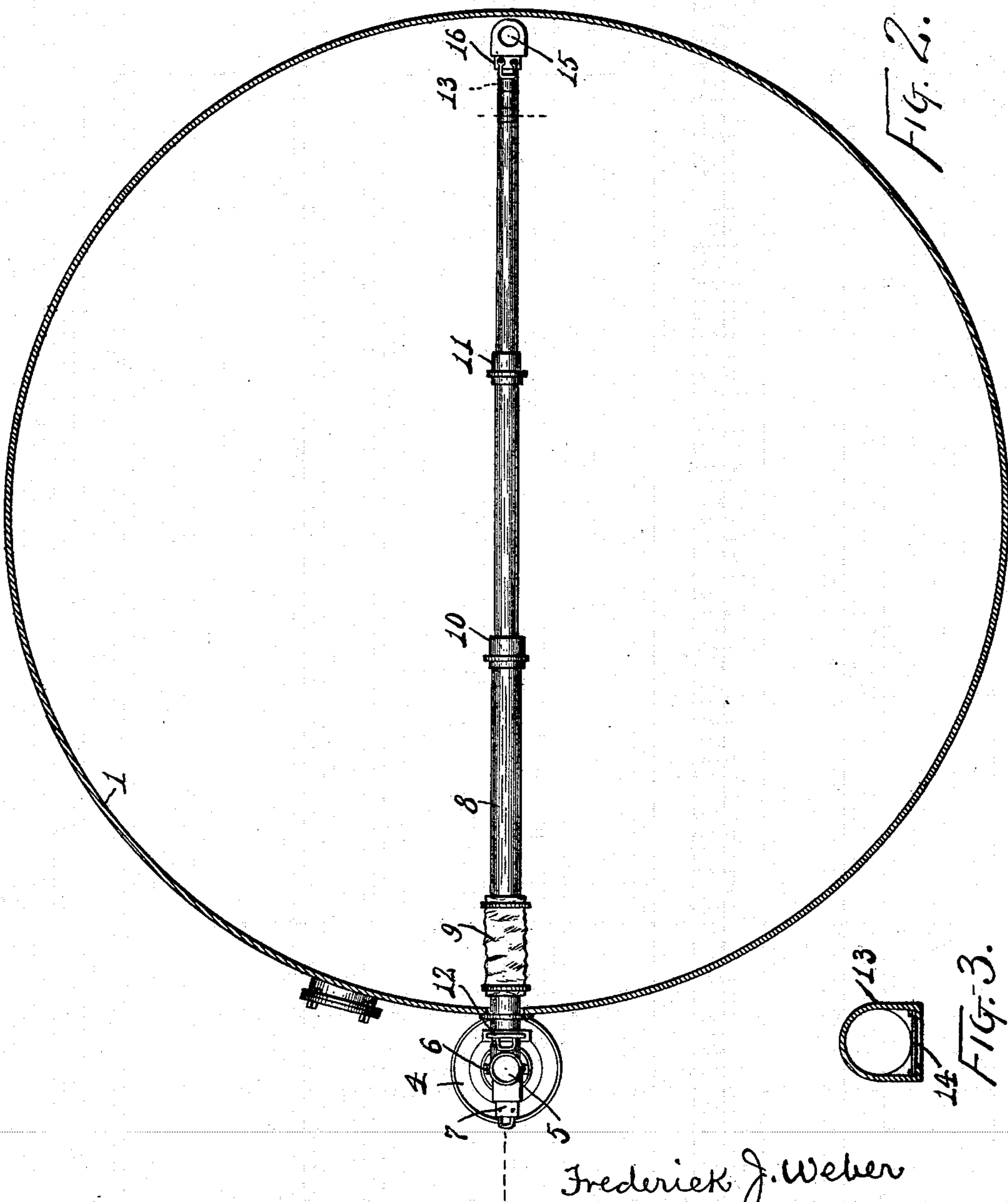
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UNITED STATES PATENT OFFICE.

FREDERICK J. WEBER, OF CONNERSVILLE, INDIANA, ASSIGNOR TO THE
STEEL STORAGE AND ELEVATOR CONSTRUCTION COMPANY, OF SAME
PLACE.

PNEUMATIC GRAIN-TANK-EMPTYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 615,328, dated December 6, 1898.

Application filed May 5, 1897. Serial No. 635,261. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. WEBER, of Connerville, Fayette county, Indiana, have invented certain new and useful Improvements in Pneumatic Grain-Tank-Emptying Devices, of which the following is a specification.

This invention relates to improvements in pneumatic devices for emptying grain-tanks; and the improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical section of a grain-tank provided with my improved pneumatic emptying apparatus; Fig. 2, a sectional plan of the same, and Fig. 3 a vertical transverse section of the finishing-mouthpiece.

In the drawings, 1 indicates the grain-tank; 2, an opening at the base thereof; 3, a valve or gate at such opening; 4, a shallow cistern below opening 2 in position to receive grain flowing from the tank through opening 2; 5, a suction-pipe which is to be assumed as leading to some distant point of delivery for the grain withdrawn from the tank and as being connected with suitable exhausting apparatus, as is usual in pneumatic grain-transfer systems; 6, a mouthpiece on the lower end of pipe 5 and disposed within the cistern 4, this mouthpiece serving to admit grain from the cistern into the lower end of pipe 5 and serving at the same time to admit into the lower end of that pipe a current of air taken from above the grain standing in the cistern; 7, a valve in pipe 5 above mouthpiece 6; 8, a branch pipe leading from pipe 5, at a point above valve 7, into the interior of the tank; 9, a flexible joint or section at the inner portion of branch pipe 8; 10, a telescopic joint formed in branch pipe 8; 11, a second telescopic joint formed in branch pipe 8, the entire length of branch pipe 8 within the tank, when extended, being sufficient to enable the outer end of the branch pipe to reach the most distant portions of the floor of the tank; 12, a valve in branch pipe 8 near

its juncture with suction-pipe 5; 13, a mouthpiece formed at the free end of branch pipe 8; 14, a valve controlling the grain-inlet to said mouthpiece; 15, an upturned portion at the free extremity of branch pipe 8 beyond mouthpiece 13, and 16 a valve controlling the upper extremity of pipe 15.

Assume the tank to be more or less full of grain which is to be transferred from the tank through pipe 5. All of the valves or gates being closed, valve 7 is first to be opened, the result being a rapidly-moving upward current of air in pipe 5. Gate 3 is now to be partially opened, whereupon grain flows from the tank into cistern 4, the grain in the cistern entering the lower end of pipe 5 through the mouthpiece and being carried upward through pipe 5 by the air-blast and delivered at the point of discharge of that pipe, gate 3 being regulated, so as to permit of grain flowing from the tank into the cistern as fast as it is withdrawn from the cistern by the air-current. By this means the tank may be nearly emptied of its contained grain, there eventually remaining, however, a body of grain in the base of the tank, the upper surface of this body of grain sloping toward opening 2 at the angle of repose of the grain. At this stage gate 3 is to be closed, as grain will no longer flow from it, and valve 7 is to be closed. The tank is now to be entered by an attendant through a suitable manhole and branch pipe 8 brought into action, its mouthpiece 13 resting upon any portion of the body of grain in the tank. Valve 12 is now to be opened, and valves 14 and 16 are to be sufficiently opened to establish the proper flow of air and grain through branch pipe 8, which grain thus carried by the air-current proceeds upwardly in pipe 5. Branch pipe 8 may be manipulated within the tank, so that its mouthpiece 13 is brought to bear properly upon any grain in the tank.

The upturned portion 15 of pipe 8 provides an air-inlet for that pipe at a point above and beyond the mouthpiece 13, and serves also as a handle-piece in manipulating the pipe,

and serving also to permit the early exposure of gate 16 through the sloping mass of grain.

I claim as my invention—

- 5 In a pneumatic device for emptying grain-tanks, the combination, substantially as set forth, of a tank, a suction-pipe, a branch pipe from said suction-pipe to within the tank, a

mouthpiece at the free end of said branch pipe and an upturned portion in said branch pipe beyond said mouthpiece.

FREDERICK J. WEBER.

Witnesses:

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L. E. LOWE.