

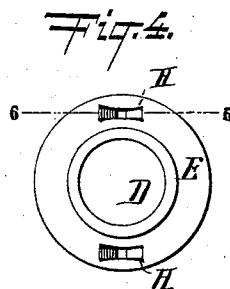
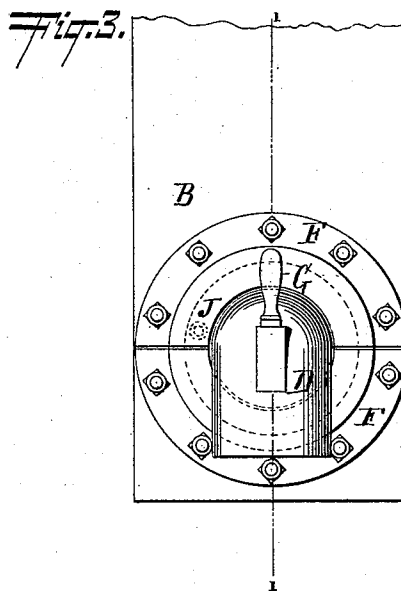
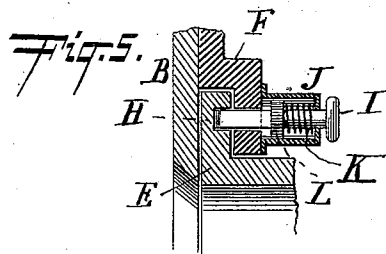
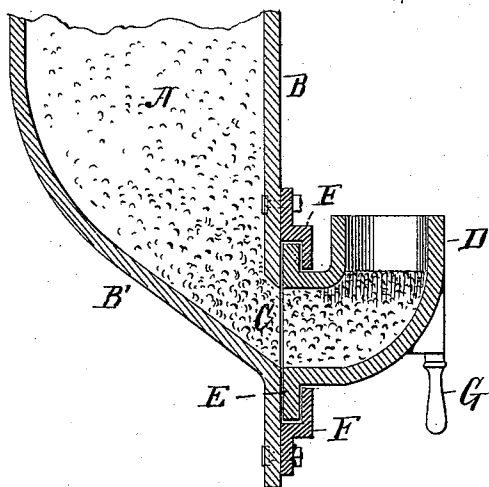
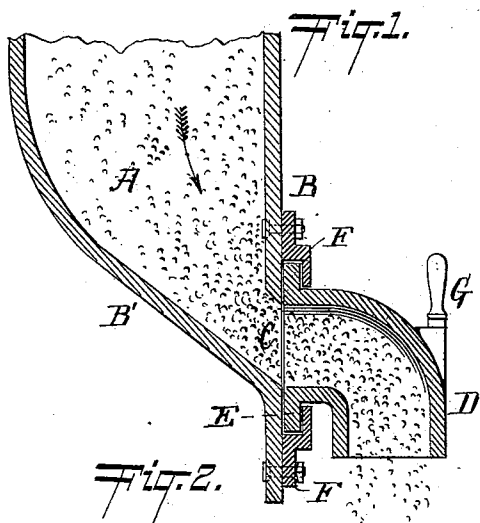
(No Model.)

J. W. GRISWOLD.

CONTROLLING SPOUT FOR GRANULATED MATERIAL.

No. 468,870.

Patented Feb. 16, 1892.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN WOOL GRISWOLD, OF TROY, NEW YORK.

CONTROLLING-SPOUT FOR GRANULATED MATERIAL.

SPECIFICATION forming part of Letters Patent No. 468,870, dated February 16, 1892.

Application filed June 15, 1891. Serial No. 396,264. (No model.)

To all whom it may concern:

Be it known that I, JOHN WOOL GRISWOLD, of Troy, Rensselaer county, New York, have invented a new and useful Improvement in
5 Controlling-Spouts for Granulated Material, of which the following is a specification.

It is well known that much difficulty is experienced in controlling the outflow of dry granulated substances—such as grain, gravel,
10 sand, &c.—from ducts or reservoirs. Ordinarily a valve or slide is arranged to move transversely across the channel or discharge-opening; but this is easily choked and clogged by the dry material. Valves which swing on
15 pivots are even more liable to become inoperative for the same reason.

My present invention is a simple device which does away with valves or slides entirely, and which depends for its operation
20 upon the principle that dry granulated material while flowing under the influence of gravity with great freedom will not obey the laws of liquids and rise to its own level. Hence if said material be flowing down a pipe
25 or channel the nozzle or spout of which is turned downward it is necessary simply to turn that spout or nozzle upward to stop the flow. My present device is an embodiment of this principle, which I have found to be operative and useful under conditions of actual
30 employment.

In the accompanying drawings, Figure 1 is a vertical section of my device on the line 1 1 of Fig. 3. Fig. 2 is a similar section showing
35 the rotary spout turned upward to prevent escape of grain. Fig. 3 is a face view. Fig. 4 is a face view of the flange on the spout, showing the recesses therein. Fig. 5 is an enlarged sectional view of the latch, and Fig.
40 6 is a section on the line 6 6 of Fig. 4.

Similar letters of reference indicate like parts.

A represents a reservoir for granulated material—such as grain, sand, gravel, or like
45 substances. The front wall B is here shown as vertical and has an escape-opening at C. The rear wall B' is inclined. Disposed in front of the opening C is the spout or nozzle D, which is bent or curved at an angle, preferably at right angles, and is provided with
50 a flange E. Bolted to the wall B are two semicircular plates F, which are shouldered or

flanged to receive the flange E. By this means the spout D is held in place before the opening C. The spout D may be rotated freely,
55 so that its delivery end may be turned upward, as shown in Fig. 2, or downward, as shown in Fig. 1. A handle G is secured to the spout D to enable the latter to be conveniently turned.

In the flange E are formed two recesses H, having beveled or inclined edges, as shown in Fig. 6. Passing through one semicircular plate F is a pin I, which is received in an exterior casing J. In said casing is a spiral
65 spring K, which acts upon a collar L fast upon pin I and tends to throw said pin inwardly. The pin I acts as a latch to enter one or the other of the recesses H, in order to prevent the spout D from turning after it is placed in
70 either of the positions shown in Figs. 1 and 2; the end of the pin normally pressing against the face of the flange slides down the beveled edge of the recess H when the latter comes in front of it. The pin is of course
75 withdrawn from the recess when the spout is to be turned.

When the spout is in the position shown in Fig. 1, the grain or other material will freely flow through it. When it is rotated into the
80 position shown in Fig. 2, the grain will be prevented from escaping.

I find in practice that this device works with great ease and efficiency, and is in every way superior to valves, slides, and other analogous
85 contrivances which, being arranged within the channel, are easily clogged and so rendered inoperative.

I claim—

1. In combination with a reservoir or duct
90 for dry granulated material having a lateral discharge-opening through which said material may discharge by its own gravity, a curved or bent spout or nozzle rotary on a horizontal axis and applied to said opening, the said
95 spout being constructed and arranged so that its delivery end may be turned downward to allow escape of said material or upward to prevent said escape, the length of the vertical portion of said spout when turned upward
100 being less than the vertical height of the material in said reservoir or duct measured from the delivery-opening thereof.

2. In combination with a reservoir or duct

for dry granulated material having a lateral discharge-opening through which said material may discharge by its own gravity, a curved or bent spout D, having a flange E and applied to said opening, and a holding device, such as the plates F, receiving said flange and allowing free rotation of said spout, substantially as described.

3. In combination with a reservoir or duct for granulated material having a lateral dis-

charge-opening, a curved or bent spout D, having a flange E and applied to said opening, holding-plates F, receiving said flange and allowing said spout to rotate, and a latch I, engaging with recesses in said flange, substantially as described.

JOHN WOOL GRISWOLD.

Witnesses:

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HENRY W. SMITH.