O. JOHNSON.

Grain-Bin.

No. 218,033. Patented July 29, 1879.

Fig. 1

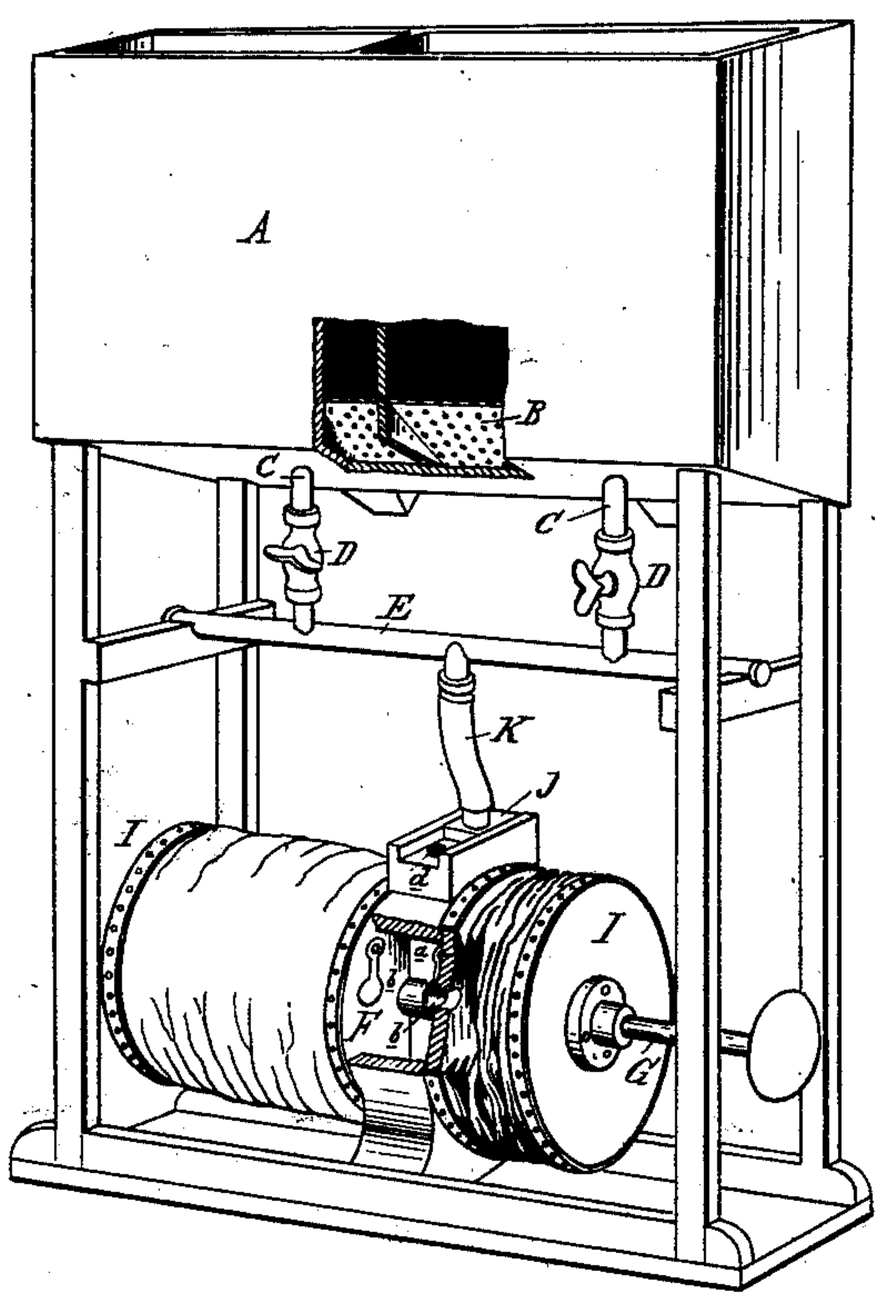
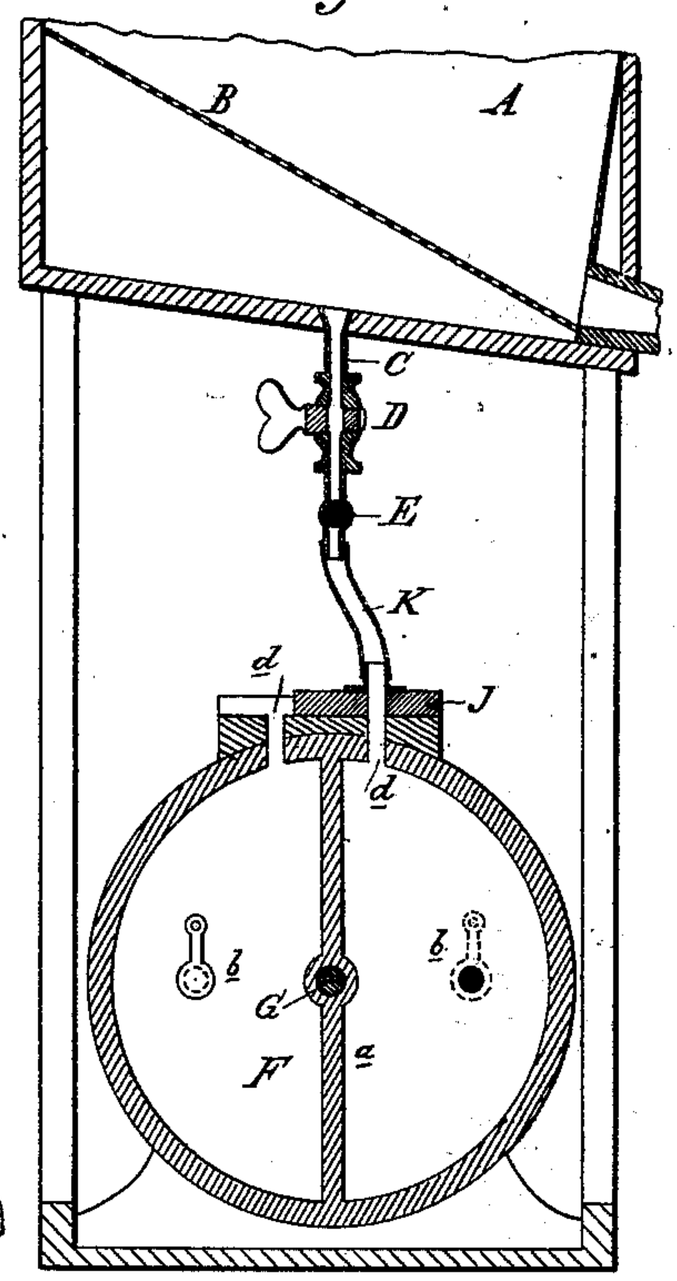


Fig. 2



Attest:

A. Barthel

Charles J. Kenth.

Inventor:

O. Johnson

By Atty

Thos. S. Sprague

UNITED STATES PATENT OFFICE

ORANGE JOHNSON, OF GRAND LEDGE, MICHIGAN.

IMPROVEMENT IN GRAIN-BINS.

Specification forming part of Letters Patent No. **218,033**, dated July 29, 1879; application filed March 4, 1879.

To all whom it may concern:

Be it known that I, ORANGE JOHNSON, of Grand Ledge, in the county of Eaton and State of Michigan, have invented an Improvement in Grain-Bins, of which the following is a specification.

The nature of this invention relates to new and useful improvements in the construction of grain-bins; and the invention consists in providing the bins with perforated false bottoms, and with air-chambers below such false bottoms; in combination with a double-acting air-pump or bellows connected with such air-chambers, for forcing fresh air up through the grain or drawing the foul air out of the bins to ventilate the grain and ascertain the condition; and, further, in the combination, with a grain-bin, of double-acting air-pump or bellows having a sliding port-plate and a flexible pipe connecting the sliding port-plate with the system of pipes leading to the grain-bins, so that such system of pipe can be put in connection with either the inlet or outlet port of the pump or bellows, as fully hereinafter explained.

Figure 1 is a perspective view, and Fig. 2 is a central vertical section.

In the accompanying drawings, which form a part of this specification, A represents a grain-bin provided with the usual spouts for discharge.

In the bottom of the bin I construct a false bottom, B, which is finely perforated with small holes. In the bottom of the bins, and through the same, I pass air-pipes C, which are provided with stop-cocks D. These pipes C are connected with a main air-pipe, E, which in turn is connected with a bellows or air-pump, as is more fully hereinafter set forth.

F represents an air-chamber, divided into two compartments by the partition *a*. In one of these compartments there are arranged the valves *b*, which open inwardly, while the other compartment is provided with valves which open outwardly.

G is a rod which passes through a proper stuffing-box in the chamber F, and has secured to it two heads, I. A drum of leather is secured at one end to each of the heads I, the opposite ends being secured to the sides of the chamber F.

In the top of the air-chamber are two openings, *d*, which are covered or disclosed by the sliding connecting-block J, which is connected by means of a flexible pipe, K, to the main air-pipe E.

By this construction I have an exhaust or suction bellows, and I can force a current of fresh air up through the grain contained in the bins, or I can draw the air down through the same and exhaust at the bellows, at which point it is easy to ascertain whether the grain is molding or becoming heated.

What I claim as my invention is—

1. The combination, with a grain-bin having a perforated false bottom and an air-chamber below such false bottom, of a double-acting air-pump or bellows connected with such air-chamber, whereby fresh air can be forced into said grain-bins up through the grain, or the foul air drawn out of such bins, to ventilate the grain and ascertain its condition, substantially as described.

2. The combination, with a grain-bin, of the air-pump or bellows having ports *d* and sliding port-plate J, and the flexible pipe K, connecting the port-plate with air-pipes leading to the grain-bin, constructed and arranged substantially as and for the purpose set forth.

ORANGE JOHNSON.

Witnesses:

H. S. SPRAGUE,

CHAS. J. HUNT.