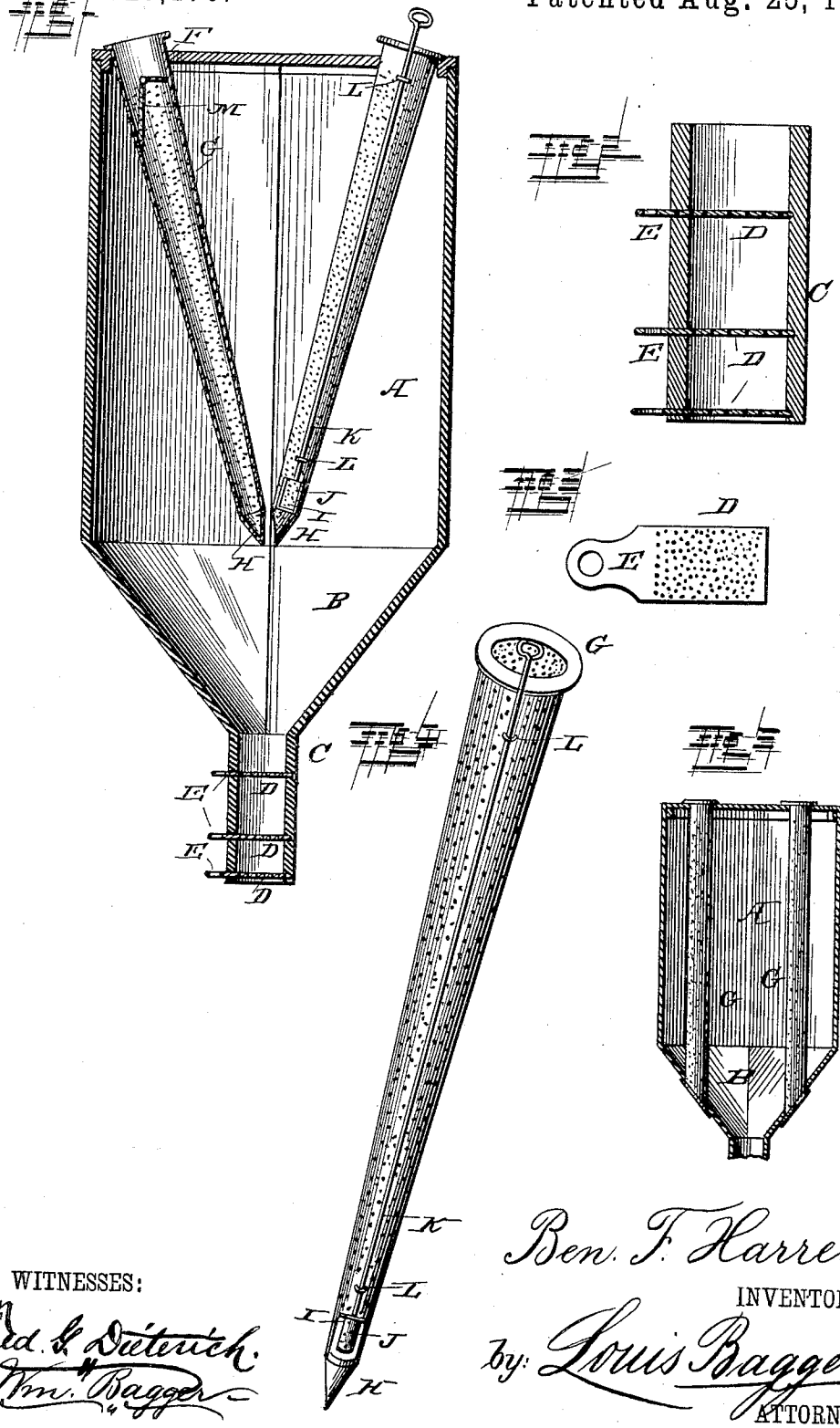
(No Model.)

B. F. HARRELL.

VENTILATOR FOR GRAIN BINS.

No. 325,170. Patented Aug. 25, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

BEN F. HARRELL, OF NEW MARION, INDIANA.

VENTILATOR FOR GRAIN-BINS.

SPECIFICATION forming part of Letters Patent No. 325,170, dated August 25, 1885.

Application filed September 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, BEN F. HARRELL, a citizen of the United States, and a resident of New Marion, in the county of Ripley and State of Indiana, have invented certain new and useful Improvements in Ventilated Grain and Flour Bins; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical sectional view of a bin or box to which my invention has been applied. Fig. 2 is a detail view, on a larger scale, of the measuring and sacking attachment at the lower end of the same. Fig. 3 is a plan view of one of the perforated slides of the said measuring attachment. Fig. 4 is a detail view of the removable ventilating and sampling tube, and Fig. 5 is a vertical sectional view illustrating a modification of my invention.

The same letters refer to the same parts in all the figures.

This invention relates to bins for the storage of grain, flour, and all articles which it is desirable to supply freely with pure air for the purpose of preserving and keeping them in proper condition; and it has for its object to provide a ventilated bin or storage-chamber which shall possess superior advantages in point of simplicity, convenience, and general efficiency.

With these ends in view the invention consists in the improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates a bin or storage-chamber of any suitable size and construction, and which in practice may be a box mounted upon suitable legs; or it may be an entire chamber or compartment of a building, such as a grain-elevator. The said bin is by preference provided with a hopper-shaped bottom, B, in order to enable its contents to be readily removed; but this is no necessary element of my invention.

The bottom of the bin is provided with a tubular spout, C, equipped with a series of perforated slides, D D, having handles E, by means of which they may be readily manipulated, and the perforations in which are of a size which is governed by the material which the bin is intended to contain. Thus for a flour or meal bin the perforations must be very small, while for a grain or corn bin they may be correspondingly larger. The spout C is divided by the slides D into compartments of known size—for instance, fractions of a bushel—in order that any desired quantity may be removed from the contents of the bin by proper manipulation of the said slides in an obvious manner. A bag or sack may also be readily attached to the spout to receive the contents of the bin.

The top or cover of the bin has one or more openings, F, through which a cylindrical or tapering tube, G, terminating in a conical point, H, may be readily inserted into the contents of the same. The said tube is finely perforated, as shown, and is provided near its lower end with an opening, I, having a sliding door or cover, J, which may be readily manipulated by means of a rod, K, extending through suitable eyes or guides, L, to the upper end of the tube. The latter is provided near its upper end with a hinged trap-door, M, opening downward or inward, and so constructed as to be maintained automatically in a closed position when the tube is arranged in a somewhat inclined position, as shown. The tube G is to be thrust through one of the openings F into the contents of the bin, which is thus supplied with pure air, while at the same time it affords a means of escape for the vapors and gases which are generated in the bin. It is obvious that by changing the position of the tube pure air may be supplied to any portion of the contents of the bin. The openings F not in use are to be closed by suitable doors or slides.

The tube G, in addition to furnishing ventilation to the interior of the bin, may be utilized as a sample-tube by simply inserting it into the contents of the bin, withdrawing the cover J, and turning the tube around once or twice. A portion of the contents of the bin will thus be caused to enter through the opening I, after which the slide J is pushed back and the tube withdrawn, after which the sample may be easily removed and examined. In this manner

samples may be conveniently obtained from any portion of the bin. The tube also forms an excellent trap for rats, mice, and other depredating animals, who will readily enter the tube, being attracted by the odor of the contents of the bin, which, being closed, affords no other access, when the trap-door M will prevent their escape, so that they may be removed and killed when desired.

In Fig. 5 I have shown a modification of my invention, which consists simply in providing the bin with a series of stationary perforated ventilating-tubes connecting openings at the top and bottom or in the sides of the bin, so as to admit of the free passage of air, and secured in position by means of flanges or collars at the ends of the said tubes. The operation of this modification is obvious.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. It is simple in the extreme. The improvements embodied by my invention are easily applied to storage-bins of ordinary construction, and it comprises in one a ventilating device, a measuring apparatus and sacker, a sampler, and a trap for the snaring of depredatory animals.

It is evident that the construction of this device is susceptible of modifications other than those which have been herein shown and described, and I would have it particularly understood that I reserve to myself the right to all such changes as may be resorted to without departing from the spirit of my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a storage-bin having a top provided with a suitable opening or openings, of a removable and adjustable perforated ventilating-tube terminating in a conical point, and having an opening near its lower end capable of being closed by a suitable slide having a handle extending to the upper end of the said tube, substantially as and for the purpose set forth.

2. A perforated ventilating tube for storage-bins, terminating in a conical point at its lower end, and provided near its upper end with a gravity trap-door opening downward or inward, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

BEN F. HARRELL.

Witnesses:

LUTHER E. WESTOVER,

MILTON W. GRIMES.