

M. RANDOLPH.  
VENTILATING-BINS.

No. 183,068.

Patented Oct. 10, 1876.

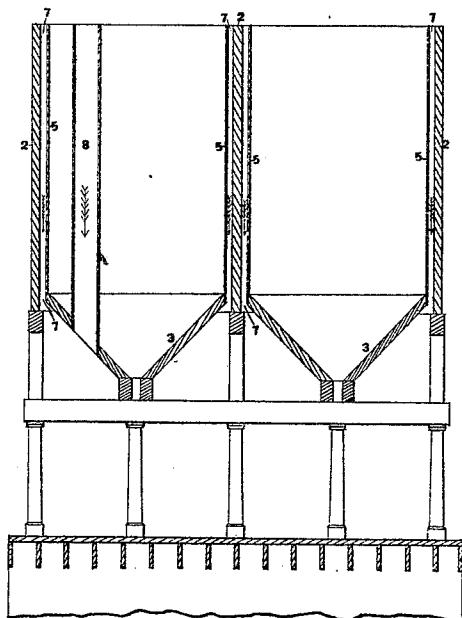


FIG 1

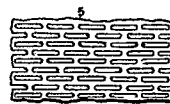


FIG 3

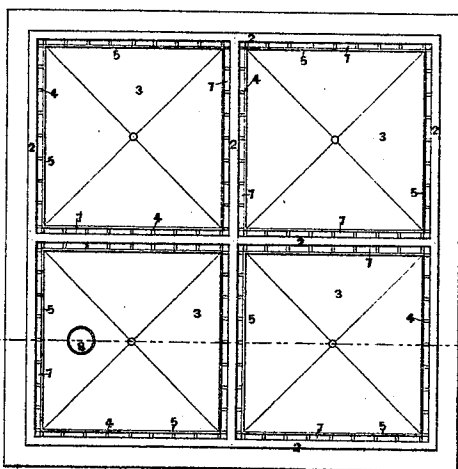


FIG 2

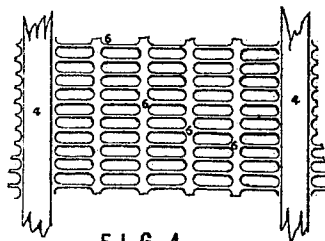


FIG 4

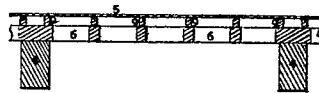


FIG 5

WITNESSES

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INVENTOR

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# UNITED STATES PATENT OFFICE.

MAHLON RANDOLPH, OF NEW YORK, N. Y.

## IMPROVEMENT IN VENTILATING-BINS.

Specification forming part of Letters Patent No. **183,068**, dated October 10, 1876; application filed June 10, 1875.

*To all whom it may concern:*

Be it known that I, MAHLON RANDOLPH, of the city, county, and State of New York, have invented a new and useful Improvement in Ventilated Bins for Holding Grain in Bulk, of which said improvement the following is a specification:

The invention relates to the construction of the bin-sides so as to adapt them to a system of ventilation by means of vertical ducts at the sides of the bins; and the improvement may be applied to bins now in use.

The invention consists of a thin metal lining supported by a rigid metal backing, so as to furnish the adequate support to the thin lining, while an air-way is formed between the metal lining so constructed and the rigid supports of the bin's sides.

The invention will be readily understood by reference to the accompanying drawings, of which Figure 1 is a sectional elevation of a bin-warehouse, taken on the line 1 1 of Fig. 2. Fig. 2 is a general plan of the same. Fig. 3 is an elevation of a portion of the plating used for the sides of the bins. Fig. 4 is an elevation of a portion of the backing for the sides. Fig. 5 is a sectional plan of a portion of the bin-side.

The walls and partitions 2, which form the bins, may be constructed of wood, metal, or masonry, in any of the usual forms now in use or adapted to the purpose. The bottoms of the bins will be constructed with hoppers 3, in the usual manner, the said hopper-bottoms, in the case of ventilated bins, being allowed to extend only as far out as the perforated lining that forms the sides of the bin proper, as shown in Fig. 1. To the inside surface of the walls or partitions of each bin will

be secured vertical ribs or furring-strips 4, of either wood or metal. These pieces will be placed, say, one or two feet apart, more or less, and to the inner surfaces, or the edges of them, will be secured, by nailing or riveting, thin perforated plates of metal 5. The perforations of these plates will preferably be elongated slots, with rounded ends, so as to secure as large an amount of air-space through these apertures as possible, and at the same time retain the tensile strength of the plates sufficiently to resist bulging from the pressure of the grain within the bin. Toward the bottoms of the bins, where the pressure of the grain against the perforated lining 5 acts with the greatest intensity, the plates 5 should be proportionately stiffer or thicker than they are nearer the top of the bin; or the required strength may be secured by a supporting-back, 6, as shown in Figs. 4 and 5. This supporting-back may be formed of iron bars, or of a cast-iron net-work interposed between the lining 5 and the furring-strips 4, and secured to the said furring-strips before the perforated lining is put in place. This construction will prevent the perforated lining 5 from bulging into and stopping up the air-passage 7. If interior ducts 8 are used, their walls may be constructed similarly to the side walls above described.

Having described my invention, I claim—

The metal lining 5, supported between the furring-strips 4 by a metal backing, 6, as described and shown.

MAHLON RANDOLPH.

Witnesses:

C. N. DAMAN,  
ALEX. WHITE.