

No. 740,754.

PATENTED OCT. 6, 1903.

H. A. HANNUM.  
GRAIN BIN VENTILATOR.  
APPLICATION FILED MAY 21, 1903.

NO MODEL.

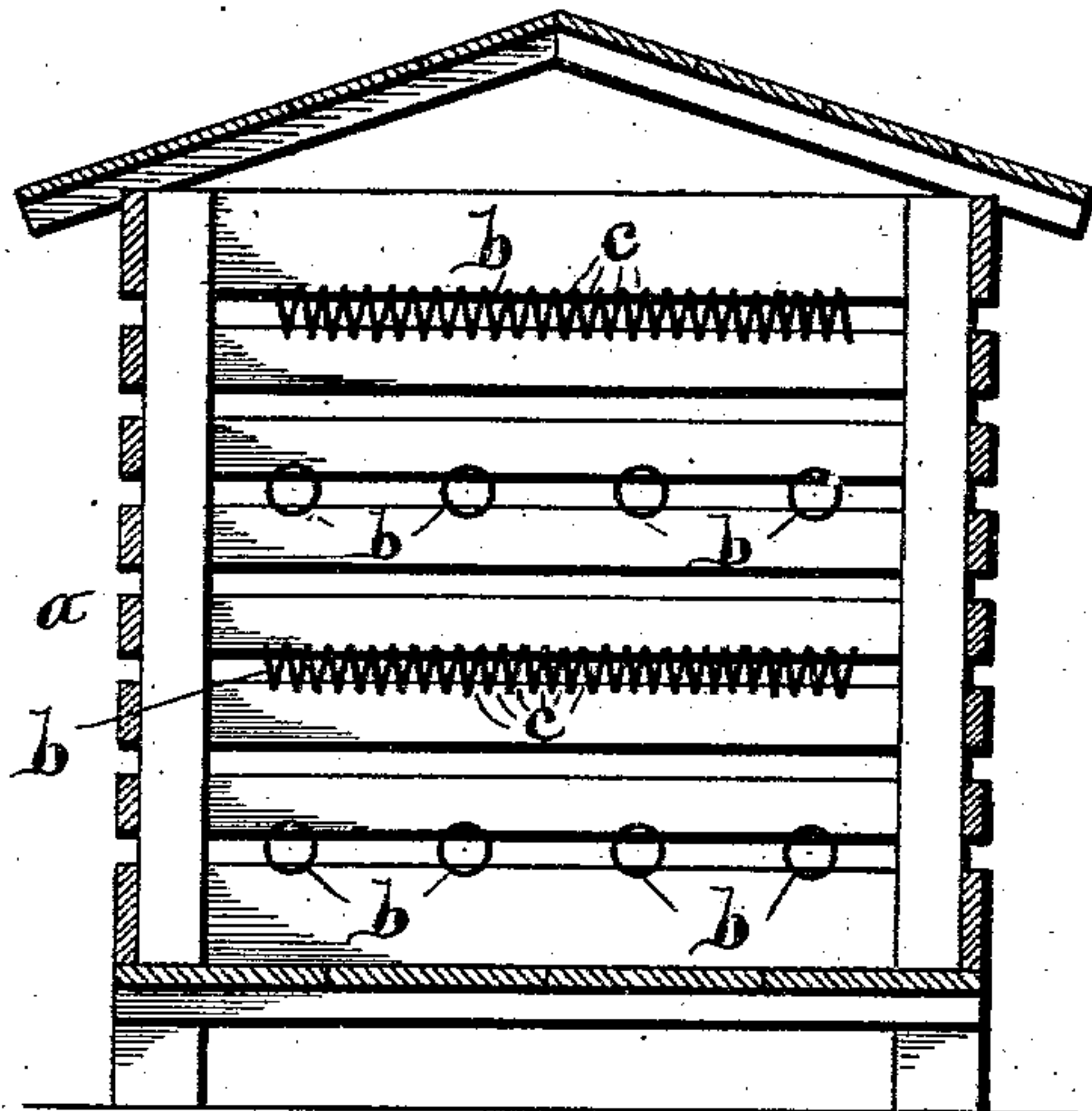


Fig. 1

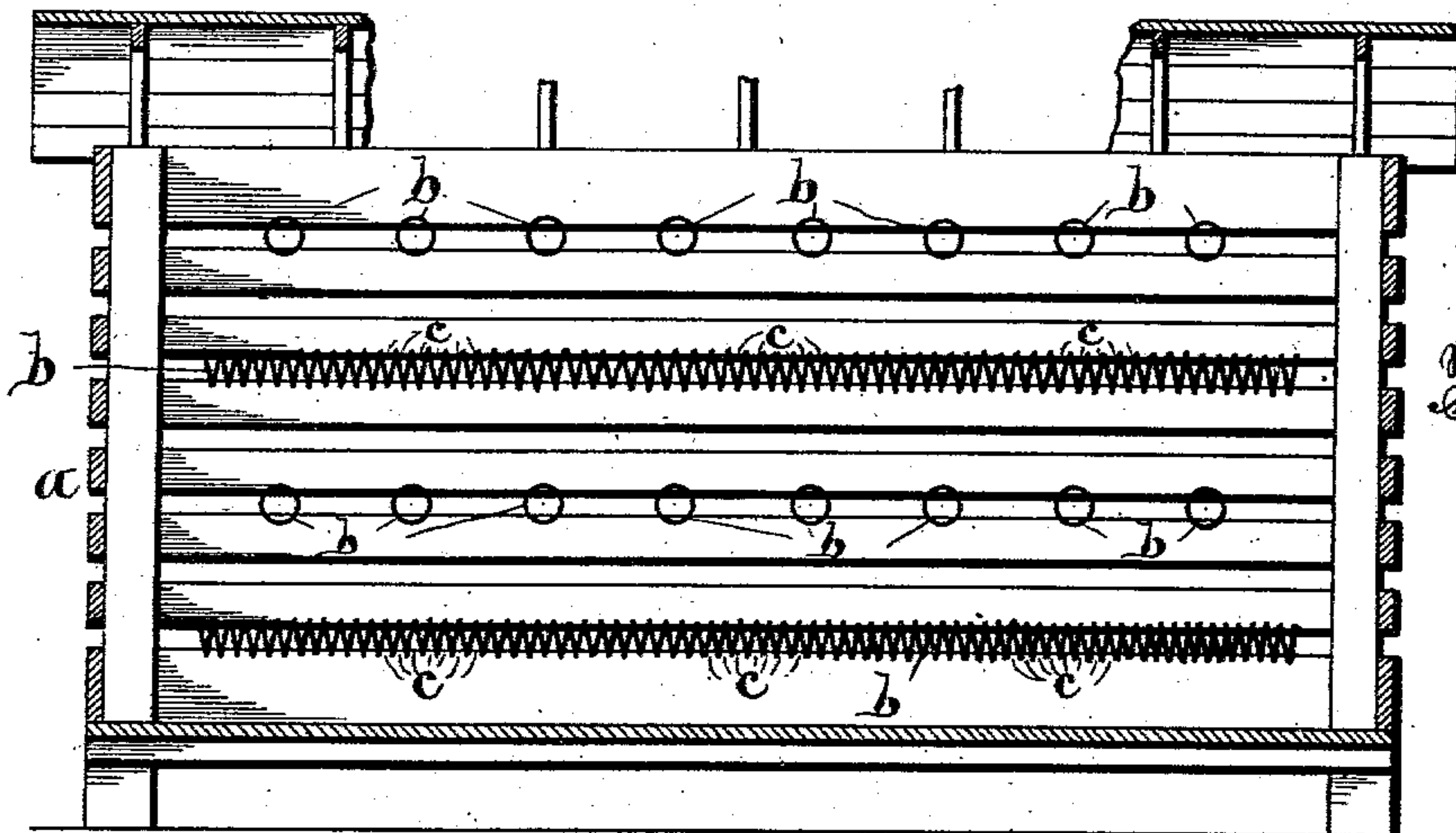


Fig. 2

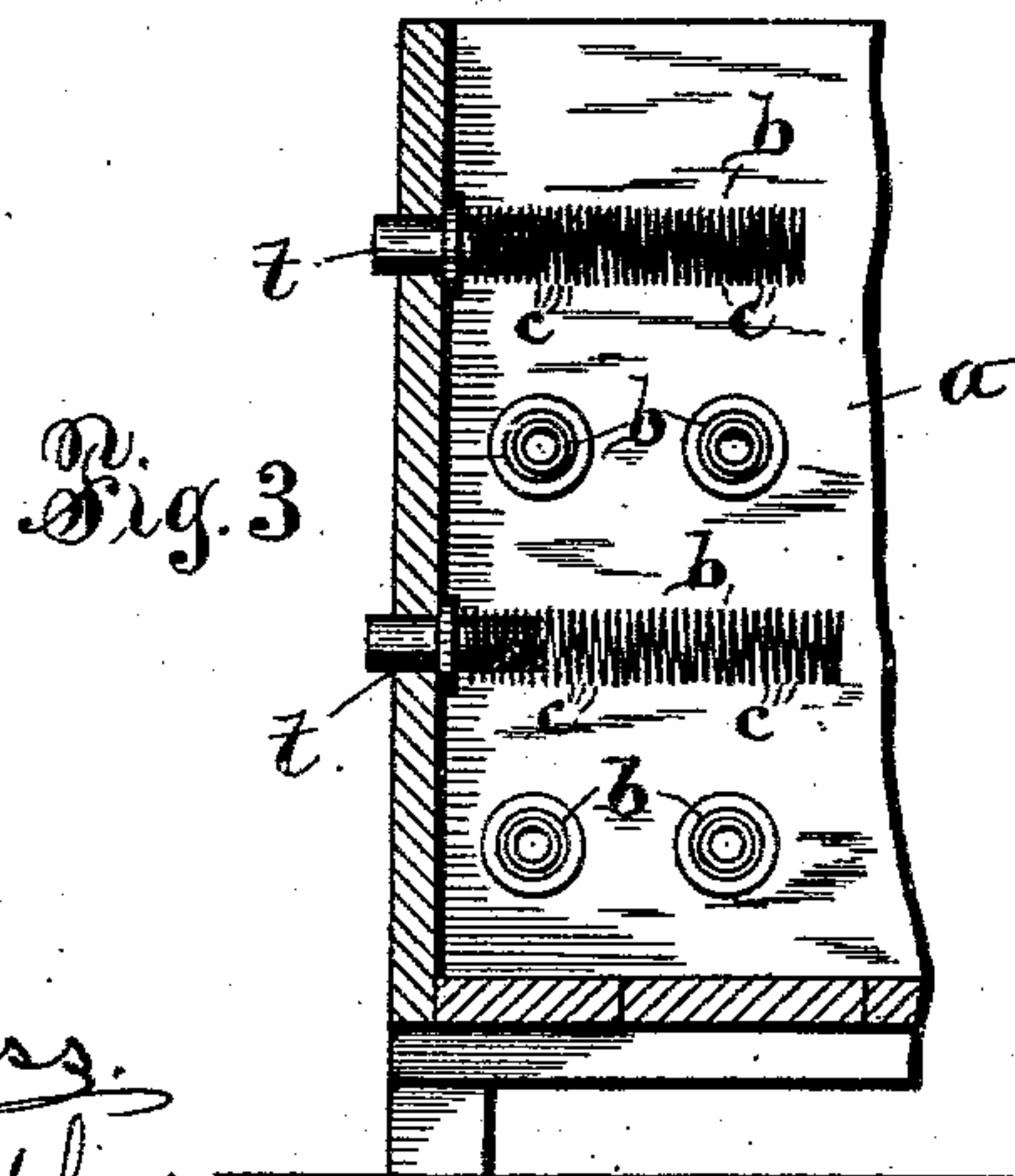


Fig. 3

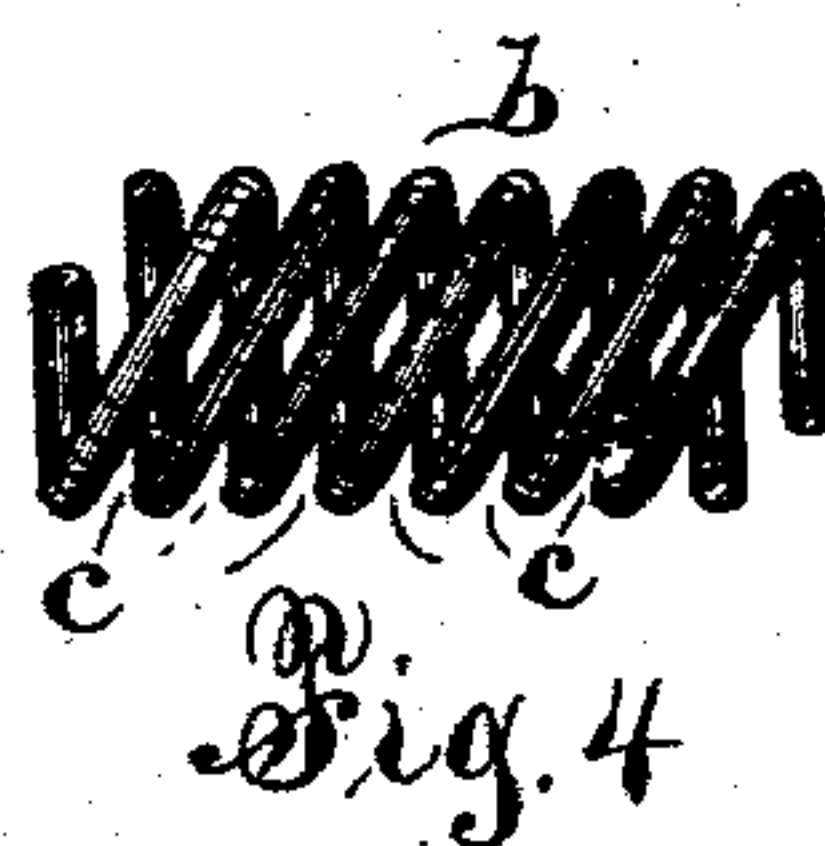


Fig. 4

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## GRAIN-BIN VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 740,754, dated October 6, 1903.

Application filed May 21, 1903. Serial No. 158,213. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. HANNUM, a citizen of the United States, and a resident of Cazenovia, in the county of Madison, in the State of New York, have invented new and useful Improvements in Grain-Bin Ventilators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The object of this invention is to provide simple, convenient, durable, and efficient means for ventilating the interior of bins or cribs containing grain or other substances which are liable to lie too compactly to permit sufficient permeation of air necessary to prevent heating and the resultant injury to the substances stored in the bin.

For the attainment of this object my invention consists mainly, in the combination with a grain-bin, of a ventiduct extending through the interior of said bin and formed of incorrodible wire or rod curved spirally and with interstices between the helices, and the invention also consists in certain novel details of construction, as hereinafter described and claimed.

In the drawings hereto annexed, Figures 1 and 2 are transverse and longitudinal sections, respectively, of a corn crib or bin embodying my invention. Fig. 3 is a transverse sectional view of a portion of a bin equipped with my improved ventilator, designed more particularly for a bin containing wheat or rye or barley or other small grain; and Fig. 4 is an enlarged perspective view of a section of the ventiduct embodying a modification of my invention.

$\alpha$  represents a crib or bin, which may be of any suitable shape and dimensions, according to the quantity and species of grain to be stored therein.

$b$  denotes my improved ventiduct, which extends through the interior of the bin  $\alpha$ , either lengthwise or crosswise thereof, and has its ends disposed to receive air from the exterior of the bin and allow said air to permeate the entire mass of grain stored in said bin. I form this ventiduct of a spirally-wound wire or light rod, of steel or iron or other suitable metal of sufficient strength to prevent

the spirals from being crushed by the weight of the grain pressing against them. To guard against corrosion of the said spirals, I coat them with suitable paint or I form the spirals of tinned wire or incorrodible metal. To allow the air to freely radiate through the sides of the ventiduct, I form the said ventiduct with spaces or interstices  $c c$  between the successive helices, which interstices constitute air-vents extending in spiral direction lengthwise of the ventiduct.

When the described ventiduct is to be applied to the species of bin which is formed with ventilating-slots through its walls, as is the case in the construction of bins for corn in the ears, the said ventiduct may be terminated inside of the bin, at short distances from the walls thereof, so as to allow the ends of the ventiduct to communicate with the air entering through the slots of the bin, as illustrated in Figs. 1 and 2 of the drawings.

In cases where the walls of the bin are formed with close joints and the bin is designed to contain wheat or other small grain I form the ventiduct with very narrow interstices between the successive helices, which may be accomplished either by compressing endwise the spirals or by inserting two or more spirals one within the other, as represented in Fig. 4 of the drawings.

To properly support the last-described form of ventiduct in the bin, I provide the walls of the bin with apertures into which I insert air-induction tubes  $t t$ , extending transversely through said walls and suitably connected at their inner ends to the ends of the ventiduct  $b$ .

When my invention is to be used in a bin of considerable size, I employ a plurality of ventiducts  $b b$ , preferably disposed transversely in the bin and distributed to allot to each ventiduct a separate portion of the interior of the bin.

What I claim as my invention is—

1. The combination, with a grain-bin, of a ventiduct extending through the interior of said bin and formed of a wire or rod curved spirally and with interstices between the helices as set forth.

2. The combination, with a grain-bin, of a ventiduct extending through the interior of

the bin and having its ends disposed to communicate with the air at the exterior of the bin and formed of wire curved spirally and with interstices between the helices.

- 5 3. The combination, with a grain-bin, of a ventiduct extending through the bin and composed of a plurality of spirally-curved wires

inserted one within the other and each formed with interstices between the helices as set forth.

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Witnesses:

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