

L. S. BLAKE.
Wool Drier.

2 Sheets—Sheet 1.

No. 105,891.

Patented Aug. 2, 1870.

Fig. 1.

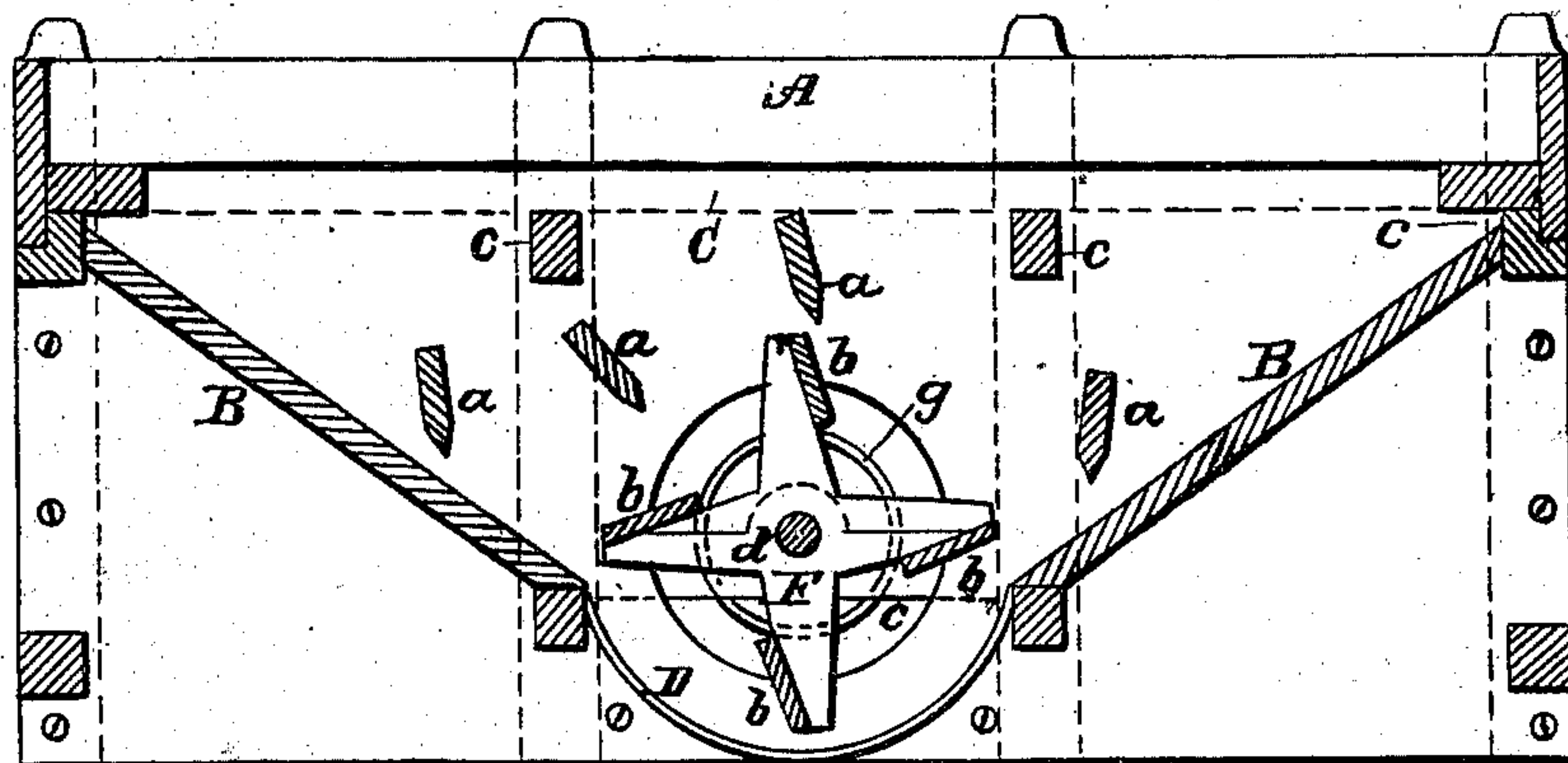
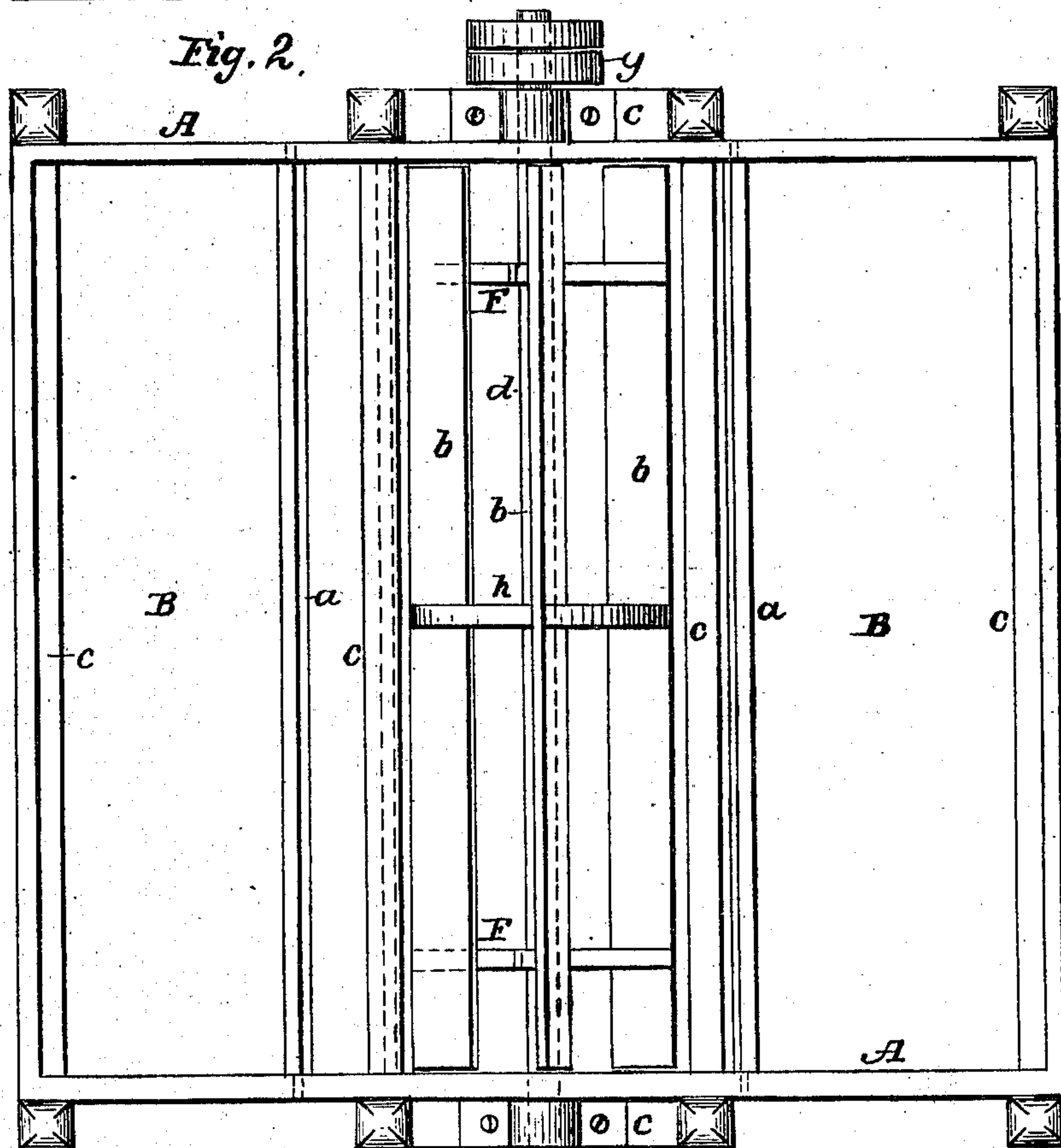


Fig. 2.



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J. H. Campbell

Inventor:

Lucien S. Blake
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Fig. 3.

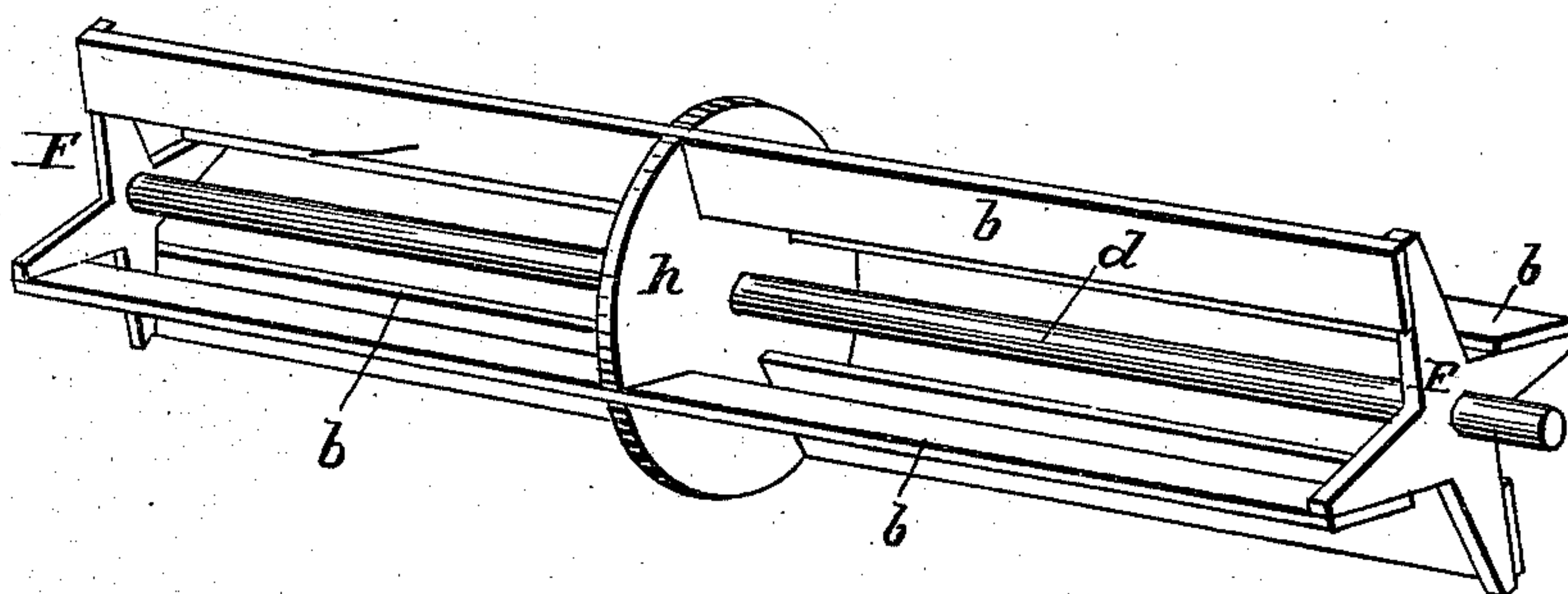
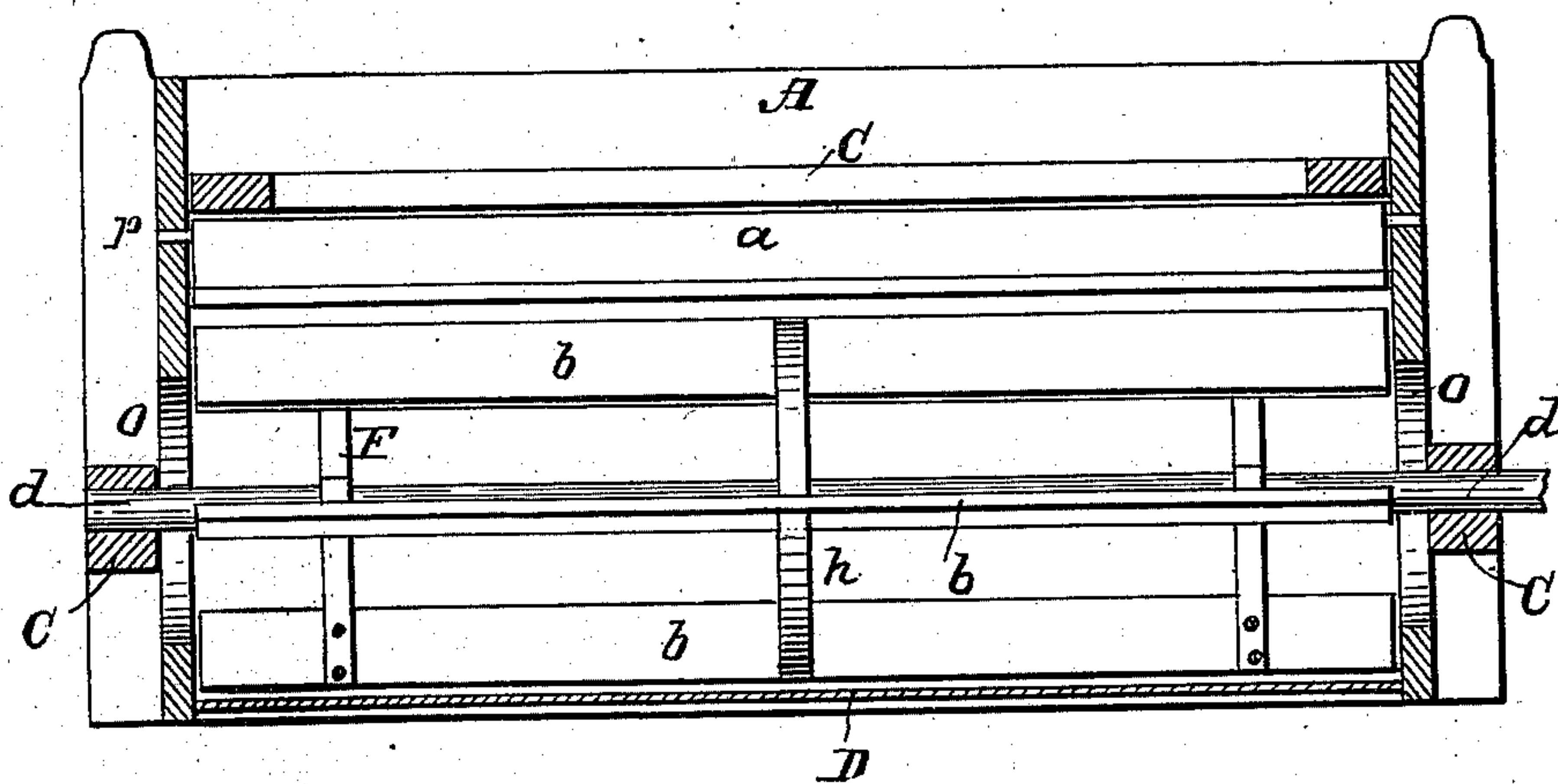


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE

LUCIUS S. BLAKE, OF RACINE, WISCONSIN.

WOOL-DRIER.

Specification forming part of Letters Patent No. 105,891, dated August 2, 1870.

To all whom it may concern:

Be it known that I, LUCIUS S. BLAKE, of Racine, in the county of Racine and State of Wisconsin, have invented a new and Improved Machine for Drying Wool; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1, Plate 1, is a section taken vertically and transversely through the improved machine on one side of its center. Fig. 2, Plate 1, is a top view of the machine with screen removed. Fig. 3, Plate 2, is a perspective view of the fan. Fig. 4, Plate 2, is a section taken in a vertical plane through the machine at right angles to the plane of the section of Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention has for its object the drying of wool by forcing into and through it currents of cool air.

It consists, first, in the employment of air guides or directors within the fan-chamber and below the screen on which the wool lies, and in connecting said guides or directors to the sides of the frame of the machine in such manner that they can be adjusted and set at different angles for directing the currents of air upwardly through the said screen-support to operate to the best advantage on the wool; second, in constructing the chamber in which the fan is arranged with a double-inclined floor, terminating in a concave portion directly beneath the fan, and a screen or perforated roof, whereby the currents of air drawn into said chamber at the ends of the fan are all directed upwardly to and through the wool in a manner superior to machines of this class hitherto constructed, as will be hereinafter explained; third, in the employment, in a wool-drying machine, hereinafter described, of a fan having a circular diaphragm or division-board applied at the middle of its length, and adapted for connecting the force of the inflowing currents upon each other and securing an even blast, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will explain its construction and operation.

The body or frame A of the machine is of a rectangular form, housed in, and made with openings O O at the extremities of a fan, F, for the influx of air induced by this fan. The horizontal portions *c c* of said frame have secured to them the bearing-boxes for the fan-shaft *d*, which shaft is provided with a driving belt-drum, *g*, on one end. To the radial arms of the fan the blades *b b* are secured in a slightly oblique manner, and at the middle of the length of the fan a circular diaphragm or partition, *h*, is applied concentrically, the object of which is to divide the inflowing currents of air and cause a uniform blast. If this diaphragm *h* were not used as described, the two currents of air flowing into the fan-chamber through the two opposite openings O O would blend and produce eddies in the center of the machine.

Beneath the fan is a concave, D, and extending from the upper termini of this concave to horizontal cross-pieces *c c* at the ends of the machine are inclined boards B B, which, with the concave D, constitute the floor of the fan-chamber, and operate to direct the currents of air upwardly and preventing circular or eddy currents.

The roof of the fan-chamber consists of a perforated plate, or, preferably, a wire screen, C, secured to a frame, and supported horizontally upon cross-pieces *c c* of the frame of the machine. Upon this screen the wool lies while it is being dried by the currents of air forced through it.

Between the roof and floor of the fan-chamber, and arranged in any suitable manner about the fan, are a number of air guides or directors, *a*, which are pivoted to the sides of the machine at *p p*, so that they can be adjusted and set at different angles with respect to the direction of the currents of air flowing from the fan. Each blade or guide *a* is a flat straight edge next the fan, beveled and having its extremities pivoted to the sides of the frame of the machine. By means of these guides or directors I secure an equal blast upon all portions of the screen C, and consequently upon the wool on this screen.

It is obvious that more than one fan may be arranged within the fan-chamber side by side.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the longitudinally-bladed and vertically-revolving fan F, right-and-left inclined guide-boards B B of the concave D, and the separated air-directors *a a*, substantially in the manner and for the purpose set forth.

2. The combination of the longitudinally-bladed and vertically-revolving fan F, right-and-left inclined guide-boards B B, concave D, separated air-directors *a a*, and sieve C,

substantially in the manner and for the purpose described.

3 The combination of the fan F, having partition *h*, the longitudinal concave D, having holes O O in each of its end pieces or heads, longitudinal inclined guide-boards B B, adjustable directors *a a*, and sieve C *c c*, substantially in the manner and for the purpose described.

LUCIUS S. BLAKE.

Witnesses:

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SAMUEL G. KNIGHT.