

McCLINTOCK YOUNG.

Improvement in Drying Matches.

No. 130,834.

Patented Aug. 27, 1872.

Fig. 1.

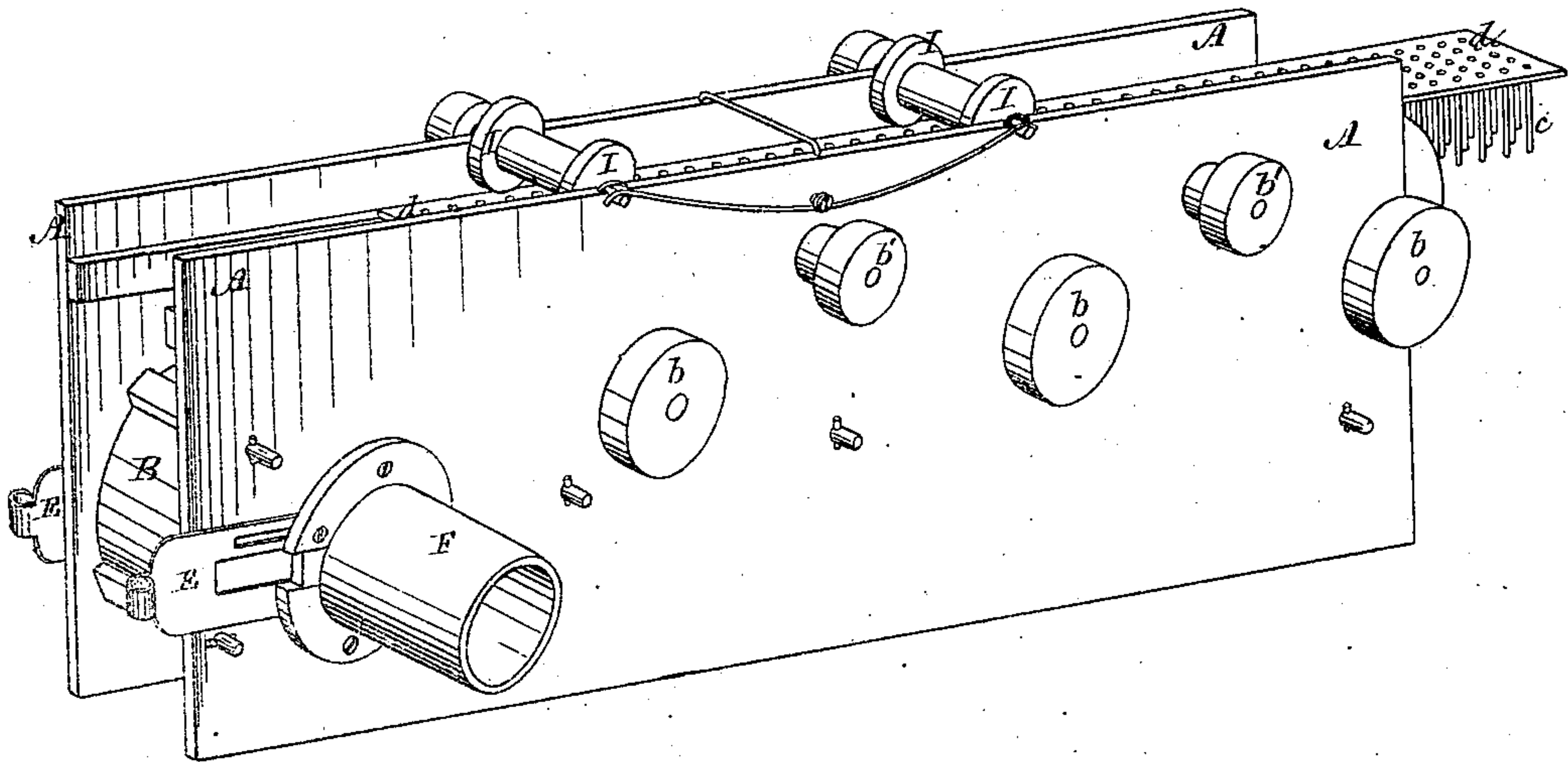
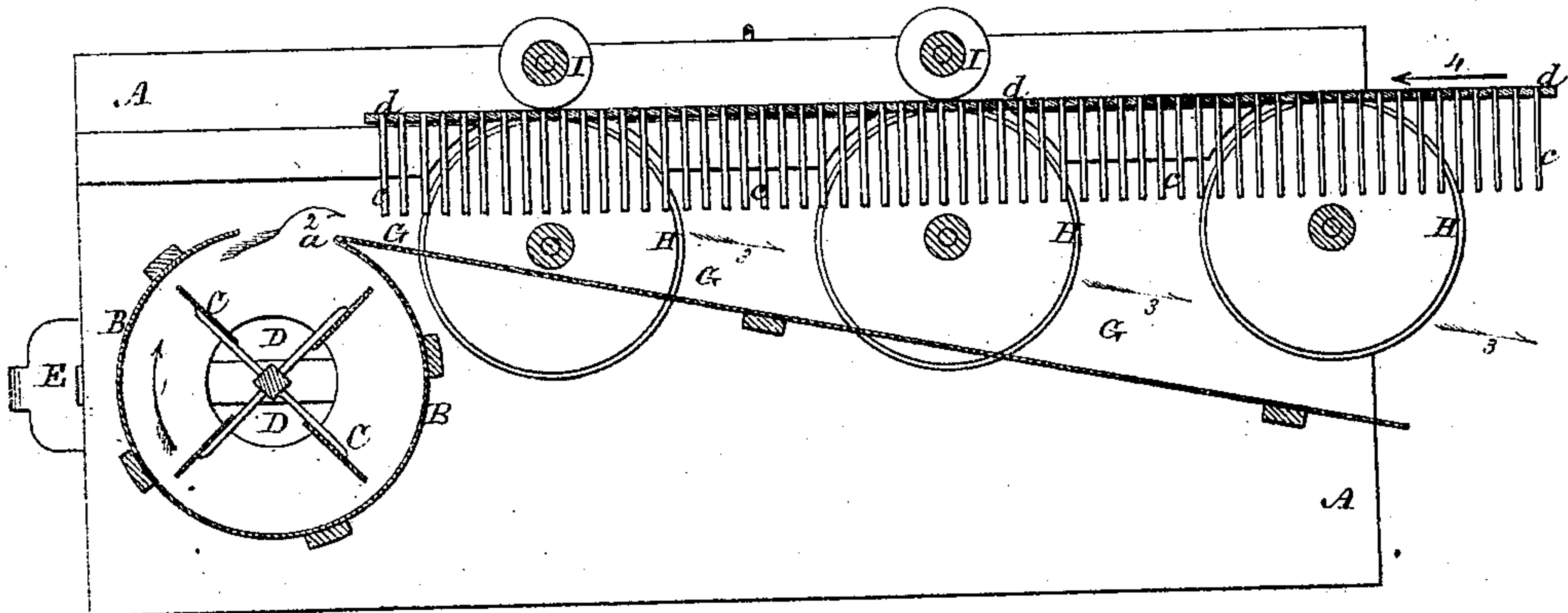


Fig. 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

McCLINTOCK YOUNG, OF FREDERICK, MARYLAND.

## IMPROVEMENT IN DRYING MATCHES.

Specification forming part of Letters Patent No. 130,834, dated August 27, 1872.

*To all whom it may concern:*

Be it known that I, McCLINTOCK YOUNG, of Frederick, in the county of Frederick and State of Maryland, have invented certain new and useful Improvements in the Mode of Drying Matches; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents in perspective an apparatus which I have devised for speedily drying the composition on matches. Fig. 2 represents a longitudinal vertical section through the same.

Similar letters, where they occur in the separate figures, denote like parts of the apparatus in the drawing.

The process of drying the composition upon matches as at present practiced is tedious, requires much time, and retards the operation of making matches very much, as the match-sticks must be kept separated until the composition is dry, else they will stick together, in which condition they are not only unsafe but unmarketable. The variable condition of the atmosphere varies the length of time required to dry the composition upon the matches, and the operation of making and boxing must await the drying, so that there is much unnecessary expense attending the various manipulations and operations in manufacturing matches.

The object and purpose of my invention are to hasten the drying of the composition, and in so doing not to disturb the composition, but leave it uniformly placed on the ends of the match-sticks.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawing.

A A represent two side pieces of a frame, which incloses a chamber that is only partially tight or sufficiently so to control or regulate a blast or volume of dry air that is to be passed through. At one end of these side pieces, and between them, there is a fan-case, B, within which a fan-wheel, C, is rotated, the dried air being drawn into the case through the eyes D, over which a register, E, is placed so as to regulate the quantity of air drawn in by the fan-wheel or to close them, as the circumstances

of the case may require. To one of the eyes of the fan-case there is attached a pipe, F, to which a hot-air conductor may be attached when in drying it becomes necessary to use heated air, in which event the opposite eye is closed by its register; and by heated air I mean air divested of its moisture, so as to readily take up that which is contained in the match composition. In some conditions of natural atmosphere it requires but a few minutes to dry this composition, and in other conditions it requires several days, so that I propose to use dry air whether natural or artificially dried. The blast created in the fan-case passes out at its top, as at *a*, and thence, as shown by the arrows 1 2 3, through an air trunk or passage, G, whose sectional area increases from where it joins the fan-case, so that the force of the blast through it will diminish as it passes from the fan-case to the end of said trunk. In the space between the side pieces A are arranged carrying-wheels H, the journals or axes of which extend through the frame or side piece, and have upon them pulleys *b*, over or around which endless belts or bands may pass to give said carrying-wheels a rotation in the direction of the arrow shown at 4, Fig. 2. The matches *c*, which are stuck in a back or board, *d*, are fed into and pass through the wind-trunk G in the direction of the arrow 4, which is against the blast or current of air from the fan-blower, and the back or board *d* rests, by its edges, on or against the carrying-wheels H, and is kept there by elastic friction-rolls I that bear on the back or board to hold it to the carrying-wheels. The blast or current through the wind-trunk, as above stated, diminishes in force as the trunk widens out, so that at the end where the matches are fed in the blast is sufficient to partially dry the composition without blowing it off or out of place on the match-sticks. As the composition becomes more hardened the matches advance into and through a more and more concentrated blast until they have passed the opening in the fan-case and out of the machine, when they will be thoroughly dried and ready to be taken out of the boards or backs and packed in boxes. *b' b'* are guide-rolls for guiding the belt or band around the driving-pulleys *b*.

While I prefer the expanding chamber for



diminishing the force of the blast where the matches are fed in, yet the same effect may be attained by other means, as, for instance, allowing the blast to escape through openings or be deflected away; but so long as the blast is least where the matches come into it, and strongest where they are carried out of it, I would regard it as an obvious modification of my invention and covered by it.

Having thus fully described my invention, what I claim is—

1. Passing matches in a suspended position through an air-passage in which a current of air is caused to pass for the purpose of drying said matches or the composition thereon, substantially as described.

2. I also claim, in combination with a series of rows of matches and an air-drying passage,

a carrying mechanism for conveying said matches through said drying passage or chamber or current of air passing through it, substantially as described.

3. I also claim, in combination with a trunk or passage through which matches are carried to dry the composition thereon, the expanding of the area of said chamber or passage as it leaves the fan-blower, and passing the matches through it from the larger toward the smaller portion or area thereof, so that the force of the blast will be lightest where the matches are fed in and increase as they advance, as and for the purpose described.

McCLINTOCK YOUNG.

Witnesses:

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