JAMES M. DICK.

Wool Driers.

No. 116,032. Patented June 20, 1871.

Fig. 1

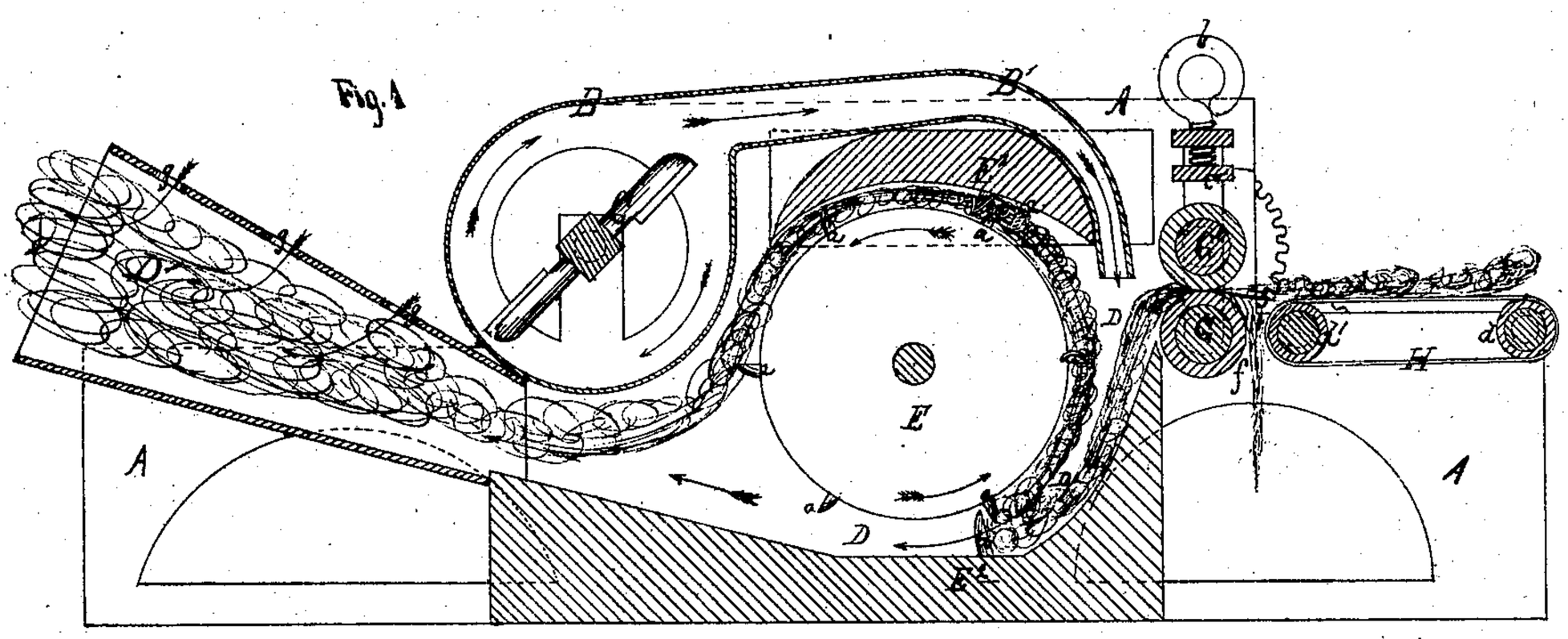
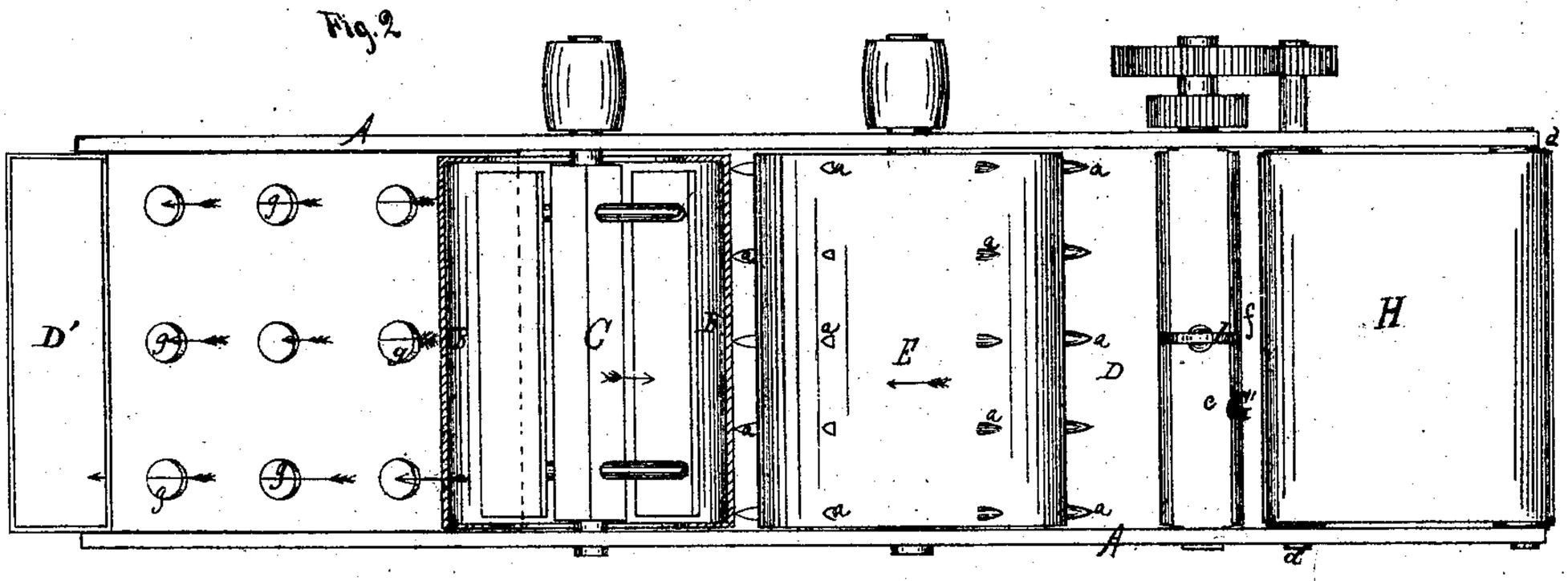


Fig. 2



Witnesses.

H. D. Watts

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116,032

UNITED STATES PATENT OFFICE.

JAMES MILLEN DICK, OF BUFFALO, NEW YORK.

IMPROVEMENT IN WOOL-DRIERS.

Specification forming part of Letters Patent No. 116,032, dated June 20, 1871.

To all whom it may concern:

Be it known that I, JAMES MILLEN DICK, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Wool-Driers, of which the following is a specification:

Nature of the Invention.

This invention consists of a machine so constructed that the wool is squeezed or pressed by means of rollers to expel moisture, then subjected to a blast of cold air and acted on by pickers, for the purpose of drying, as hereinafter fully described.

General Description.

In the drawing, Figure 1 is a vertical longitudinal section. Fig. 2 is a plan with the fan-trunk removed.

A represents the frame, which may be of any ordinary or convenient construction. Near one end is mounted a fan-case, B, having a trunk, B′, which extends to nearly the other end of the machine, where its end turns downward, as shown in Fig. 1. A fan, C, in this case, constantly impels a current of air through the trunk. An air-space or passage, D, extends from the mouth of this trunk downward and backward under the fan-case, and terminates in a flaring mouth, D′, where the wool is discharged. A picker, E, made to revolve in any suitable manner, is mounted in the air-space or passage D, being in such a position as not to break the current of air downward from the trunk, but to catch the wool at the bottom as it is drawn down. This picker revolves against the edge of the blast. A stationary picker-bed, E^1, is situated above this cylinder, and one, E^2, below. All these parts are armed with radial pins or teeth *a*, which intermatch in the revolutions of the cylinder or picker E. A pair of wringing-rollers, G G′, is situated at a proper position in front of the mouth of the fan-trunk. These are pressed downward by screw *b* acting upon adjusting-bar *c* in a manner similar to clothes-wringers. Outside these rollers is situated an endless apron, H, passing over rollers *d d′*, as clearly shown in Fig. 1. A clear space, *f*, is left between the end of the endless apron H and the wringing-rollers, which will allow the expressed water to pass downward without striking upon the apron or its contents. The flaring mouth D′, which discharges the fiber, has a series of holes, *g g*, at the top, which allow the entrance of fresh air at that point.

Operation.

The wool is fed onto the endless apron H, which conveys it to the wringing-rollers G G. In passing between these the water is expressed and runs down through opening *f* without falling upon the apron, as before stated. The moment the wool passes inside the rollers the current of cold air through trunk B′ forces it downward upon the picker-bed E^2, whose teeth serve as a stop to its further progress. Here it is caught by the picker E and carried upward and backward in the edge of the blast, which blows in the opposite direction from which the picker is running. This action against the blast aids very greatly in the drying process. After being carried around it passes through the intermatching teeth of the stationary picker E^1, and is carried down to outside the picker-bed with the fibers thoroughly separated. Here it receives the full impetus of air through the passage D, and is finally blown out at D′ thoroughly dried by its contact with the current of air in passing through.

In this quick drying the result is much better than in a slow process, as the fiber is left with a greater degree of life and elasticity, and, therefore, it has greater strength and is capable of greater wear. The holes *g g* in the top of the discharge-mouth D′ aid the drying very materially, as the current inside sucks through these a large quantity of fresh air. The picker E not only separates the fibers of the wool from their matted condition, but also opens them, so as to give the best effect to the air.

Claims.

What I claim as my invention is—

1. In a wool-drying machine, a fan, C, and trunk B′ B, so arranged that the current of air is impelled against the wool at its entrance and is blown out, as herein described.

2. In a wool-drying machine, in combination with the fan-trunk B B′ and fan C, the revolving picker E and picker-beds E^1 E^2, arranged and operating as herein set forth.

3. In a wool-drying machine, the expressing-rollers G G′ and the endless apron H, having the water-space *f* between the same, in combination with the fan or blower C, constructed and arranged so that the wool receives the air-blast upon its entrance into the machine, substantially as and for the purpose set forth.

4. The flaring mouth D′, for the exit of the wool, provided with the air-holes *g g*, when employed in a wool-drying machine in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES M. DICK.

Witnesses:
J. R. DRAKE,
C. N. WOODWARD.