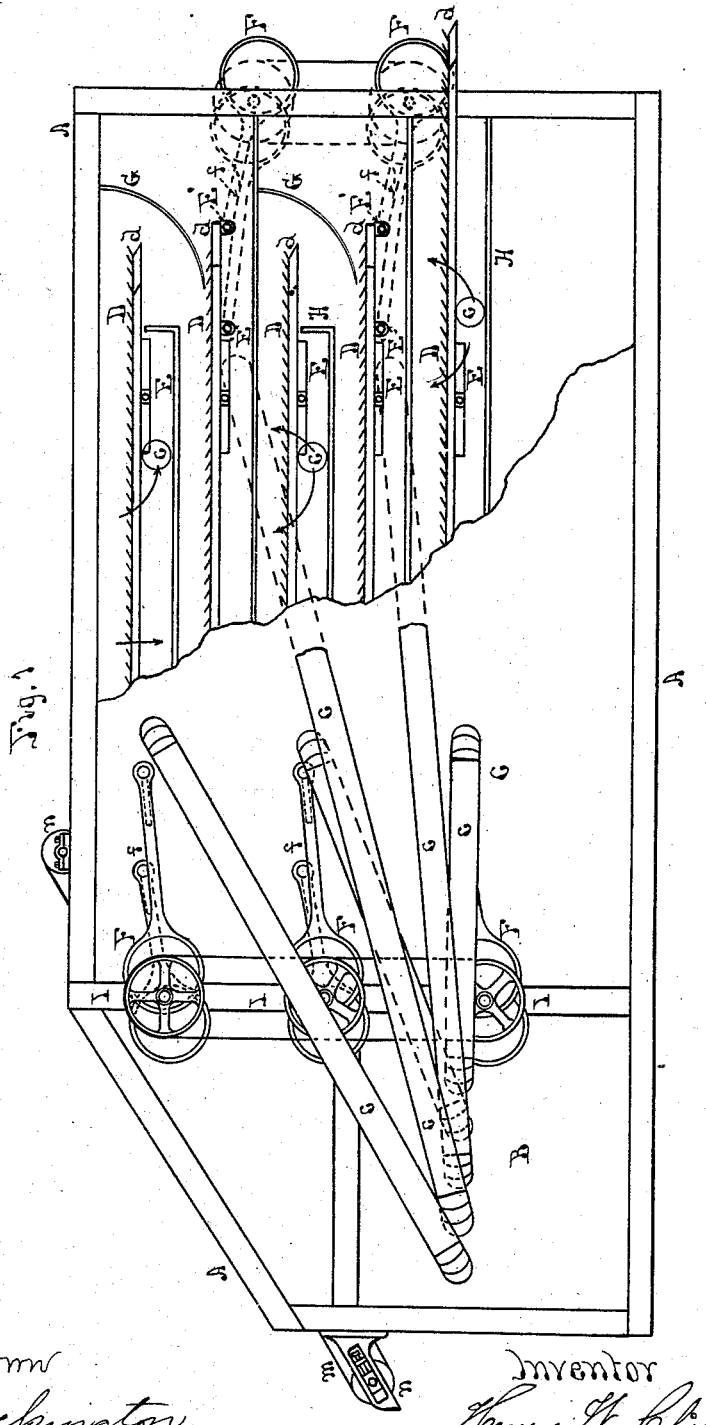
(No Model.) 2 Sheets—Sheet 1.

H. W. CHURCH.

MACHINE FOR DRYING WOOL AND OTHER FIBER.

No. 263,683. Patented Sept. 5, 1882.



Witnesses
Wm. S. Brown
A. P. Ockington.

Inventor
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His Atty

(No Model.)

2 Sheets—Sheet 2.

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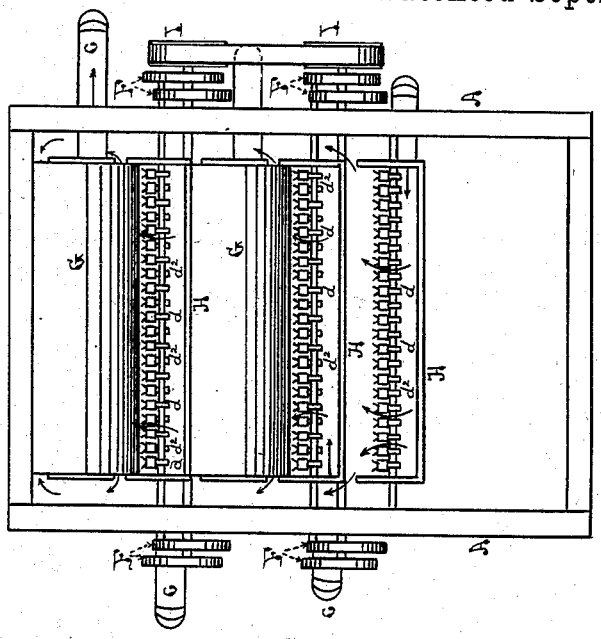
Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY W. CHURCH, OF GRANITEVILLE, MASSACHUSETTS.

MACHINE FOR DRYING WOOL AND OTHER FIBER.

SPECIFICATION forming part of Letters Patent No. 263,683, dated September 5, 1882.

Application filed July 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. CHURCH, of Graniteville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machines for Drying Wool and other Fiber, of which the following is a specification.

My invention relates to what are known as driers for wool or other fiber, in which the fiber is dried by exposure to air, and in which movable belts or aprons have been used to successively convey the wool along through the machine in a well-known manner; and it consists in substituting for said belts or aprons reciprocating bars provided with inclined teeth which propel the fiber over them, and means for reciprocating the same, substantially as hereinafter described.

In the drawings, Figure 1 is a side view of the machine with part of one side represented as broken away to show its internal construction. Fig. 2 is an end view, showing the series of reciprocating-bar tables for supporting and drying the fiber.

A is the side and frame-work of the machine. This machine is divided into two compartments, B and C, connected by pipes *c c*. The compartment B contains the fan for producing an air-blast and driving currents of air through the pipes *c*, either by force or suction, in the usual manner, between compartments B and C.

C is the compartment in which the fiber is placed to be dried. In the compartment C, I place, one above the other, a series of longitudinal platforms, D D, for supporting and conveying the wool through the machine. These platforms consist of series of longitudinal bars d d^2, placed side by side, with sufficient space between them to allow of a free circulation of air without permitting the fiber to fall through. Every other bar d is connected by pins and cross-bars together, and every other bar d^2 in like manner, thus forming all the bars d in any platform into one frame and moving together, and all the bars d^2 into another frame moving independently of the other. Each frame, with its series of bars, is supported upon projections E E on the inside of the compartment, so as to be capable of reciprocating to and fro longitudinally, and the cross-bars of the frames are so placed as to allow the frame composed of the bars d to move one way, while that composed of the bars d^2 moves the other way. Motion is given to these frames by eccentrics F and connecting-rods *f*, attached to lugs E′ on the frames. The eccentrics connected to each pair of frames of bars d d^2 composing a platform, D, are both mounted upon the same driving-shaft, the eccentric connected to frame of bars d being set opposite to that connected to frame of bars d^2, so as to move one frame in one direction while the other is moved in the opposite direction, as shown in the drawings. Each of the bars d d^2 is provided with teeth or spines projecting upward from their top edges in the direction in which the wool is to be carried to a substantially equal distance.

At the end of each platform D except the lower one is placed an incline, G, to receive the fiber as it is thrown off the upper platform and conduct it to the next lower one. The lower platform D throws the wool out at the end of the machine.

H H are long boxes under each platform, through which the air is forced or drawn by the fan in the usual manner to oblige it to pass through and dry the fiber. The pipes *c c* lead into these boxes.

I I are the driving-pulleys of the eccentric-shafts. The arrows show the direction of the currents of air.

The operation of the machine is as follows: The wool or other fiber to be dried is placed upon the upper platform by an ordinary feed-apron, *m*, upon which it is spread. The feed-apron passes around rollers *n n*, driven in the ordinary manner. The alternate reciprocation of the upper pair of frames carrying the toothed bars d d^2 of the upper platform, D, carries the wool along to the other end, and at the same time continually opens and draws apart the fiber, allowing the air to pass freely through it, and thus promoting the drying process. As the wool passes off the upper platform it falls upon the upper incline, G, and is thrown by the latter upon the second platform, D, which advances it in like manner to the next lower one, and it continues thus to pass from platform to platform until the last one

delivers it out of the end of the machine, for which purpose it is made longer, as shown. By this arrangement of mechanism very rapid drying is insured, and the wool comes out in better shape.

What I claim as new and of my invention is—

1. In a fiber-drying machine, a reciprocating toothed frame provided with inclined teeth or spines carrying the fiber, in combination with the means to produce air-current to pass through the latter, substantially as described.

2. In a fiber-drying machine, the combination of two alternately-reciprocating frames provided with inclined spines or teeth and forming the platform D, for receiving and transporting the fiber through the machine, substantially as described.

3. In a fiber-drying machine, the combination of a series of successively-operating platforms, D D, each formed of reciprocating frames with inclined teeth or spines, substantially as described.

4. The combination of two platforms, D D, each formed of reciprocating frames provided with inclined spines or teeth, with the connecting-incline G, substantially as described.

5. In combination with the reciprocating frame with inclined teeth or spines, carrying the fiber, the air-pipe *c*, connecting the chamber of the same with an air-blast mechanism, substantially as described.

6. The combination of a series of platforms, D D, each formed of reciprocating frames with inclined spines or teeth, with a series of corresponding air-pipes, *c c*, substantially as described.

HENRY W. CHURCH.

Witnesses:
DAVID HALL RICE,
N. P. OCKINGTON.