

(No Model.)

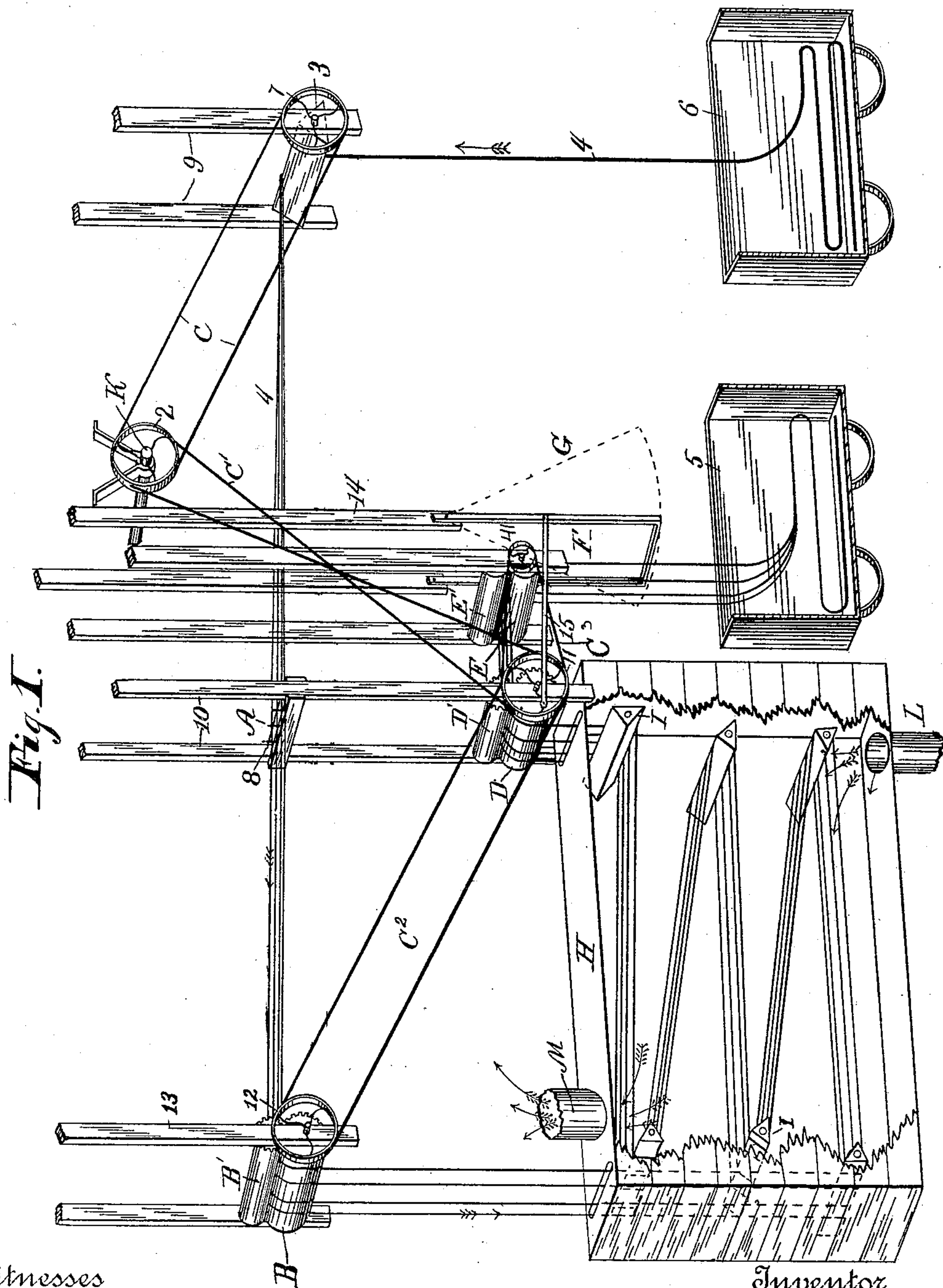
2 Sheets—Sheet 1.

W. KERR.

MACHINE FOR SEPARATING AND DRYING WARPS AFTER BEING DYED.

No. 348,130.

Patented Aug. 24, 1886.



Witnesses  
H. D. Harrington  
Sam. M. Lake

Inventor  
William Kerr.  
By his Attorney  
A. Bell.

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2 Sheets—Sheet 2.

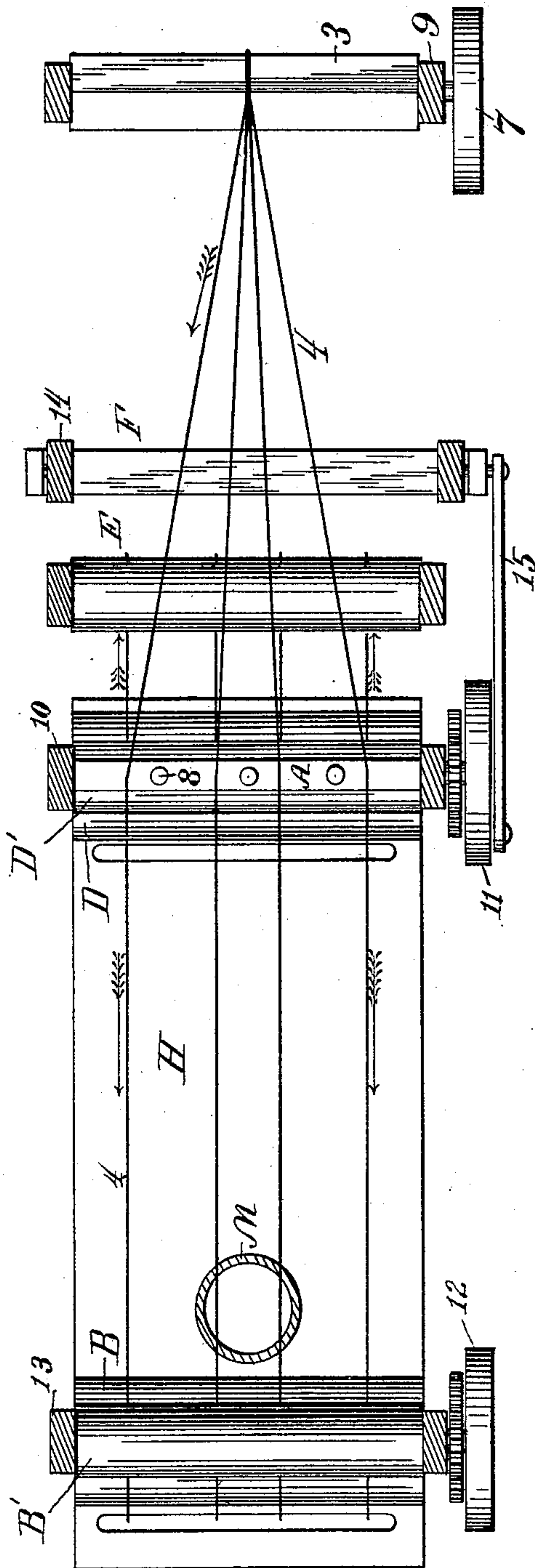
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Fig. 2.



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Wm. M. Lake

By his Attorney

Inventor  
William Kerr.  
A. Bell.



# UNITED STATES PATENT OFFICE.

WILLIAM KERR, OF SACCARAPPA, MAINE.

MACHINE FOR SEPARATING AND DRYING WARPS AFTER BEING DYED.

SPECIFICATION forming part of Letters Patent No. 348,130, dated August 24, 1886.

Application filed April 16, 1886. Serial No. 199,117. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM KERR, a citizen of the United States, residing at Saccarappa, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Machines for Separating and Drying Warps After Being Dyed; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to combine in a single process the separating and drying of dyed warps. I accomplish this object by leading the warp from the box or cart in which it is deposited after the dyeing process over a reel, through a comb or separating pins, over rollers, which regulate its speed and tension, and through a hot-air chamber provided with a series of rollers which carry the warp back and forth in said chamber until it is thoroughly dry, and, finally, depositing the warp, separated into its original sections, in the box or cart provided for that purpose.

In the process of dyeing both time and money are saved by putting two or more sections of warp together—say sections of four hundred threads each, and eight thousand yards long.

By means of my improved separator and drier the warp, after being dyed, is separated into its original sections and dried without injury to the color or fiber.

In the drawings, Figure 1 represents a side elevation, in perspective, showing parts broken away and in section, of the separating mechanism and the hot-air chamber, and the means employed for drying the warp and depositing it in the receiving-box. Fig. 2 represents a plan view of the separator and drying-chamber.

Like letters and figures indicate like parts.

6 is the box or cart containing the wet warp. 4 is the warp, and 3 the reel over which it is led on its way to the comb or separator. This reel is journaled in pendent supports 9, and is preferably made so as to present a triangular shape in cross-section, the acute an-

gles of the reel assisting in lifting the warp from the box as it passes forward to the separator.

K is the driving shaft, which imparts motor-power to the mechanism. It actuates the reel through driver 2, belt *c*, and pulley 7.

A is the comb-bar or separator, having pins 8, between which the dyed warp is separated into its original sections. This bar is supported on standards 10.

B and B' are drawing-rollers, so geared as to have opposite movements for imparting a uniform speed and tension to the warp. These rollers are actuated by the main shaft through driver 2, belts *c'* *c''*, and pulleys 11 12. They are journaled in pendent supports 13, or may be supported in any approved manner.

H is the drying-chamber, provided with supply-pipe L, through which hot air is admitted into the chamber, and escape-pipe M, through which it is discharged. The top of this chamber has a transverse slot or opening at each end, the warp passing downward through one into the chamber and upward and out through the other.

I represents a series of transverse rollers, preferably showing in cross-section a triangular shape. These rollers are journaled in suitable supports on each side of the chamber, and may consist of any number found necessary to fully dry the warp which passes under and over them in its back-and-forth movement through the chamber. The hot air may be supplied by a fan, pump, or in any other approved manner.

D and D' are drawing-rollers, which maintain the speed and tension of the warp as it passes through the chamber. These rollers are geared similar to rollers B and B', and are actuated by the main shaft through driver 2, belt *c'*, and pulley 11.

E and E' are rollers, between which the dried yarn passes on its way to the receiving-box. Roller E is connected with roller D by band C' and pulleys 11 and 41, and is thus actuated by the same mechanism which imparts motion to said roller D.

F is the oscillating folder, its movement being indicated by dotted lines. This folder is pivoted at its upper ends to pendent supports 14, and receives its motion from pulley 11



through connecting-rod 15, as shown in Fig. 1. The function of this folder is to lay the dry sections of the warp in regular folds or layers in the boxes prepared to receive them.

5 The advantages of my invention are, first, saving of time and money by accomplishing in a single connected process what has hitherto required two distinct and separate operations to perform; second, the preservation, in the  
10 fiber of the yarn, of its soft and elastic quality through the hot-air process of drying; third, the retention of the purity and brilliancy of the colors, which are liable to be injured or tarnished when brought into actual contact  
15 with heated surfaces.

What I claim as new and of my invention is—

1. The combination, with mechanism for separating warp into its original sections after being dyed, consisting of a driving-shaft, reel,  
20 comb, drawing-rollers, and means for operating the reel and drawing-rollers from said driving-shaft, as shown and described, of a hot-air chamber having supply and escape pipes for the admission and discharge of hot air, and

provided with a series of transverse rollers for 25 conducting the warps to and fro through said chamber, rollers for drawing the warps forward through the hot-air chamber, means for operating said rollers, an oscillating folder for laying the warp-sections in the receiving-box, 30 and means for actuating said folder, substantially as set forth.

2. The combination, with a driving-shaft, of reel 3, comb A, drawing-rollers B B', D D', and EE', oscillating folder F, rod 15, and means 35 for operating said reel, drawing-rollers and rod from said driving-shaft, of a drying-chamber, H, having supply and escape pipes L M, and provided with a series of transverse rollers, I, for conducting the warp-sections through 40 said drying-chamber, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM KERR.

Witnesses:

THOMAS B. SPROUL,  
C. W. DENNETT.