

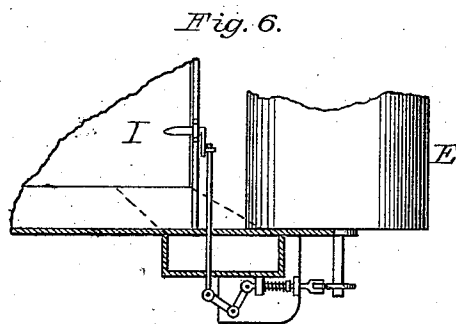
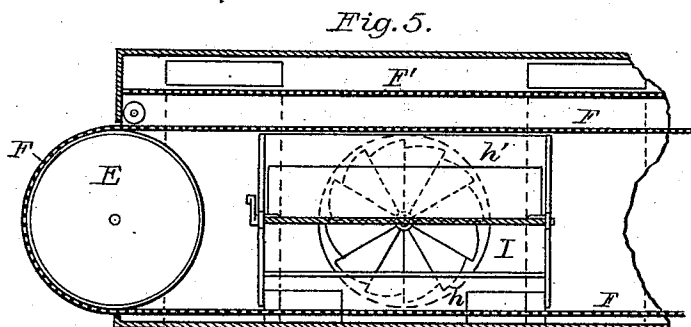
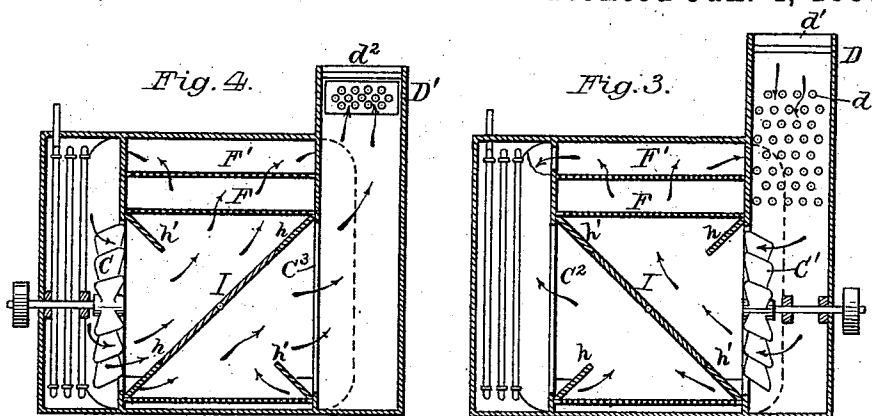
(No Model.)

2 Sheets—Sheet 2.

F. G. & A. C. SARGENT.
FIBER DRIER.

No. 355,559.

Patented Jan. 4, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

FREDERICK G. SARGENT AND ALLAN C. SARGENT, OF GRANITEVILLE, MASS.

FIBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 355,559, dated January 4, 1887.

Application filed February 1, 1886. Serial No. 190,527. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK G. SARGENT and ALLAN C. SARGENT, of Graniteville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Fiber-Drying Machines, of which the following is a specification.

Our invention relates to machines for drying fiber; and it consists in certain improvements in the machine patented to us November 11, 1884, in Letters Patent No. 307,873, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of one side of a drier with the casing partly broken away to show its internal construction. Fig. 2 is a similar elevation of the opposite side of the machine. Fig. 3 is a transverse section across the machine on the line Y Y of Fig. 1. Fig. 4 is a transverse section on the line X X of Fig. 1. Fig. 5 is a longitudinal section through a portion of the machine at one end. Fig. 6 is a detail view of the damper-reversing mechanism.

A is the casing of the machine, which is a double machine—that is, it has two sets of reversible dampers and air-passages connected with a single traveling screen-apron and upper screen, thereby enabling the fiber to be subjected to more powerful alternating air-currents for a longer time in passing through the machine. This arrangement also facilitates the heating and drying of the air-currents.

E E' are the revolving drums carrying the woven-wire apron F.

F' is the screen stretched horizontally above the apron.

C is one of the air-blast fans, and C' is the other.

D is the air-inlet spout, and d is the steam-pipe to heat the air when admitted. This air-inlet pipe is provided with a damper, d'. As in our former machine, the air entering inlet-pipe D from outside passes down and through fan C', past the reversible damper I, Fig. 3, and thence out through the passage C', opposite the fan, there being no second fan in this passage, as in our former machine. The direction of the passage of the air-currents past the vibrating damper I alternately up and down through the traveling apron F and

screen F' are the same as described in our said former patent and will be well understood as well as the reversing mechanism of the damper.

When the air passes through passage C' it enters passage D', which extends along the entire side of the machine to and over the second fan, C, conveying the air to the latter. In this passage are placed two sets of pipes, P P', one set, P, being connected to a cold-water pipe, in order that the air from the wool will be suddenly reduced in temperature when coming in contact with it, and the other set, P', being connected to a steam-generator to again heat the air as it passes to fan C, and prepare it to again take up moisture from the fiber. The drip-pipe p of the set of cold-water pipes P allows the water deposited from the air-current to run off.

The fan C sends the air-current through a second reversing-damper, I, vibrated by drum E, Fig. 4, and the apron F and screen F' in alternating currents and through passage C' into passage D', whence it either passes out at the top, past damper d', when the latter is open, or when the latter is closed passes along air-flue D' to the top of air-inlet flue D, whence it traverses around in the machine again, as described.

In the flue D' is placed a set of cold-water pipes, P', forming a condenser for the air passing through it, and removing its surplus water before it again enters passage D.

Each division of the machine is complete in itself, composed of one fan and damper I, and is separated from the other by partitions and a yielding flap constructed as described, and lettered f in our said former patent, as is also the last division from the outer air.

It will be seen that by this construction of the parts we are enabled to take our air-currents for drying the fiber directly from the outside of the machine and discharge them outside, or we can continually use the same air over again, or we can take a portion from the outer air and use a portion over again. This is of great advantage, as we can thus regulate the amount of moisture in our drying air-currents with the greatest accuracy by simply moving the dampers d' d' from closed to open, or the reverse.

What we claim as new and of our invention is—

1. The combination of screen F', traveling perforated apron F, fan C' and its reversible damper I, air-passage D², and fan C and its reversible damper I, said air-passage forming a conduit for conveying the air from the first-mentioned apron and fan to the second ones, substantially as described. 5
2. The combination of the screen F', traveling perforated apron F, fan C' and its reversible damper I, air-passage D², provided with one or more sets of pipes for steam or water, and fan C and its reversible damper I, said air-passage forming a conduit for conveying the air from the first-mentioned apron and fan to the second ones, substantially as described. 10 15
3. The combination of the screen F', traveling perforated apron F, air-inlet passage D to the same, provided with damper d', fan C' and its reversible damper I, said air-passage forming a conduit for conveying the air from the first-mentioned apron and fan to the second ones, fan C and its reversible damper I, air-passage D', leading therefrom, and flue D³, connecting passages D' and D, substantially as described. 20 25
4. The combination of the screen F', traveling perforated apron F, air-inlet passage D to the same, provided with damper d', fan C' and its reversible damper I, air-passage D², said air-passage forming a conduit for conveying the air from the first-mentioned apron and fan to the second ones, fan C and its reversible damper I, air-exit passage D' from the latter and its damper d', and flue D³, connecting passages D' and D, substantially as described. 30 35
5. The combination of a single traveling perforated apron, F, with two fans in separate compartments and adapted to force air-currents through said apron, and the air-passage D² and D³, D' forming another passage connecting said compartments and respectively provided with one or more sets of pipes for steam or water between said compartments, substantially as described. 40

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