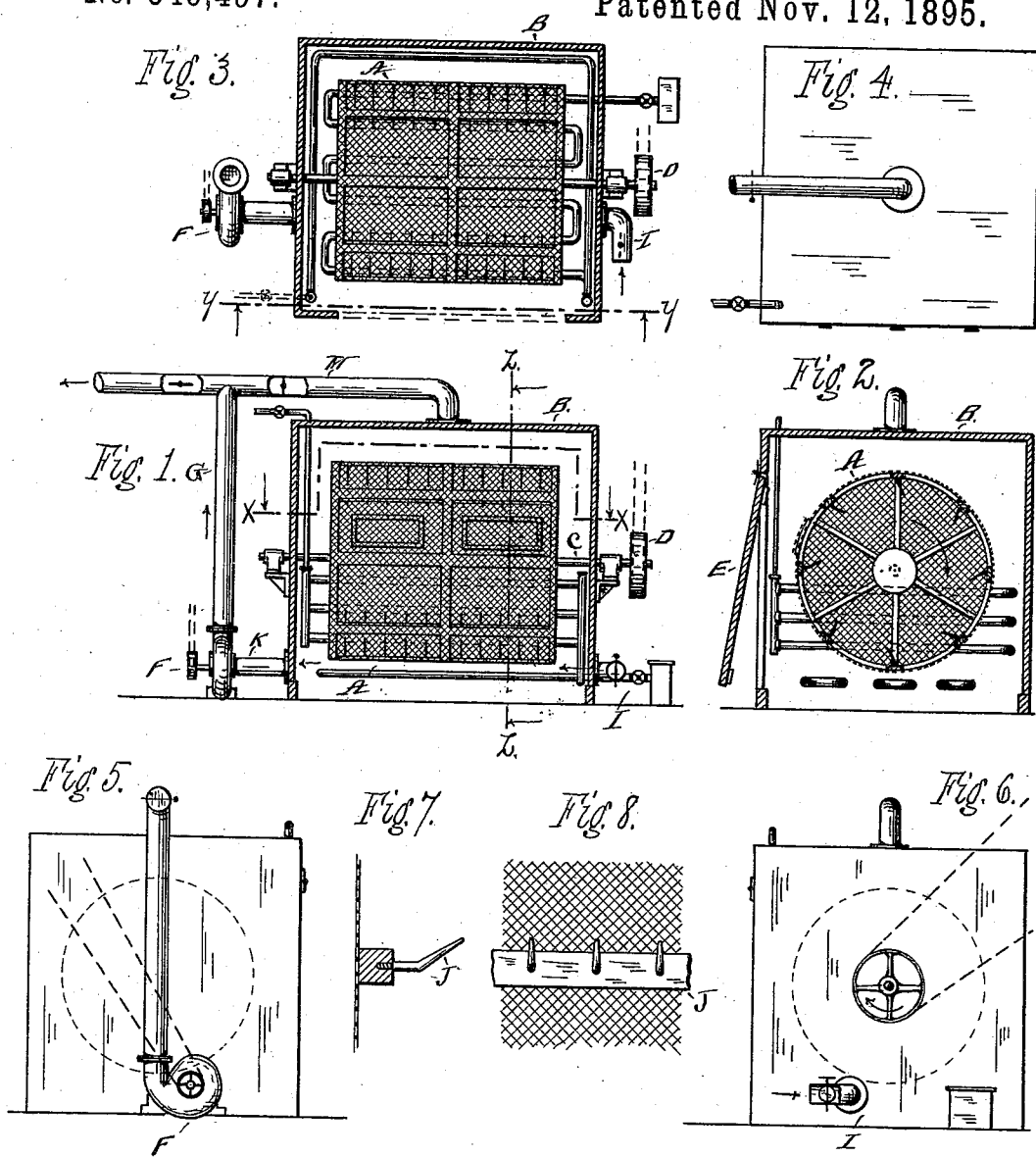


(No Model.)

G. W. DAVIS.
WOOL DRIER AND CARBONIZER.

No. 549,497.

Patented Nov. 12, 1895.



Witnesses:
E. J. Warner
A. E. MacLaine

Inventor:
George W. Davis
by Albert B. Vincent
Att'y.

UNITED STATES PATENT OFFICE.

GEORGE W. DAVIS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF FOUR-FIFTHS TO THOMAS MABBETT, HENRY J. MABBETT, CHARLES L. DAVIS, AND WALDO E. DAVIS, OF SAME PLACE.

WOOL DRIER AND CARBONIZER.

SPECIFICATION forming part of Letters Patent No. 549,497, dated November 12, 1895.

Application filed March 18, 1895. Serial No. 542,158. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DAVIS, of Providence, in the State of Rhode Island, have made certain new and useful Improvements in
5 Machines for Drying and Carbonizing Wool; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

10 Figure 1 is an elevation of my improved device, showing the chamber in vertical section. Fig. 2 is a vertical cross-section on line L L. Fig. 3 is a top view with the chamber in horizontal section. Fig. 4 is a top and exterior
15 view of the chamber. Fig. 5 is an end elevation showing devices for drawing the air from the chamber. Fig. 6 is an elevation of the opposite end, showing air-inlet. Figs. 7 and 8 show the arrangement of hooks or arms upon the
20 interior of the rotating cylinder.

The object of my invention is to dry and carbonize the wool rapidly and thoroughly and with little labor; and it consists in the construction, arrangement, and operation of
25 the elements hereinafter described.

In the drawings, A is a large cylinder, made of wire and located within a close chamber B, and is attached to an axis C, the latter being supported in suitable bearings and rotated
30 through a pulley D.

Upon three sides of the chamber B, and also upon the bottom thereof, are a series of steam-pipes. The precise arrangement, however, of the steam-pipes is not material, provided an
35 entrance to the cylinder through a door or opening E, Fig. 2 is preserved.

F is a fan by which air is drawn from the bottom of the chamber B through a pipe K and carried or forced off through a pipe G.

40 I, Fig. 6, is an air-inlet, also at the bottom of the chamber B and opposite the exhaust, pipe K. Upon the inside of the wire cylinder A are several rows of horizontally-arranged hooks or arms J, as shown in Figs. 7 and 8, one end of which may be screw-threaded, the
45 opposite end being bent upwardly at an angle.

The operation of my invention is as follows: While the machine is at rest the door E of the chamber B is opened and the wool introduced to the cylinder A through a suitable
50 aperture therein, the aperture and door E being closed and secured before the machine is started. The cylinder A is then rotated by

means of the axis C and pulley D, before mentioned. As the cylinder A rotates, the wool
55 therein is caught successively upon the several series of hooks J and tossed and stirred up. During this manipulation of the wool the hot air within the chamber is caused to circulate freely through the fiber of the wool.
60 As this operation goes on, the air within the chamber B becomes laden with moisture and by its increased weight falls to the bottom of the chamber, where it is drawn off by the exhaust-fan F, fresh dry air entering at the air-
65 inlet I to be heated, charged with moisture, and drawn off until the wool is thoroughly dry.

When the moisture in the wool has been removed and there is no longer any moist air in
70 the bottom of the chamber B, the fan F is stopped and the cylinder continues to rotate during the carbonizing process, which is thus made simply a continuation of the drying process, minus the circulation of the air, the
75 wool remaining in the cylinder and requiring no hand manipulation and entailing no loss of time.

A circulation of dry hot air may be maintained during the carbonizing process, if it is
80 desired, by permitting the fan F to continue and reversing the position of the dampers shown in horizontal pipe M, Fig. 1.

What I claim as my invention, and wish to secure by Letters Patent, is—
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In combination with the casing B, one side of which is provided with a door of a cylinder A journaled in the casing and provided with an opening in the side to register with the door, an inlet and an outlet pipe communicating with the bottom of the casing, the inlet
90 being provided with a valve and the outlet being provided with a fan, and a third pipe communicating with the top of the casing, said third pipe being provided with two valves or
95 dampers and the outlet pipe communicating with said third pipe between the two dampers, whereby the air may be caused to circulate through the casing or be discharged from the third pipe, and a steam pipe upon three
100 sides of the casing and the bottom, substantially as set forth.

GEORGE W. DAVIS.

Witnesses:

WALTER B. VINCENT,
A. E. MACLAINE.