

(No Model.)

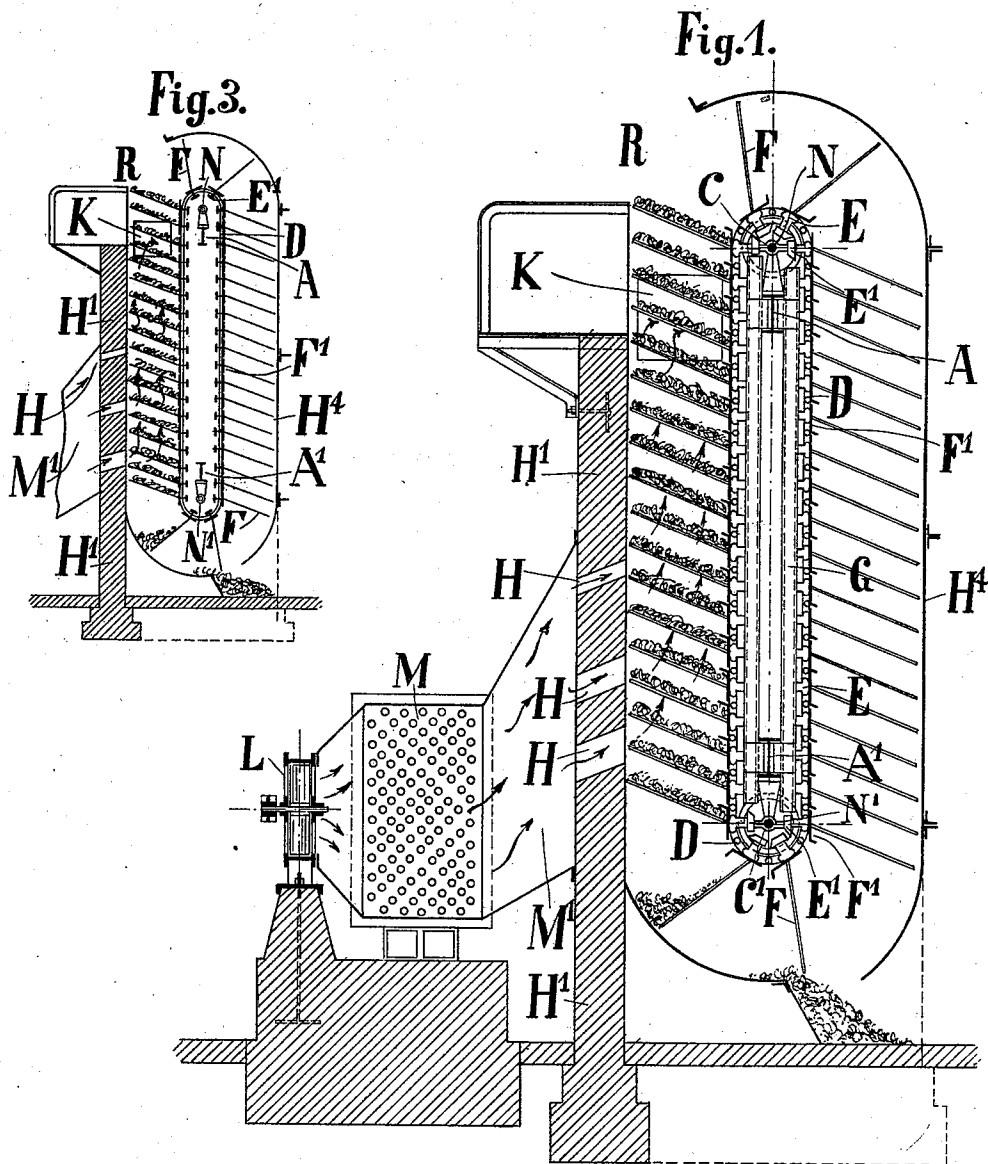
2 Sheets—Sheet 1.

J. M. E. LEKEUX.

MACHINE FOR CARBONIZING AND DRYING WOOL.

No. 568,691.

Patented Sept. 29, 1896.



Witnesses;

J. W. Hammer
H. Beissel

Inventor;

J. M. E. Lekeux
and
Samuel Meyer
attorneys

(No Model.)

2 Sheets—Sheet 2.

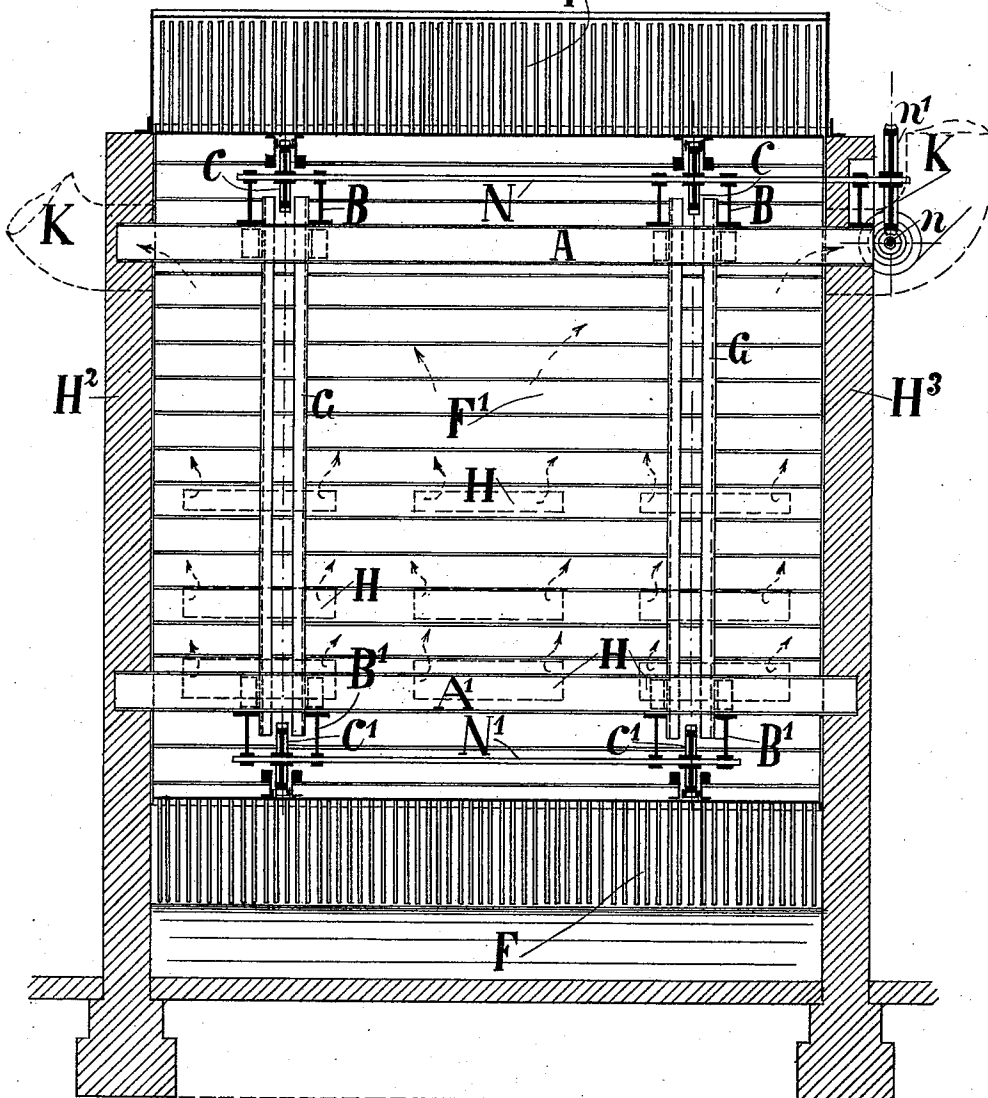
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Fig. 2. F



Witnesses:

J. H. Manning
H. Beisel

Inventor:

J. M. E. Lekeux
Karl D. Meyer
Attorney

UNITED STATES PATENT OFFICE.

JULES M. ED. LEKEUX, OF DÜSSELDORF, GERMANY.

MACHINE FOR CARBONIZING AND DRYING WOOL.

SPECIFICATION forming part of Letters Patent No. 568,691, dated September 29, 1896.

Application filed February 4, 1896. Serial No. 578,061. (No model.)

To all whom it may concern:

Be it known that I, JULES M. ED. LEKEUX, a subject of the King of Belgium, and formerly of Verviers, Province of Liège, Belgium, now residing at Düsseldorf, Rhenish Prussia, Germany, have invented a new and useful Improvement in Machines for Carbonizing and Drying Textile Fiber, (for which I have applied for a patent in Germany, provisional number L 9,820, IV/29^b, August 30, 1895,) of which the following is a specification.

My invention relates to machines for carbonizing and drying wool or other textile fiber; and it has for its object, first, to utilize in the best manner the necessary heated air or gases in blowing them through equally-divided portions of the fiber to be treated in such a way that no other escape than through the fiber under treatment is left and in so proportioning the sections or areas of the openings through which the heated air is entering that a gradual increase of its effect is obtained, so as to give the greatest amount of heat to the lowest portions of the fiber just before leaving the machine, and, second, to arrange the machine so that with the least amount of driving power and the least amount of heat lost the process is economically performed.

The accompanying drawings illustrate my improved machine, and Figure 1 is a vertical cross-section of the same. Fig. 2 is a vertical longitudinal section. Fig. 3 is a reproduction of Fig. 1 on a reduced scale.

The machine consists of an oblong chamber with three vertical sides in brick walls H' H² H³ and a fourth vertical side H⁴, covered in with metal plates, while at the top there is a partly-cylindrical cover, leaving a side opening for charging the goods to be treated, and at the bottom of the vertical metal-plate side there is another opening for discharging the treated goods. At the foot of the opposite brick wall is placed a blower with a heater, sending hot air or gases through horizontal slits in the wall into the interior of the chamber by a suitable connecting-conduit.

Two strong beams A A', in the upper and in the lower part, respectively, are placed lengthwise in the chamber resting in the side walls. Bearings B B' are fixed to these beams, carrying two horizontal shafts N N' and pairs

of guide-wheels C C', keyed thereon. The upper shaft N is a driving-shaft, taking motion in slow revolutions from a transmission by a suitable gear, a worm and worm-wheel *n n'* in the example shown. The motion is transmitted to the lower shaft N' by two endless chains D D, laid over the guide-wheels C C'. In regular intervals this chain has links E, with a side lever on each inner side ending in a hammer-head-shaped piece E', forming counterpoise for a connecting-plate F' at the outer side of the chain-links fixed to each chain and forming a hurdle in carrying a row of light thin tubular sticks F, covered, preferably, with wire-gauze. These hurdles are on an inclination of about twenty-two and one-half degrees to the horizontal line and form one entire system with the two endless chains. The chain with the plates F' at the same time forms a double movable partition-wall of the chamber.

Behind the brick wall H' is a blower L, suitably connected to an air or gas heating apparatus M, from which an upward flue M' is leading to the wall H' in its full width.

When the machine is put in motion, all the hurdles or drying-tables F F describe their circular path around the wheels C C', with their endless chains D, and the hammer-headed counterpoises E hold the hurdles in their proper inclination to the horizontal by sliding during their march in suitable channels G, fixed in a vertical position just in the line of the counterpoises between the two wheels C and C' on the upper and the lower shafts. The hurdles descend in the space formed between the walls H' H² H³ and the vertical channels G, and when charged at their upper passage before the opening R, in the order in which they present themselves in the inclined position, they slowly transport the goods to be treated to meet the stream of hot air or gas blown into the slightly-inclined holes H in the wall H' from the conduit M', heater M, and blower L, so that this heated air or gas penetrates upward successively through all the loaded hurdles and finally takes its way through the outlets K in the side walls. When the hurdles reach the lower part of the apparatus, the hammer-shaped counterpoises leaving the channels G, wherein they were guided, and the hurdles

taking their turn around the guide-wheel C', incline downward and discharge automatically the fully-treated textile fibers in completely dry state. This arrangement of the machinery obliges the hot air or gas blown into the lower part of the apparatus through suitably-distanced, superposed, and dimensioned openings H, the upper holes being smaller in sectional area than the lower ones, to penetrate, successively, the material spread on the hurdles through all the layers before said hot air can leave the apparatus at its upper part through the said outlets K, and so insures the most thorough and equal action of it, charging itself with a maximum of moisture.

For the carbonizing action the machine is regulated to a slower speed of movement, so as to leave the goods, after completely drying them, exposed to the action of dry heat.

I am well aware that drying-machines for treating textile fiber have been made using a chamber wherein heated air is moving through the mass of goods moved in the chamber, and I do not claim such a machine broadly; but

What I claim, and desire to secure by Letters Patent, is—

1. In carbonizing and drying machines, an endless carrier, the chains of which are pro-

vided with links having inwardly-projecting hammer-head levers, and outside connecting-plates with hurdles outwardly inclined from same, in combination with the shafts and wheels around which the carrier is adapted to operate, the transverse beams with bearings for supporting the shafts, and the vertical channel-plates G, connecting the beams, substantially as described and for the purpose set forth.

2. In apparatus for carbonizing and drying wool, a drying-compartment having one of its sides provided with openings, the upper openings being smaller in sectional area than the lower ones, a blower and a flue connecting the blower with the side openings of the drying-compartment, in combination with an endless carrier having links provided with outside connecting-plates, and inclined hurdles projecting from said plates, substantially as described the carrier being arranged for operation, so that the air from the blower shall strike successively, the under side of each hurdle and pass upwardly through the material thereon, substantially as specified.

JULES M. ED. LEKEUX.

Witnesses:

V. WEERTS LEKEUX,
J. L. MARLAND.