

No. 847,383.

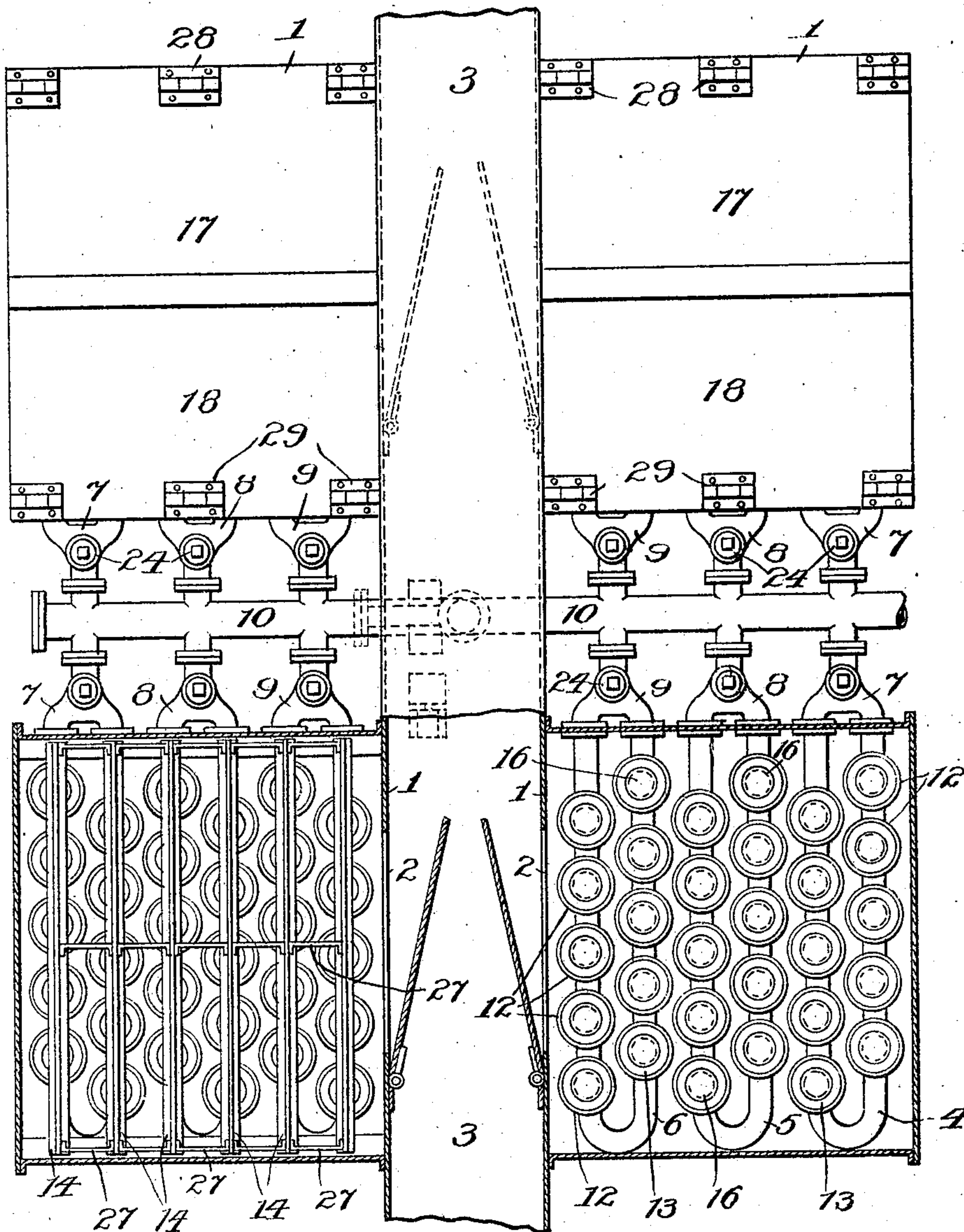
PATENTED MAR. 19, 1907.

O. VENTER.
APPARATUS FOR DRYING TEXTILE MATERIAL.

APPLICATION FILED JAN. 16, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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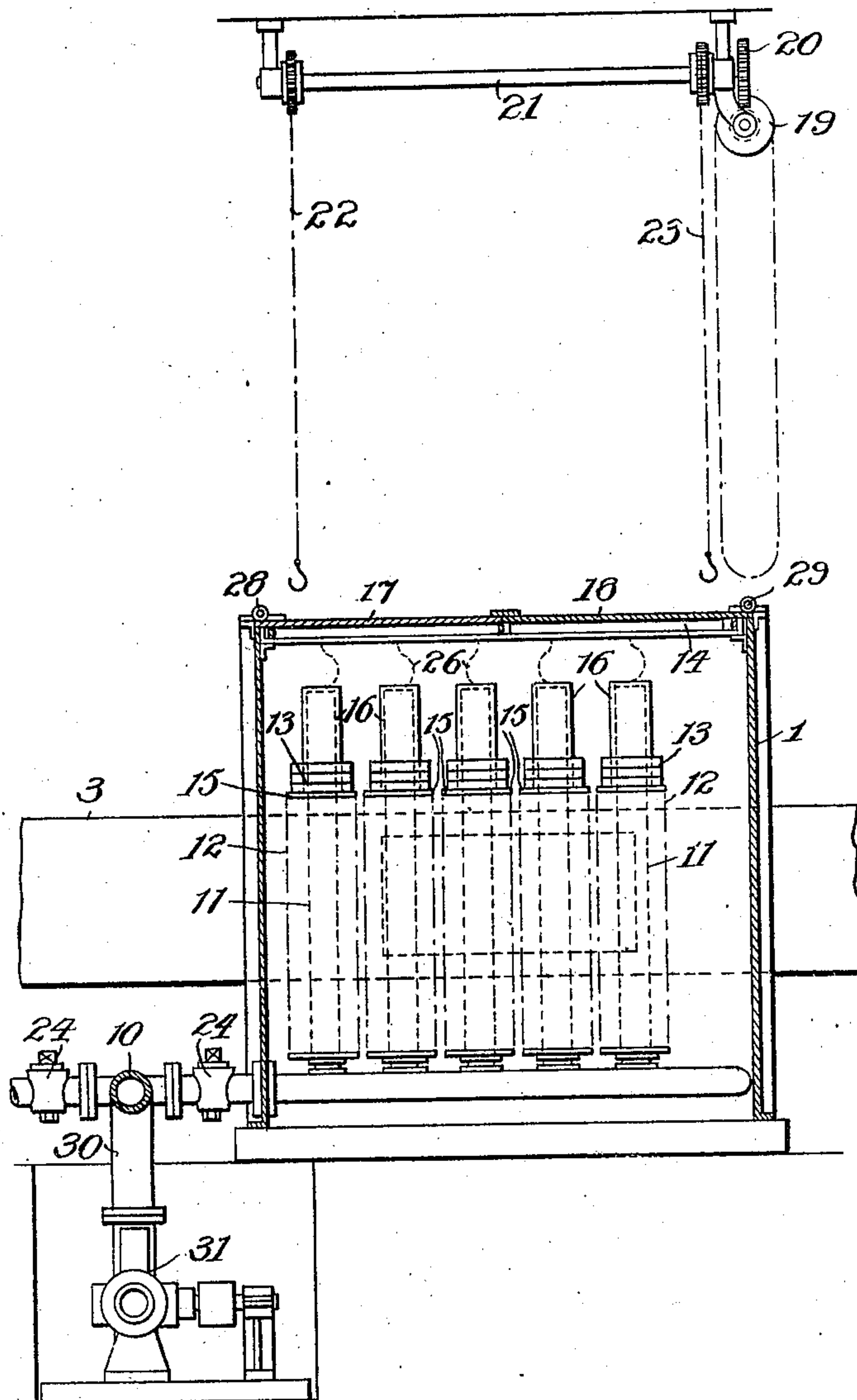
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APPARATUS FOR DRYING TEXTILE MATERIAL.

APPLICATION FILED JAN. 16, 1907.

2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

OTTO VENTER, OF CHEMNITZ, GERMANY.

APPARATUS FOR DRYING TEXTILE MATERIAL.

No. 847,383.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed January 16, 1907. Serial No. 352,589.

To all whom it may concern:

Be it known that I, OTTO VENTER, a subject of the German Emperor, residing at Chemnitz, in the Kingdom of Saxony and Empire of Germany, have invented certain new and useful Improvements in Apparatus for Drying Textile Material, of which the following is a specification.

This invention relates to an apparatus for quickly drying textile material of any kind—for instance, loose material, spun goods, stocking material, cops, cheeses, slivers, &c.,—which is subjected to the mordanting process, bleaching process, &c., and is placed round perforated hollow cylinders.

The new feature of the invention consists in the hollow cylinders holding the goods to be dried being connected with a pipe in which a partial vacuum is produced by means of a suitable device and the space surrounding the hollow cylinders being formed as a drying-chamber closed off from the space outside, into which chamber a compressed-air pipe opens which maintains the air at a suitable excess pressure. By these means through the external excess pressure existing in the drying-chamber the moisture present in the goods to be dried is prevented from evaporating outward—that is, into the drying-chamber—and at the same time the water-vapors forming under the influence of the dry air are caused to escape into the vacuum-pipe. The result of this is that the air of the drying-chamber has no opportunity during the drying process to absorb moisture, and consequently the accumulation of water-vapor in the drying-chamber, which is detrimental to the drying process, is prevented.

The invention is represented in the appended drawing, in which—

Figure 1 shows, partly in plan and partly in section, several drying-chambers connected with a common compressed-air pipe, while Fig. 2 illustrates a vertical section through a drying-chamber.

As to be seen from the drawing, 1 are the drying-chambers, each of which is connected through an opening 2 with the compressed-air pipe 3. In the latter the dry air possesses a suitable excess pressure above the outside atmosphere, which excess pressure is transmitted through the openings 2 into each of the drying-chambers. In each drying-chamber the lines of the pipes 4 5 6 are arranged, the ends of which are connected

with the vacuum-pipe 10 through the fork connections 7 8 9, respectively, and the closure devices 24. The vacuum-pipe 10 is connected (see Fig. 2) through the pipe 30 with a fan 31 or any other suitable device by which the air is drawn away out of the pipe, so that a pressure exists in the pipe 10 which is considerably less than that of the outer atmosphere. On the lines of pipes 4 5 6 the perforated hollow cylinders 11 are fastened, around which the material 12 to be treated is grouped. On the material the plates 15 are placed, extending above into the hoods 16, surrounding the perforated cylinders. On the plates 15 the weights 13 are supported, by means of which the material surrounding the cylinder 11 is subjected to pressure. The hoods 16 are suspended from the beam 14 by means of the tension members 26. The different beams 14 can be connected into a grate-shaped frame by means of the connecting-pieces 27. Each drying-chamber is provided above with two lids 17 18, capable of opening up and closing down, each of which is hinged at one of its sides at 28 or 29, respectively. The instant the lids are closed down into the position indicated in Fig. 2 the drying-chamber is shut off air-tight from the outside. Above the drying-chamber an elevating device 19 20 21 is arranged, by means of which after the lids 17 18 have been turned up the beam 14, with the hoods 16 and the weights 13, can be raised by means of the tension members 22 23, and consequently the material supported round the perforated hollow cylinders 11 can be removed.

The operation of the invention is as follows: The air-pressure is transmitted from the compressed-air pipe 3 through the openings 2 into the drying-chambers, so that in said chambers approximately the same pressure exists as in the compressed-air pipe 3. By means of the excess pressure the moisture present in the goods to be dried is prevented from evaporating outward—that is, into the drying-chamber. On the other hand, it is possible for water-vapor to form only toward the interior of the perforated cylinders 11, which, as set forth above, are connected with the vacuum-pipe 10, so that the water-vapor escaping inward is drawn away through the latter, and consequently the percentage of moisture in the drying-chamber is not increased, whereby the drying process is materially accelerated.

Instead of the drying-chamber 1 a space surrounded with walls and likewise closed off from the outside may also be used in the form of a drying-room. Hereby the essence
5 of the present invention is altered as little as when the number of drying-chambers is altered which are connected with a common compressed-air pipe and with common vacuum-pipe.

10 Having now fully described my invention, I declare that what I claim is—

1. An apparatus for drying textile material the combination of a drying-chamber, a perforated hollow cylinder provided therein,
15 a pipe in communication therewith, means for producing a partial vacuum in said pipe, means for closing off said drying-chamber from the outside and a compressed-air pipe connected thereto.

20 2. In apparatus for drying textile material the combination of a drying-chamber closed off from the outside, a compressed-air pipe in

communication therewith, a series of perforated hollow cylinders provided in said drying-chamber adapted to receive the material
25 to be dried, a pipe in communication with said hollow cylinders and means for drawing air from said latter pipe.

3. In apparatus for drying textile material the combination of a drying-chamber closed
30 off from the outside, a compressed-air pipe in communication therewith, a series of perforated hollow cylinders provided in said drying-chamber adapted to receive the material to be dried, a pipe in communication with
35 said hollow cylinders, means for shutting off this communication, respectively, and a fan connected to said latter pipe.

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

OTTO VENTER.

Witnesses:

MORRIS LIPMAN,

THOMAS H. NORTON.