March 21, 1933. E. WENZEL 1,902,429

MOISTENING CLOTH

Filed May 11, 1931

Fig. 1.

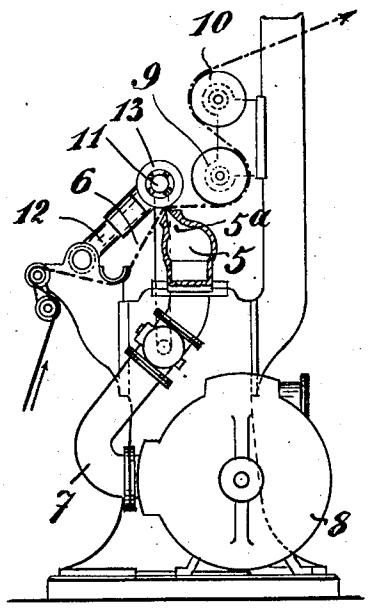


Fig. 3.

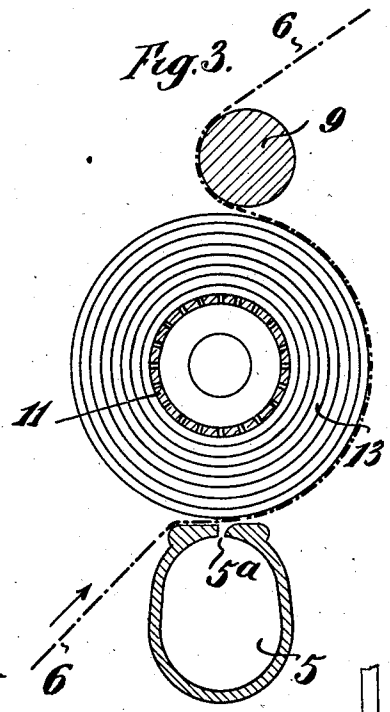
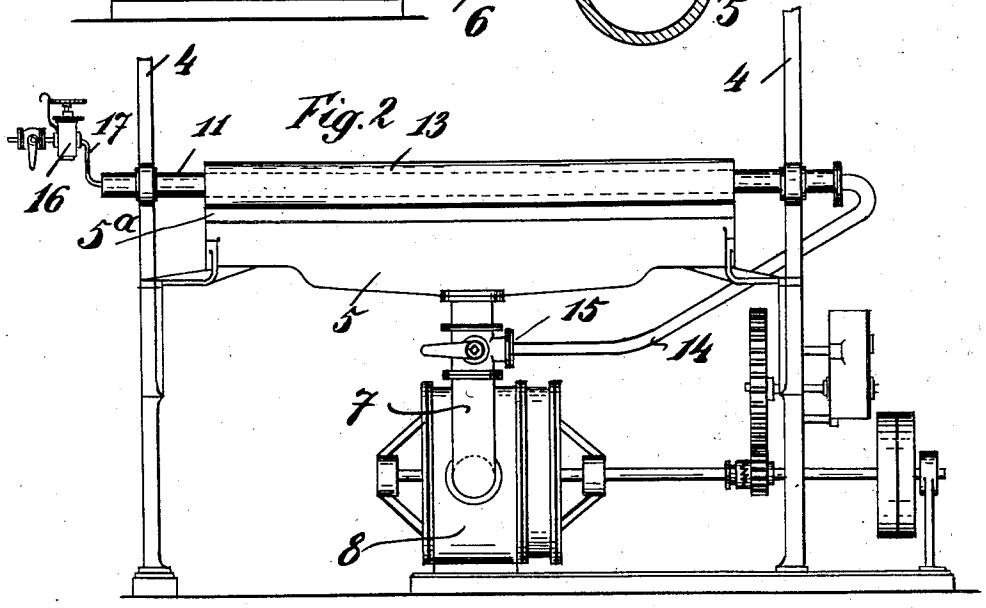


Fig. 2



Inventor:
Emil Wenzel
By Knight Bros.
attys.

Patented Mar. 21, 1933 1,902,429

UNITED STATES PATENT OFFICE

EMIL WENZEL, OF AUE, GERMANY, ASSIGNOR TO ERNST GESSNER AKTIENGESELLSCHAFT, OF AUE, GERMANY, A CORPORATION OF GERMANY

MOISTENING CLOTH

Application filed May 11, 1931, Serial No. 536,624, and in Germany June 2, 1930.

My invention relates to means for moistening cloths.

In order to improve the shrinking or the conditioning of cloths, more or less water is supplied to the cloth which thereupon is subjected to a drying process, the effect of this treatment substantially depending upon the uniformity of moistening.

Now it is very difficult to obtain, with the aid of the known methods and means, a uniform moistening, and to determine the degree of moisture, more particularly it is very difficult to adjust approximately correctly the degree of moisture in advance.

In order to overcome these difficulties, I effect the moistening of cloths according to the invention by means of a device in which the moisture is sucked through the cloth, a perforated drum fitted with a porous liner being arranged opposite a suction nozzle, to which liner water is fed from the interior of the drum by means of regulatable pressure. Each adjustment of the height or head of the pressure applied is corresponded to by the passage of a certain quantity of water which is delivered without any remainder to the cloth by means of the sucking action.

For instance, if with a height of pressure of 0.3 atmospheres, the water passage per minute amounts to 600 grams and 10 meters of cloth of 600 grams each pass between the nozzle and the porous liner, then as easily will be seen, the degree of moisture is 10%. For the adjustment of height of the pressure required in the individual case, any suitable pressure-controlling means may be provided in the water supply conduit, such as a reduction valve fitted with a reading-off scale.

The cloth may more or less surround the drum or pass between nozzle and drum in a straight line.

In order that my invention may be more readily understood, an embodiment of the same is diagrammatically illustrated by way of example in the accompanying drawing in which

Figure 1 is an end view of my new moistening device,

Figure 2 is the corresponding side view, and

Figure 3 shows on an enlarged scale the porous drum and the suction nozzle.

As will be seen from Figures 1 and 2 a chamber 5 is mounted on a frame 4 which chamber corresponds in length to the width of the cloth to be treated and is provided at the top with a longitudinal slot forming a suction nozzle 5*a* over which the cloth 6 is guided. Figure 1 shows the chamber 5 with nozzle 5*a* in cross section. The suction chamber 5 is connected by a conduit 7 to a vacuum pump 8 which is driven in any suitable manner. After the cloth has passed over the nozzle 5*a* it is guided in any suitable manner by rotary cylinders 9 and 10. Above the nozzle 5*a* is disposed a perforated hollow drum 11 which may be mounted on swing arms 12 and is enveloped by a liner of hygroscopic material 13, such as a suitable ceramic material, blotting paper or fabric or the like. The one end of drum 11 is connected by a pipe 14 in which a throttling member is disposed, such as a valve or cock 15, to the pipe 7 of the vacuum pump, while its other end is attached to the reduction valve 16 of the pipe 17 for the water under pressure.

The cloth may be guided through the device as illustrated in Figure 1, so as to be in contact with the drum 11 only along a generatrix or element thereof, or the cloth may embrace the drum on a portion of its periphery, as illustrated in Figure 3 for which purpose the one guide cylinder 9 is situated correspondingly.

I so determine the porosity of the liner 13 of drum 11 that the water penetrating from inside to outside must pass under a determined pressure whereby a determined degree of moistening of the cloth is assured, more particularly when the vacuum pump acts with a previously determined efficiency, because the water supplied to the drum 11 under a determined pressure passes through the porous liner 13 and is sucked from chamber 5 by the nozzle 5*a* into the cloth.

What I claim as my invention is:—

A device for moistening cloth comprising a moistening drum formed of a perforated hollow cylindrical body and a porous liner surrounding said body, a supply pipe for

water under pressure connected to the interior of said cylindrical body, a suction chamber extending along said drum and having a suction slot directed towards said drum, and means for passing the cloth to be treated between said drum and slot.

The foregoing specification signed at Berlin, Germany this 28th day of April, 1931.

EMIL WENZEL.