

No. 722,363.

PATENTED MAR. 10, 1903.

L. P. HEMMER.
FULLING MACHINE.
APPLICATION FILED APR. 2, 1900.

NO MODEL.

Fig. 3.

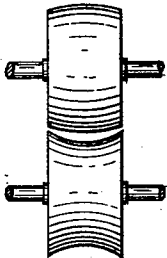


Fig. 4.

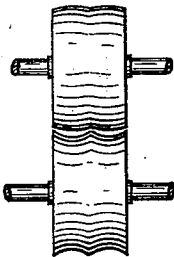


Fig. 1.

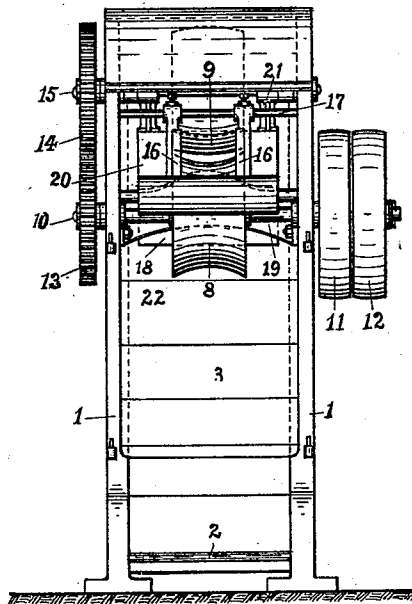


Fig. 5.

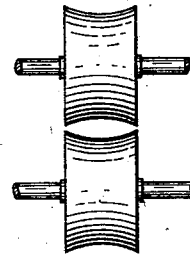


Fig. 6.

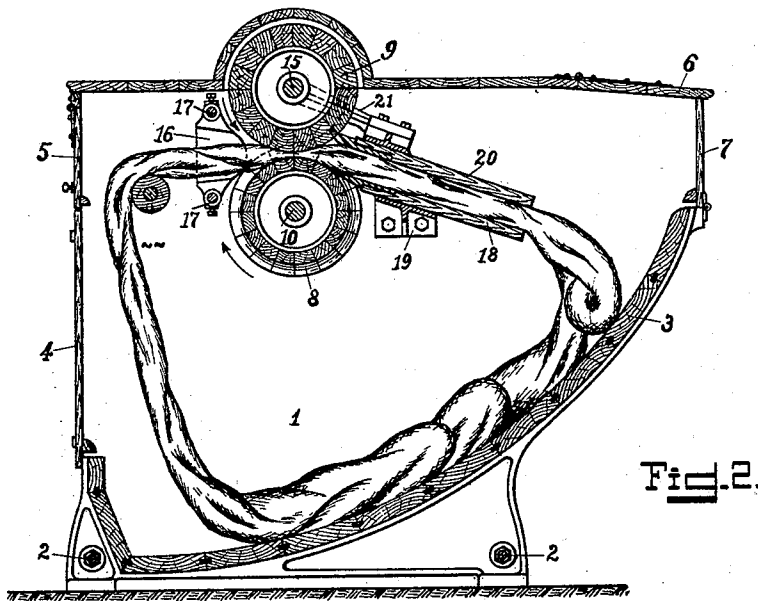
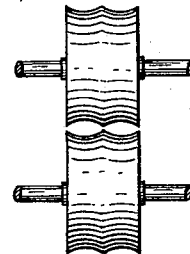


Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

LEOPOLD PHILIPP HEMMER, OF AIX-LA-CHAPELLE, GERMANY.

FULLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 722,363, dated March 10, 1903.

Application filed April 2, 1900. Serial No. 11,233. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD PHILIPP HEMMER, machine manufacturer, residing at No. 62 Krugenofen, Aix-la-Chapelle, Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Fulling - Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to fulling-machines, and particularly to such in which instead of cylindrical rollers with profiled or curved surfaces are employed, the end in view being to concentrate the textile fabric in the central part like a hank, so that it can be better fullled afterward in the direction of its breadth. The last-named fulling operation cannot be executed satisfactorily where the fabric has passed through a fulling-machine with cylindrical rollers, which always cause the fabric to broaden out toward the ends of the rollers. The excessive broadening out of the fabric cannot take place with these new rollers, as the working surface of the rollers prevents the broadening out of the fabric and concentrates the mass of the fabric more or less in or toward the center. The consequence of the marked concentration in the central part of the curved surface of the rollers is a more elastic and effective pressure of the upper roller on the textile fabric, and the fulling of the textile fabric in breadth is more rapidly effected. Another advantage gained by these new profiled rollers is to cause the different layers of the textile fabric to slide one over another and cause the creases of the fabric to change their position as often as the fabric is passing between said rollers, owing to the different circumferential velocities of the working surfaces of the rollers. In consequence of the friction between the different parts of the textile fabric passing through the profiled rollers a better felting of the former is obtained.

In the accompanying drawings, Figure 1 is an end view of the fulling-machine with the principal doors removed. Fig. 2 is a longitudinal sectional view of the machine. Figs. 3 to 6 show different forms of working rollers with profiled working surfaces.

The frame of the machine consists chiefly of the two side parts 1, connected by the stay-rods 2, and is closed on the under side by the feather-and-tongued boards 3, fastened to the inner flanges of said side parts 1. The upper part of the machine is likewise closed in order to keep out dust and other impurities. Admission to the interior of the machine is gained at the front by means of the double door 4 and the upper door 5 and at the rear by means of the horizontally-swinging doors 6 and 7. These parts may, however, be arranged in any other suitable way, as in doing so the efficiency of this machine would in no wise be lessened, as it wholly depends upon the working rollers 8 and 9, having profiled surfaces so arranged as to form a passage or passages between them deeper in cross-section at their middle than at their ends. The one end of the shaft 10 of the lower roller 8 is provided with a tight pulley 11 and a loose pulley 12, and the other end carries the wheel 13, meshing with the wheel 14, seated upon the shaft 15 of the roller 9.

The fabrics to be fullled are united to an endless strand after being drawn through the profiled rollers and guided to said rollers by two guide-boards 16, adjustably seated upon the rods 17, placed in front of the working rollers 8 and 9, while behind the latter is arranged the customary stowing apparatus, consisting of the stationary bottom 18, carried by the bracket 19, and the swinging cover 20, attached by arms 21 to the shaft 15 of the upper profiled roller 9. If now the machine is set in motion, the friction of the coöperating working rollers 8 and 9 will draw the fabric through said rollers and press it into the stowing apparatus, and on leaving the latter it will drop to the bottom of the machine, to be drawn up again over the small roller 22 in order to enter the rollers anew. This cycle of operations is continued until the fabric has been fullled to the desired degree, and the fabrics thus operated upon will be more thoroughly and evenly fullled than it can be done with cylindrical rollers. These advantages may be still further increased by giving the working rollers for certain classes of fabrics profiled surfaces most suitable to their peculiarities.

It is obvious that the profiled surfaces of

the rollers, as shown in Figs. 3 to 6, could be varied, yet all such variations would be based upon the same principle—namely, to compel the fabrics to be fulled to assume for the time
5 being at the different points of the passage or passages formed between said rollers a cross-section deeper at the middle than at the sides, whereby the fabrics are kept most effectively together, to change the creases
10 in the fabric at each of their passages through the working rollers, and to distribute the pressure more evenly, thereby causing a uniform felting.

I claim—

15 1. In a fulling-machine of the class described a pair of cooperating chief working rollers with profiled working surfaces forming a passage for the fabrics to be fulled, such passage being deeper at the middle than at

the ends thereof to obtain an even distribu- 20
tion of pressure and a more rapid and uniform felting, substantially as shown and described.

2. In a fulling-machine of the class described a pair of cooperating chief working 25
rollers with profiled working surfaces forming passages for the fabrics to be fulled deeper at the middle of each individual passage than at the ends thereof to obtain an even distribution of pressure and a more rapid and uni- 30
form felting, substantially as shown and described.

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

LEOPOLD PHILIPP HEMMER.

Witnesses:

C. E. BRUNDAGE,
G. SCOTT.