

(No Model.)

C. B. DOLGE.

PROCESS OF PRODUCING FELT HAVING A CROSS SECTION VARYING IN THICKNESS THROUGHOUT ITS WIDTH.

No. 314,369.

Patented Mar. 24, 1885.

Fig. 1.

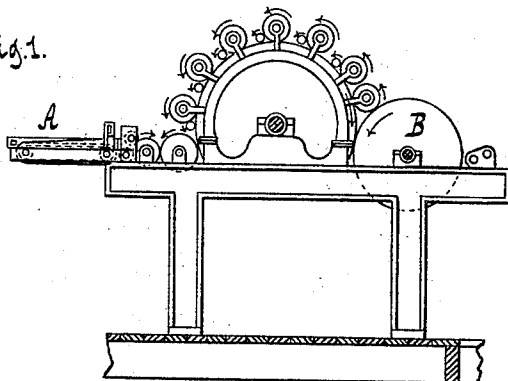


Fig. 2.

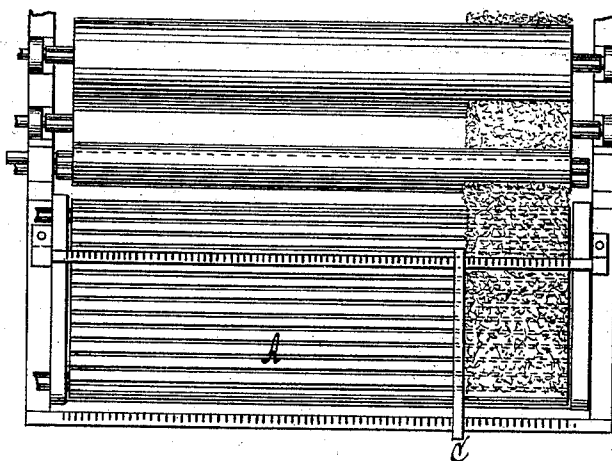


Fig. 3.

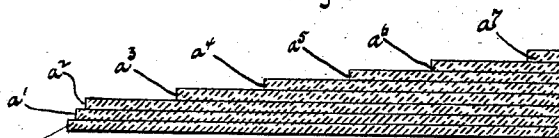


Fig. 4.

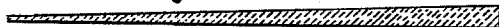
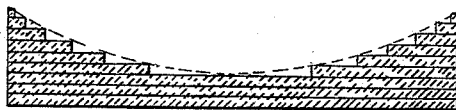


Fig. 5.



Fig. 6.



WITNESSES:

William Miller
Otto Hufel and

INVENTOR

Carl Bruno Dolge

BY

Van Santwood & Hauff

ATTORNEYS

UNITED STATES PATENT OFFICE.

CARL BRUNO DOLGE, OF DOLGEVILLE, ASSIGNOR TO ALFRED DOLGE, OF
NEW YORK, N. Y.

PROCESS OF PRODUCING FELT HAVING A CROSS-SECTION VARYING IN THICKNESS THROUGHOUT ITS
WIDTH.

SPECIFICATION forming part of Letters Patent No. 314,369, dated March 24, 1885.

Application filed December 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, CARL BRUNO DOLGE, a citizen of the United States, residing at Dolgeville, in the county of Herkimer and State of New York, have invented new and useful Improvements in Process for Producing Felt Having a Cross-Section Varying in Thickness Throughout its Width, of which the following is a specification.

This invention relates to an improvement in the art of manufacturing felt the cross-section of which is varying in thickness throughout its width—such, for instance, as tapering, convex, or concave.

In the accompanying drawings, Figure 1 represents a side elevation of a carding-machine which I use in carrying out my invention. Fig. 2 is a plan or top view of the feed-table of the carding-machine on a larger scale than the previous figure. Fig. 3 is a transverse section of a pile of webs formed to produce felt of a tapering cross-section. Fig. 4 is a transverse section of the tapering felt when finished. Fig. 5 is a transverse section of a pile of webs formed to produce felt of a convex cross-section. Fig. 6 is a similar view of a pile of webs formed to produce felt of a concave cross-section.

Similar letters indicate corresponding parts.

In order to produce felt of tapering cross-section, I proceed as follows: I spread on the feed-table A of the carding-machine a quantity of wool or other material capable of being felted, said material being distributed evenly over the entire width of the feed-table, (or to a width corresponding to the width of the fabric to be produced,) and after this material has passed through the carding-machine it is taken from the same by an endless apron, which moves with a velocity equal to the speed at which the wool passes through the carding-machine, and which conveys the carded wool, the so-called "web," to another apron that runs direct between the rollers of the felting-machine. Before all the wool of the web is worked up by the carding-machine and conveyed to said endless apron, another layer of wool, narrower in width than the first layer, *a*, is evenly spread on a portion of the feed-table of the card, and is in the same manner worked by

the carding-machine and conveyed to the felting-machine, the rollers of which are in operation continually, thus felting the narrower web *a'* directly to the full web *a*. The feed-table is provided with a gage, C, which is set to the width of the web desired, which again corresponds with the shape of the fabric to be produced. When the web *a'* has fully covered the web *a* lengthwise, a series of layers of wool or other material capable of being felted are spread in like manner consecutively on the said feed-table, these layers *a² a³ a⁴ a⁵ a⁶ a⁷* decreasing in width each time, thus forming by quicker or slower diminished widths a more straight or a more pointed taper, respectively, and thus allowing the felting-machine to perform the operation of felting on each web separately. This operation is continued till the required thickness is reached. The same result may be obtained by first producing the narrowest web and have the others increase in width the reverse way, as described above. If desired, the webs *a a' a²*, &c., may be placed upon each other, as shown in Fig. 3, (without the felting-machine being in operation,) until a pile of webs of the required thickness is formed, and then the whole pile may be exposed to the action of the felting-machine, so as to unite the different layers; but I prefer to follow the process first described, since by subjecting the webs as the same are placed one upon the other to successive felting actions a fabric is produced which is uniformly felted throughout its entire thickness, whereas in exposing the entire pile to a single felting action the outer layers of the pile become thoroughly felted together and harder, while the inner layers are liable to be imperfectly felted, and the fabric thus produced is liable to be softer in the middle and even subject to splits.

By referring to Fig. 5 it will be readily understood how, in following the process above described, felt can be produced with a convex cross-section, and by referring to Fig. 6 the process of producing felt of a concave cross-section is rendered intelligible.

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

1. The improvement in the art of manufac-

100.

turing felt the cross-section of which is varying in thickness throughout its width, which consists in first forming webs of varying width, then placing these webs one upon the other in the proper order to form a pile corresponding to the cross-section of the fabric to be produced, and; finally, exposing the pile to a felting action.

2. The improvement in the art of manufacturing felt the cross-section of which is varying in thickness throughout its width, which consists in producing webs of varying width, then exposing the first two webs to a felting

action, then adding one or more webs and exposing them together with the webs already felted to a felting action, and so on until a fabric of the desired width and cross-section has been formed.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

CARL BRUNO DOLGE. [L. S.]

Witnesses:

JOSEPH KOCH,
E. R. WANCKEL.