(No Model.)

C. W. GLOVER.

ROLLER FOR HAT BODY FELTING AND SIZING MACHINES.

No. 292,111. Patented Jan. 15, 1884.

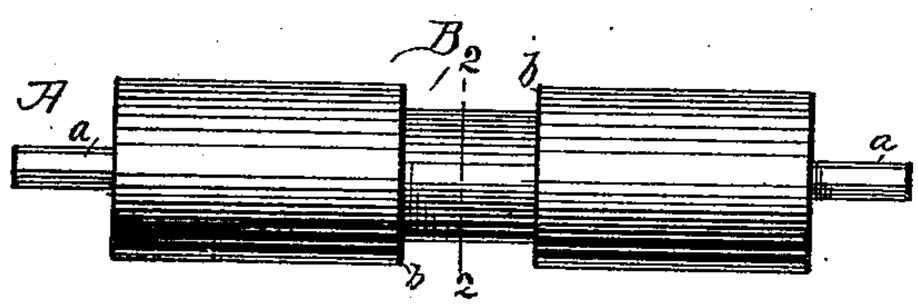

FIG. 1.

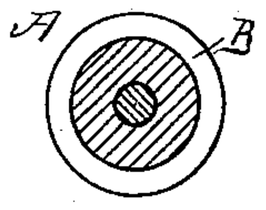

FIG. 2.

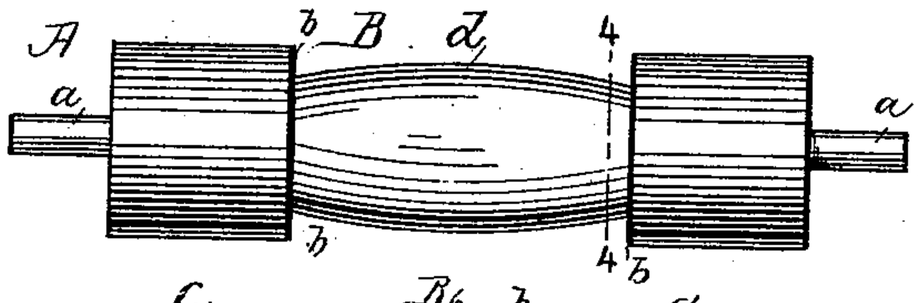

FIG. 3.

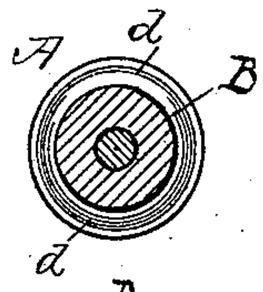

FIG. 4.

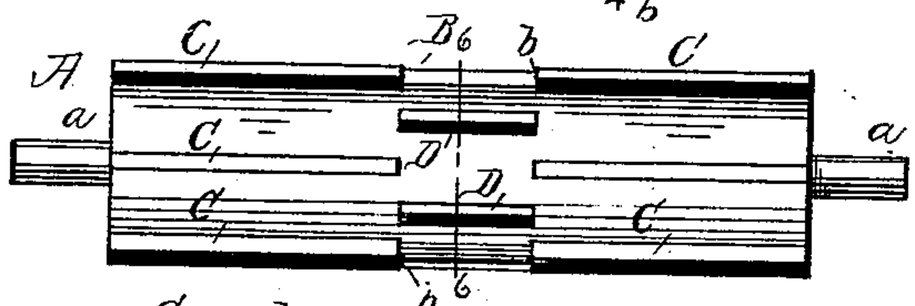

FIG. 5.

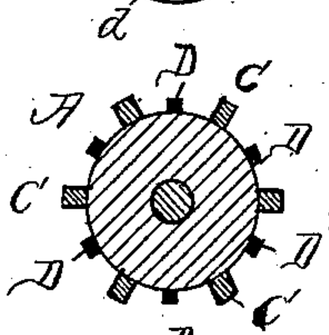

FIG. 6.

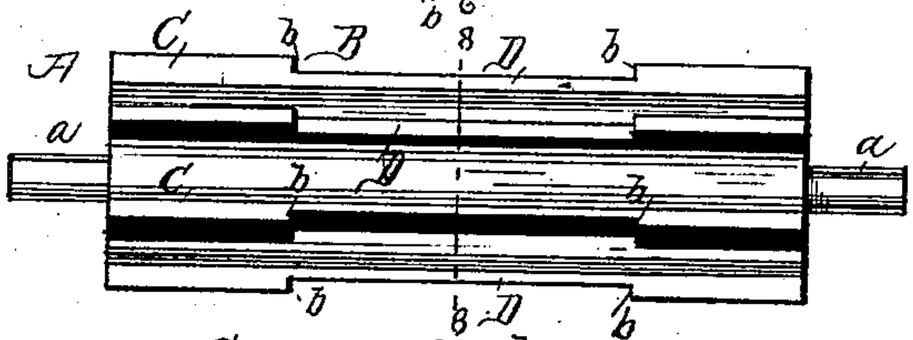

FIG. 7.

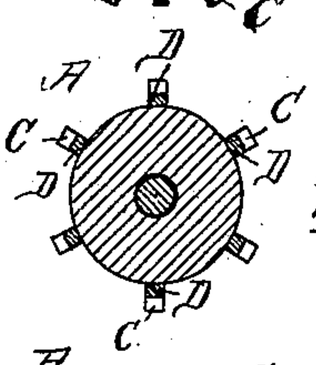

FIG. 8.

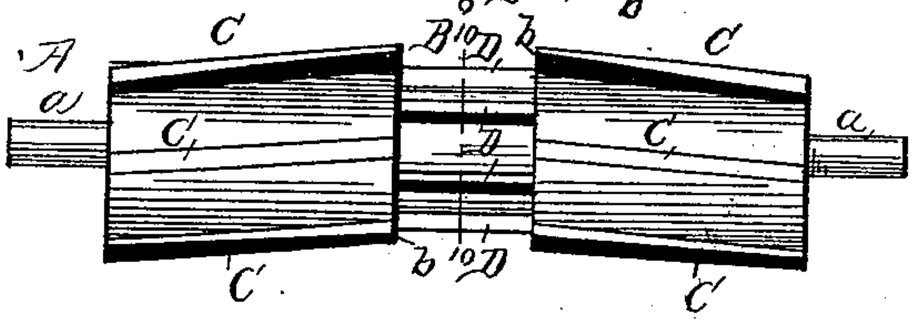

FIG. 9.

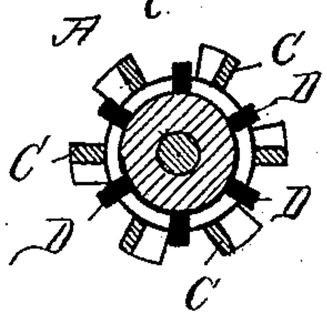

FIG. 10

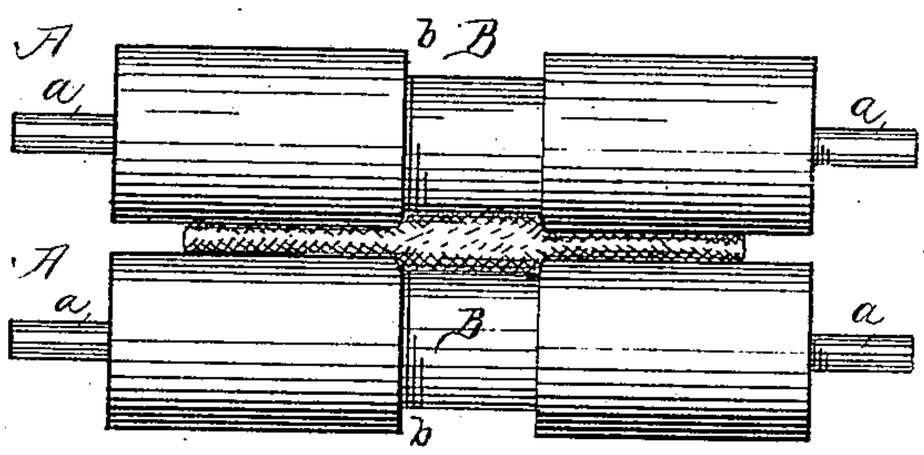

FIG. 11.

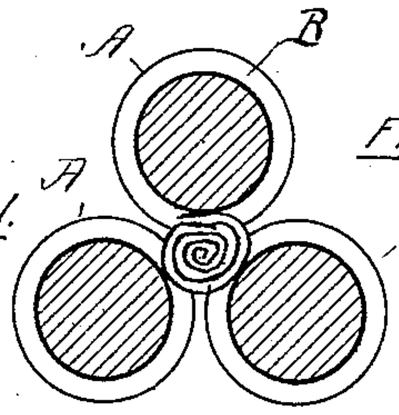

FIG. 12

Witnesses.
Wm. S. Bellows
H. Parker Fellows

Carlos W. Glover
Inventor
per Brown Bros.
Attorneys

UNITED STATES PATENT OFFICE.

CARLOS W. GLOVER, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE JOHN T. WARING HAT SIZING MACHINE COMPANY, OF NEWARK, N. J.

ROLLER FOR HAT-BODY FELTING AND SIZING MACHINES.

SPECIFICATION forming part of Letters Patent No. 292,111, dated January 15, 1884.

Application filed June 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, CARLOS W. GLOVER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Rollers for Hat-Body Felting and Sizing Machines, of which the following is a full, clear, and exact description.

This invention relates to rollers for use in machines otherwise constructed and arranged for the felting of hat-bodies and other articles, such as is shown and described in Letters Patent of the United States No. 279,376, granted June 12, 1883. Such rollers have a circumferential construction or working-surface designed to insure a more rapid and perfect felting and sizing of hat-bodies or other articles subjected to them; and this invention consists in constructing the working-surface of the roller with a circumferential cavity or depression at its central portion, which cavity or depression has shoulders or abutments at its ends, and is of a depth at its ends equal to or greater than at the middle portion thereof.

It also consists of a roller, either with or without such cavity or depression, having lags or projections extending longitudinally from its ends to near its central portion, and intermediate or otherwise arranged lags at its central portion, which intermediate or otherwise arranged lags are of less height radially than the inner ends of the outer or end lags, thereby forming, in connection therewith, a cavity in relation to the outer surfaces of said lags at the central portion of said roller, all for the purpose more particularly of keeping the hat or other roll being operated upon at the central portion of the rollers by preventing its movement toward either end of the rollers, thus obtaining a more rapid and better sizing and felting of the hat or other roll.

The inventions herein contained constitute improvements upon the subject-matter of United States Patent No. 278,904, dated June 8, 1880.

In the accompanying plate of drawings is illustrated rollers, for use in machines for felting hats and other articles, constructed according to this invention—

Figures 1 and 3 showing in elevation rollers having a circumferential cavity at their central portion; and Figs. 2 and 4 are cross-sections, respectively, of the same. Figs. 5 and 7 show in elevation rollers having lags or projections so arranged in relation to each other as to their height radially from the surface of the rollers as to form a cavity at their central portion, and Figs. 6 and 8 are cross-sections, respectively, of the same. Fig. 9 shows in elevation a roller having a circumferential cavity in its central portion similar to the roller in Fig. 1, with lags or projections similar to Fig. 5; and Fig. 10 is a cross-section of the same. Fig. 11 shows in elevation two rollers constructed as shown in Fig. 1, with a hat or other roll between them in position for being operated upon by the rollers, the usual upper roller being removed; and Fig. 12 is a cross-section of Fig. 11 with the upper roller in its place.

In the drawings, A A represent rollers constructed according to this invention, each having journals *a* at each end, by which they are supported for operation in the machine.

In Figs. 1 and 2 the roller A is shown as having a circumferential cavity, B, at its central portion, which cavity has square or substantially square shoulders *b* at its two ends, and is substantially of an equal depth throughout its length.

In Figs. 3 and 4 the roller A has a circumferential cavity, B, but of a greater length than in the roller shown in Fig. 1, having the shoulders *b*, the central part, *d*, of said cavity, however, being convex or bulging, as shown. The hat or other article, while being operated upon in the machine, will abut against the shoulders *b* of the cavity B, which will prevent its moving toward either end of the rollers, thus keeping it at the central portion thereof in its proper position for the most satisfactory results in felting the hat-roll, &c.

In Figs. 5 and 6 is shown a roller without a cavity in its surface proper, but having lags or projections C extending from each end to near its central portion, and running in a line parallel with the axis of the roller, and lags or projections D at the central portion inter-

mediate of the lags C, which lags D, while arranged parallel with the axis of the roll, are also arranged to alternate circumferentially with the lags C, and are of less height radially from the surface of the roller than the lags C, the difference of height of the lags forming the cavity B, and the inner ends of the lags C making the shoulders *b*, substantially and for the working purposes of the rollers the same as shown in the rollers in Figs. 1 to 4, inclusive.

In Figs. 7 and 8 is shown a roller without a cavity in its surface proper, having lags or projections C extending from each end to near its central portion, and running in a line parallel with the axis of the roller, and lags or projections D at the central portion, forming a continuation of the lags C, but which are of less height radially from the surface of the roller than the lags C, the inner ends of the lags C making the shoulders *b*, thus again forming the cavity B, for the purposes of this invention, as above described.

In Figs. 9 and 10 is shown a roller having a cavity, B, formed in the surface of the roller, and having lags or projections C and D, of the same relative arrangement and height to those shown in Fig. 5, the lags C in this roller running in a line slightly angular circumferentially to the axis of the roller, the lags D being in the circumferential cavity in the roller. The enlarged portions of the rollers whose inner ends form the limits of the central cavity, B, might, of course, be separate rings or bands secured on the roller, or the contour of such roll might be obtained by turning down a solid roll. By this arrangement and construction of a cavity, B, in the central portion of the roller, as herein described, both on the surface of the roller and by the arrangement of the lags C and D, the hat or other roll is kept at or near the central portion of the rollers, in the operation of the machine, where the most effective working-surfaces are arranged, and obviously the felting of the hat-roll, &c., is greatly facilitated.

The lags or projections can be of any height or of any shape in cross-section desired, and the outer lags, C, can be of one length, as shown, or in two or more separate pieces or sections, as also the lags D, without departing from this invention, which consists, essentially, in the construction and arrangement of the cavity or depression B, with its shoulders or abutments, either in the surface of the roller or by its lags, or by the combination of the two, and the cavity can be of any depth desired.

Having thus described my invention, what I claim is—

1. In a machine for felting hats, &c., a roller having a circumferential cavity of equal depth throughout its length, and at or near the longitudinal central portion of said roller, substantially as and for the purpose specified.

2. In a machine for felting hats, &c., a roller having a circumferential cavity of less depth at its middle portion than at its ends, and at or near the longitudinal central portion of said roller, substantially as and for the purpose specified.

3. In a machine for felting hats, &c., a roller having a circumferential cavity, substantially as described, with shoulders or abutments *b* at its ends, substantially as and for the purpose specified.

4. In a machine for felting hats, &c., a roller having lags or projections on its surface extending from each end near to its central portion, and intermediate lags or projections at said central portion of less height radially than the end lags, for the purpose specified.

5. In a machine for felting hats, &c., a roller having a circumferential cavity, substantially as described, lags or projections extending from each end of said roller to said cavity, and intermediate and independent lags or projections in said cavity of less height radially than the end lags, for the purpose specified.

6. In a machine for felting hats, &c., a roller having a circumferential cavity, substantially as described, lags or projections extending from each end of said roller to said cavity, and intermediate lags or projections in said cavity of less height radially than the end lags, and said end lags being in a line slightly angular circumferentially, substantially as and for the purpose specified.

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

CARLOS W. GLOVER.

Witnesses:
EDWIN W. BROWN,
WM. S. BELLOWS.