

(No Model.)

2 Sheets—Sheet 1.

J. HALL.
FINISHING ROLL.

No. 599,469.

Patented Feb. 22, 1898.

Fig: 1.

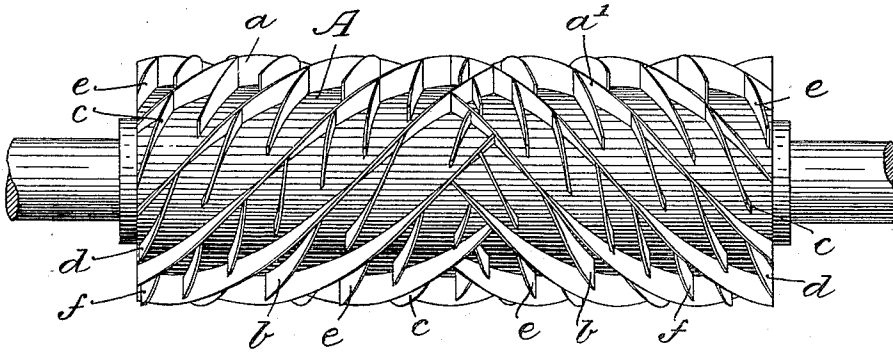


Fig: 2.

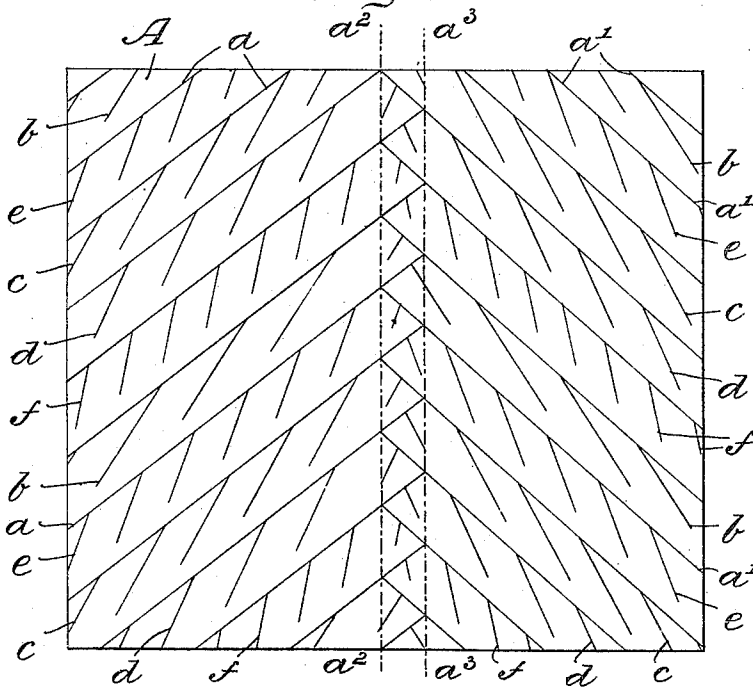
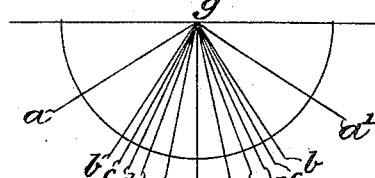


Fig: 3.



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Fig: 4.

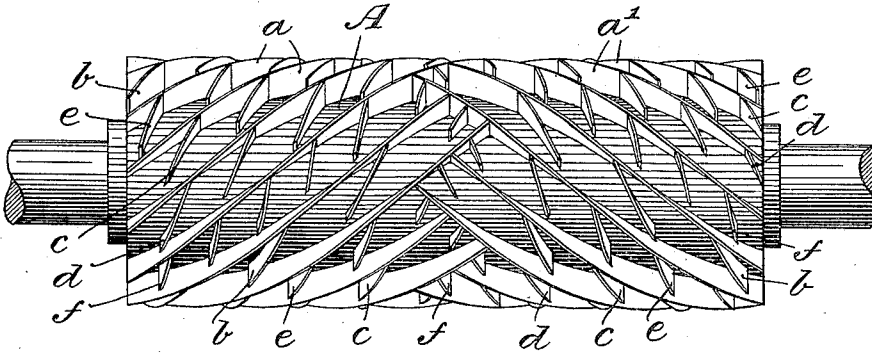
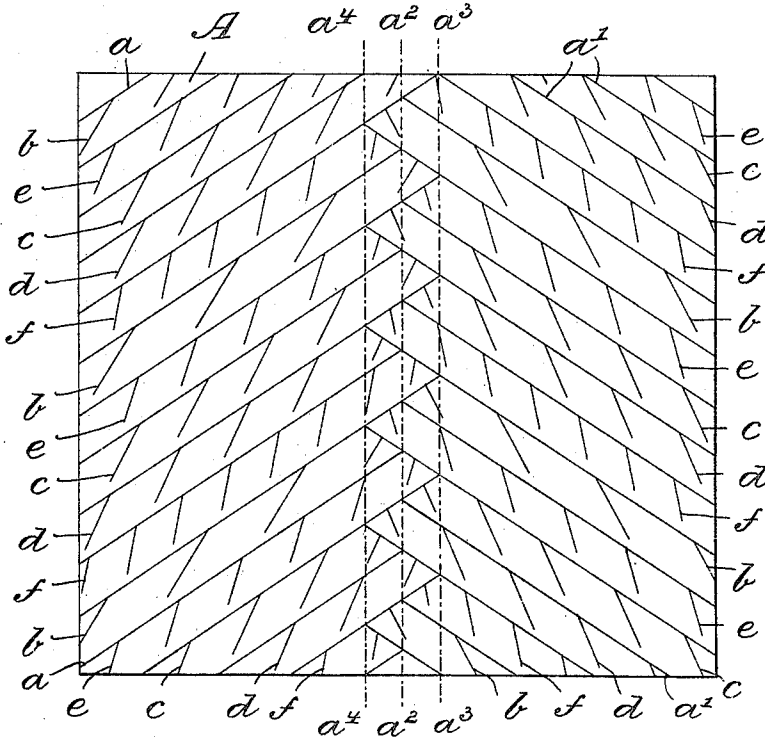


Fig: 5.



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UNITED STATES PATENT OFFICE.

JOSEPH HALL, OF LEEDS, ENGLAND.

FINISHING-ROLL.

SPECIFICATION forming part of Letters Patent No. 599,469, dated February 22, 1898.

Application filed July 2, 1897. Serial No. 643,217. (No model.) Patented in England February 25, 1896, No. 4,199.

To all whom it may concern:

Be it known that I, JOSEPH HALL, a subject of the Queen of Great Britain, residing at Leeds, in the county of York, England, have invented certain new and useful Improvements in Finishing Rolls or Cylinders, (for which I have obtained Letters Patent of Great Britain, No. 4,199, dated February 25, 1896,) of which the following is a specification.

My invention has relation to a roll or cylinder adapted for use in fleshing, setting out, shaving, or analogous leather dressing and finishing machines, and in such connection it relates particularly to the construction and arrangement of such a roll or cylinder.

My present invention has for its object to provide in a working roll or cylinder an arrangement of blades whereby the tension on the hide or skin during the operation of the roll or cylinder is lessened by causing the roll or cylinder to take hold of the hide or skin at many points, the hide being thereby better supported, more steadily worked, having less tendency to tear, and the finished skin or hide having the appearance of being worked by hand.

To this end my invention consists in a roll or cylinder having two series of helical main blades oppositely arranged and abutting at two or more points, there being arranged between the main blades short threads or blades in two or more series, the angle or trend of the short blades being different from the angle or trend of the short blades of the other series and from the angle or trend of the main helical blades.

My invention further consists in a roll or cylinder constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of a finishing roll or cylinder embodying main features of my invention, the main blades abutting alternately in the center and to one side thereof. Fig. 2 is a diagrammatic view illustrating the arrangement of the blades of the cyl-

inder when projected upon a flat surface. Fig. 3 is a diagram illustrating the angle or trend of the main blades and the varying angles or trends of the short threads or blades. Fig. 4 is a top or plan view of a modified form of finishing roll or cylinder, in which the main blades abut alternately at three points in the center and to the right and left of the center; and Fig. 5 is a diagrammatic view of the arrangement of blades of the cylinder shown in Fig. 4 when projected upon a flat surface.

Referring to the drawings, A represents the base of the cylinder or roll, which is suitably grooved or recessed to receive and retain the main spiral blades *a* and *a'* as well as the short threads or blades *c*, *d*, *e*, *f*, and *b*. The main blades *a* and *a'* are oppositely coiled and may be arranged as shown in Figs. 1 and 2—that is to say, the blade *a'* abuts against the blade *a* at the longitudinal center line *a*², whereas the blades *a* abut or terminate against the blades *a'* at the line *a*³ to the right of the center line *a*². In Figs. 4 and 5 the blades *a* and *a'* abut at three points—one in the center line *a*², one in the line *a*³ to the right of the line *a*², and the third in the line *a*⁴ to the left of the center line *a*².

In both forms of cylinder or roll there are provided, by preference, five series of short blades or threads, (marked, respectively, *b*, *c*, *d*, *e*, and *f*.) The short blades of one series are arranged at a certain angle with the main blades *a* and *a'*, which differs from the angle at which the main blades *a* and *a'* are arranged, and also differs from the angles made by the short blades of all the other series. This will be more readily understood from an inspection of Fig. 3, in which the angles of the main blades and short blades are illustrated in diagram. Thus *ag* and *a'g'* represent the trend of the main blades *a* and *a'*, and *bg*, *cg*, *dg*, *eg*, and *fg* the varying angles made by the respective series *b*, *c*, *d*, *e*, and *f* of the short blades. These short blades do not abut against each other, but abut at varying angles against the main blades *a* and *a'*, substantially as shown in Figs. 2 and 5. The series of blades *b*, *c*, *d*, *e*, and *f* may be arranged as shown in the drawings—that is to say, the series *b* followed by *e*, then by *c*,

then by *d*, and then by *f*—or they may be arranged consecutively, so that the series *b* is followed by the series *c*, *d*, *e*, and *f*.

5 The operation of my improved roll or cylinder may be explained as follows: The main blades *a* and *a'* spread the hide or skin generally from the center to the ends in one trend or direction. The five series of short blades take up the work in successive trends or directions, following each other at angles differing from that of the main blades, as well as from the angles of the other series of short blades. The hide, skin, or leather is thereby more effectually set out, cleansed, spread, 15 and softened. The crossing or abutment of the main blades at two or more points, together with the abutment of the short blades with the main blades at or near the center of the cylinder, serves to prevent the formation of ridges or scratches at or near the center of the skin or leather and also forms on the cylinder several supports for the skin or leather, effectually preventing tearing or riffling during the treatment of the skin or leather.

25 Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a finishing roll or cylinder, two series

of oppositely-arranged helical main blades, and two or more series of short threads or blades, each series whereof being arranged at an angle varying from the angle of the main blades and from the angle of the other series of short blades, said short blades abutting against the main blades, substantially as and for the purposes described. 35

2. In a finishing roll or cylinder, two series of oppositely-arranged helical main blades abutting against each other at two or more points, one of which is in the center line of the cylinder, and two or more series of short threads or blades, each series whereof being arranged at an angle varying from the angle of the main blades and from the angle of the other series of short blades, said main blades abutting against the main blades but not against each other, substantially as and for the purposes described. 45

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses. 50

JOSEPH HALL.

Witnesses:

E. L. J. HALL,
A. H. HEINS.