

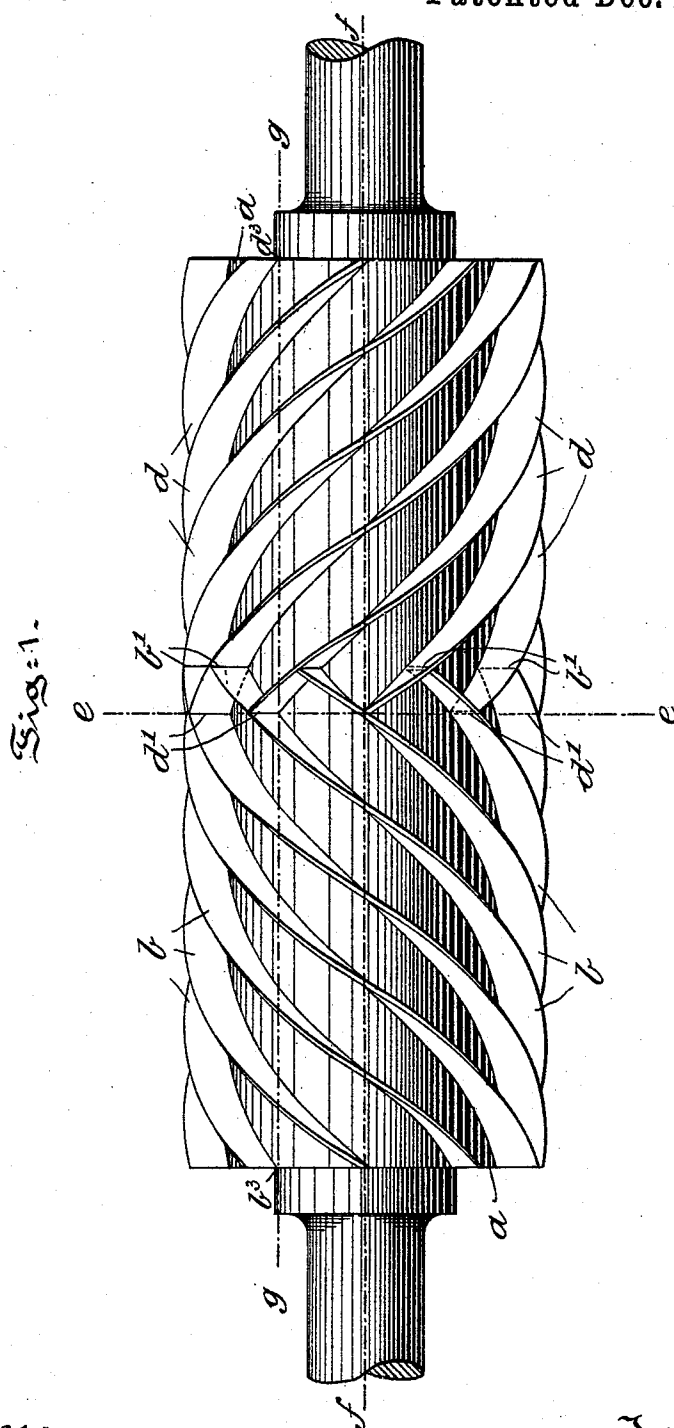
(No Model.)

4 Sheets—Sheet 1.

W. EVANS.
FINISHING ROLL.

No. 572,532.

Patented Dec. 8, 1896.



Witnesses:
Thomas M. Smith.
Richard C. Maxwell.

Inventor:
William Evans,
By J. Walter Douglas
Attorney.

(No Model.)

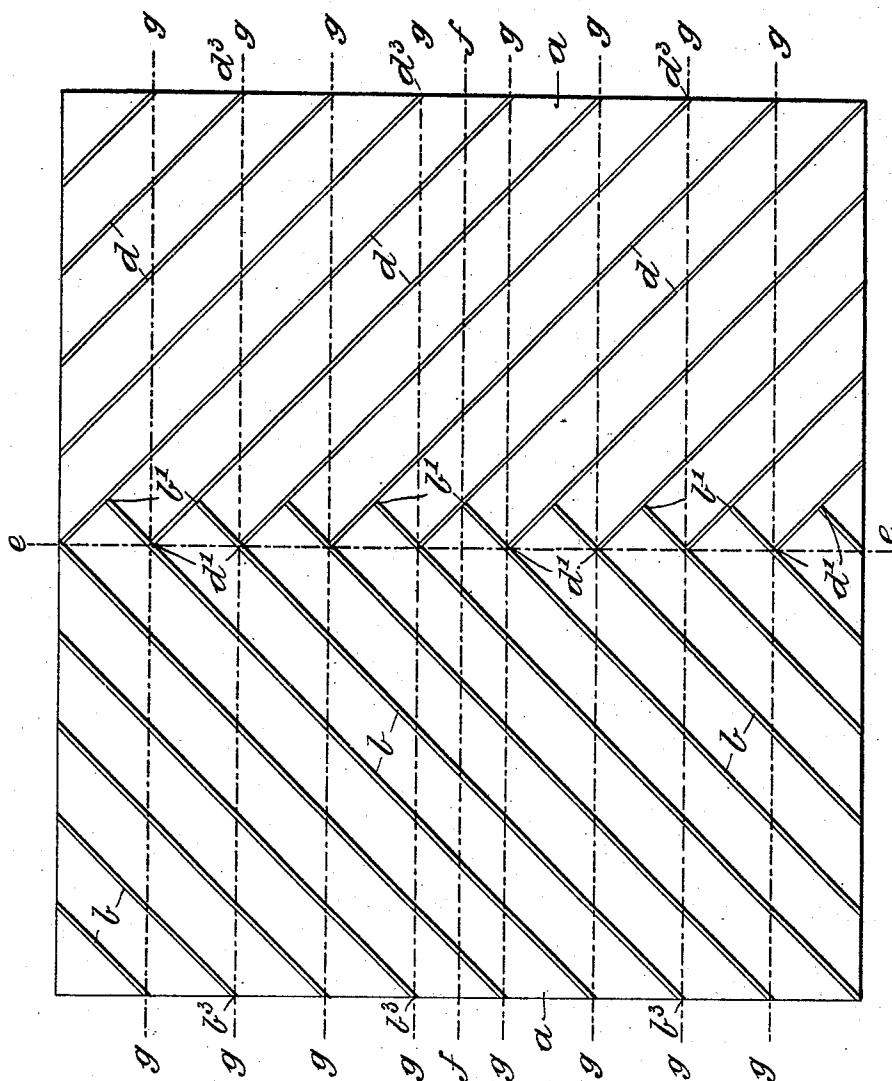
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Fig. 2.



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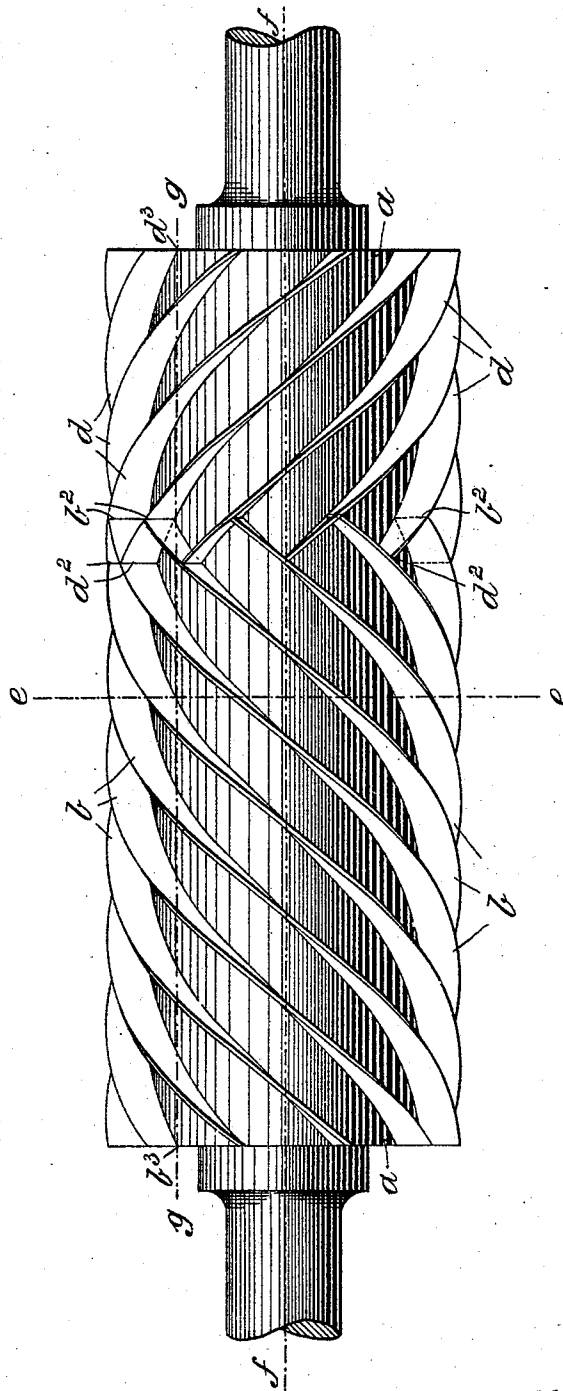
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Fig. 3.



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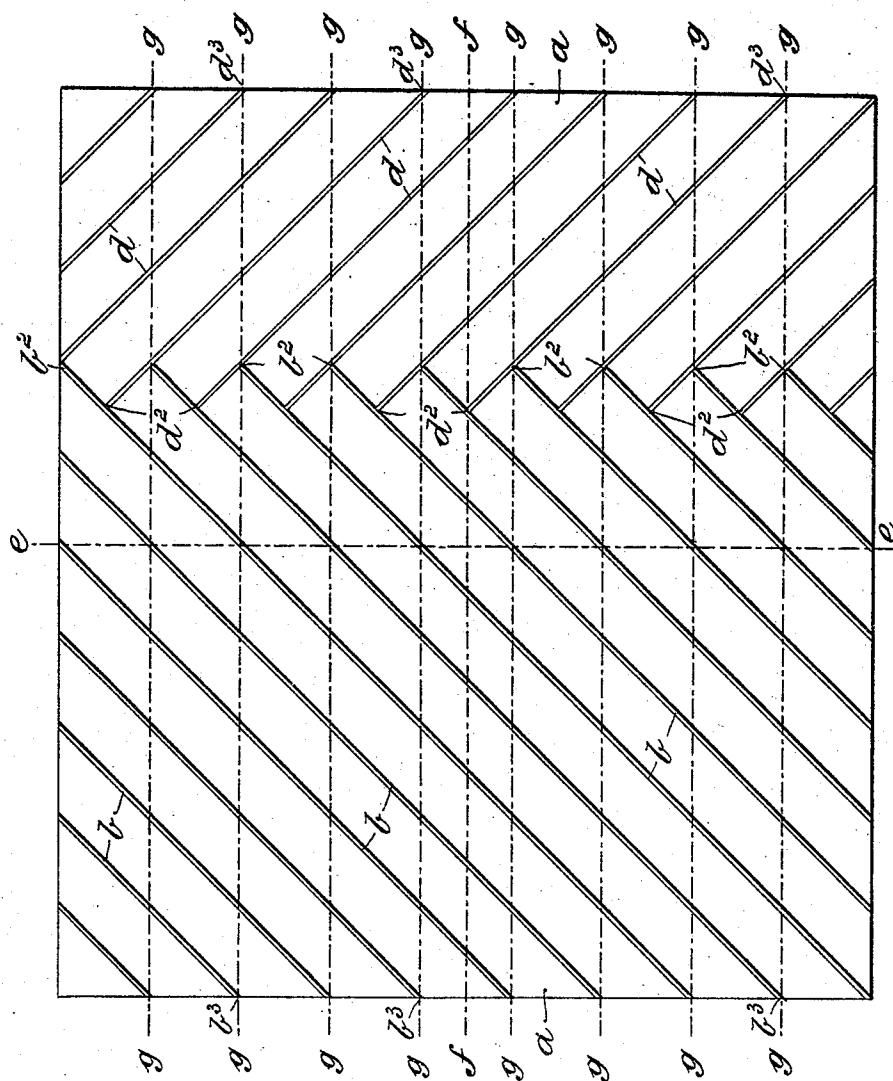
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Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM EVANS, OF PHILADELPHIA, PENNSYLVANIA.

FINISHING-ROLL.

SPECIFICATION forming part of Letters Patent No. 572,532, dated December 8, 1896.

Application filed October 15, 1895. Serial No. 565,752. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EVANS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Finishing Rolls or Cylinders for Hides, Skins, or Leather, of which the following is a specification.

My invention has relation to a finishing roll or cylinder adapted to shave green hides or tanned skins, to flesh green hides, to put out skins, and other analogous uses in the manufacture of leather, and it relates to the construction and arrangement of blades in such a finishing roll or cylinder.

The principal objects of my invention are, first, to provide a finishing roll or cylinder for putting out, shaving, fleshing, or analogous uses in the treatment of leather, which roll or cylinder is adapted to stretch the hide or skin lengthwise during the operation of cutting, shaving, or putting out, and is adapted also to cut, shave, or scrape the hide or skin in a straight line without riffling or wrinkling; second, to provide a roll or cylinder with two series of oppositely-arranged helical knives or blades abutting at points outside the longitudinal center of the roll or cylinder, one series being shorter than the other, both series being arranged at equal angles and the ends of the knives or blades on one side terminating in a horizontal line drawn from the terminal of an oppositely-arranged knife or blade through a point either where the long blade abuts against the short blade or where the short blade abuts against the long blade, and, third, to provide a roll or cylinder with two series of oppositely-arranged abutting helical knives or blades, one series being shorter than the other and abutting against the other series at the longitudinal center of the roll or cylinder, both series being arranged at equal angles and the ends of the knives or blades of one side terminating in a horizontal line drawn from the terminal of an opposite blade through the point of abuttal at the center of the roll or cylinder.

My invention, stated in general terms, consists of a finishing roll or cylinder provided

with blades or knives 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, and in which—

Figure 1 is a top or plan view of a finishing roll or cylinder embodying features of my invention, showing oppositely-arranged helical knives abutting at and to one side of the longitudinal center of the roll or cylinder. Fig. 2 is a plan view of the roll or cylinder of Fig. 1, illustrating the arrangement of the blades thereof when projected upon a flat surface. Fig. 3 is a top or plan view of a roll or cylinder in which the longer blades abut against the shorter blades and the shorter blades abut against the longer blades at points outside the longitudinal center of the roll or cylinder and the terminal of each of the short knives being in a horizontal line with a terminal of one of the long blades, and Fig. 4 represents in plan the arrangement of the blades of the roll or cylinder of Fig. 3 projected upon a flat surface.

Referring to the drawings, *a* represents the roll or cylinder suitably channeled or grooved to receive the helical or spiral blades *b* or *d*. The blades *b*, which, as shown in the drawings, are arranged at the left-hand end of the roll or cylinder *a*, are longer than the blades *d* at the right-hand end of the roll or cylinder, and the blades *b* and *d* are oppositely coiled.

As illustrated in Figs. 1 and 2, the blades *b* abut, as at *b'*, against the short blades *d* on one side of the line *e*, drawn through the longitudinal center of the roll or cylinder *a*, while the blades *d* abut against the long blades *b* at the points *d'* of the center line *e*.

In Figs. 3 and 4 the blades *b* abut, as at *b''*, against the blades *d* at one side of the central line *e*, and the blades *d* abut against the long blades *b* at the points *d''* on the same side of the center line *e* at the points *b''*.

In both forms or arrangement of the blades the angle which the blades *b* describe either with the vertical center line *e* or the horizon-

tal center line f is exactly the same as the angle which the blades d describe with either of said center lines e or f .

In both forms, as illustrated in the drawings, if a line g be drawn parallel with the center line f from one terminal b^3 of a blade b said line g will also pass through a terminal d^3 of a blade d .

In the form illustrated in Figs. 1 and 2 this line g also passes through the points d' of abuttal of a short with a long blade, that is to say, at the center line e , while in the form illustrated in Figs. 3 and 4 the line g passes through the points b^2 of abuttal of a long with a short blade. It is of course obvious that this arrangement may be changed, so that in the form illustrated in Figs. 1 and 2 the line g will pass through the points b' and in the form shown at Figs. 3 and 4 the line g will pass through the points d^2 .

The essential features of my present invention are, first, the helical blades b and d describe with the center line e and center line f equal angles, that is to say, if the angle described by a blade b with the line e or f is forty-five degrees the angle described by the blade d with the line e or f is also forty-five degrees; second, a blade b and a blade d terminate in points b^3 or d^3 , which lie in a line g , parallel with the horizontal line f of the cylinder, and, third, this line g will pass either through a point of abuttal of a long with a short blade or a short with a long blade. By such arrangement of the blades the hide or skin to be treated is spread evenly from end to end by the helical arrangement of the blades, and the cutting, shaving, abrading, or putting-out action of the blades on the skin is always in a straight line, (represented in the drawings by the lines g .) The former disadvantage, known as "riffing" or "wrin-

klung" of the hide, skin, or leather, which is always present when the blades have abutted on either side and not in the center or have been arranged at different angles to a vertical line of the roll, is entirely avoided by the present construction, and the tearing action of the blades at the center of the skin, hide, or leather when all the blades abutted at the center is likewise entirely obviated.

Having thus described the nature and objects 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 blades, one series being shorter than the other series, both describing equal angles to a line vertical of the roll, each series abutting against the other and terminating in a line parallel with the horizontal center line of the roll and passing through a point of abuttal of a blade of one series against one of the other series, substantially as described.

2. In a finishing roll or cylinder, two series of oppositely-arranged helical blades, one series terminating at one end in the longitudinal center of the roll and the other abutting against the other series at and beyond the longitudinal center of the roll, both series of blades being arranged at the same angle and the outer terminals of both series of blades and the points of abuttal at the longitudinal center of the roll, all being in a line parallel with the horizontal center line of the roll, substantially as described.

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

WILLIAM EVANS.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.