(No Model.)

A. E. WHITNEY.

CYLINDER FOR HIDE WORKING MACHINES.

No. 341,977. Patented May 18, 1886.

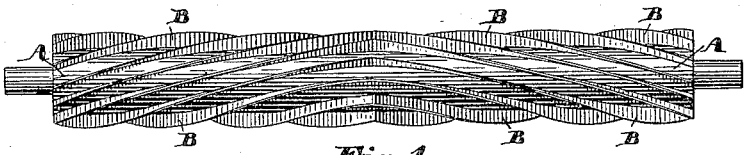

Fig. 1.

Fig. 2.

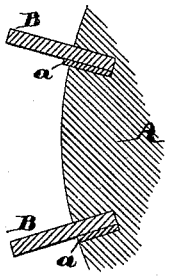

Fig. 3.

Witnesses:
Walter E. Lombard.
Frank D. Gray.

Inventor:
Arthur E. Whitney,
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UNITED STATES PATENT OFFICE.

ARTHUR E. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

CYLINDER FOR HIDE-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 341,977, dated May 18, 1886.

Original application filed July 29, 1885, Serial No. 172,938. Divided and this application filed September 5, 1885. Serial No. 176,243. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. WHITNEY, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Knife Rolls or Cylinders for Unhairing and Hide-Working Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to the construction of knife rolls or cylinders for machines for unhairing, working, and scouring hides; and it consists in certain novel features of construction, which will be readily understood by reference to the description of the drawings, and to the claims, to be hereinafter given.

Figure 1 of the drawings is an elevation of my improved knife-cylinder. Fig. 2 is a diagram illustrating the increasing pitch of the spiral blades projected upon a flat plane, and Fig. 3 is a partial transverse section of the knife-cylinder drawn to an enlarged scale.

In the drawings, A is the body of the roll or cylinder mounted upon the shaft and having formed in the periphery thereof a series of longitudinal grooves made spiral in opposite directions from the center of the length of said roll.

B B are a series of thin steel blades bent and twisted to conform to the spiral of said grooves, each of said blades extending from end to end of said roll in one piece, as shown.

The blades B B are rectangular in cross-section, and of a thickness somewhat less than the width of the spiral grooves in which they are to be set, and they are secured in position in said grooves, after being placed therein, by means of thin strips of metal, *a a*, driven into the spiral grooves by the sides of said blades, said strips being made of brass, copper, or other malleable metal, and of a width somewhat greater than the depth of said grooves, as shown at the upper part of Fig. 3, and are then calked by upsetting said strips and driving the projecting portion thereof into the groove, or flush with the periphery of the body A, as shown at the lower portion of Fig. 3.

Working or knife cylinders having blades arranged spirally in opposite directions from the middle of the length of the cylinder, either cast upon the cylinder or bolted thereto in two or more sections each, and with the spiral of uniform pitch throughout the length of said blades, have been used before; but I have found that in order to properly spread the hides or skins widthwise it is necessary that the spiral of the blades should have an increasing pitch from the middle of their lengths toward their two ends, as illustrated in the diagram, Fig. 2, in which the dotted lines *b b* indicate a uniform pitch and the full lines *c c* the increasing pitch of the blades of my improved knife-cylinder projected on a flat plane.

Another great advantage of my invention is due to the manner of securing the blades B B to the cylinder A, whereby much thinner blades can be used, and the cylinder can be made much smaller in diameter with the same number of blades than when cast upon or bolted to the cylinder, as heretofore practiced.

The thinner blades do better work than the thick ones, and are not so liable to become clogged by the hairs and scouring material adhering thereto, and the smaller cylinder can be operated with less power than the larger one, and then the blades set as herein described can be worn up much closer than the blades that are cast upon or bolted to the cylinder and at the same time do good work.

The double spiral groove is a very effective means of holding the blades, from the fact that said groove is radial to the axis of the cylinder in all its parts, and as the end of a blade may be ninety degrees around the circle of the cylinder from the point which the same blade occupies at the middle of its length, said blade cannot be easily withdrawn from said groove when once properly inserted therein, as one part braces and supports another, this being particularly the case at or near the point where the reverse spirals meet and where the greatest strength is required.

This invention was originally shown and described in another application of mine, filed July 29, 1885, and numbered 172,938, of which this application is a division.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

A knife-cylinder for unhairing, working out, or scouring hides or skins, having blades arranged spirally in opposite directions, and having a pitch which increases from the middle of the length of said cylinder toward each end thereof, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 3d day of September, A. D. 1885.

ARTHUR E. WHITNEY.

Witnesses:

WALTER E. LOMBARD,

FRANK E. BRAY.