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Patented Dec. 5, 1899.

F. WAYLAND.  
MACHINE FOR SPLITTING HIDES.

(Application filed Nov. 26, 1898.)

(No Model.)

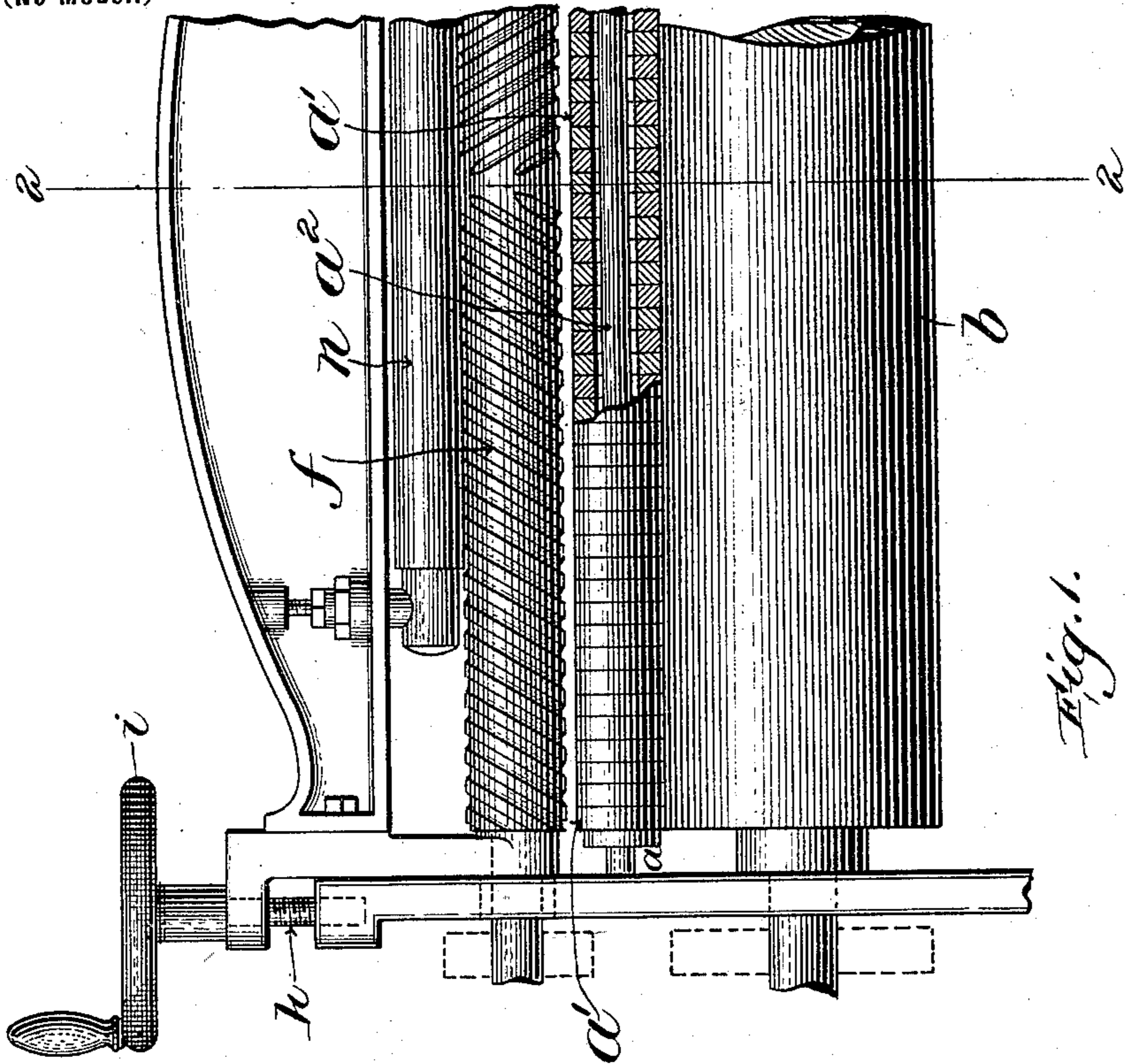


Fig. 1.

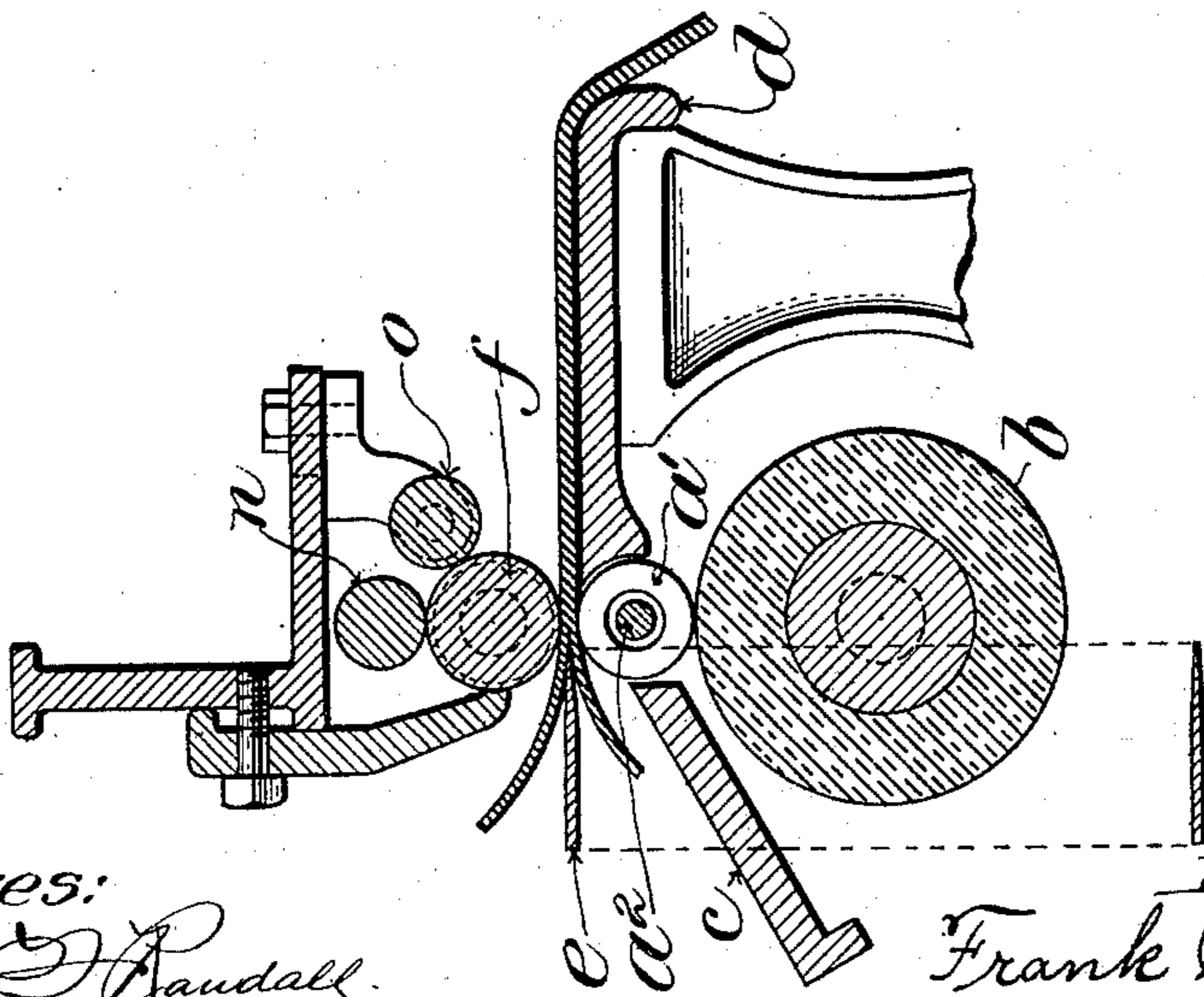


Fig. 2.

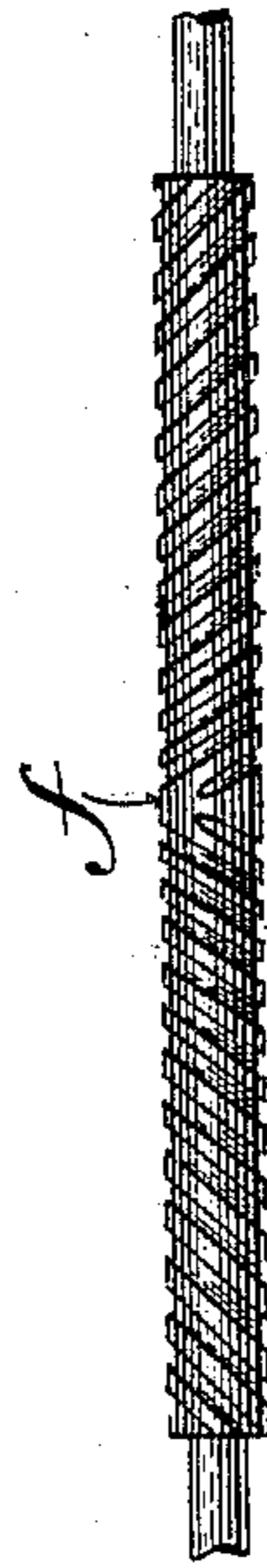


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR SPLITTING HIDES.

SPECIFICATION forming part of Letters Patent No. 638,368, dated December 5, 1899.

Application filed November 26, 1898. Serial No. 697,532. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK WAYLAND, of Kanona, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Machines for Splitting Hides, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

My invention relates to machines for splitting hides, and is especially adapted for use in splitting green hides while in a "wet" condition, a result which cannot be satisfactorily accomplished with machines now in use, since when the rolls become wet and slippery the feeding of the hide against the traveling knife cannot be properly controlled.

One of the leading characteristics of my invention resides in the use of a combined gage and stretching roll in combination with the splitting-knife and other cooperating elements, which enables me to secure a peculiarly-effective action in feeding the hide properly against the splitting-knife.

Another important characteristic consists in the employment of a corrugated feed-roll in such a way as to wholly prevent any trace or markings of the corrugations from appearing in the layers split off from the hide. This is of great importance, because it is necessary to commercial success that the layers should be free from such unevenness.

These and other features will be more fully explained in the detailed description hereinafter contained and will be particularly pointed out in the claims.

In the accompanying drawings I have illustrated a mode of practically embodying the principles of my invention.

Figure 1 is a front elevation, a portion of the machine being broken away, Fig. 2 being a sectional elevation in the plane indicated by broken line 2 2. Fig. 3 is a detail showing one of the ways in which I may modify the construction of my gage-roll.

It will be understood that minor mechanical details are omitted from the drawings in order to more clearly show the parts with which my invention is concerned.

Referring now to the details of the construction shown in the drawings, *a* designates the sectional or ring roll, which may be of the usual construction, comprising the narrow rings *a'*, loosely hung upon the shaft *a*<sup>2</sup>. This ring-roll rests upon a supporting-roll *b*, which is covered with rubber or suitable yielding and elastic material to permit the several rings to yield or be depressed independently to accommodate thick spots or portions of the hide.

As will be understood by those skilled in the art, the supporting-roll is positively driven by means of suitable gearing (indicated in dotted lines) and the sectional or ring roll is rotated by its frictional contact with the supporting-roll.

The ring-roll is kept in proper position on the supporting-roll by the ring-plates *c* and *d*, which, however, permit the rings to rise and fall, according to the thickness of the hide.

*e* designates the belt-knife, which travels across the machine parallel with the axis of the ring-roll and in a plane slightly above the level of the top of said roll.

Above and opposite to the ring-roll *a* is the gage-roll *f*, which is positively driven by means of suitable gearing, (indicated in dotted lines.) This gage-roll has bearings adjustable in a vertical plane toward and away from the level of the belt-knife by means of screw *h* and wheel *i*. As will be readily understood, the relative height of this roll above the level of the cutting edge of the knife determines the thickness of the layer split off, for when the roll is lowered it depresses the hide, owing to the yielding of the ring-roll, and leaves a lesser portion of the thickness above the level of the knife-edge, so that a thinner layer is cut off the top of the hide than is the case when the gage-roll is adjusted to a greater height above the plane of the knife-edge. This is the normal function of the gage-roll; but I make two distinctive changes or modifications which give to the gage-roll in my machine a peculiar action which it does not have in existing machines and which enables it to properly and satisfactorily feed the wet slippery hide against the knife without interfering with its old function as a gage-roll to regu-

late the thickness of the layer split off. These modifications consist in corrugating the roll and giving it a materially higher surface speed compared with the surface speed of the ring-roll, the effect of which will be described in detail.

Referring now to the drawings, it will be noticed that the surface of the roll is formed with series of corrugations. As shown, these corrugations extend spirally around the roll from its middle to the ends, the spirals on one side of the middle being left-hand spirals and those on the other side being right-hand spirals. These spirals should be cut sufficiently small and with blunt enough edges to avoid cutting the surface of the hide.

Instead of running the gage-roll at the same surface speed as the sectional roll (which takes its speed from its supporting-roll) the gage-roll is run considerably faster. This of course causes a slipping action of the gage-roll upon the top or grain surface of the hide. The corrugations, however, exert a sufficient drawing action in the hide to properly assist the ring-roll in advancing the hide against the knife.

The rapid movement of the gage-roll and its partial slipping prevents the hide from being puckered up into ridges as it is fed against the knife.

As will be readily understood, the spiral corrugations exert a lateral stretching or smoothing action upon the hide, so that the hide is spread out smoothly and evenly before it meets the knife, and since there is more fullness along the skirts than in the middle this result is a distinct advantage.

I have shown a reinforcing-roller *n* above the gage-roll and another such roller *o* along the side of the gage-roll, their function being to prevent the gage-roll from springing out of true alinement under the tension to which it is subjected.

The feeding and stretching or smoothing action of the gage-roll may be varied by varying the pitch and depth of the corrugations, as it is clear that a steeper pitch will result in an increased feeding action and a diminished lateral stretching.

It may be advantageous also in some cases to gradually increase the pitch of the spirals toward the end, as illustrated in Fig. 3, to secure a somewhat augmented action near the skirts, where the greatest fullness of the hide occurs.

By the construction above described I am able to secure the effect of a positive feed by the gage-roll upon the hide, and yet by the relatively higher speed of the gage-roll as compared with the actual movement or travel of the hide I avoid producing any creases or ridges in the hide as it is presented to the knife.

It is obvious that variations may be made in the embodiment of my principle; but I be-

lieve that I am the first to introduce into a splitting-machine a corrugated roll driven at a materially higher surface speed than that at which the ring-roll and the hide moves, whereby the corrugations are utilized for obtaining the proper feed and yet leave no unevenness or ridges in the layers split off.

I believe that I am also the first to introduce into a splitting-machine a gage-roll which acts also as a laterally-stretching and feed roll.

While I have mentioned the fact that this machine is peculiarly adapted to split green hides, it will be understood that the same principle may be applied to machines for splitting tanned or partly-tanned hides, though in such case it may be expedient to wet the top of the hide to secure the desired slipping action of the roll upon the hide.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. In a splitting-machine, the combination, with a traveling knife, of a pair of opposing coöperating feed-rolls arranged to feed the hide against the edge of the traveling knife, one of said rolls being formed with corrugations extending spirally around its periphery, whereby a lateral stretching of the hide is caused as the hide is fed by the said rolls against the knife, substantially as described.

2. In a machine for splitting hides the combination of a traveling knife, a yieldingly-supported ring-roll, a combined gage and laterally-stretching roll opposed to and coöperating with said ring-roll to properly feed the hide against the traveling knife-edge, substantially as described.

3. In a machine for splitting hides the combination of a traveling knife, a yieldingly-supported ring-roll, a coöperating roll mounted above the ring-roll and provided with corrugations on its surface, and means for driving said corrugated roll at a materially higher surface speed than the surface speed of the ring-roll, whereby the hide is properly fed to the splitting-knife by the said rolls, yet is kept free from any indentations, due to the corrugations of the corrugated roll, along the line of its contact with the knife-edge, thus avoiding unevenness in the layers split off, substantially as described.

4. In a splitting-machine, the combination of the splitting-knife, a ring-roll, a supporting-roll therefor provided with a yielding elastic surface, a vertically-adjustable roll opposed to and coöperating with said ring-roll to feed the hide against the knife, said adjustable roll being formed with a series of right and left spiral corrugations extending respectively from the middle portion to the ends of the roll, substantially as described.

5. A gage-roll for a hide-splitting machine formed with right and left hand spiral corrugations extending from the middle to the ends of the roll, each spiral gradually increasing in pitch as it approaches the ends of the roll, substantially as described.

In testimony whereof I have signed my

name to this specification, in the presence of two subscribing witnesses, this 18th day of November, A. D. 1898.

FRANK WAYLAND.

Witnesses:

GEO. N. GODDARD,

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