(No Model.)

4 Sheets—Sheet 1.

# J. W. VAUGHN.

## PUTTING OUT MACHINE.

No. 274,858. Patented Mar. 27, 1883.

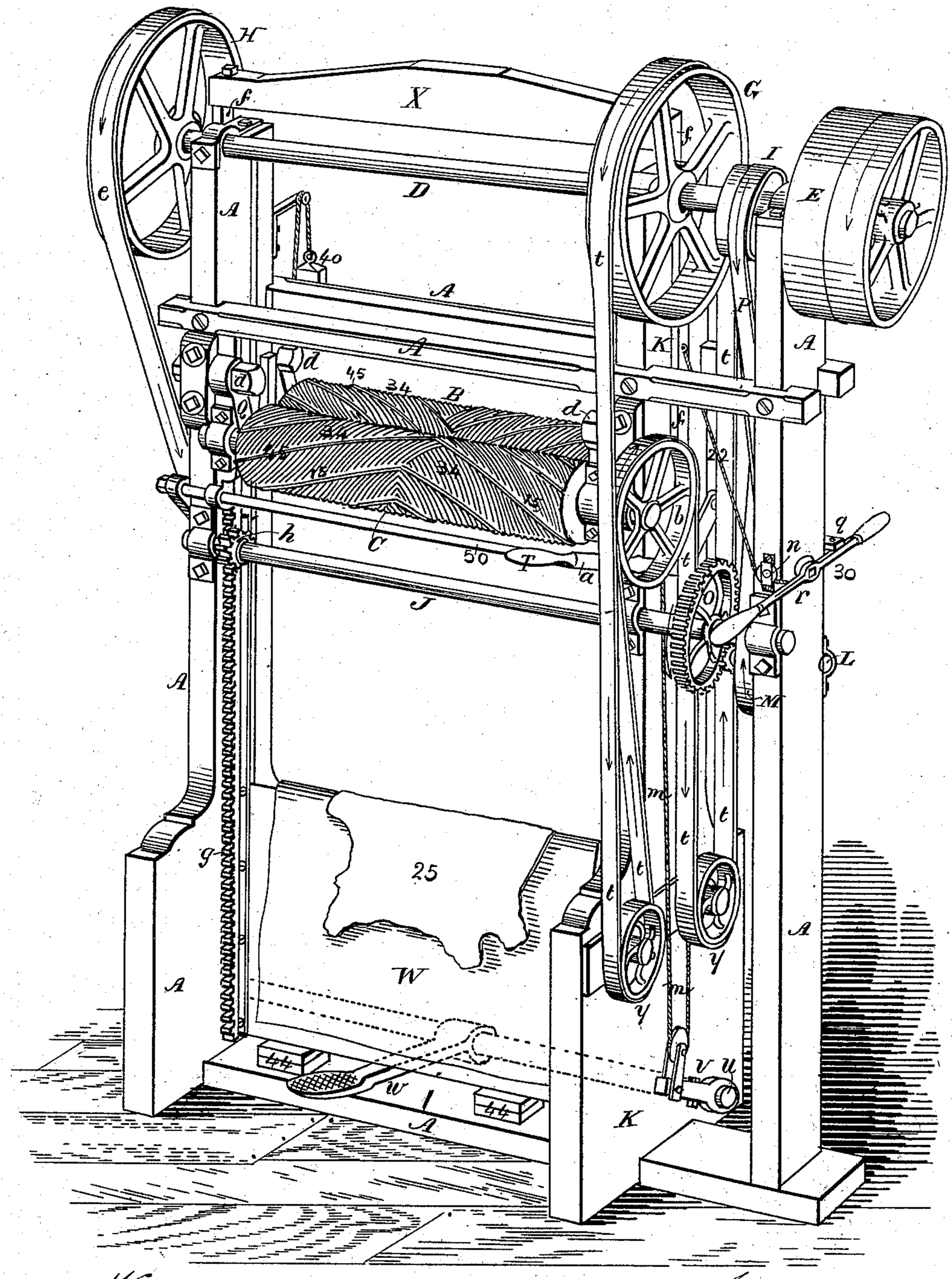


Fig. 1.

Witnesses:
H. E. Runick.
H. E. Metcalf.

Inventor:
Joseph W. Vaughn,
Per C. A. Shaw
Atty.

(No Model.)

4 Sheets—Sheet 2.

# J. W. VAUGHN.

## PUTTING OUT MACHINE.

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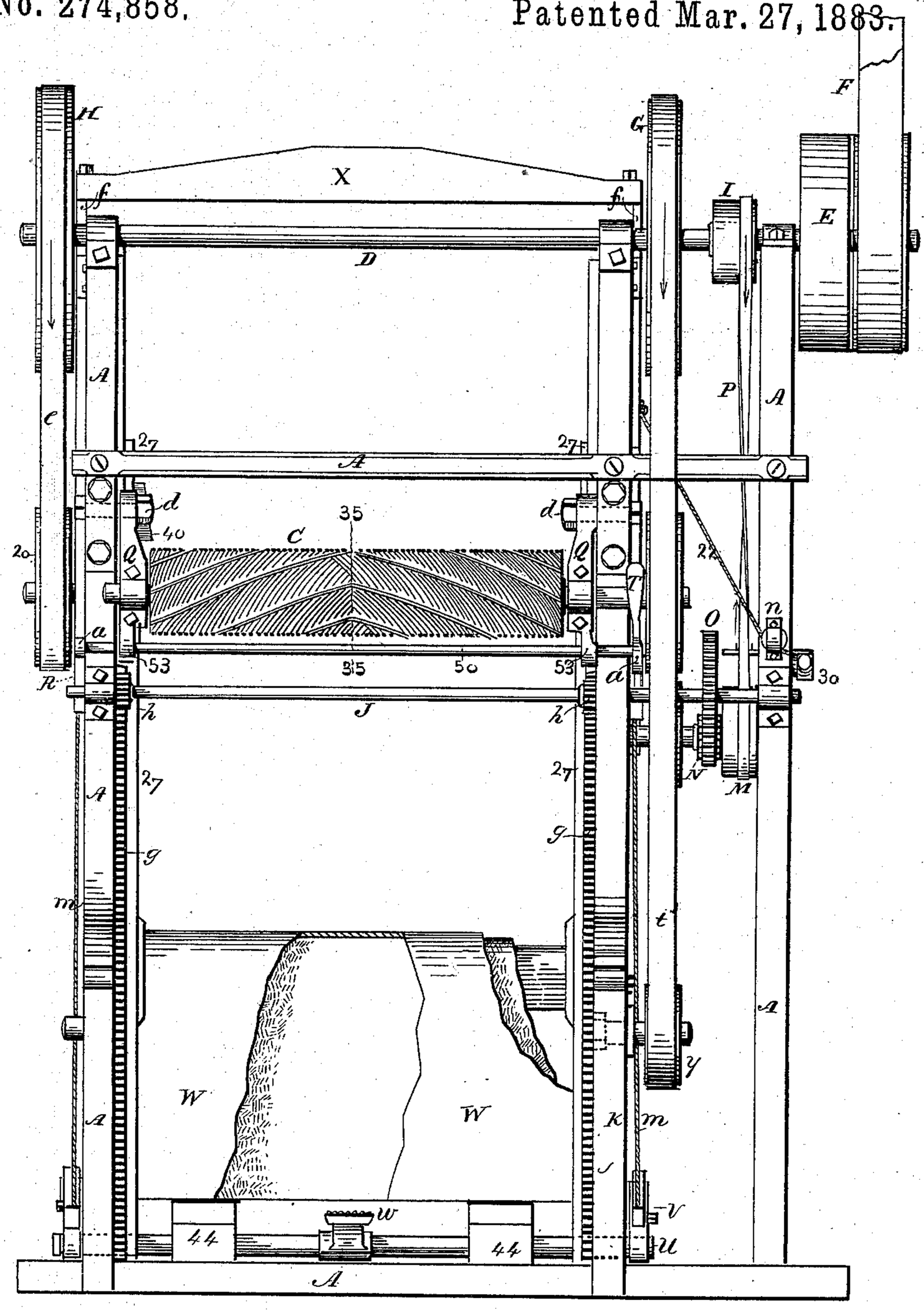


Fig. 2.

Witnesses.

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(No Model.)

4 Sheets—Sheet 3.

# J. W. VAUGHN.

## PUTTING OUT MACHINE.

No. 274,858. Patented Mar. 27, 1883.

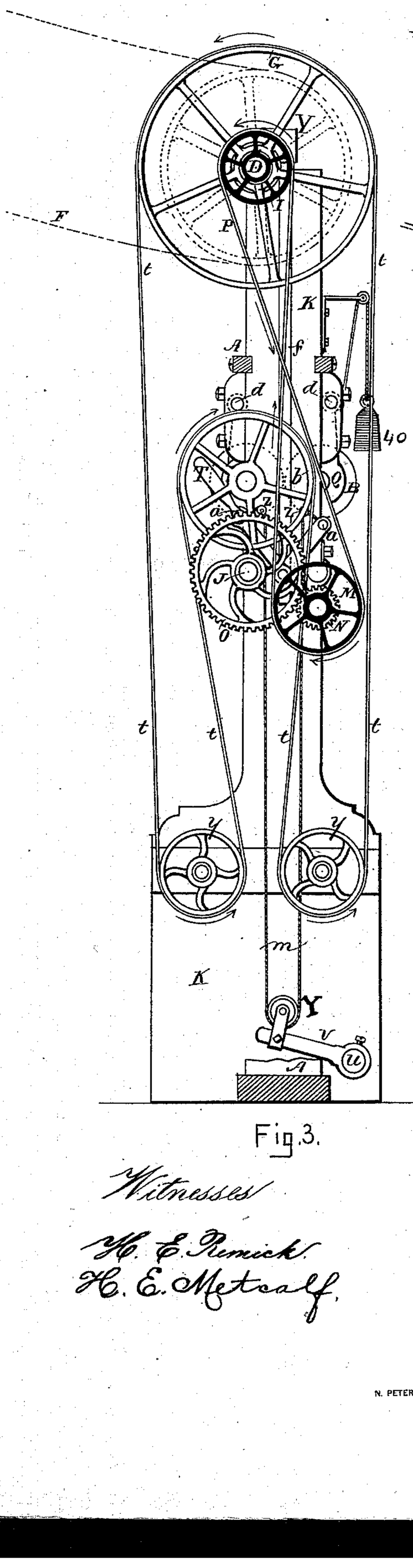


Fig. 3.

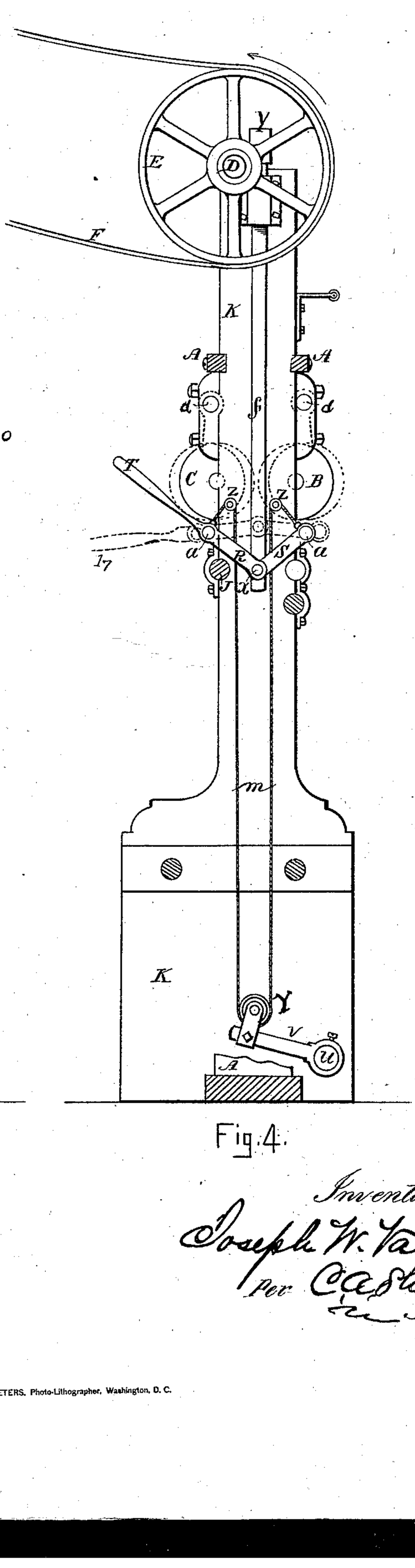


Fig. 4.

Witnesses
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(No Model.)

4 Sheets—Sheet 4.

# J. W. VAUGHN.

## PUTTING OUT MACHINE.

No. 274,858. Patented Mar. 27, 1883.

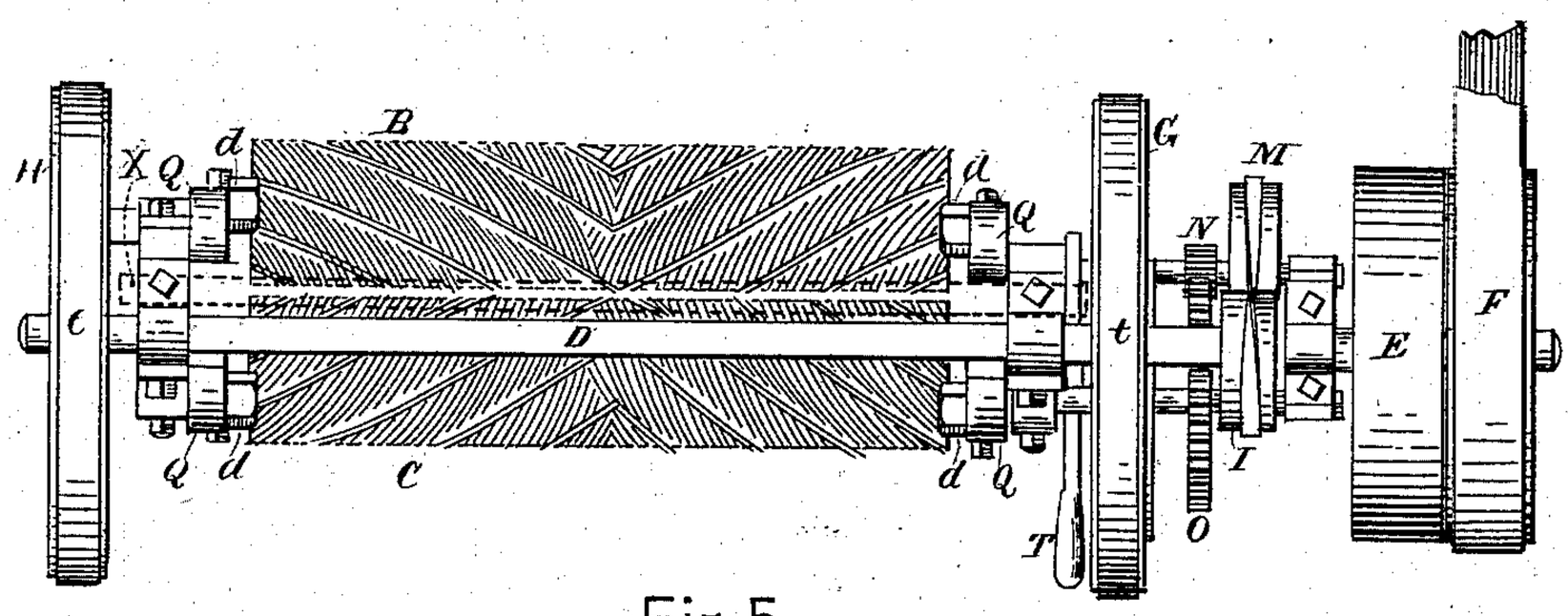


Fig. 5.

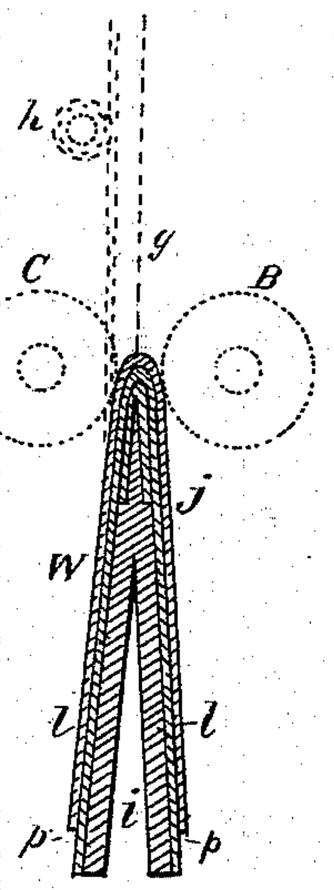


Fig. 6.

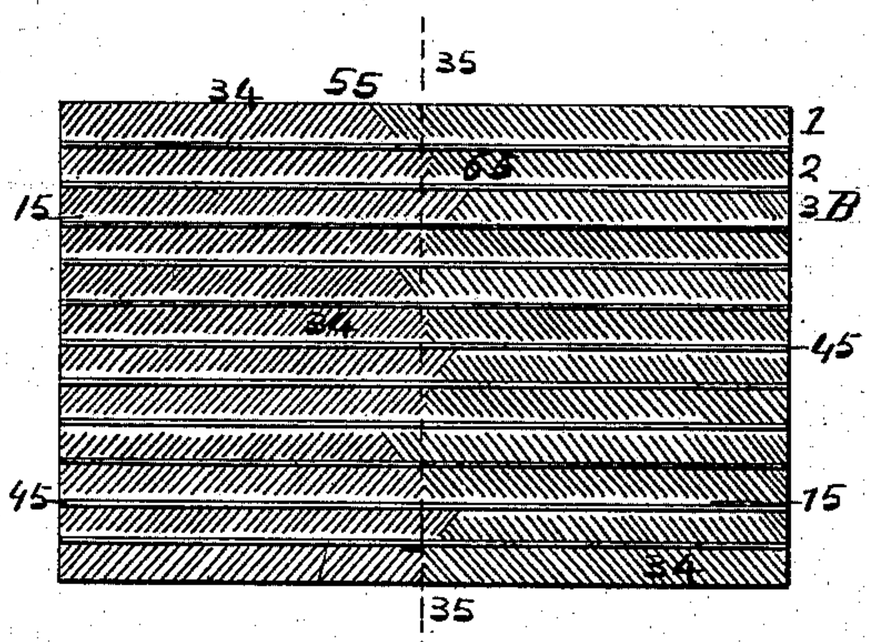


Fig. 7.

Witnesses:

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H. E. Metcalf.

Inventor.

Joseph W. Vaughn,

Per C. A. Shaw,

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# UNITED STATES PATENT OFFICE.

JOSEPH W. VAUGHN, OF PEABODY, ASSIGNOR TO HIMSELF, AND GEORGE L. NEWCOMB, OF SALEM, MASSACHUSETTS.

## PUTTING-OUT MACHINE.

SPECIFICATION forming part of Letters Patent No. 274,858, dated March 27, 1883.

Application filed December 1, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH W. VAUGHN, of Peabody, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Putting-Out Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an isometrical perspective view of my improved machine; Fig. 2, a front elevation of the same; Fig. 3, an end view showing the machine with its driving-pulleys and main gear-wheel in position; Fig. 4, an end view showing the machine with a part of its pulleys and gears removed; Fig. 5, a top plan view of the rollers; Fig. 6, a vertical transverse section of the holder, and Fig. 7 a view designed to show the arrangement of the short threads or flanges of the rollers.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to mechanism designed to be used in the manufacture of leather for performing the work usually done by hand in "putting out," "setting out," and "scouring" morocco and other skins and hides to increase their size, remove the "fleshings," tanning-liquors, and water, and render them smooth and even; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a new and more effective device of this character is produced than has heretofore been employed for that purpose.

The nature and operation of my improvement will be readily understood by all conversant with such matters from the following description.

In the drawings, A represents the frame of the machine; B C, the rollers; D, the main shaft; E, the main driving-pulley, and F the main belt.

The main shaft is journaled horizontally in the upper part of the frame-work, and carries the pulley G for driving the roller C, the pulley H for driving the roller B, and the pulley I for driving the shaft J.

The frame of the machine is provided with an auxiliary standard or upright, K, near one of its ends and journaled therein, and in the opposite end of the frame there is a countershaft, L, carrying the fast and loose pulleys M and pinion N, which intermeshes with the gear O on the shaft J, the pulleys M being connected with the driving-pulley I by the crossed belt P.

The rollers B C are arranged in parallelism and on the same plane, and are journaled horizontally in the swinging arms or lugs Q, the upper ends of which are jointed to the frame at *d*.

Secured at *a a* to the shafts 50, journaled in the lower ends of the arms Q, are two levers, R S, connected at their inner ends by the joint *x*, the lever R being extended to form the handle T at the front of the machine.

A treadle-shaft, U, provided at either end with the arms V and at its center with the treadle W, is disposed in the lower part of the frame-work, and at the outer end of each of the arms there is a pulley, Y.

Attached to the standard K are two loose pulleys, *y y*, and passing over these and under the pulley Y there is a vertically-arranged cord, *m*, having its ends respectively secured to the shafts 50 or levers R S at or near the points *a a*.

It will be understood that the rollers B C are provided at each of their ends with a pair of the jointed levers R S, pivoted to the lugs Q and secured on each side of the machine to shafts 50, and that the levers are connected by means of a cord and pulleys with the treadle-rod U, substantially as shown in Fig. 4.

Arranged to slide vertically in proper ways between the standard K and one end of the frame-work A there is a wedge-shaped holder or carrier, W, provided at either end with a rack, *g*, which intermeshes with a pinion, *h*, on the shaft J. This holder has a body, *i*, composed of wood and provided with a metallic cap, *j*, and is covered with a stout leather apron, *l*, having a rubber lining, *p*, to render it elastic, or enable the apron to yield slightly when in use.

A cross-bar, X, is arranged over the machine and provided with a vertically-disposed bar, *f*, at either end, which bars work in proper ways in the standards of the frame-work and have their lower ends respectively connected to the levers R S at the joints *x*. One of the bars *f*, nearest the pulley I, is provided with a cord, 22, which passes under the sheave *n* on the frame A, and is secured to the forward part of the shipping-lever 30. This lever is arranged horizontally, being centrally pivoted to the frame at *r*, and is provided with an ordinary shipping bar and clutch, *q*, for shipping the belt P, which drives the shaft J through the intermediate pulley, M, pinion N, and gear O.

The roller B is driven from the pulley H by the belt *e*, which passes over the pulley 20, and the roller C from the pulley G by the belt *t*, which passes around the loose guide-pulleys *y* *y* on the standard K to give the roller C a movement opposite to that of the roller B, as indicated by the arrows. The rollers are preferably composed of brass or composition, and are provided with a series of long spirally-arranged threads or flanges, 45, disposed at equal distances apart on their peripheries, as best seen in Fig. 5, which threads, and the shorter ones hereinafter described, are designed to take the place of the "slicker" used in putting out skins in the ordinary manner. These threads start from the center of the roller and pass spirally in opposite directions around it toward the ends. For instance, in Fig. 2 each of the threads 45 starts from the same point on the vertical line 35, drawn through the center of the roller, one passing spirally downward to the right-hand end of the roller and the other in like manner to the left-hand end of the same, the pitch of the threads being very slight, or preferably such in a full-size working machine that each of the threads will pass around or nearly around the roller between its center, where they start, and its end, where they terminate.

In the drawings the rollers are diametrically enlarged in order to show the principle of their construction more distinctly, and hence the threads 45 are necessarily represented as having less pitch than is desirable for most kinds of work.

Between each pair of the long threads or flanges 45 the surface of the rollers is grooved or fluted in such a manner as to form a series of short threads or flanges, 34, which stand nearer at a right angle to the axial line of the roller than the threads 45. These short threads are of the same height as the long threads and start or project from the rear edges of the same, but do not extend entirely across the spaces between the long threads, thus leaving a groove or channel, 15, immediately in front of each long thread, which serves as a drain to carry off the water and tanning-liquors pressed from the skins or hides during the process of treating them with the machine.

The object of the long spirally-arranged threads 45 is to remove the light fleshings and stretch the skin or hide downward and at the same time diagonally outward, while the object of the short threads 34 is to stretch the skin laterally or more nearly in a line with the rollers. When constructed with angular edges the threads remove the lighter fleshy parts of the hide or skin which are not removed by "green-shaving;" but they may be so formed or constructed as to render the machine adapted to green-shave the hide or skin, if desired, or to remove the heavy or thick fleshings.

In the use of my improvement the hide or skin 25, having first been green-shaved or properly prepared for the putting-out, setting-out, or scouring process, as the case may be, is placed upon the holder W, with the flesh side outward, and the machine started up by means of the main belt F. The shipping-lever 30 is then moved to ship the belt P onto the fast pulley M, thereby communicating motion to the shaft J through the intermediate pinion, N, and gear O, causing the holder W to move upward by means of the pinions *h* and racks *g*, passing between the rollers B C, and submitting the skin to their action in a manner which will be readily obvious without a more explicit description. The side pieces, 27, in which the holder is framed and to which the racks *g* are attached, are elongated or extend above the racks, and when the holder has passed upward a sufficient distance to bring all parts of the hide or skin into contact with the rollers these side pieces strike the under part of the cross-bar X and lift or raise the same, drawing up the vertical bars *f f* and bringing the levers R S, to which the lower ends of said bars are attached, into the position indicated by the dotted lines 17 in Fig. 4, thereby throwing the rollers out of contact with the skin or hide on the holder. The cord 22, connecting the shipping-lever 30 with one of the bars *f*, being drawn upward as said bar rises, operates the lever 30 to ship the belt P from the fast to the loose pulley M, thus freeing the pinion N, gear O, shaft J, and pinions *h*, and permitting the holder to descend by the force of gravity to its normal position on the rubber cushions 44, as shown in Figs. 1 and 2, preparatory to receiving another hide or skin 25. The rollers B C are prevented from coming into actual contact with each other by stops (not shown) attached to the inside of the frame-work, against which the lugs Q strike when in a vertical or nearly vertical position, and by the shafts 50 coming into contact with the frame-work. When the levers R S are elevated, as shown by the dotted lines 17, and the joint *x* passes above a horizontal line drawn through the points *a a*, the levers become locked or remain extended, and thus hold the rollers apart while the holder W descends from between them to its normal position, as described.

It will be understood that all of the parts essential to the proper operation of the machine are so "timed" that the raising of the levers

R S to the position shown by the dotted lines 17 in Fig. 4 will be coincident with the shipping of the belt P to cause the descent of the holder.

As the holder carrying the hide or skin 25 passes upward between the rollers the handle T is elevated, as seen in Fig. 4, permitting the rollers to come into contact with the skin, and at the same time the foot is placed upon the treadle *w*, and through the cords *m* and pulleys Y *z* the rollers are forced inwardly against the skin until the desired amount of pressure is obtained thereon to properly accomplish the work, the treadle being released as the holder falls. The edges of the threads 45 and 34 may be angular or rounded in any degree, or according to the work they are required to do, and when rounded may be applied to the grain side of the skin, if desired. As the threads 45 all start from the same line, 35, or from the center of the rollers, the hide or skin at the part corresponding therewith would not be properly and sufficiently "put out" or stretched laterally if the threads 45 only were used, or if the short threads 34 were regularly arranged. To obviate this difficulty the short threads 34, between every alternate pair of the long threads, are carried past or across the line 35, as seen in Fig. 7. For instance, in section 1 of said figure the short threads 34 cross the line 35 and meet at 55 on the left side of said line; in section 2 they meet directly on said line; in section 3, at 65, on the right of said line, and so on entirely around the roller, this arrangement of the short threads at the center of the roller having been found to effectually overcome all defects in the work caused by a regular arrangement of the same at this point or at the center of the roller.

It will be understood that the speed of the rollers and the pressure placed upon the same by the treadle, and also the speed at which the holder travels, should be varied in accordance with the work being done.

In Fig. 1 a whole skin or hide is represented on the holder, the neck and butt being arranged on the top of the same; but when a side, or one-half of a skin or hide, is treated the neck and butt come on opposite sides of the holder, near the bottom, and for treating or putting out sides, or one-half of a hide or skin, the rollers should be constructed with the line 35 or meeting-point of the threads 45 nearer one end than the other, in order that this portion of the rollers may act upon the neck and thicker portions of the skin.

It will be obvious that the two sides of the holder constitute two inclined tables, on which the hide or skin rests, and that a holder of this shape will present the hide or skin to the rollers to better advantage, and enable the same to act more effectively on the skin, especially at the center, than would be possible were the holder of the same thickness throughout, or as thick at the top as it is at the bottom. The swinging lugs Q enable the rollers to yield or separate as the holder passes between them, and the counter-balance 40 prevents the holder from descending too rapidly when its upward movements are reversed. The rollers may also be separated or brought together by means of the handle T, as required.

It will be obvious that as the holder carrying the hide or skin passes upward between the rollers the inner surfaces of the rollers, or those portions of the same which are in contact with the hide or skin, move downward, or in a direction opposite to that of the holder, thereby opposing the passage of the holder and skin between the same, these movements of the holder or carrier and the rollers, as described, being essential to the proper performance of the work.

It will also be apparent that in a machine of this character the movements of the holder and rollers may be reversed, or that the holder may remain stationary and the rollers be so arranged as to advance and recede in performing their work, and that instead of the swinging lugs Q the rollers may be arranged to yield to the passage of the holder by means of properly-disposed springs, without departing from the spirit of my improvement.

As I propose to make the rollers B C the subject-matter of other Letters Patent, I do not herein claim the same, broadly, or when in and of themselves considered; but,

Having thus explained my invention, what I claim is—

1. In a putting-out machine, a pair of yielding rollers provided with flanges or threads for scraping or stretching the hide or skin, and adapted to revolve in opposite directions in such a manner as to oppose the passage of the skin between the same when in contact therewith, and a holder or carrier for the hide or skin, which holder passes between said rollers in presenting the hide or skin to the action of the same, in combination with mechanism for operating said rollers and holder, substantially as specified.

2. In a putting-out machine, the combination of the following instrumentalities, to wit: a pair of yielding rollers provided with flanges or threads for scraping or stretching the hide or skin, a movable holder or carrier for holding and presenting the hide or skin to the action of the rollers, a shipping device for reversing the movement of the holder or carrier after it has presented the hide or skin to the action of the rollers, and a treadle or device for increasing the pressure of the rollers on the hide or skin at the will of the operator of the machine, substantially as set forth.

3. In a putting-out machine, the rollers B C, suspended in the swinging lugs Q, in combination with the levers R S, substantially as described.

4. In a putting-out machine, the bars X *f f*, in combination with the levers R S and rollers B C, substantially as and for the purpose set forth.

5. In a putting-out machine, the combination of the bars X *f f*, cord 22, and shipping-lever 30 for automatically shipping the belt P and reversing the movement of the holder or carrier W, substantially as specified.

6. In a putting-out machine, the holder or carrier W, provided with an elastic covering which yields slightly when the rollers act upon the hide or skin, and thereby assists in preventing injury to the stock, substantially as specified.

7. In a putting-out machine, the holder W, provided with the racks *g*, in combination with the pinions *h*, shaft J, and operative mechanism, substantially as set forth.

8. In a putting-out machine, the projections or bars 27, in combination with the bars X *f f*, cord 22, shipping-lever 30, and operative mechanism, substantially as described.

9. In a putting-out machine, the projections or bars 27, in combination with the bars X *f f*, levers R S, rollers B C, and operative mechanism, substantially as specified.

10. In a putting-out machine, the treadle-shaft U, provided with the lever or arm *v* and cord *m*, in combination with the swinging lugs Q and rollers B C, substantially as and for the purpose set forth and described.

11. In a putting-out machine, the shaft D, bars X *f f*, rollers B C, shaft J, holder or carrier W, and their operative mechanism, arranged in the frame-work A in the relative positions described, and as shown, whereby the machine is rendered more compact and the various parts are enabled to perform their functions to the best advantage, substantially as described.

12. In a putting-out machine, the rod 50 for connecting the levers R S at one end of the machine with those at the other, thereby enabling the levers to be operated in unison by the handle T, substantially as set forth.

13. In a putting-out machine, a vertically-arranged carrier or holder for the hide or skin, having two tables arranged opposite each other, or back to back, in such manner that a part of the hide or skin will rest on one of the tables and a part on the other, and be simultaneously operated on by the mechanism for scraping, stretching, or putting out the same as said carrier advances to be acted upon by said mechanism, substantially as specified.

14. In a putting-out machine, the bars X *f f*, levers R S, and cross-connecting shafts 50, combined and arranged to operate with the rollers B C, substantially as set forth.

15. In a putting-out machine, the combination of the rollers B C, provided with the flanges 45, and arranged substantially as shown, whereby the action of the rollers upon the hide or skin will be the same on either side, substantially as shown and described.

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H. E. METCALF.