

J. W. VAUGHN.
PUTTING OUT MACHINE.

No. 344,068.

Patented June 22, 1886.

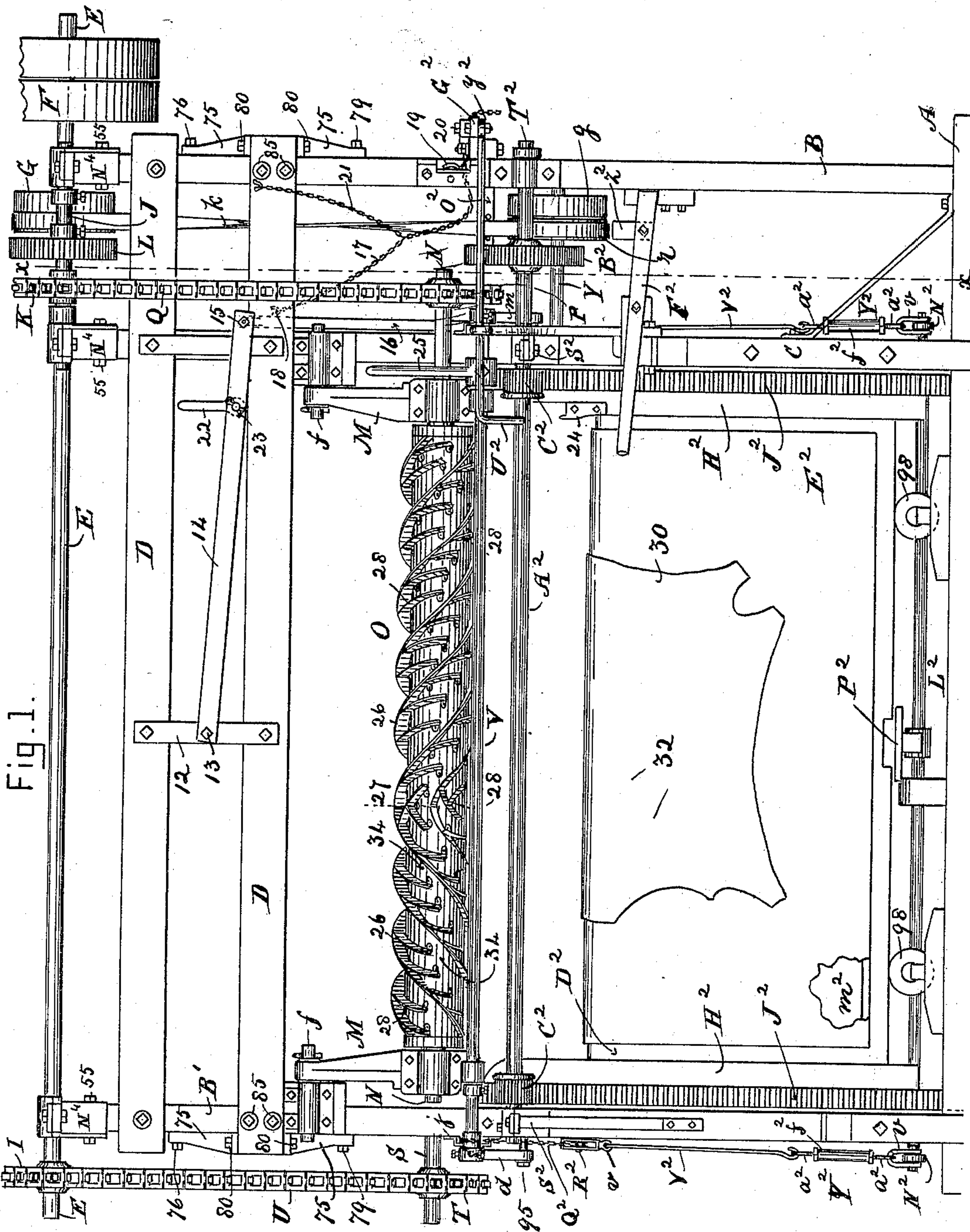


Fig. 1.

Witnesses.

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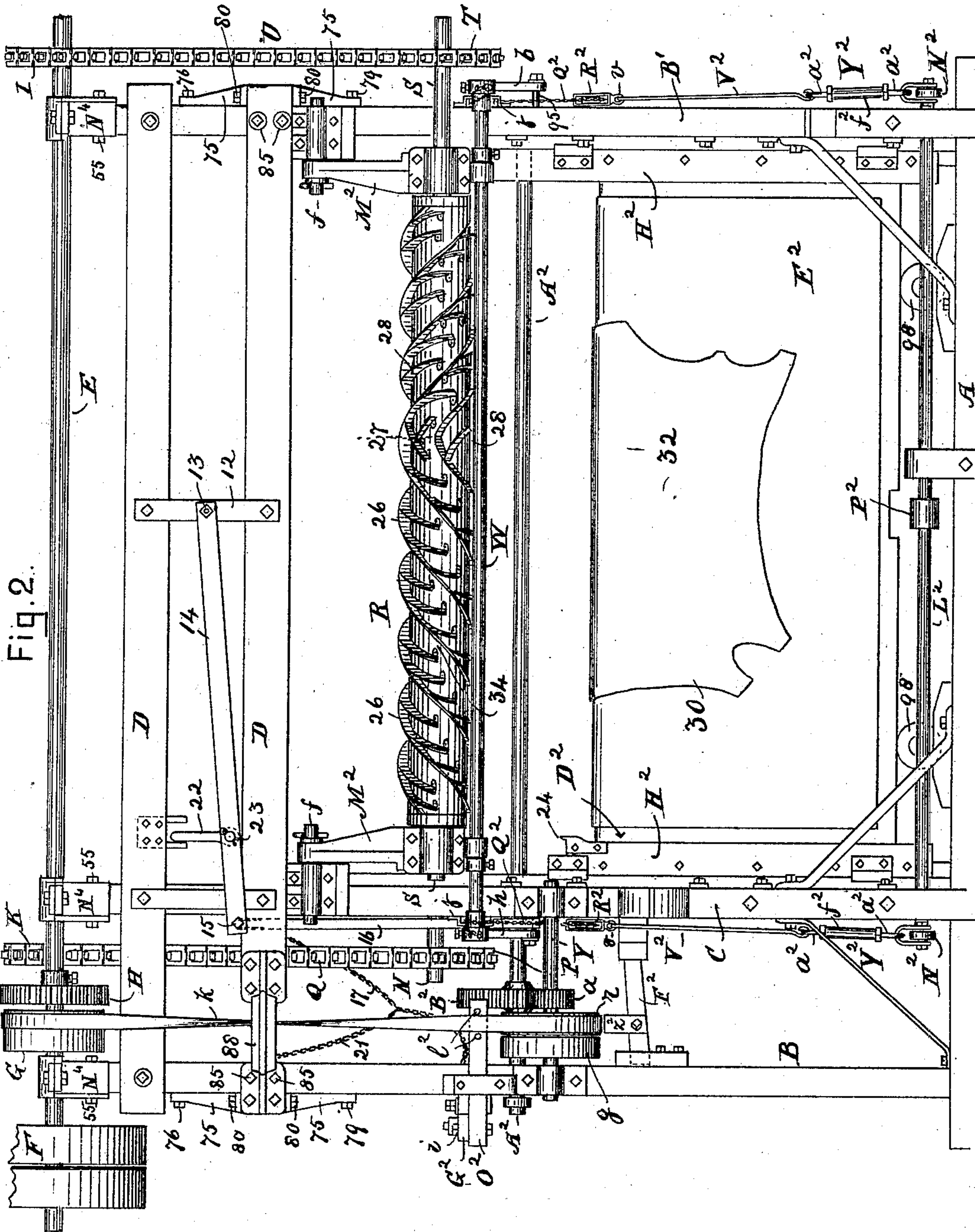


Fig. 2.

Witnesses.

E. Blanta.
E. L. Chayer.

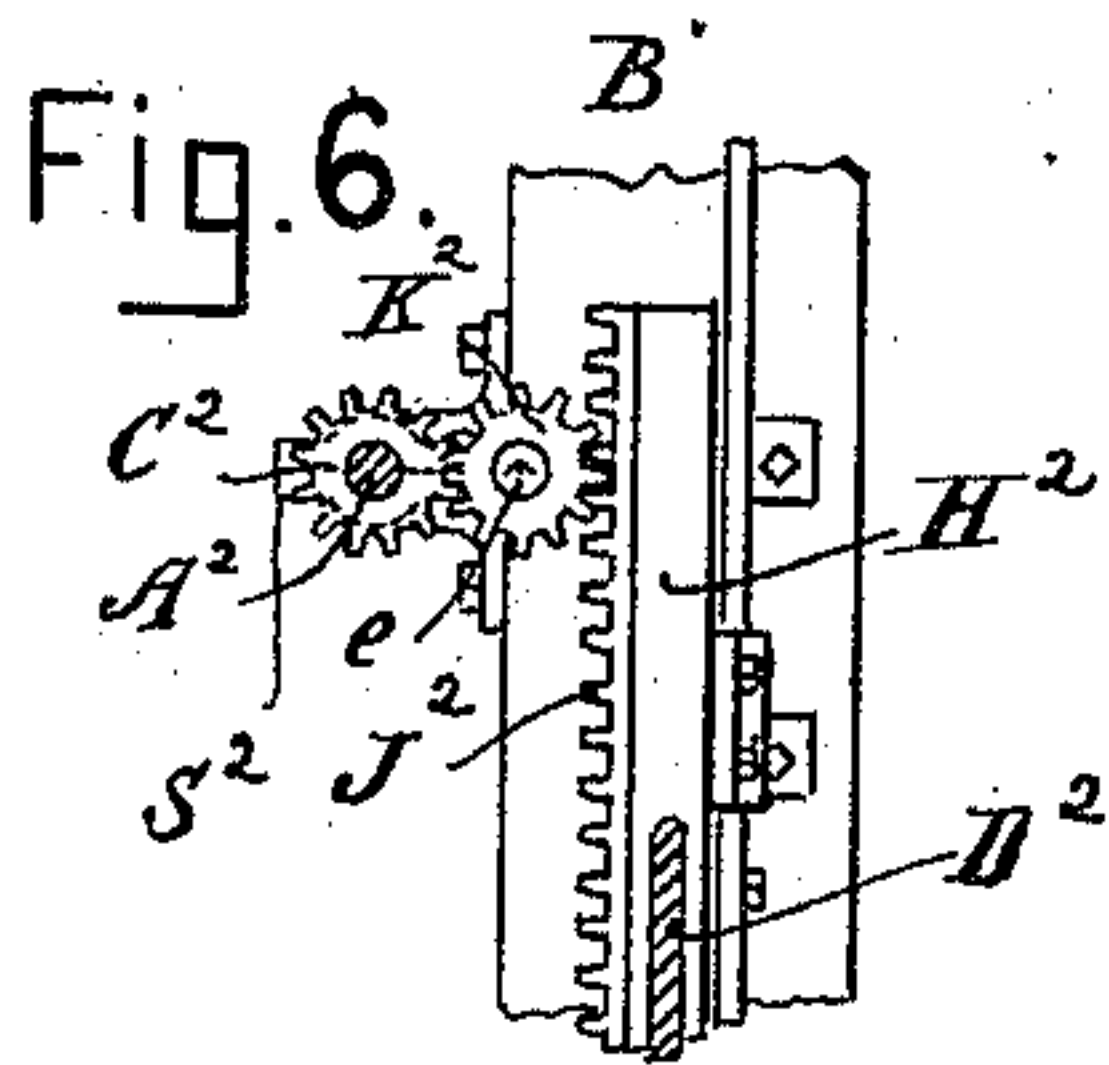
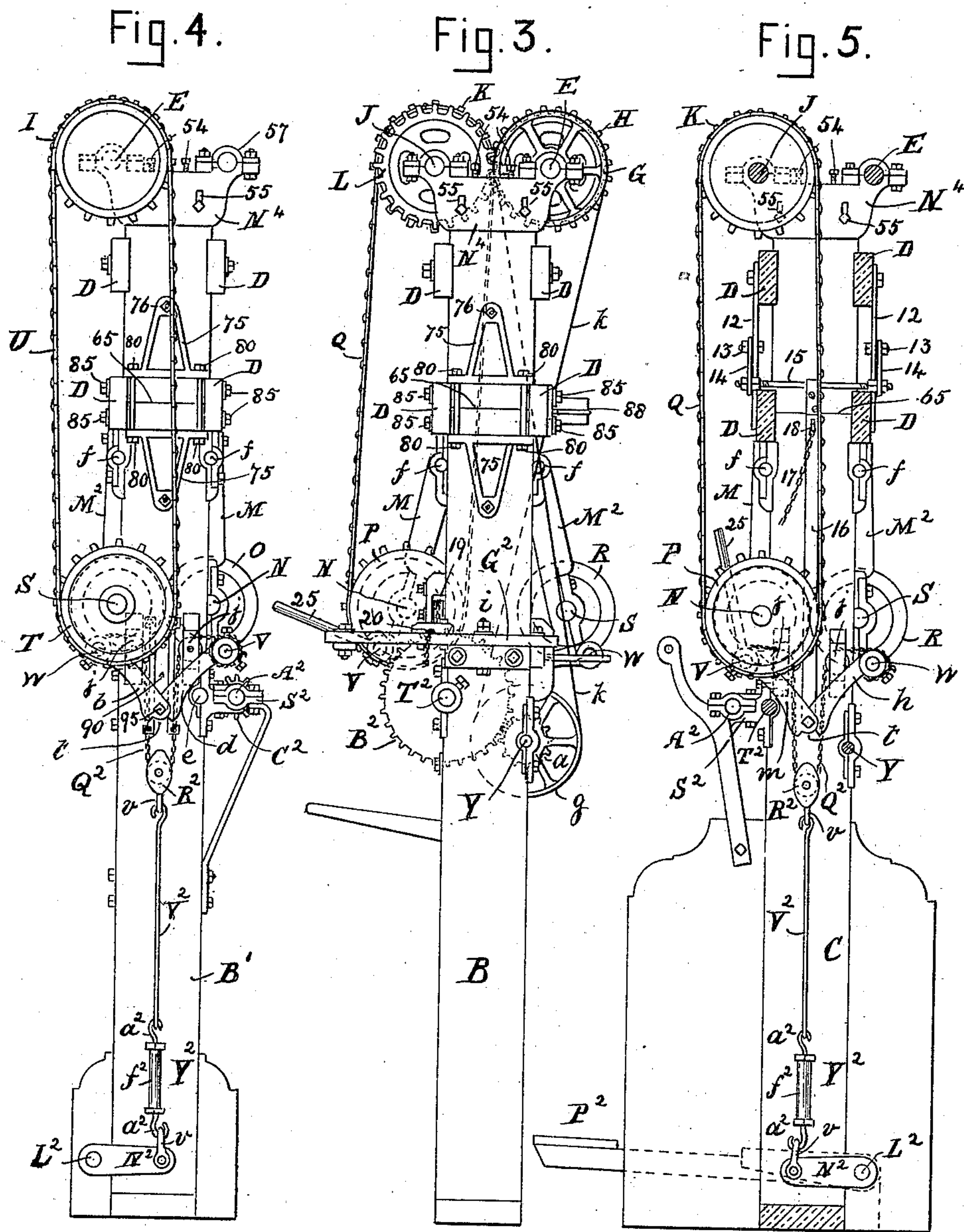
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Fig. 7.

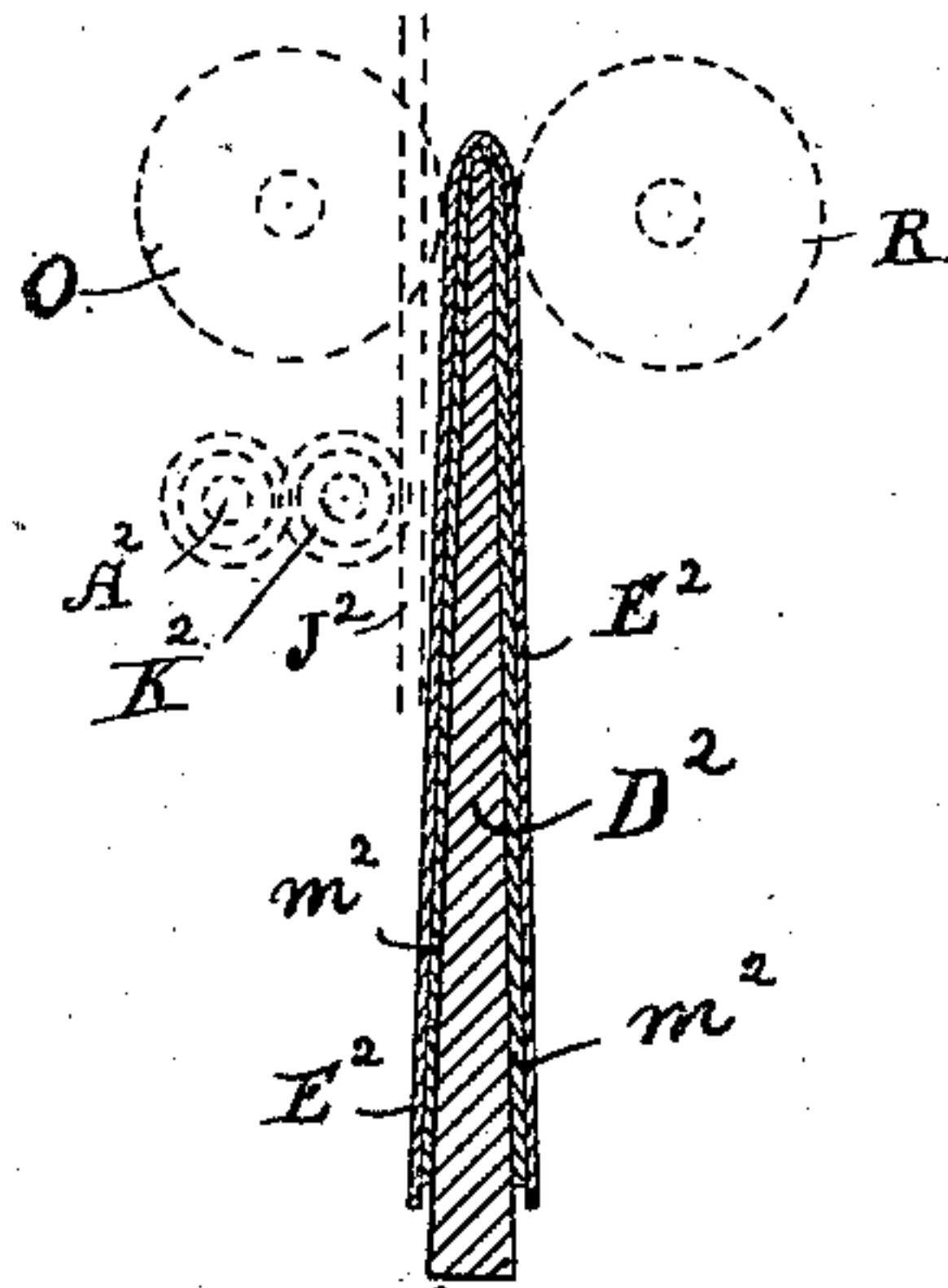


Fig. 8.

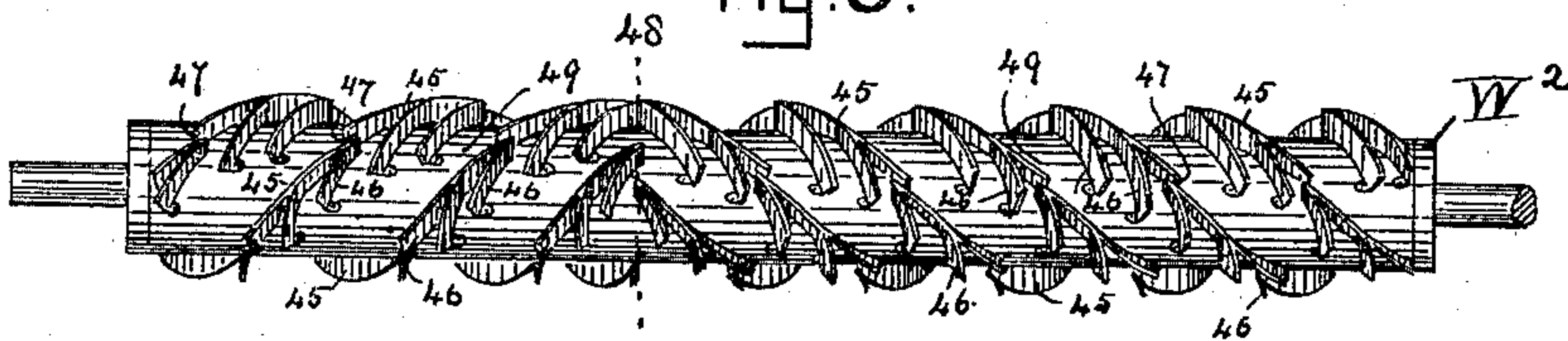


Fig. 9.

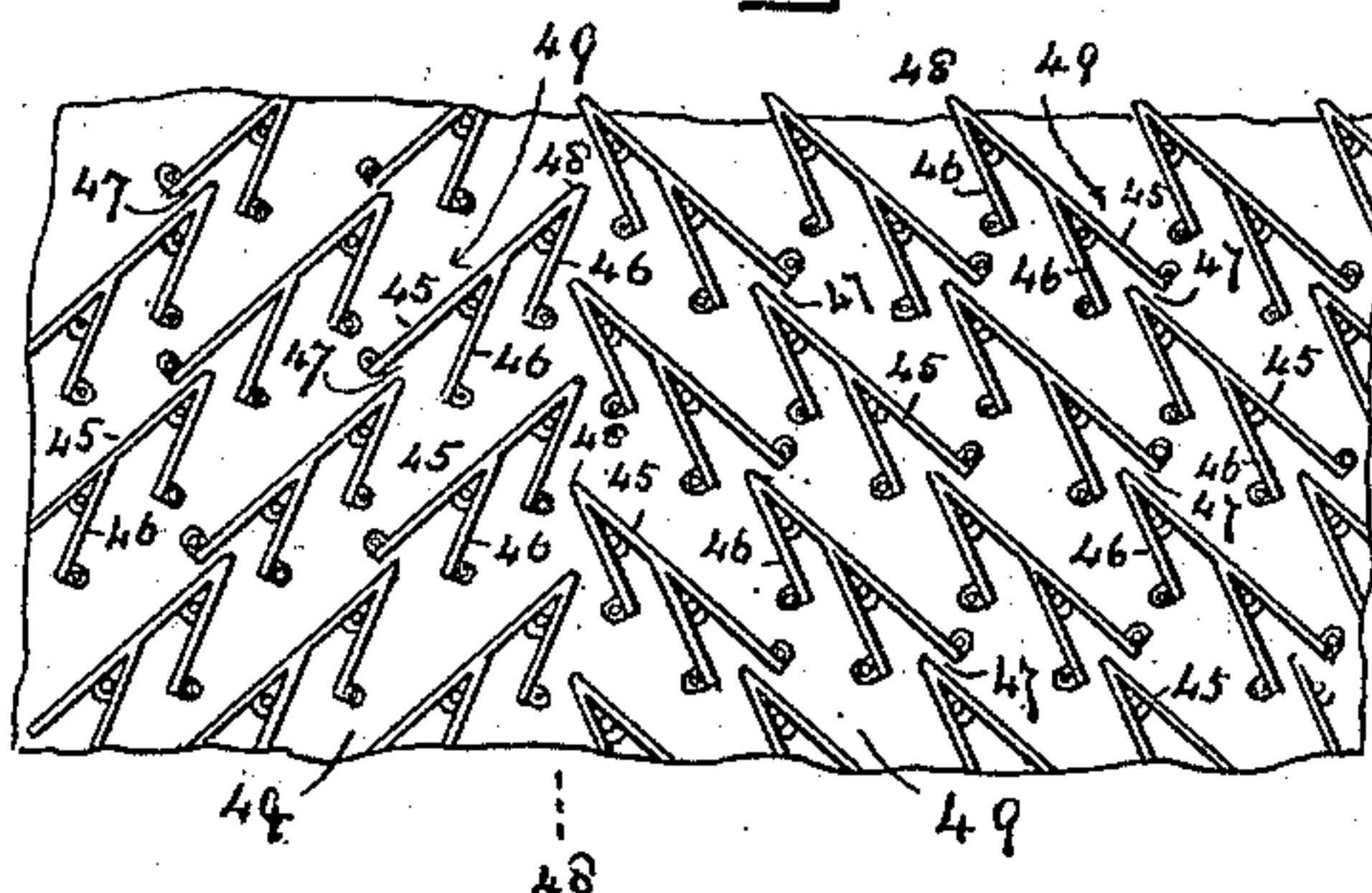


Fig. 10.

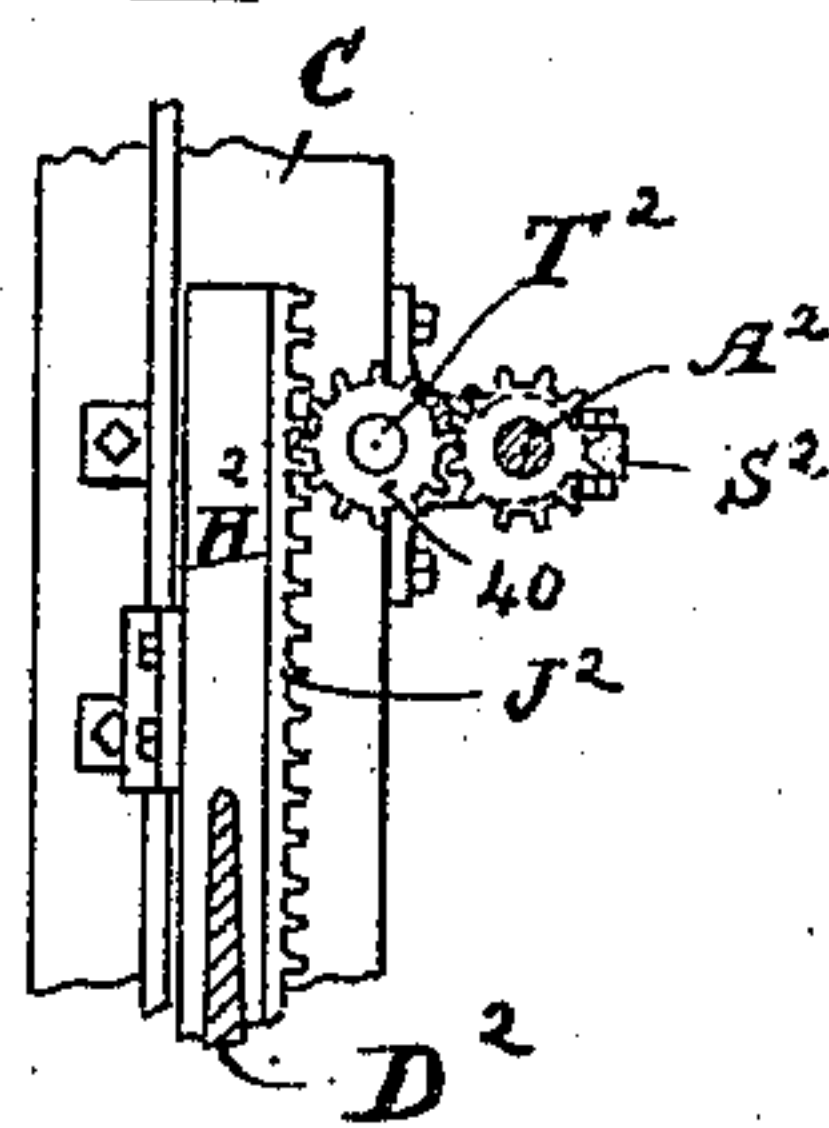
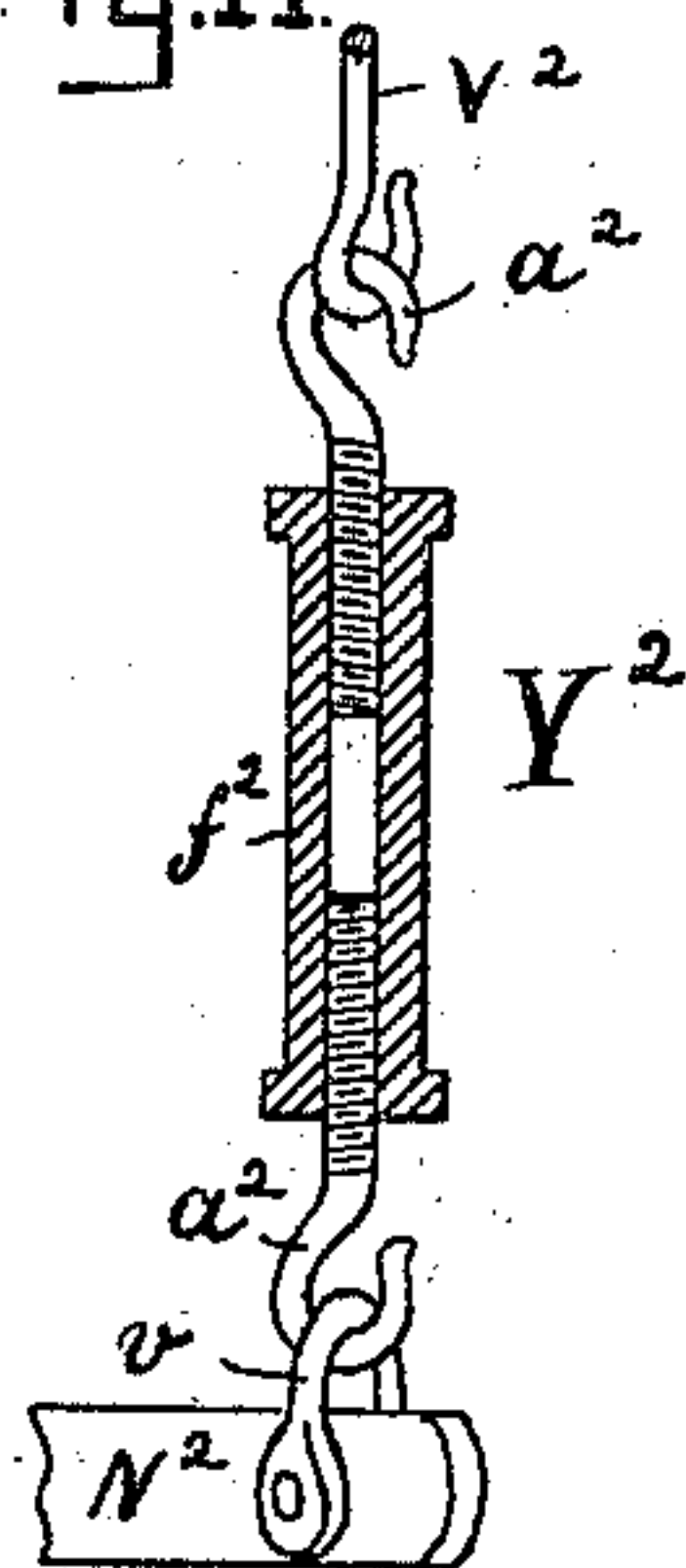


Fig. 11.



Witnesses.

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UNITED STATES PATENT OFFICE.

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PUTTING-OUT MACHINE.

SPECIFICATION forming part of Letters Patent No. 344,068, dated June 22, 1886.

Application filed April 5, 1886. Serial No. 197,888. (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 part of this specification, in which—

Figure 1 is a front elevation of my improved putting-out machine; Fig. 2, a rear elevation of the same; Fig. 3, an elevation showing the right-hand end of the machine; Fig. 4, an elevation showing the left-hand end of the same; Fig. 5, a vertical transverse section taken near the right-hand end of the machine on the dotted line *x x*, the auxiliary standard and a part of the mechanism supported thereby being shown in elevation; Fig. 6, a diagram showing a portion of the rack at the left-hand end of the holder and the pinions connected therewith; Fig. 7, a vertical transverse section of the holder; Fig. 8, a side elevation showing a modification of the roll; Fig. 9, a view designed to show the arrangement of the flanges of the roll represented in Fig. 8; Fig. 10, a diagram showing a portion of the rack at the right-hand end of the holder and the pinions connected therewith, and Fig. 11 a view of the adjusting device.

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

The invention relates to that class of machinery which is employed in the manufacture of leather for performing the work formerly done by hand in "striking-out," "putting-out," "setting-out," and "scouring" morocco, calf, and other skins and hides to increase their size, remove the fleshings, tanning-liquors, water, &c., and render them smooth and even; also, to machinery for unhairing hides and skins; and it consists in the novel construction and combination of parts hereinafter described and claimed, the object being to produce a simpler and more effective device of this character than is now in ordinary use.

My present invention is designed as an improvement on the putting-out machine shown in Letters Patent of the United States No. 274,858, dated March 27, 1883, and I do not therefore herein claim, broadly, anything shown or described in said Letters Patent, or when in and of itself considered.

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

In the drawings, A represents the bed or base of the machine; B B', the main standards or ends; C, the auxiliary standard, and D D the girders by which the standards are connected near their upper ends. Disposed horizontally in the upper portion of the standards there is a main shaft, E, carrying the main driving-pulley F, fast pulley G, gear H, and sprocket-wheel I. A counter-shaft, J, is mounted in the standards B C, at the right-hand end of the machine, said shaft being arranged in parallelism with the shaft E, and carrying a sprocket-wheel, K, and gear L, the latter intermeshing with the gear H on the shaft E. Pivoted on a stud, *f*, at the front of the standard B', there is a swinging arm or lug, M, and at the rear of said standard a corresponding arm or lug, M², and pivoted in like manner on a stud, *f*, at the front of the auxiliary standard C there is a swinging arm or lug, M, and at the rear of said standard a corresponding arm or lug, M².

Journaled horizontally on a shaft, N, in the arms M, at the front of the machine, there is a roll, O, one end of said shaft being elongated and provided with a sprocket-wheel, P, which is connected with the sprocket-wheel K on the counter-shaft J by the chain-belt Q, and journaled in a corresponding manner on a shaft, S, in the arms M², at the rear of the machine, there is a roll, R, said last-named shaft being elongated at one end and provided with a sprocket-wheel, T, which is connected with the sprocket-wheel I on the shaft E by the chain-belt U. A horizontally-arranged shaft, V, is mounted in the lower ends of the arms, M, and a corresponding shaft, W, in the lower ends of the arms M², said last-named shafts respectively extending past the standard B' at the

left-hand end of the machine and the auxiliary standard C near the right-hand end, as shown in Figs. 1 and 2.

The shaft V is provided at one end with a downwardly and inwardly inclined arm or lever, m , and at the other with a corresponding arm or lever, d , said arms being rigidly connected to said shaft. The shaft W is also provided at one end with a downwardly and inwardly inclined arm or lever, b , and at the other with a corresponding arm or lever, h , said arms being rigidly connected to said shaft.

The lower ends of the arms m h at the right-hand end of the machine, and also of the arms d b at the left-hand end of the machine, are respectively connected by rule-joints t .

A shaft, Y, carrying a fast pulley, r , loose pulley g , and pinion a , is journaled horizontally in the standard B and auxiliary standard C, said pulley r being connected with the fast pulley G on the shaft E by the crossed belt k .

A shaft, A^2 , is journaled horizontally at the front of the machine, being supported by brackets S^2 on the standards B' C, and provided with a pinion, C^2 , at either end.

A holder, D^2 , is disposed between the standard B' and the auxiliary standard C, said holder being fitted to work vertically in suitable ways on the inner faces of said standards. The body of the holder is preferably composed of wood, and is slightly wedge-shaped, being somewhat thicker at its lower than at its upper edge. It is also provided with a thick inner covering, m^2 , of elastic rubber, over which is spread an outer covering of leather, E^2 , the rubber yielding, and thereby preventing injury to the hide or skin when it is under the action of the rolls O R. The body of the holder is furnished with end pieces, H^2 , which extend above it, said end pieces being each provided at the front with a vertically-arranged rack, J^2 .

Journaled on a stud, e , which projects from the standard B' at the left-hand end of the machine between the pinion C^2 and rack J^2 , there is an intermediate pinion, K^2 , (see Fig. 6,) which intermeshes with said rack and the pinion C^2 at the left-hand end of the shaft A^2 .

Journaled horizontally at the right-hand end of the machine and supported by the standards B C there is a shaft, T^2 , carrying near its center a gear, B^2 , which intermeshes with the pinion a on the shaft Y, and at its inner end a pinion, 40, which intermeshes with the pinion C^2 on the right-hand end of the shaft A^2 , and with the rack J^2 at the right-hand end of the holder D^2 , said pinion on the shaft T^2 corresponding in size with the intermediate pinion, K^2 , at the other end of said holder.

One object of the intermediate pinion, K^2 , and the pinion 40 on the shaft T^2 is to remove the shaft A^2 outwardly from the path of the holder D^2 , and thereby render it more convenient to manipulate the hide or skin, which sometimes requires to be kept in position on said holder or adjusted by the hands of the workman while being operated upon by the rolls O R.

A treadle-shaft, L^2 , is journaled horizontally in the lower portion of the frame-work of the machine, said shaft being provided at either end with a rigidly-attached horizontally-arranged arm, N^2 , and at its center with a treadle, P^2 .

A chain, Q^2 , passes through a sheave, R^2 , at the left-hand end of the machine, said chain being carried upward over pulleys j on the standard B' and outward over the ends of the shafts W V, one end of said chain being wrapped around and secured to the shaft W, and its other end wrapped around and secured to the shaft V. A corresponding chain, Q^2 , passes through a sheave, R^2 , and upward over pulleys j on the auxiliary standard C, said chain being carried outward over the right-hand ends of the shafts W V, and its respective ends wrapped around and secured to said shafts in substantially the same manner as the chain at the left-hand end of the machine. Each of the sheaves R^2 is provided at its lower end with a link, v , and each of the arms N^2 on the treadle-rod L^2 is also provided with a link, v , the sheaves being respectively connected with said arms by means of a rod, V^2 , and an adjusting device, Y^2 . The adjusting device consists of the two hooks a^2 and cylindrical body f^2 , which is drilled longitudinally through its center, the cylinder being interiorly threaded at one end with a right and at the other end with a left hand screw-thread. One of the hooks a^2 has a shank which is provided with a right-hand screw-thread, and the other a shank which is provided with a left-hand screw-thread, said shanks being screwed into the correspondingly-threaded portions of the hole in the cylindrical body f^2 .

Each of the rods V^2 is provided with a hook at either end, the upper hook on the rod being hooked into the link v of the sheave and the lower hook on the rod into the upper hook on the adjusting device Y^2 , the lower hook a^2 on said device being hooked into the link v of the arm N^2 .

As the adjusting devices Y^2 and rods V^2 at each end of the machine are constructed and arranged in substantially the same manner, it is not deemed essential to describe them more fully.

In the drawings the cylinders f^2 are represented as turned to the right or screwed onto the shanks of the hooks a^2 to the fullest extent; but by turning the cylinders to the left or off the shanks of their respective hooks the parts connecting the sheaves and treadle-arms may be lengthened as desired, thereby to a great extent governing the pressure which may be exerted on the rolls O R by means of the treadle P^2 . A brake-lever, F^2 , is pivoted to the standard C, and provided with a pad, z^2 , adapted to engage the fast pulley r .

A shipping-lever, G^2 , is pivoted at i to a bracket on the outer face of the standard B, at the right-hand end of the machine, said lever having pivoted to its rear end a sliding

bar, O^2 , provided with the pins l^2 , between which the belt k passes. A sliding rod, U^2 , mounted in suitable supports, has its outer end pivoted at y^2 to the lever G^2 , so that by moving the rod U^2 longitudinally the lever G^2 may be actuated to ship the belt k from the fast pulley r to the loose pulley g , and vice versa, as required.

The girders D are connected near their centers by two vertical bars, 12, and pivoted at 13 to said bars there are two horizontally-arranged bars, 14, connected at their outer ends by a cross-rod, 15. Jointed at its upper end to the rod 15 there is a vertically-arranged bar, 16, the lower end of said bar 16 being jointed at t to the arms $m h$ on the right-hand ends of the rods $W V$. A chain, 17, has its upper end hooked at 18 to the upper end of the bar 16, the lower end of said chain being carried through under a sheave, 19, in the standard B at the right-hand end of the machine, and secured by a clamp, 20, to the front portion or long arm of the lever G^2 . A guard-chain, 21, is employed to keep the chain 17 from coming into contact with the gears, the upper end of the guard-chain being secured to one of the girders D , and its lower end to the center of the chain 17.

A yoke or \cap -shaped loop, 22, connects the bars 14 near their free ends, said yoke being jointed to said bars at 23, and standing in a vertical line with a lift or clip, 24, which is attached to the end piece, H^2 , at the right-hand end of the holder D^2 , said lift being adapted to engage said yoke and raise the bars 14, when the holder is sufficiently elevated.

A handle, 25, is rigidly secured to the right-hand end of the rod V , said handle standing in a vertical position, or nearly so, when the arms $M M^2$ are swung inwardly, as shown in Figs. 4 and 5, and in a nearly horizontal position when the rolls $O R$ are separated to their fullest extent, as shown in Fig. 3.

The roll O is provided peripherally with a series of spirally-arranged flanges, 26, which start from a circumferential line at 27, and pass in the same direction around it to either end, as shown in Fig. 1. The flanges 26 are respectively provided at uniform distances on their rear sides with a series of short auxiliary flanges, 28, which are preferably slightly curved and stand at an angle of about forty-five degrees to the main flanges. The flanges are constructed of metal, and may be secured to the body of the roll in any suitable manner, the body being preferably composed of wood.

The roll R is constructed in substantially the same manner as the roll O , but its main flanges pass around its body in a direction opposite that of the flanges in the roll O , as shown in Fig. 2—that is to say, the flanges 26 on the roll O run outwardly and downwardly toward either of its ends from the line 27, as viewed in Fig. 1, and the flanges 26 on

the roll R run in like manner, as viewed in Fig. 2.

The rolls rotate or turn inwardly or in opposite directions, being arranged in parallelism on the same horizontal plane and run at the same speed.

It will be obvious that the front roll, O , is driven by the counter-shaft J and belt Q , and the rear roll, R , by the main shaft E and belt U , the gears $L H$ on said shafts intermeshing and the rolls running in unison.

In using the machine the hide or skin 30, to be put out, scoured, or otherwise operated upon, is first "green-shaved" and properly prepared, and then placed on the holder D^2 with its flesh side outward and its fore shoulders, 32, immediately under the lines 27 of the rolls, the rolls being then in the position shown in Figs. 4 and 5, after which the machine is started up and the rolls caused to revolve inwardly or toward each other, as described. The shipping-rod U^2 is then moved to ship the belt k onto the fast pulley r , thereby communicating motion to the shaft A^2 , causing the holder D^2 to pass upward between the rolls $O R$, and submitting the skin or hide to their action in a manner which will be readily obvious without a more explicit description. When the holder has passed upward a sufficient distance to bring all parts of the hide or skin into contact with the rolls, the lift 24 on the right-hand end of the holder engages the yoke 22, raising the bars 14, drawing up the bar 16, and throwing the rolls out of contact with the hide or skin, the arms $m h$, which are jointed to the bar 16, acting to separate the rolls as said bar is elevated. At the same time the chain 17 is also drawn upward by the bar 16, to which it is attached, and operates the shipping-lever G^2 , to throw the belt k onto the loose pulley g , thereby stopping the upward movement of the holder and permitting it to descend to its normal position by force of gravity, the speed of its descent being governed by the brake-lever F^2 , applied by the workman in charge to the fast pulley r . As the holder passes upward between the rolls, the rolls may be brought to bear on the hide or skin with any required degree of pressure by the foot of the workman applied to the treadle P^2 . The joints t of the arms $m h$, and also of the companion-arms $b d$, are so constructed as to enable said joints to be drawn upward by the bar 16 slightly above a line drawn horizontally through the centers of the shafts $S N$, on which said arms are secured, so that when said joints have "passed the center" in their upward course the rolls $O R$ will be kept separated and out of contact with the hide or skin until the holder has fully descended, after which the rolls may be brought into their normal position, as shown in Figs. 4 and 5, by elevating the handle 25 and causing the joints t to pass below the shafts $W V$.

It will be obvious that by withdrawing the pressure from the treadle and depressing the

handle 25 the rolls may be removed from contact with the hide or skin whenever desired; also, that the traversing movements of the holder may be governed by the shipping-rod 5 U^2 and brake F^2 .

The edges of the flanges on the rolls O R may be angular or rounded in any degree, or in accordance with the work they are required to perform, and when rounded may be safely 10 applied to the grain-side of the hide or skin. As the flanges 26 of said rolls all start from a common line, 27, the hide or skin at the part corresponding therewith would not be properly "put out" or treated if the flanges 26 15 only were used, or if the short flanges 28 on the line 27 were arranged in regular order, and therefore the short flanges at that point are irregularly arranged, as shown in Figs. 1 and 2. The short flanges 28 are of the same height 20 as the long flanges 26, and may be formed integral therewith or separately, as preferred. They are also of such length as to leave a space between their outer ends and the front of the next adjoining long flange, thus forming 25 channels 34 for the water or tanning-liquors to pass off and drop to the ground as the rolls revolve. The long flanges 26 remove the light fleshings from the hide or skin and stretch it downward, and also diagonally outward, while at the same time the short or auxiliary flanges 28 stretch it laterally or more 30 nearly in a line with the rolls. When constructed with angular edges, the flanges readily remove the lighter fleshy parts of the hide or skin; but they may be so constructed as to 35 render the machine adapted to green-shave it or remove the heavy or thick fleshings, if desired.

The shoulder portions 32 of a hide or skin 40 are usually somewhat "baggy" or full, and in order to perform the work properly it should be put out or stretched in either direction from the shoulders. The line 27 or starting-point of the flanges 26 is therefore placed several inches to the left of the center of the rolls, 45 in order to bring it over the shoulders of the hide or skin and enable that portion to be properly treated. It may, however, be located at the center or to the right of the center, if 50 desired.

The rolls O R are prevented from coming into actual contact with each other by stops (not shown) attached to the inner faces of the standard B C, against which the arms M M^2 55 strike when in a vertical or nearly vertical position. The rolls may also be prevented from coming into contact by the ends of the shafts W V striking the sides of the standards B' C or against projections on said standards.

60 It will be understood that the speed of the rolls 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 character of the work being done. 65 The two sides of the holder constitute two inclined tables, on which the hide or skin rests,

a holder of this shape presenting the hide or skin to the rolls to better advantage, and enabling the rolls to act more effectively, especially at the center, than would be possible 70 were the holder of the same thickness throughout, or as thick at the top as it is at the bottom. It will also be obvious that as the holder carrying the hide or skin passes upward between the rolls the inner surfaces of the rolls, 75 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 80 of the holder and rolls, as described, being essential to the proper performance of the work.

The swinging arms M M^2 enable the rolls to yield or separate as the holder passes between them; but instead of said swinging arms the 85 rolls may be arranged in any suitable supports and adapted to yield to the passage of the holder by means of properly-disposed springs, without departing from the spirit of my improvement. 90

In Fig. 8 a roll, W^2 , is represented, in which the long flanges 26 of the rolls shown in Figs. 1 and 2 are broken up into short flanges or sections 45, each of said sections being provided at its rear side with one or more auxiliary flanges, 46, constructed and arranged in 95 substantially the same manner as already described for the short flanges on the rolls O R. The ends of the flanges 45 overlap each other, but spaces 47 are left between the 100 overlapped ends, to form channels, through which the water expressed from the hide or skin may flow, thereby enabling the water to find its way to the ground more readily than when the flanges 45 are united to form a continuous flange, as shown at 26 in Fig. 1, this 105 being of especial advantage in treating very wet hides and skins. The sections 45 are arranged in long spiral rows, which pass around the body of the roll in substantially the same 110 manner that the flanges 26 pass around the roll O, and said rows start from a common circumferential line at 48 in the same manner the flanges 26 on the roll O start from the line 27. The short flanges 46 are of the same 115 height of the flanges 45, and may be formed integral therewith or made separately. There is also a space, 49, between the outer ends of the short flanges 46 and the front faces of the flanges 45, which serves as a channel for the 120 water in substantially the same manner as the channel 34 on the roll O, the only material difference between the roll O and the roll W^2 (shown in Fig. 8) being that the long spiral flanges 26 of the roll O are broken up in the 125 roll W^2 into sections 45 to form the water-channels 47.

In Figs 1 and 2 a whole skin or hide is represented on the holder, the neck and butt portions being arranged on the top of the same; 130 but when a side or one-half of a skin or hide is treated the neck and butt, if desired, may

be so placed as to be opposite each other on the holder; or the half skin or hide may be arranged diagonally on the holder in such a manner that the larger part of the neck portion and shoulders will be at the front of the holder and the larger part of the butt portion at the rear of the holder, or vice versa, this arrangement being preferable to that in which the neck and butt are placed exactly opposite each other, as described. The standards B B' C are respectively provided with caps N⁴, which are fitted to be moved vertically and rendered adjustable by the screws 54 and bolts and slots 55, the shaft J being journaled in the caps on the standards B C and the shaft E in the caps on the standards B B' C. These caps perform an important function in tightening the belts, and also in leveling up the shafting at the top of the machine.

In Fig. 4 one of the boxes 57 in the cap N⁴ is represented as not in use, but it is sometimes required where it is not convenient to communicate power to the shaft E by means of the pulley F, in which case a shaft may be mounted in the box 57 and other supports, and provided with a gear adapted to intermesh with a gear which may be placed on the left-hand end of the shaft E, power being communicated to said last-named shaft through the shaft mounted in said box.

Each of the standards B B' C is divided transversely on the line 65, opposite the girders D D, the upper section of each standard being secured to the lower section by twin clamps 75, the clamp pertaining to the upper section of the standard being bolted thereto at 76, and that to the lower section bolted thereto at 79, and the sections forced together by the bolts and nuts 80. The sections are also additionally secured in proper position by bolts 85, which pass transversely through the same and through the girders D D.

The object in dividing the standards on the line 65 is to enable the upper portion of the machine to be readily detached from the lower portion without removing the shafts E J or the pulleys, gears, and sprocket-wheels which said shafts respectively carry, thereby adapting the machine to be handled and packed with greater convenience. It also enables it to be carried through a comparatively low door in a car or van in transporting it from place to place, or moving it into or out of the building in which it is used, without being taken entirely apart. The lower girder, D, is cut and trussed, as shown at 88, to prevent said girder from interfering with the belt k. Rubber cushions or springs 98 are disposed on the bed A, on which the holder D² strikes when dropped, as described.

A vertical groove, 90, is formed in the outer face of the standard B' at the left-hand end of the machine, and fitted to work in said groove there is a bolt or stud, 95, which also serves to connect the arms b d at the joint t of said arms, said bolt being elongated to enter said groove, the object of the elongated bolt and groove be-

ing to keep the rolls equidistant from each other, or in proper position with respect to the holder D², as they swing on the arms M M²; but instead of the bolt and groove any other suitable device may be employed in connection with the arms b d for the same purpose.

In the roll shown in Fig. 8 each of the main flanges or sections 45 is represented as provided with two auxiliary flanges, 46; but three or more auxiliary flanges may be used with each main section, or one only, as preferred.

In addition to striking-out, putting-out, scouring, setting-out, and unhairing hides and skins, the machine is also well adapted for "softening" or "breaking" them before they are "limed," in this respect taking the place of the stone or mill ordinarily employed for the same purpose.

I do not confine myself to the use of the rolls O R W², as rolls of any suitable form or construction may be employed in the machine, in accordance with the nature of the work to be performed; neither do I confine myself to the use of two bars, 14, as one may be employed, if properly adapted to engage the holder D², nor to the use of the lift 24 for engaging the yoke 22 on said bar.

As the roller shown in Fig. 8 forms the subject-matter of another application for Letters Patent filed coincident herewith, I do not claim the same, broadly, herein.

Having thus explained my invention, what I claim is—

1. In a putting-out machine, the combination of the shaft E, provided with the pulley G, gear H, and sprocket-wheel I, the countershaft J, provided with the gear L, and sprocket-wheel K, the chain-belts U Q, sprocket-wheels P T, yielding rolls O R, and swinging arms M M², substantially as described.

2. In a putting-out machine, the combination of the shaft Y, provided with pulleys r g and pinion a, the shaft T², provided with the gear B² and pinion 40, the holder D², provided with the racks J², the shaft A², provided with the pinions C², and the intermediate pinion, K², substantially as set forth.

3. In a putting-out machine, the pivoted bars 14 and the holder D², in combination with the chain 17, shipping-lever G², bar O², and belt k², substantially as set forth.

4. In a putting-out machine, the pivoted bars 14 and the holder D², in combination with the chain 17, shipping-lever G², bar O², belt k, bar 16, jointed arms m h, and rolls O R, substantially as described.

5. In a putting-out machine, the pivoted bars 14, provided with the yoke 22, in combination with the chain 17, lever G², bar O², belt k, and holder D², adapted to engage said yoke as it rises, substantially as specified.

6. In a putting-out machine, the holder D², provided with the lift 24, for engaging the yoke 22 on the pivoted bars 14, substantially as set forth.

7. In a putting-out machine, the adjusting

device Y², in combination with the shaft L², arm N², treadle P², rod V², sheave R², chain Q², pulleys j j, rods V W, and arms M M², for regulating the pressure which may be applied to the rolls O R by the treadle, substantially as described.

8. In a putting-out machine, the standards B B' C, having the shaft E mounted thereon and divided on the line 65, said standards B B' being connected by the clamps 75, to enable the upper portion of the machine to be removed, substantially as and for the purpose set forth.

9. In a putting-out machine, the caps N⁴, rendered adjustable on the standards B B' C by the bolts and slots 55 and screws 54, and provided with boxes or bearings for the shafting disposed at the top of the machine, in combination with the shafts E J, pulley G, gears L H, sprocket-wheels K I, and belts U Q, substantially as described.

10. In a putting-out machine, the standard B', provided with the groove 90, in combination with the elongated bolt or stud 95, jointed arms b d, and arms M M², for keeping the rolls O R in proper position with respect to the holder D², substantially as set forth.

11. In a putting-out machine, the shaft A², provided with the pinions C², and the holder D², provided with the racks J², in combination with pinions disposed between the pinions C² and said racks and intermeshing therewith, and mechanism for rotating said shaft and raising said holder, substantially as described.

12. In a putting-out machine, the shaft E, provided with the pulley G, gear H, and sprocket-wheel I, the shaft J, provided with the gear L and sprocket-wheel K, the belts U Q, the swinging arms M M², the rolls O R, respectively provided with the sprocket-wheels P T, and the holder D², provided with

the racks J², in combination with mechanism for operating said rolls and holder, substantially as set forth.

13. In a putting-out machine, the shaft Y, provided with the pulleys r g and pinion a, the shaft T², provided with the gear B² and pinion 40, the shaft A², provided with the pinions C², the holder D², provided with the racks J², the intermediate pinion, K², and a pair of yielding rolls provided with flanges for scraping or stretching the hide or skin, in combination with mechanism for operating said rolls, a treadle mechanism, or other suitable device, for increasing the pressure of the rolls on the hide or skin, and a shipping device for reversing the upward movement of the holder, substantially as described.

14. In a putting-out machine, the shafts W V, jointed arms b d m h, swinging arms M M², handle 25, rolls O R, sprocket-wheels P T, belts U Q, shaft E, provided with the pulley G, gear H, and sprocket-wheel I, and shaft J, provided with the gear L and sprocket-wheel K, in combination with the chain Q², pulleys j j, a treadle or device for increasing the pressure on the rolls, and a holder adapted to present the hide or skin for the action of the rolls, substantially as set forth.

15. In a putting-out machine, the shafts W V, handle 25, jointed arms m h b d, swinging arms M M², rolls O R, sprocket-wheels P T, chain Q², pulleys j j, shaft Y, pulleys r g, pinion a, shaft T², gear B², pinions 40 K², shaft A², holder D², provided with the racks J², a treadle or device for increasing the pressure of the rolls on the hide or skin, and operative mechanism for the rolls and holder, substantially as described.

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Witnesses:

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