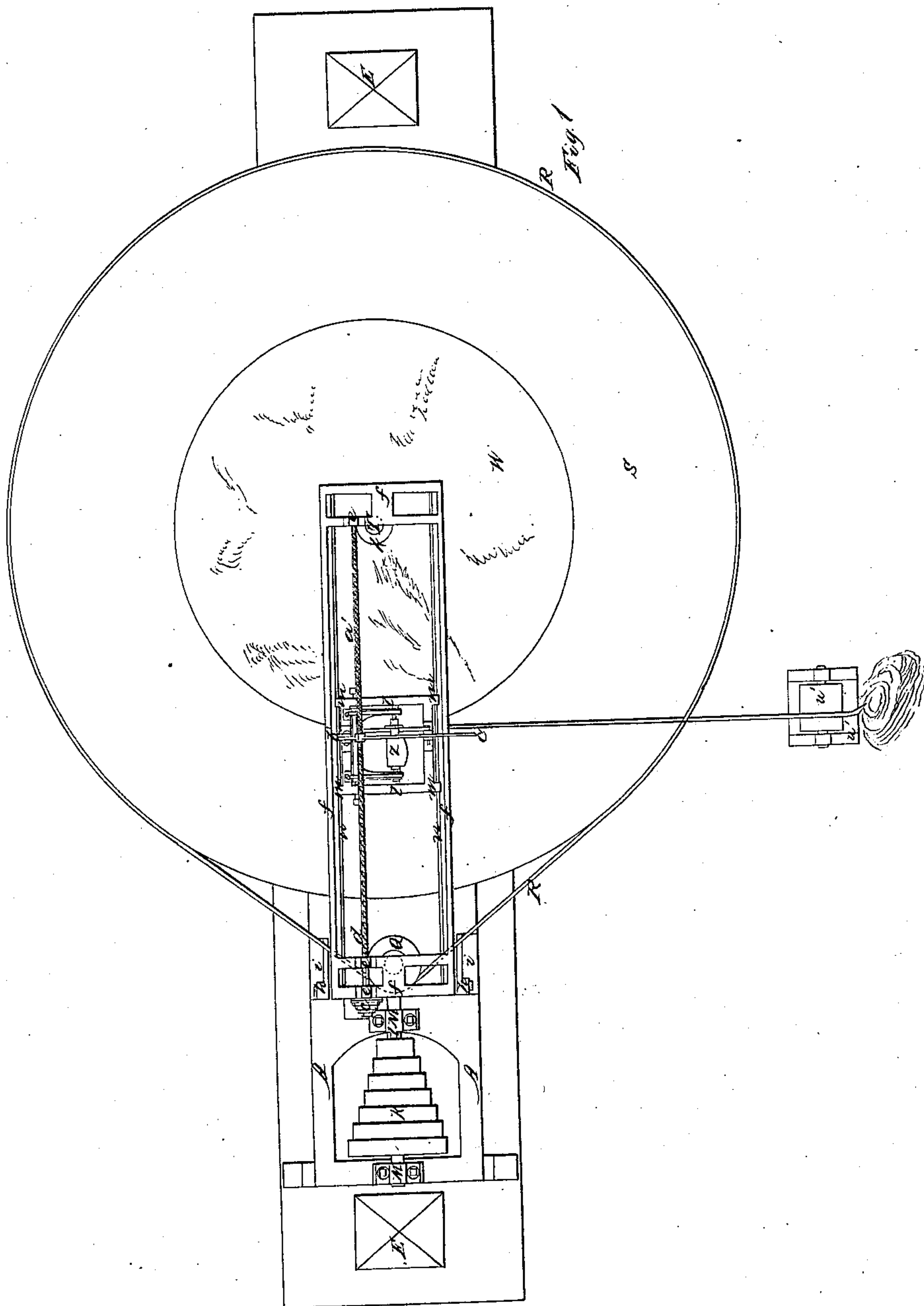


Holmes & Pedrick
Cutting Raw Hides,

No. 1,927.

Patented Jan. 9, 1841.



Sheet 2-3 Sheets.

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Sheet 3-3 Sheets

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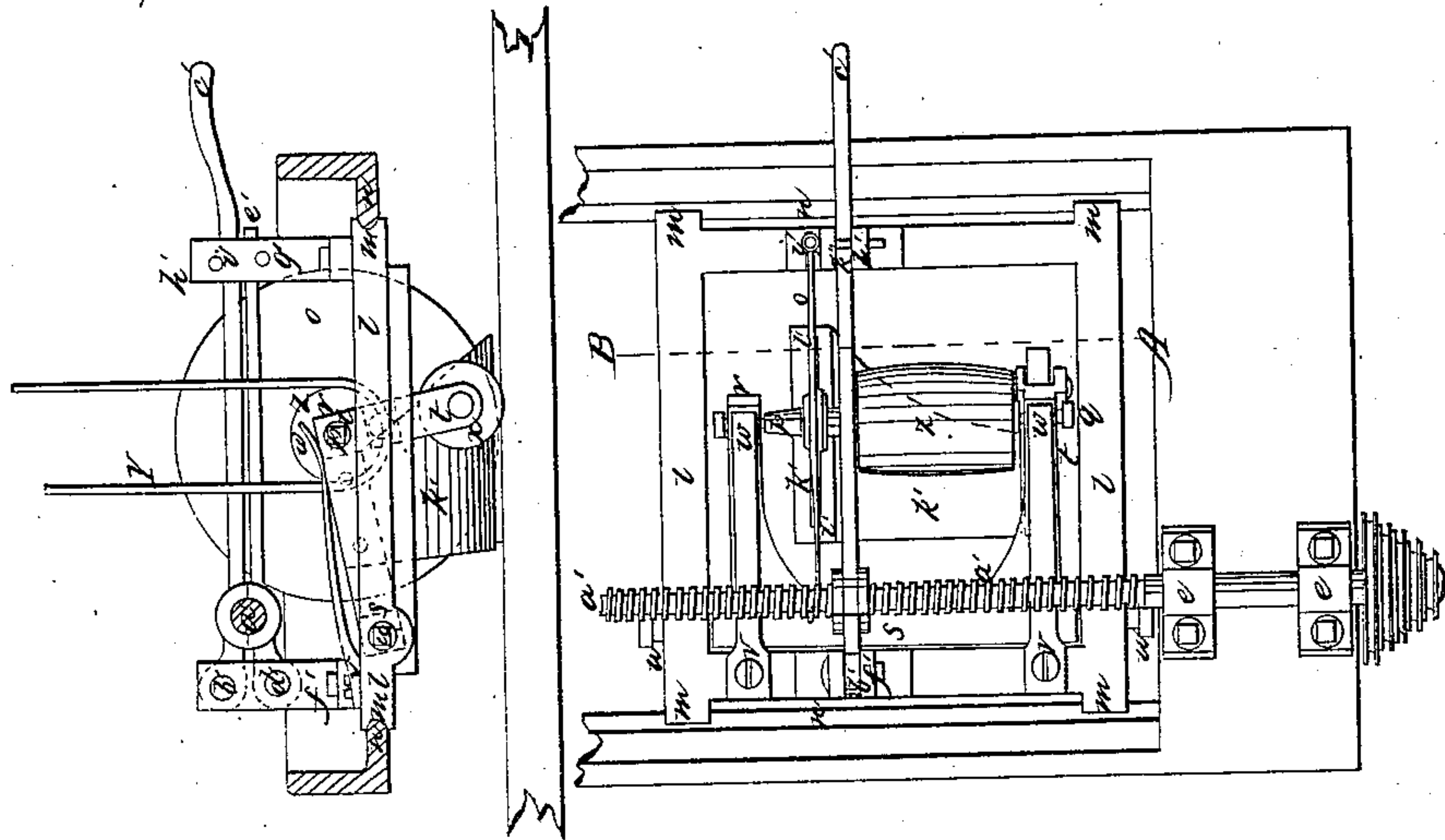


Fig. 4.

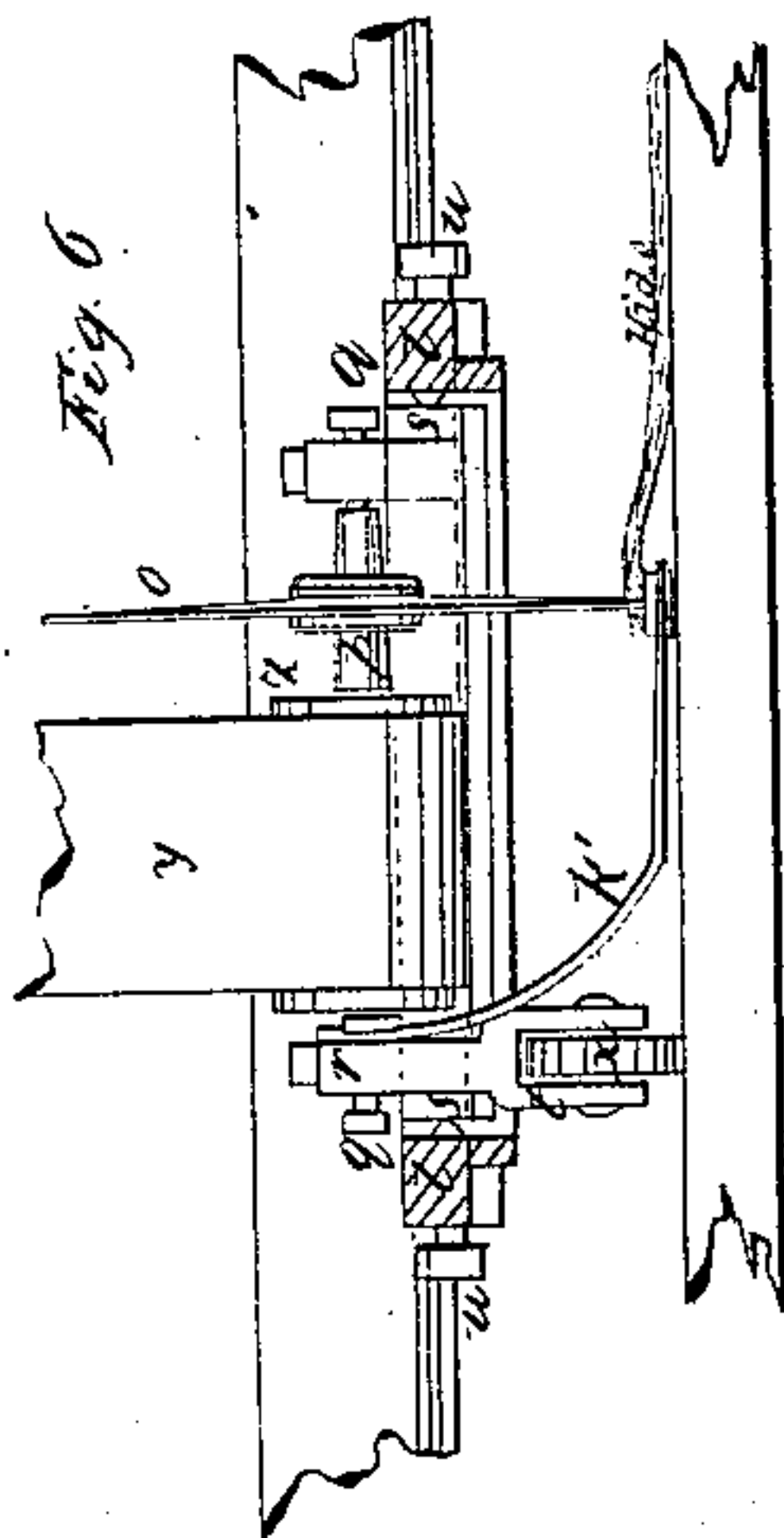


Fig. 6.

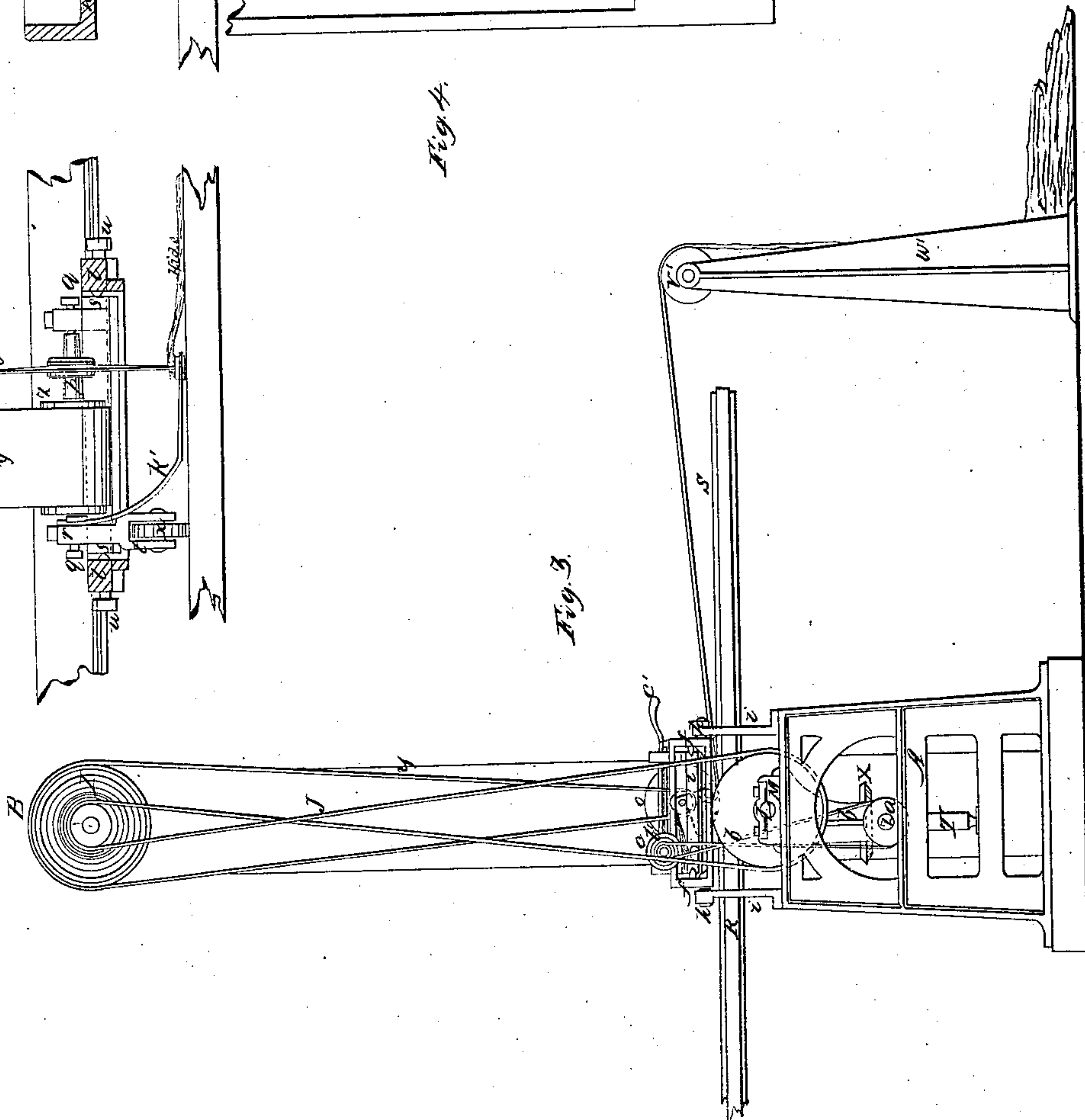


Fig. 3.

UNITED STATES PATENT OFFICE.

PHILIP B. HOLMES AND WM. PEDRICK, OF CHARLESTOWN, MASSACHUSETTS.

MACHINE FOR CUTTING RAWHIDES AND LEATHER INTO STRIPS FOR THE MANUFACTURE OF ROPES, &c.

Specification of Letters Patent No. 1,927, dated January 9, 1841.

To all whom it may concern:

Be it known that we, PHILIP B. HOLMES, and WILLIAM PEDRICK, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented a new and useful improvement in machinery for cutting rawhides or leather into strips for the purpose of making ropes thereof or for such other purposes to which the same may be successfully applicable.

The said improvement, the principle thereof, and manner in which we have contemplated the application of the same, by which it may be distinguished from other inventions of a like character or for a similar purpose, together with such parts or combinations as we claim to be our invention, we have herein set forth in the following description and accompanying drawings herein referred to, which taken in connection form our specification.

It has been customary heretofore to cut the strips of which raw hide ropes are formed, from the skins by a common knife in the hand of the workman. In proportion to the skill acquired by the operative, the more equal in width and perfect would be the strip separated from the hide, but as whatever is accomplished by such means is liable to more or less imperfection and as it is well known that the operations of machinery, when its parts are well adjusted, are more perfect than the above, we have contrived a machine by which we are enabled to perform the work of cutting raw hides into strips, in a much more expeditious and satisfactory manner than that by which the same has been heretofore accomplished.

Figure 1 represents a top view. Fig. 2 a side elevation. Fig. 3 an end elevation. Fig. 4, a plan of the knife frame. Fig. 5 a side elevation of the knife and its frame and Fig. 6 a section of the same taken on the line A B Fig. 4.

A A A Figs. 1, 2 and 3 is the framework suitably arranged to support the operating parts thereto attached. A long drum B is placed parallel to and above the frame A as represented in Fig. 2, and has its shaft C supported in proper bearings or boxes D D, on the top of two upright posts E E or otherwise arranged and suitably connected to the ceiling of the room or building in which the machinery is placed. This drum is driven by a belt F proceeding from the driving

power to and around a fast pulley H on the shaft C. A cone or system of variable pulleys I on the shaft C communicates a revolving motion through a band J, to another system of variable pulleys K, on a short horizontal shaft L Figs. 1, 2, 3, whose journals are supported and move in bearings or boxes M M, resting on and secured to the top of the frame A. A beveled pinion N Fig. 2, placed on the inner end of the shaft L, engages with a beveled wheel O on a short perpendicular shaft P, the said shaft having a pulley Q Figs. 1, and 2 affixed thereon partly around, and from which a band or belt R, Figs. 1, 2, 3, passes to and about the periphery of a large circular table S, as seen in the drawings. The table S is mounted on the upper end of a perpendicular shaft T, which is supported by a step V, and revolves in a suitable box U applied to the end of the frame A, see Fig. 2. On this table the hide or skin W Fig. 1, is placed and properly confined and centered, for the operations of the knife which reduces it to a long band or strip as will be hereafter explained. The mere weight of the hide, generally speaking will be found to produce sufficient friction to prevent its slipping on the surface of the table.

A beveled gear X Figs. 2 and 3 fixed in any desirable position on the upright shaft T, communicates with and turns around a beveled pinion Y, on a long horizontal shaft Z extending below the upper part of the frame A and suitably supported in bearings thereto connected. A cone of variable pulleys a, on the other end of the shaft Z, communicates motion, by a cross band b, to another series of similar pulleys c, on a horizontal shaft d, running parallel to the shaft Z and extending to and over the shaft T (see Figs. 1, and 2). The shaft d is supported and revolves in bearings e e e, secured to the top of a rectangular or other proper shaped metallic frame f, f, f, f, Fig. 1, f g, Fig. 2 and f f Fig. 3. This frame is hinged (as shown at h Figs. 1, 2, 3) to upright posts or projections i, i, bolted to the top of the frame A. The other end g of this frame rests on the top of the upright shaft T, just above the circular table S; the shaft T passing through and turning around in a circular hole in a projection k, Figs. 1, and 2, from the end g of the frame.

The frame f g Fig. 2, carries the circular

cutting knife which is connected to it as follows. A square or rectangular frame or carriage *l l* Figs. 1, 3, 4, 5, 6 is supported and moves in the frame *f f*, *f f*, Fig. 1, by projections *m, m, m, m* therefrom, having their ends hollowed out, and resting on rails *n, n*, applied to the inside of each of the sides of the frame *f f*, as represented in the drawings. The carriage *l* carries a circular cutting knife *o* whose shaft *p* Figs. 4, 5, 6, is supported in bearings, or on the conical points of screws *q, q*, screwed into a sustaining frame *r, s* Fig. 4, *s r*, Fig. 5 and *s s*, Fig. 6; the said sustaining frame being similarly affixed to the two opposite sides of the carriage *l, l*, by screws *u u*. Two springs *v w* Figs. 4, 5 having an end *v* of each attached to the frame *l*, act at or near their other ends upon the frame *r s* Fig. 4, and press said frame and the circular knife *o* down, with a sufficient force to tighten the belt *y* and to cause the roller, *x*, to always travel on the surface of the table *S*. An arm or projection *r t*, Figs. 5, 6, from the frame *r s t* has a small roller *x* fixed in the lower end thereof, the said roller resting on the upper surface of the revolving table *S*, and supporting the cutter *o* at its proper elevation above the same.

The knife *o* has its circumference grooved to a sharp edge and is revolved by a belt *y*, Figs. 2, 5, 6, passing about a pulley *z* on its shaft *p* and proceeding from the main drum *B* as represented in the drawings. The frame *l* and knife *o* have a lateral motion given to them by means of a long screw *a'*, cut on the shaft *d*. This screw is clasped by two bars *b' c'*, *d' e'*, Figs. 4 and 5, one end *b', d'*, of each being hinged or otherwise properly jointed to an upright *f'*, Figs. 4, 5. The opposite end *e'* of the lower bar *d' e'* passes through the space cut out of the top of a standard *h'* and rests on a pin *g'* Fig. 5, passing through the two sides of the space in the top of the standard *h'*. A portion of a female screw is properly formed in the lower side of the bar *b' c'* and in the upper side of the bar *d' e'*, where they clasp the screw *a'*, the same coinciding in thread with the screw *a'*.

From the above it will be seen that the revolutions of the shaft *d'* or screw *a'* acting in a female screw of the bars *b' c'*, *d' e'* attached to the carriage *l*, gives to said carriage a lateral motion in the frame *f, g*, Fig. 2, or causes it to advance with a regular movement, toward the center of the revolving table. Thus it is apparent that when the knife *o* is put in revolution, and brought in contact with the circular edge of the hide, it continually cuts in a spiral curve, as the table *S* revolves, and the knife approaches the shaft *T*, until it reaches the center, or near the same of the hide, thus separating therefrom or reduc-

ing it, to, a long strip. The bar *b' c'* is borne or held down upon the screw by means of a pin *i'* passing through the sides of the space *h'* Fig. 4, in the standard *h'*. On removing the pins *i', g'*, and lowering the end *e'* of the bar *d' e'*, and raising the end *c'* of the bar *b' c'*, and thus removing the threads of the female screws of the said bars, from the screw *a'*, the carriage *l l* may be easily slid along the rails *n, n*, which support it and on arriving near the end of the screw *a'*, may be thereto connected as before described. That part of the circumference of the hide adjacent to the knife *o*, is lifted from the table and rests during the operation of cutting on an iron platform *h'* (as represented in Fig. 6) the edge or circumference of the knife passing through an elongated slot *l' l'*, Fig. 4, formed in the same. The platform *h'* is attached to one side of the frame *r s t*, and travels around with the same.

Whenever it may be desirable to lift the knife *o* from the hide the frame *f g*, Fig. 2, is raised by means of a rod *m' n'*, hinged at its lower end *m'* to the end *g* of the frame *f g*, and having its upper extremity similarly connected to a lever *o' p' q'*, moving on a fulcrum *p'* attached to the lower side of a cross beam *r'*, extending between the posts *E E* at a proper distance beneath the drum *B*. By applying the hand to the end *q'* of the lever *o' p' q'* and pulling the same down, the end *g* of the frame *f, g*, and the cutting knife *o* can be raised upward. When drawn up, they may be kept in this position by inserting a pin *s'* (see Fig. 2,) in a hole *t'* (over the end of the lever) in an arm *u'* projecting downward from the cross beam *r'* as seen in the drawing. As the strip of hide is removed from the table *S* it should pass over a pulley *v'* Figs. 1 and 3 on the top of a standard *w'* Fig. 3, and somewhat elevated above the plane of the table *S* so that the portion of the strip intervening between the cutting knife *o* and the pulley *v'*, may not be in contact with the revolving table or hide thereon.

It will be evident to any mechanic of ordinary skill that instead of a circular revolving knife a proper shaped straight knife may be adapted to the carriage *l l* having its sharp edge so arranged as to cut through the hide as the circular table revolves but as we have found from experience that the circular knife operates under general circumstances to better advantage we give it the preference.

Instead of a revolving table *S* on which the hide is placed it may be arranged on a stationary table and sustained on suitable friction rollers properly inserted therein or on its upper surface and the hide may be revolved by hand or by draw rollers in front of the knife, or by various other de-

vices or contrivances of machinery which we have thought of and invented while building the above specified machine. Furthermore in the place of a screw for
5 giving a lateral motion to the cutting knife, a chain belt may be substituted as described in our caveat filed previous to this specification, but as we do not conceive either of the above to be of so much utility as the
10 machinery herein described, we shall not specify any of them at present, but shall leave them to be included in a future application for a patent, which we contemplate making for improvements on our invention.
15 Having thus described our improvements, we shall claim as our invention—

1. Reducing or cutting hides, or other similar materials, into long bands or strips, by means of a revolving table, in combination with a circular or other proper shaped
20 cutting knife, attached to a movable carriage over the same; said knife being caused to pass, from the circumference toward the center of said table, by the action of a revolving screw or similar apparatus so as
25

to describe a spiral or curved cut, through the hide, on said table, as the same revolves; the whole being arranged and operating together substantially in the manner as herein above described and set forth. 30

2. We also claim, supporting the periphery of the hide above the revolving table, while the circular knife operates thereon by means of a platform attached to the knife-frame, through an elongated slot in
35 which platform the knife is inserted and acts on the hide resting on the same, the whole being arranged and operating substantially as herein above described.

In testimony that the foregoing is a true
40 description of our said invention and improvements we have hereto set our signatures this fourth day of November in the year eighteen hundred and forty.

PHILIP B. HOLMES.
WILLIAM PEDRICK.

Witnesses:

R. H. EDDY,
JOHN NOBLE.