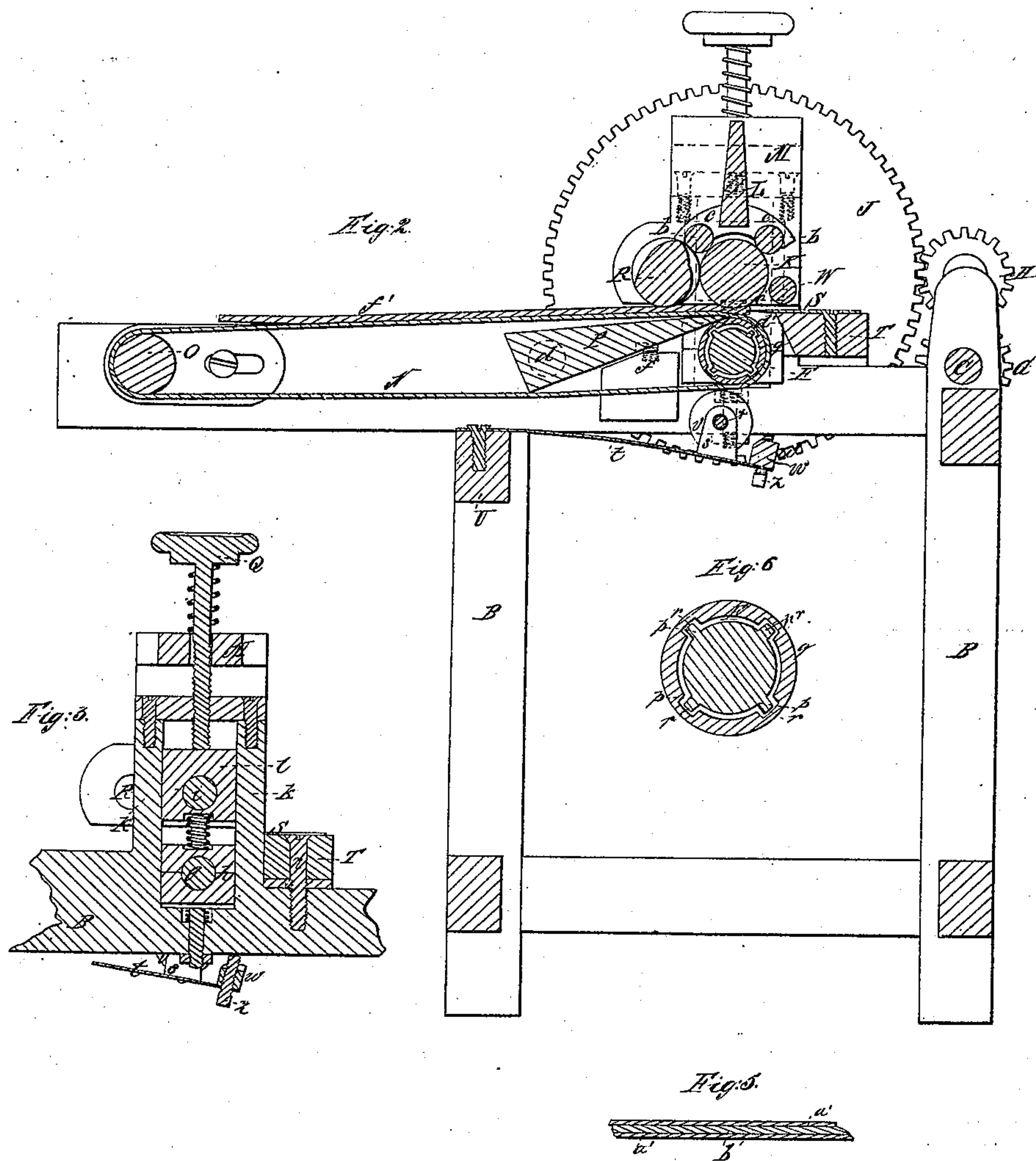


E. Pratt,

Splitting Leather.

N^o 12,114.

Patented Dec. 19, 1854.

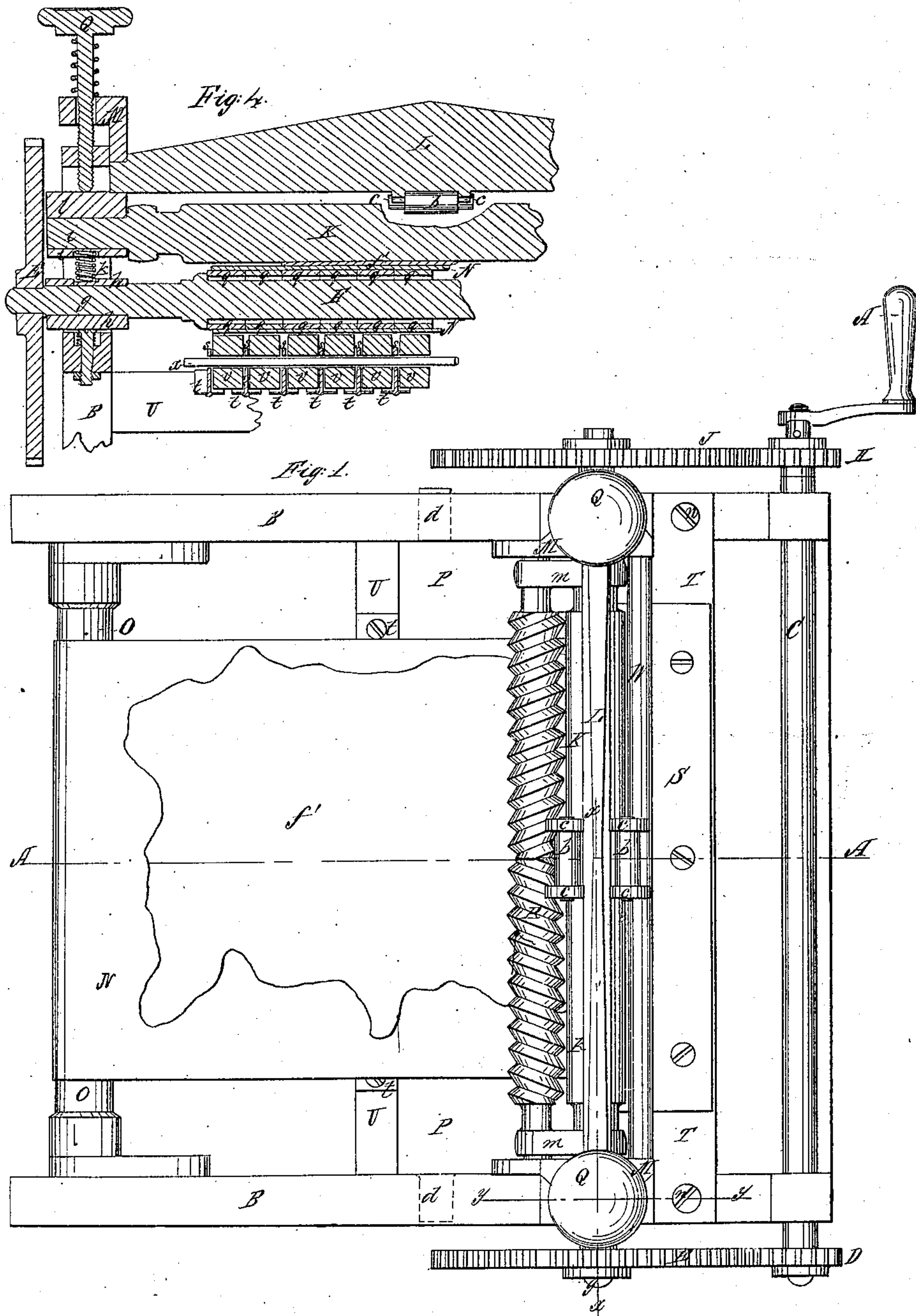


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UNITED STATES PATENT OFFICE.

ELISHA PRATT, OF SALEM, MASSACHUSETTS, ASSIGNOR TO ELISHA PRATT AND H. P. UPTON.

LEATHER-SPLITTING MACHINE.

Specification of Letters Patent No. 12,114, dated December 19, 1854.

To all whom it may concern:

Be it known that I, ELISHA PRATT, of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Splitting Leather, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

10 Figure 1 is a plan of my machine; Fig. 2, a section through the same upon the line A, A; Fig. 3, a transverse section upon the line *y*, *y*; Fig. 4, a section on the line *x*, *x*; Fig. 5, a section upon the elastic apron upon a larger scale; Fig. 6, a detached view of one of the rings of the sectional roll.

In the machines most commonly in use for the purpose of splitting leather the hide is pressed up to the gage roll by a spring plate over which it passes on its way to the knife. The action of this plate is not however uniform owing to the varying thickness of the leather.

To keep the leather more uniformly and evenly pressed up to the gage roll, however variable may be its thickness, is the object of my present invention, the first part of which consists in the use of a roll composed of metallic sections or rings placed beneath the gage roll, and which performs the office intended to be performed by the spring plate heretofore employed, the sections or rings being forced up by means of springs in a manner which will be hereafter described and so secured to the shaft which carries them, that while they are allowed to play up and down they are also caused to revolve with the shaft, and thus feed the leather into the machine.

40 The second part of my invention has reference to a peculiar construction of feed apron which carries the leather in between the rolls, and which is rigid and unyielding in the direction of its length and elastic in the direction of its thickness, the object of which is to hold the leather more perfectly and uniformly up to the gage roll than has heretofore been accomplished. For this purpose a wooden roll covered with india rubber has been tried but has failed to accomplish the desired end, for the reason that the roll requires to be subjected to great pressure and it is found to be impossible to attach the india rubber so securely to its surface that it will not be torn off. Another

objection to the use of an elastic roll thus constructed arises from the fact that the great pressure forces out the india rubber and causes it to bulge out and thus diminish the size of the throat through which the leather is to pass, and this happens more especially where the leather is thickest and requires the largest throat. These defects have rendered the elastic roll entirely impracticable and useless for the purpose. By means however of the before mentioned elastic feed apron I have overcome all the above difficulties, and am enabled to feed the material to the roll, and to press it uniformly and evenly up to the gage roll however varying and uneven it may be in thickness.

To enable others skilled in the art to make and use my invention, I will proceed to describe the manner in which I have carried it out, referring generally to the principal parts of the machine and more particularly to those features which form the subject of my invention.

In the accompanying drawings B is the framework of the machine; C, the main driving shaft carrying at one end the pinion D which drives the cog wheel E upon the shaft of the sectional roll F. G is a pinion upon the other end of the shaft C which engages with the pinion H, which latter drives the cog wheel J upon the shaft of the gage roll K. The gage roll is prevented from springing in the center by the rollers *b*, which run in ears *c*, upon the bottom of the transverse bar L, the ends of which are secured to the uprights M.

N is an endless apron which passes over the sectional roll F and the stretcher O. Beneath that portion of the apron N, which is contiguous to the gage roll is the swinging table P, the forward edge of which rests upon the sectional roll F, the rear of the table being pivoted to the side bars of the frame at *d*. The object of this table is to support the feed apron and prevent it from sagging when loaded with the leather. A portion of the weight of this table is carried by the springs *f*, which bear upon brackets upon the frame work, by which means the sectional roll is relieved from unnecessary pressure. The shaft *g* of the sectional roll F, runs in boxes *h*, which slide up and down in the guide piece *k*. The boxes *l*, which carry the gudgeon *i* of the

gage roll K, slide in the same uprights, their position being regulated by the hand screws Q, in the customary manner.

R is a spreader which is revolved by means of the bands *m*, from the shaft of the gage roll. The object of this spreader is to insure the uniform and even delivery of the leather to the gage roll and knife.

S is the knife which is secured to the bar T, the latter being attached to the frame by means of the screws *n*, or otherwise.

I will now proceed to describe the first part of my invention.

p, are longitudinal ribs or feathers upon the surface of the roll F.

q, are metallic rings of the form represented in Figs. 2 and 6 which are strung upon the roll F as seen in Fig. 4. The ribs *p* fitting loosely within the grooves *r*, prevent the rings from turning independently of the roll F. There is sufficient play between the rings *q*, to enable them to move vertically to accommodate themselves to the varying thickness of the leather, as will be hereafter explained. *t*, are springs secured to the cross timber U.

s, are ears upon the extremity of the springs which carry the long spindles *x*.

v, are rollers which are strung upon the spindle *x*, and are placed one beneath each of the sections of the roll F, the latter while they are allowed to yield to accommodate themselves to the varying thickness of the leather are thus kept firmly and evenly pressed up to the work by the springs.

w, is a bar which runs transversely across the machine and is adjusted in position by set screws *z*. The object of this bar is to limit the upward motion of the springs *t*, and rollers *v*, the ends of the springs resting upon the under side of the bar. In the accompanying drawings the rollers *v* are represented as carried by the long rod *x*, under certain circumstances. I contemplate providing each roller with a separate shaft, so that each roller shall be operated upon by its individual spring—the choice of these methods will depend upon the work which the machine is called upon to perform.

W is a roll which may be driven by hand or by a band and serves at times to assist the draft of the "grain" from the machine.

The elastic feed apron which constitutes the second part of my invention is made in

the following manner: *a'*, *a'*, Fig. 5, are two thicknesses of canvas of suitable strength, which are firmly cemented to a band of india rubber or other suitable elastic substance *b'*. The above is the construction which I prefer for the elastic apron, it may however be composed of one or more thicknesses of canvas upon one side and of elastic material upon the other, the object being to render it strong and rigid in the direction of its length and elastic in the direction of its thickness.

Operation: The leather being placed upon the apron as seen at *f*, Figs. 1 and 2, the machine is set in motion by turning the crank A', the leather is thus drawn in against the edge of the knife (Fig. 2) by the motion of the apron, the "grain" passing up at *c'*, is wound upon the roller W, and the "split" passing off beneath the knife as usual at *d'*, owing to the peculiar action of the elastic apron and the sectional spring roll the leather is kept uniformly pressed up against the gage roll however irregular may be its thickness. Under certain circumstances the sectional roll may be used alone without the elastic apron and for certain kinds of leather the elastic apron may be used without the sectional roll; my machine operates most perfectly however when the two are used together as represented in the accompanying drawings.

1. I do not claim the use of rolls composed of sections of rings strung upon a shaft when the sections and shaft are allowed to revolve independently of each other, but I only claim the same in combination with the springs *t*, or their equivalent, and when they are so united with the shaft which carries them, that while they are permitted to rise and fall to accommodate themselves to the varying thickness of the leather, they are at the same time forced to revolve with the shaft and feed the leather into the machine as described.

2. I claim the feed apron N, nonelastic in the direction of its length, and elastic in the direction of its thickness constructed in the manner substantially for the purpose set forth.

ELISHA PRATT.

Witnesses:

JOHN H. NICHOLS,
CHAS. S. NICHOLS.