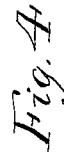


1,038,560.

3 SHEETS—SHEET 1.



Inventor
Joseph H. Gay
By his Attorney
David Benjamin

J. H. GAY.
LEATHER SPLITTING MACHINE.
APPLICATION FILED JAN. 13, 1912.

1,038,560.

Patented Sept. 17, 1912.

3 SHEETS—SHEET 2.

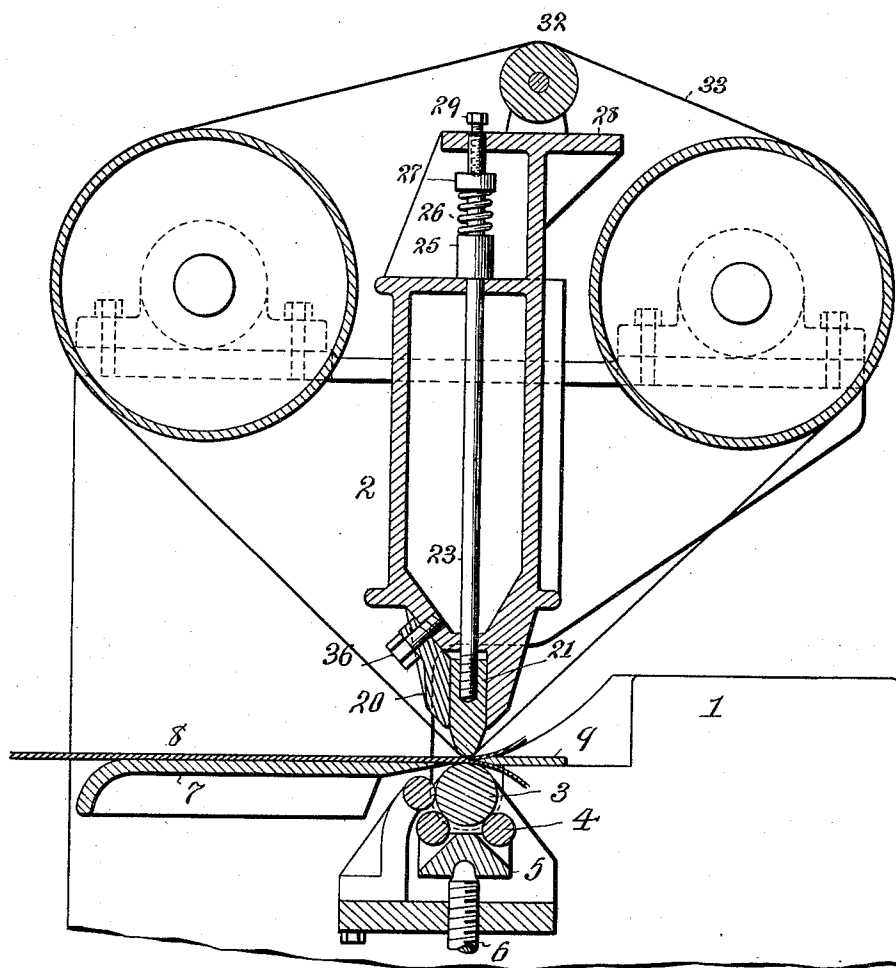


Fig. 2.

Witnesses:
May S. McHenry
Charles T. Porter.

Inventor
Joseph H. Gay
By his Attorney Paul Benjamin

J. H. GAY.
LEATHER SPLITTING MACHINE.
APPLICATION FILED JAN. 13, 1912.

1,038,560.

Patented Sept. 17, 1912.

3 SHEETS—SHEET 3.

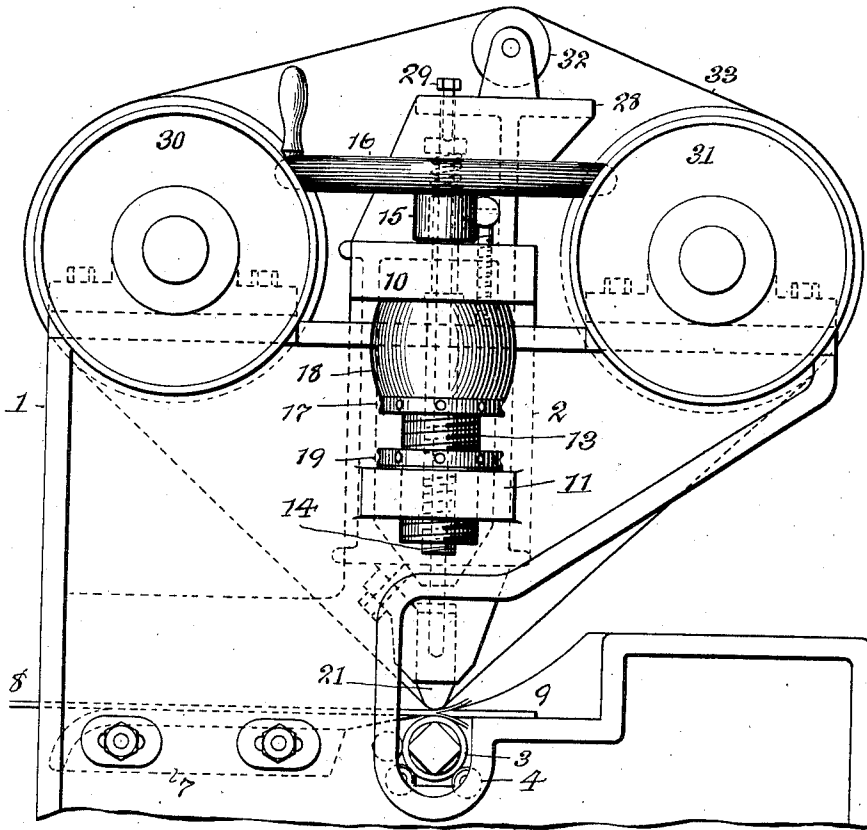


Fig. 3.

Witnesses:
May J. McFarry
Arthur J. Porter.

Inventor
Joseph H. Gay.
By his Attorney
Laird Benjamin

UNITED STATES PATENT OFFICE.

JOSEPH H. GAY, OF NEWARK, NEW JERSEY.

LEATHER-SPLITTING MACHINE.

1,038,560.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed January 13, 1912. Serial No. 671,021.

To all whom it may concern:

Be it known that I, JOSEPH H. GAY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Leather-Splitting Machines, of which the following is a specification.

In U. S. Patent No. 718,655, granted to W. D. Quigley and myself, January 20, 1903, we have described a construction of drawing-in rolls and knife, which involves a certain described setting of the rolls, so that an expanding clearance space is provided, in which space the knife may be set at, or in close proximity to, the line of maximum compression of the hide between said rolls instead of at a distance therefrom. Where the hide after leaving the line of maximum compression has to travel some distance before it meets the knife edge, it is apt to buckle or become displaced from a true plane of movement, with the result that a smooth straight cut is no longer made, but rather a wavy one, so that each split instead of being of uniform thickness is of varying thickness, and hence not only is the work impaired but the number of splits obtainable from the hide is reduced, with consequent economical loss.

My present invention provides a means of accomplishing the same result, without requiring the setting of rolls in the manner pointed out in the aforesaid patent which requires considerable care and nicety of adjustment. The spring roll is eliminated and a plurality of presser blocks is substituted therefor, disposed in line side by side across the machine—each block having a rounded lower edge which may be struck on an arc of much shorter radius than that of the ordinary spring roll. A web of canvas or other strong fabric—preferably endless and suitably driven—travels under the lower edges of the blocks. The blocks themselves are resiliently supported by suitable springs, and are sufficient in number to permit of self-adjustment to the natural variations in thickness of the hide. The hide is thus drawn in to the knife by means of the traveling web above coacting with the traveling support below. By reason of the short radius of edge curvature of the blocks, the clearance space between belt and support may be made of such a predetermined width as will permit the knife edge to be

brought so close to the maximum line of compression of the hide that the intervening distance between said line and said knife will be practically nothing. Hence there is no chance for the hide to buckle between compression line and knife, and straight and uniform splits are produced, not only from tanned hides, but even from the much more flexible green hides. So that in fact I can with this device split green hides before tanning them.

In the accompanying drawings Figure 1 is an elevation of a portion of a hide splitting machine of the general type set forth in the aforesaid patent, showing so much of said machine as is necessary clearly to illustrate my invention and its relation to the usual parts of said apparatus. Fig. 2 is a vertical section of said portion of the line x, x of Fig. 1. Fig. 3 is an end elevation of said portion. Fig. 4 is an enlarged sectional view showing the relation of the knife to the blocks, belt and spring roll.

Similar numbers of reference indicate like parts.

At 1, 1 are shown the two end frames between which are supported the upper or truss frame 2, and the traveling support for the hide. Said support is here the usual gage roll 3, journaled in the end frames and driven by any suitable means. Said roll is supported at several points along its length by friction rolls 4, each group of friction rolls being mounted in a carriage 5, vertically adjustable by the screw 6. At 7 is the usual fixed work table over which the hide 8 passes to the drawing-in devices and knife 9. Said knife may be a traveling band, as fully described in the aforesaid patent.

The truss frame 2, instead of swinging on trunnions, as set forth in said patent, is here provided at its ends with projecting arms, one of which is shown at 10, which are supported upon similar arms 11, projecting from the end frames 1 by the following means: 13 is a cylindrical shell (Fig. 3) exteriorly threaded and received in arm 11, and interiorly threaded to receive the lower threaded portion of a rod 14, which passes through arm 10, and above said arm has a collar 15 and operating hand wheel 16. Between a flange 17 on shell 13 and arm 10 is interposed an annular rubber spring 18. On shell 13 is a lock nut 19. The initial resiliency of spring 18 is adjusted by rotat-

ing the shell 13, (by means of a lever inserted in openings in the rim of flange 17) so as to move said shell vertically in arm 11, and after such adjustment the shell is secured in position by the lock nut 19, rotated by similar means. By turning the hand wheel 16, the truss frame 2 is raised or lowered, the rubber spring 18 then expanding or becoming compressed, as the case may be.

The truss frame 2 is provided at its lower edge with a recess, of which a removable bar 20, secured in place by bolts 36, forms one wall. In said recess are placed side by side a number of steel blocks 21. The lower edge 22, Fig. 4, of each block is made rounded, and the sides may taper downwardly to meet said rounded edge. The body of the block fits the recess in the frame and the recess is made of sufficient length to permit said block to be adjusted upwardly or downwardly therein. In order to effect this vertical adjustment of the blocks in the truss frame, each block is provided with an operating rod 23, which extends upward through frame member 24, and carries a fixed collar 25. A helical spring 26 bears on said collar and upon a loose bar 27. There are a number of bars 27, each receiving two rods 23, the upper ends of said rods passing through the uppermost frame member 28. In member 28 are adjusting screws 29, bearing on each of the bars 27, between the pair of rods 23 which pass through said bar.

Journalled on the end frames 1 and respectively disposed on opposite sides of truss frame 2, are rolls 30, 31. Passing over said rolls and over an idler roll 32 on the top frame member 28 and under the lower convex edges 22 of blocks 21, is a preferably endless web or belt 33 of suitably strong fabric or material. The shaft 34 of roll 31 extends beyond the end frame 1 and carries a driving pulley 35, by means of which said roll 31 is rotated and the web caused to travel in the direction of the arrow *a*, Fig. 4, the gage roll 3 being driven in the direction of the arrow *b*.

The hide being placed in the usual way upon the table 7 is advanced until gripped between the belt 33 and the gage roll 3, and is thus drawn in and presented edgewise to the knife 9, whereby it is split, as indicated in Fig. 4.

Particular attention is now called to the following: If two rotating rolls are placed one above the other, with their longitudinal central axes in the same vertical plane, then the line of maximum compression (line *c, c*, in Fig. 4) of the hide drawn in between them is in said plane. The clearance space between the roll peripheries on the delivery side of the compression line (right hand side of Fig. 4) will enlarge proportionately to the radius of curvature of either roll or of

both. Into this clearance space the splitting knife enters. Hence if, because of large curvature radius, the clearance space expands only very gradually for a considerable distance from the line of compression, it may not afford sufficient room to permit the knife to be brought into the desired proximity to that line. If, on the other hand, the spring or upper roll be reduced in radius so as to provide for more rapid expansion of the clearance space in order to allow more room for the approximation of the knife to the compression line, then the roll itself may become so attenuated as to be liable to distortion or bending. When, however, a stationary presser device and traveling web is substituted for the spring roll, the difficulty is obviated, since the curvature of the edge 22 may be made of any short radius to give the necessary clearance to permit the knife to be brought close to the compression line *c, c*, Fig. 4, without impairing in any wise the rigidity of the presser device: for, obviously, the blocks 21 can be made as deep as desired and be firmly supported in the truss frame recess.

The adjustments provided permit—1. The regulation of the initial resiliency of the truss frame supporting springs 18. 2. A vertical movement of the truss frame by means of hand wheel 16, so as to raise and lower all of the blocks 21 simultaneously. 3. The regulation of the initial resiliency of the helical springs 26, two at a time, by means of the screws 29, and also a setting of the blocks 21 with reference to varying thickness of the hide. 4. A self-adjustment of each block 21 to varying degrees of thickness of the hide as the same passes under said blocks and raises them against the resiliency of the said helical springs 26.

A single long presser block or bar may be used instead of a plurality of blocks, but the latter construction is preferable.

I do not limit myself herein to a presser block having its edge formed in a circular arc, as here shown, since I may employ other edge conformations, as, for example, the conformation specifically set forth in another application for Letters Patent, Serial No. 671,022, filed simultaneously herewith; and instead of employing a gage roll as the lower moving support for the hide, I may use any other suitable moving support, as, for example, a fixed bar with a traveling web passing over it, also as set forth in the aforesaid application.

I claim:

1. A hide-splitting machine, comprising a splitting blade, a moving support, a moving web, and a presser block having an edge bearing upon said web to compress said hide between said web and said support: the said edge being rounded to produce a clearance of sufficient width to permit of

the adjustment of said blade in close proximity to the line of maximum compression of said hide.

5 2. A hide-splitting machine, comprising a splitting blade, a rotary gage roll, a moving web above said roll, and a plurality of presser blocks having their lower edges in line and bearing upon said web to compress said hide between said web and said support: the said edges being rounded to produce a clearance of sufficient width to permit of the adjustment of said blade in close proximity to the line of maximum compression of said hide.

15 3. A hide-splitting machine, comprising a splitting blade, a moving support for the hide, end frames, a truss frame supported on said end frames, means for vertically adjusting said truss frame, a plurality of presser blocks disposed in line in said truss frame and having their lower edges in proximity to said moving support, a web pass-

ing under said presser blocks, and means for driving said web to cooperate with said moving support to engage said hide and 25 move the same to said blade.

4. A hide-splitting machine, comprising a splitting blade, a moving support for the hide, end frames, a truss frame supported on said end frames, a plurality of presser 30 blocks disposed in line in said truss frame and having their lower edges in proximity to said moving support, means for vertically adjusting said blocks in said truss frame, a web passing under said presser blocks, and 35 means for driving said web to cooperate with said moving support to engage said hide and move the same to said blade.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH H. GAY.

Witnesses:

GERTRUDE T. PORTER,
MAY T. MCGARRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."