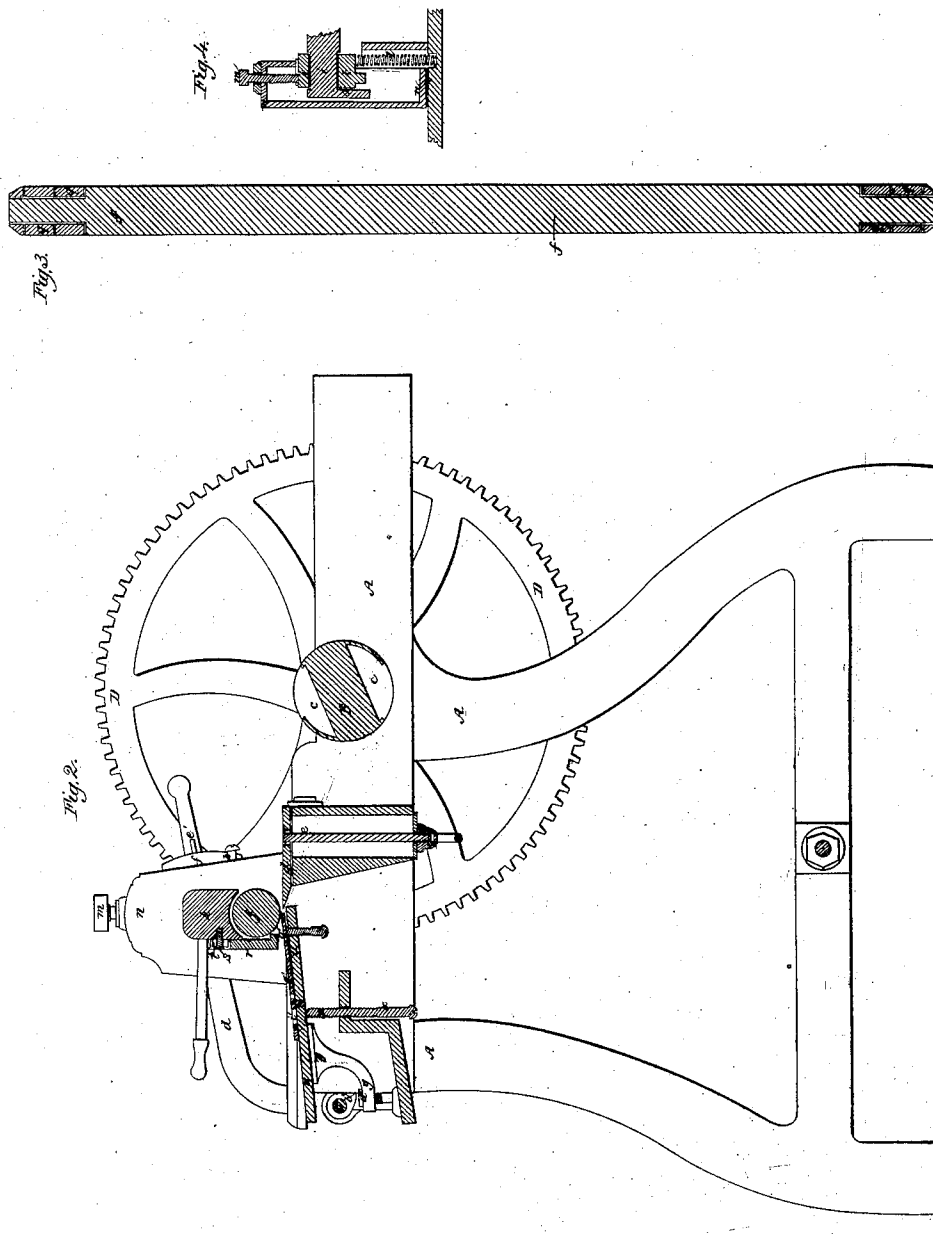


No. 8,369.

PATENTED SEPT. 16, 1851.

A. RICHARDSON.
LEATHER SPLITTING MACHINE.

2 SHEETS—SHEET 2.

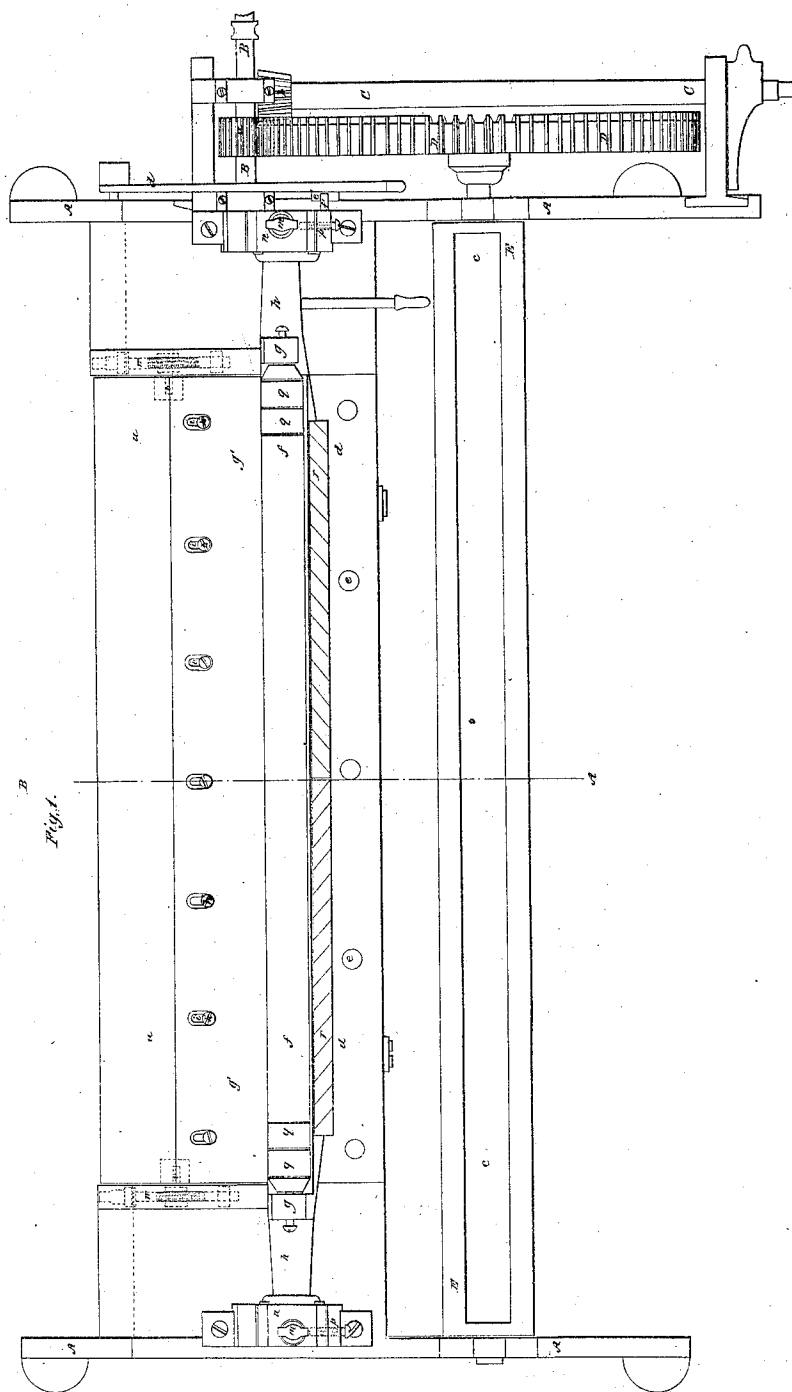


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UNITED STATES PATENT OFFICE.

A. RICHARDSON, OF NORTH ENFIELD, NEW HAMPSHIRE.

LEATHER-SPLITTING MACHINE.

Specification of Letters Patent No. 8,369, dated September 16, 1851.

To all whom it may concern:

Be it known that I, ALPHA RICHARDSON, of North Enfield, in the county of Grafton and State of New Hampshire, have invented certain new and useful Improvements in Leather-Splitting Machines, and that the following description, taken in connection with the accompanying plates of drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plates of drawings represent my improvements.

Figure 1, Plate 1, is a plan of my improved leather splitting machine. Fig. 2, Plate 2, is a transverse vertical section of the same taken in the plane of the line A B Fig. 1, Plate 1, and Figs. 3 and 4 Plate 2 are detail sectional views of parts which will be explained in the sequel.

My improvements are made mostly upon the machines heretofore devised and patented by me, and are for the purpose of diminishing the cost of the leather splitting business and simplifying the construction of the machines and therefore, and at the same time, making them to operate more perfectly.

The main features of a leather splitting machine, it is well known, consist in a stationary knife or one having a reciprocating lateral motion and a set of compressing or gage rolls, or other equivalent devices, properly adjusted so as to bite and compress the leather just in front of the cutting edge of the knife, and as the business of leather splitting is now conducted two or three machines are required to carry it on, having knives and rollers of different lengths to accommodate the different widths of hides to be split.

My first improvement consists in the use of sectional friction tubes on each end of the gage or pressure roll, for the purpose of permitting the loose or belly and shank parts of the hides to be drawn through the machine with greater velocity and ease than the other portions of the hide, at the same time providing thereby for an extension or diminution of the pressure and gage roll, so as to accommodate it to the several widths

of hides, and make the machine answer all the uses of three machines as the business is now carried on.

My second improvement consists in combining with the ordinary cast iron spring plate, against which the gage roll bears, and as used in the machines now in operation in lieu of a roller, and arranged as hereinafter specified, a cast steel plate, the combination being so contrived as to allow of an horizontal adjustment of said plate toward the edge of the knife, while its elasticity may also be varied by means of vertical set screws, passing through said cast iron plate. By this mode of constructing a bed plate for the gage roll to bear against, the front edge of the old cast iron plate may be made to project under the edge of the knife and form a lip to prevent the shaving from settling down, and the knife from cutting the upper or gaged part of the side uneven, keeping that part of the hide about the edge of the knife in the most favorable position to be operated upon.

I also use in combination with the gage roller, a spreading bar having diverging grooves on its underside which spreads the leather or keeps it from wrinkling during the process of splitting.

A A A A in the several drawings, represents the framework of the machine, constructed as shown in the drawings or in any other way to properly sustain the operative parts of the machine.

B B—C C are two driving shafts either of which may be used as most convenient to the operation, the former having a spur gear pinion *a* working with teeth on the periphery of the wheel D D and the latter having a bevel gear pinion *b* which works in suitable teeth on the side of the periphery of said wheel D D. This wheel D D of large diameter is fixed on one end or journal of the drawing cylinder E E in a groove *c c* of which, one end of the hide to be split is confined by a wedge of wood or other material, and the turning of the cylinder, it will be seen, draws the hide through the machine and against the edge of the knife. The knife *d d* has a single bevel only as shown in Fig. 2 Plate 2 and is of such length as to enable the machine to split the widest hides, being confined in its seat on the framework A A by means of the screws, bolts and nuts shown at *e e* Fig. 1 Plate 1 and Fig. 2 Plate 2.

f f is the gage roller set in proper bearings *g g* which depend from near the extremities of the suspended beam *h h*, the journals *i i* of which beam rest and turn in movable or adjustable boxes *k, k*, as shown in Fig. 4, Plate 2, which is a detail sectional view of one of said boxes. These boxes rest on the spiral springs *l* and are moved up by the same and down by the thumb screw *m* in the cases *n—n* on each end of the framework; and the arms *o, o* on the ends of the journals *i, i* of the gage roller beam, bear against the ends of the adjustable stop screws *p, p*, which work through the sides of the said cases *n, n* in lieu of being placed, as heretofore in such position on the framework as to interfere with the passage of the hides through the machine.

The gage roller and its beam should be so adjusted as that the axes of said roller and of the journals of said beam, shall be in the same vertical plane with the edge of the knife, and each end of said roller, for some length, is turned down to a lesser diameter, than the main part thereof, so as to permit of its extension or diminution in length by means of the sectional tubes *q q* fitted on said ends, as shown in the drawings Fig. 1 Plate 1 and Fig. 3 Plate 2 which latter is a detail sectional view of the gage roller. These tubes turn loosely on the ends of the gage roller, and are of great advantage besides extending the same for hides of different widths in enabling the operator to get the looser or belly and shank parts of the hides through the machines more easily, the sectional tubes operating as friction rollers in effecting this result.

The spreading bar *r r* is confined by a series of screws passing through slots *t* along said bar to the back of the gage roller beam as shown in Fig. 2 Plate 2, so that it may be adjusted vertically. Its underside is formed with diverging grooves or rather teeth or ridges of any proper kind (as shown in Fig. 1 Plate 1 where the gage roll and its appendages are turned up round one hundred and eighty degrees, so as to be better exposed,) and, by being so formed said bar spreads out the leather as herein before stated.

u u Fig. 1, Plate 1 and Fig. 2, Plate 2 represents the common cast iron spring plate, herein before referred to, which rests on the adjustable bearing rods *v v* shown by dotted lines in Fig. 1 which rods with the said plate are moved horizontally by means of the adjusting screws *w, w*, also shown by dotted lines in Fig. 1 Plate 1, so that the front edge of said plate may project in under the edge of the knife and support the

split as herein before suggested. This plate tilts on the adjustable fulcrum screws *x x* and has a series of curved arms *y y* secured at proper intervals apart on its underside, in the lower ends of which arms are adjustable studs *a'*, Fig. 2 Plate 2. Against the tops of these studs, the surfaces of the cams *b'* bear, said cams being set for the purpose at proper intervals apart on the turning rod *c' c'*, which rod has proper bearings secured to the framework and is moved by the bent arm *d*. By the operation of the aforesaid cams *b'* on the studs *a'* of the curved arms *y y*, the plate and its appendages are always kept in proper position relative to the bilge of the gage roller, and they may be kept in any desired position by means of the catch *e'* on the side of the bent arm *d'* which engages with the teeth of the rack *f'* fixed on the side of one of the cases *n*.

g' g' is the cast steel spring plate, before referred to, forming with the cast iron plate *u u* a double lip spring plate, so to speak. The plate *g' g'* is confined to the plate *u u* by the confining screws *h', h', h', &c.*, which pass through the several slots *i', i', i'* in the former plate, so that said plate may be adjusted in any position on the cast iron plate *u u*, or it may be drawn back for some work if desirable, so that the split may bear directly upon the lip of said iron plate. A variable elasticity may be given to this cast steel plate *g' g'* by means of the adjusting screws passing at proper intervals apart through the underside of the plate *u u*, and bearing against the underside of the plate *g' g'* as shown in section in Fig. 2 Plate 2.

Having thus described my improved leather splitting machine I shall state my claims as follows:

What I claim as my invention and desire to have secured to me by Letters Patent is—

1. Making the gage roller of a leather splitting machine, with the sectional tubes or friction rollers to be placed on each end thereof, substantially as herein above set forth; and for the purpose specified.

2. I claim combining with the ordinary cast iron spring plate of a leather splitting machine, a cast steel spring plate, forming a double lip spring plate, and fitted thereon so as to be adjustable horizontally, as herein above set forth, and so that the front edge of the lower or cast iron plate, may project under the edge of the knife and hold up the split as herein above set forth.

ALPHA RICHARDSON.

Witnesses:

EZRA LINCOLN,
ROBERT L. HARRIS.