

J. F. Flanders, Splitting Leather,

No 29,649,

Patented Aug. 14, 1860.

Fig. 5.

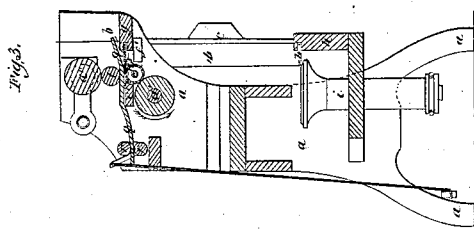


Fig. 4.



Fig. 2.

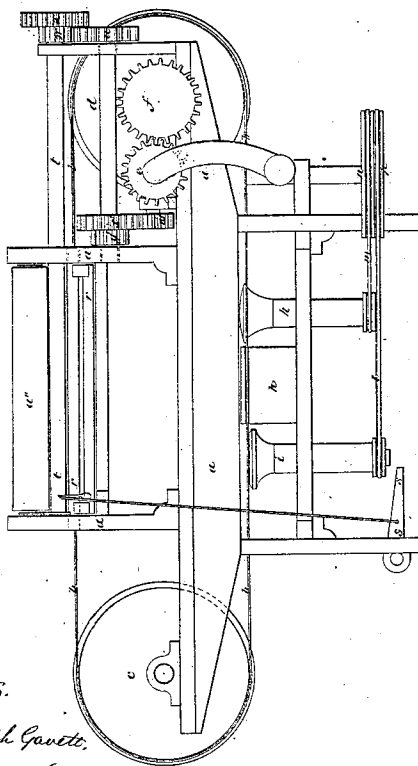
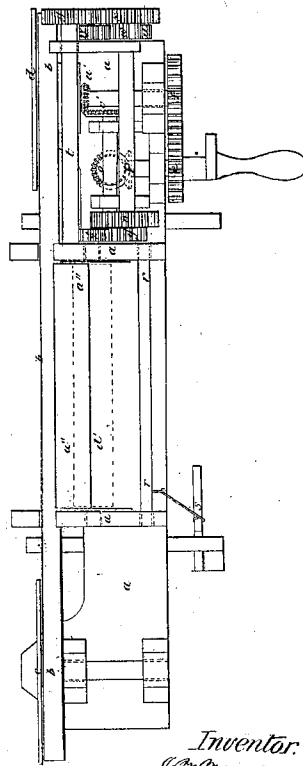


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

J. F. FLANDERS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND E. G. ALLEN,
OF SAME PLACE.

LEATHER-SPLITTING MACHINE.

Specification of Letters Patent No. 29,649, dated August 14, 1860.

To all whom it may concern:

Be it known that I, J. F. FLANDERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Leather-Splitting Machines, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of my said improvements by which my invention may be distinguished from all 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 plate of drawings represent my improvements.

Figure 1 is a plan or top view of my improved machine. Fig. 2 is a front elevation of the same. Fig. 3 is a central transverse vertical section. Figs. 4 and 5 are detail views to be hereinafter referred to.

In machines for splitting leather, &c., it has been found extremely difficult on account of the varying thicknesses of the hide to cut or split the "grain" of uniform thickness throughout, the tendency to form an irregular cut being increased by the weight of the "split" which drags the leather downward from the knife.

The essential feature of my invention consists in a novel arrangement of devices whereby these objections are entirely obviated, the uniformity of the thickness of the "grain" being invariably secured whatever may be the inequalities of the leather to be split. The desired result is effected by the use of a sectional roll consisting of rings hung loosely upon a shaft immediately under the leather and made to have an upward bearing thereon by means of an india-rubber roll or other suitable elastic bearing that presses upward against the rings. This arrangement constitutes in effect an elastic bearing to the leather consisting of a series of separate and independent springs that possess all the necessary elastic force and yet are remarkably free to play, much more so than any ordinary arrangement of springs thereby affording a yielding and elastic bearing to every inequality or indentation of the leather and one that is peculiarly sensitive thereto.

Another important feature of the present invention consists in an arrangement of devices whereby the leather whatever its shape

or condition is presented perfectly straight to the knife or cutter. This is very essential to the successful operation of the machine as the flanks, shanks and the thinner portions of a hide from being longer than the others necessarily get cockled up and it is important that these wrinkles should be first drawn out otherwise the leather will not be fed in a straight line to the knife. To control and guide the leather so that it shall be properly carried to the knife I use a brake apparatus that binds and holds the thick portions of the hide and allows the thin portions to pass freely until the wrinkles are drawn out by the action of the feeding rolls.

Having thus described the general features of my invention I will next proceed to describe the manner in which they can be practically carried out.

a a a a in the drawings represent the supporting framework of a leather-splitting machine. The knife or cutter may consist of an endless belt or band *b b* formed of any thin suitable metal. This belt is supported and revolved by two pulleys *c, d*, the pulley *d* receiving its motion from the driving shaft through the gears *e* and *f*. The rear edge of the knife rests against flanges on the pulleys *c* and *d*. The knife *b b* is kept in true position both horizontally and vertically by an upper and lower guide *g—h*. These guides may be made adjustable. The knife *b b* is kept constantly sharp by two revolving wheels *i—k* one bearing upon the upper and the other upon the under edge of the knife and revolved by belts *l, m* on a pulley *n* rotated by bevel gears *o, p*.

q—q is the leather fed in between the rolls *r r* fastened together and operated so as to bring any desired pressure or bite upon the leather by means of a treadle *s s*. By this means the brake will bear upon and hold back the thick portions of the leather until the wrinkled or thin parts have been drawn smooth, thereby presenting the leather straight to the knife.

t t is a small gage-roll that bears upon the upper surface of the leather as shown. This roll is driven through the gears *u, v, w, x, y*. It is important that the gage-roll should be of small diameter in order to firmly hold the leather close to the cutting edge of the knife and in order to prevent

this roll from springing as from its small
 size, it is very liable to do, I place over it
 a larger roll a'' which bears down upon the
 gage-roll and keeps it in place. Upon the
 5 under side of the leather is a sectional roll
 consisting of a series of separate and inde-
 pendent rings $b' b'$, &c., of considerable
 larger inside diameter than the shaft c' upon
 which they are hung. The sectional rings
 10 rest upon a rubber roll d' that is revolved
 through the gears u', v', w', x', y', z' . By
 the action of the rubber roll d' upon the
 rings $b' b'$, &c., it will be seen that every
 portion of the hide whatever may be its
 15 thickness or irregularity will be uniformly
 pressed and kept up against the gage-roll.
 By this means the uniformity of the thick-
 ness of the "grain" is effectually secured.
 e' and f' are bars one placed before and
 20 the other behind the sectional rings and so
 placed and formed as to limit the lateral
 and upward motion of the rings b', b' , &c.,
 but they are left free to be pressed down,
 by the action of the leather, upon the elastic
 25 roll. Although the sectional roll may be
 placed directly over the elastic roll, I pre-
 fer to place it a little on one side of the ver-
 tical axis thereof, as when placed directly
 in the same vertical line the rings by the
 30 motion of the rubber roll have a tendency
 to crowd back and then to snap forcibly
 back against the leather which prevents the

cut from being uniform. The elastic roll
 may be made adjustable with regard to its
 position with the rings.

It will be seen that there are variety of
 modes in which an elastic bearing can be ob-
 tained for the rings of the sectional roll,
 thus, as shown in Fig. 5, the rings instead
 of bearing upon the rubber roll, may bear
 40 upon an endless elastic apron or belt run-
 ning around pulleys g', g' .

Having thus described my improvements,
 what I claim as my invention and desire to
 have secured to me by Letters Patent is—

1. The arrangement of sectional rollers
 for the direct or immediate support of the
 hide or leather as the delivery of the same
 to the edge of the circulating knife, in com-
 bination with a roller located below the sec-
 50 tional roller and constructed as described
 with elastic surface and fixed bearings.

2. Placing the sectional roll to one side
 of the vertical axis of the elastic roll as de-
 scribed.

3. Holding the leather and controlling
 its progress while passing through the ma-
 chine by means of a brake operating sub-
 55 stantially as described.

J. F. FLANDERS.

Witnesses:

JOSEPH GAVETT,
 A. W. BROWN.