





# UNITED STATES PATENT OFFICE.

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## FEED OF LEATHER-SPLITTING MACHINES.

Specification of Letters Patent No. 28,559, dated June 5, 1860.

*To all whom it may concern:*

Be it known that I, DEXTER H. CHAMBERLAIN, of West Roxbury, in the county of Norfolk and State of Massachusetts, have  
5 invented certain new and useful Improvements in the Feed of Leather-Splitting Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making  
10 part of this specification, in which—

Figure 1 is a view of a leather splitting machine, with my improved feed attached. Fig. 2 a transverse vertical section through the same.

15 In the feed arrangement of leather splitting machines as heretofore constructed a great difficulty has existed in pressing the leather being split, against the edge of the splitting knife in a regular and uniform  
20 manner; this has arisen in part from the peculiar nature and consistency of the article operated on, for example where a side of leather is to be split, it is run through the machine endwise, and as the skin is of a  
25 different thickness and density at different parts, it is requisite that one of the feed rolls should be capable of adjustment to give the required degree of pressure to each part of the leather across its width; and  
30 also that each portion of the length of this roll should continue a uniform pressure on the surface of the leather for the whole length of the skin, notwithstanding slight variations in its thickness at different parts  
35 of its length. To meet this requirement an elastic or yielding roll has been employed, that is a roll formed of rings playing loosely on a shaft and pressed toward a rigid feed roll by an india rubber roll beneath it or  
40 by springs, so that the different portions of the length of the roll would yield to accommodate itself to the varying thickness of different parts of the width of the skin; this roll could be so adjusted that a greater  
45 amount of pressure could be applied at one end of it than at the other; but when it was set sufficiently close to the rigid feed roll to feed the thinnest portion of the skin (as was necessary) the thicker portions as they  
50 passed through the rolls would be pressed so hard by the action of the springs (their strength increasing as they were compressed) that the leather would be mashed out wherever a thick place occurred, causing it to "buckle" in front of the edge of the

knife, the result being that an uneven surface was produced after splitting.

The object of my present invention is to remedy this difficulty and to so arrange the feed that while the pressure may be adjusted  
60 along the length of the roll to give to each portion of the width of the skin a pressure suited to its thickness and density, the pressure so applied may remain uniform and  
65 unvarying while the skin is passing through the rolls, notwithstanding the occurrence of places in the skin which vary in thickness from the end to which the roll was first adjusted.

My invention consists in pressing the  
70 leather to be operated on toward the rigid feed roll, by means of a series of independent disk (or sections of a roll) which are forced toward the rigid feed roll by pressure applied independently to each disk; and in a  
75 convenient method of retaining the independent disks in position with respect to the rigid roll, and of applying and adjusting the necessary pressure to each disk independently.  
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That others skilled in the art may understand and use my invention I will proceed to describe the manner in which I have carried out the same.

In the said drawings A is the frame of  
85 the machine, B the rigid feed roll which runs in suitable bearings in the frame A and is driven by power applied to the cog wheel C, D is the splitting knife. Immediately over the roll B is placed the trough E which  
90 extends across the machine and is secured to the frame A by screws *a* or otherwise; this trough (which may be of cast iron or other suitable material) has ends *b* and sides *c*, the inner faces of which are vertical, while the  
95 outside of the sides *c* are slightly flaring; there is no bottom to the trough, but the series of disks *d*, which occupies the whole length of the trough (and corresponds in  
100 length with the roll B) forms a roll which projects through the bottom of the trough and rests on the roll B beneath it, the height of the bottom edge of the sides *c* from the roll B being rather less than the semi diameter of the disks *d*, so that they cannot fall  
105 out, and the width of the trough from one side *c* to the other is such that the disks may revolve freely between them.

Pressure is applied independently to each disk *d* in the following manner. A friction  
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roll  $f$  is placed over and rests upon each disk  $d$ , this roll  $f$  which is of a thickness nearly equal to that of a disk  $d$  is composed of two thinner disks 1 and 2 joined together in the center by a pin or axle  $i$  passing through them. A thin flat lever  $F$  is placed between the disks 1 and 2 of each roll  $f$  upon the axle  $i$  of which it rests, a notch being cut in the lower side of the lever for the axle to run in; the short end of this lever is pivoted to one side of the trough  $E$  and the long arm of it extends over the other side of the trough, where it is weighted by the adjustable weight  $m$  the lever being notched at 4 to hold the weights.

To keep the levers  $F$  and rolls  $f$  steady a series of notches 3 are cut in the top of the sides  $c$  of the trough  $E$  in each of which a lever  $F$  plays when the disks  $d$  force up the weight as a piece of leather is being passed through as shown at  $n$  Fig. 2. The levers  $F$  are all pivoted on a rod  $s$  which is placed in a groove  $o$  in the back of the trough  $E$  near its upper edge.

With the above described arrangement of feed it will be seen that by adjusting the weights  $m$  on the levers  $F$  any desired or variable amount of pressure may be given to the leather at different parts of it, to suit its varying density, while the disks  $d$  yielding independently of each other will accommodate themselves to any variation of thickness which may occur in the leather, the pressure thus remaining uniformly the same as adjusted.

There are other ways of applying the weight or pressure to the friction rolls  $f$  which might be adopted without departing from the spirit of my invention, for example a frame might be built over the trough  $E$  and a weight be caused to press down vertically on the axle of each roll  $f$ . Where the roll  $B$  is to be placed above the presser roll or roll of disks  $d$  (as would be preferred in some machines) the trough  $E$  would occupy a position immediately under the roll  $B$  and the disks  $d$  would be pressed up toward it, in this case I would prefer to use a system of double levers to bear the rolls  $f$  up against the disks  $d$ .

The splitting knife, shown here is stationary but this feed arrangement is applicable to and is intended to be used with splitting knives which are not stationary, for example with a belt knife.

Claim—

What I claim as my invention and desire to secure by Letters Patent is,

In combination with a rigid feed roll  $B$ , the presser roll composed of independent disks or sections  $d$ , confined in a suitable receptacle or trough  $E$  and pressed toward the roll  $B$  by pressure applied independently to each disk, substantially as described for the purpose specified.

D. H. CHAMBERLAIN.

Witnesses:

THOS. R. ROACH,  
P. E. TESCHEMACHER.