

(No Model.)

3 Sheets—Sheet 1.

J. A. SAFFORD.
LEATHER SPLITTING MACHINE.

No. 305,240.

Patented Sept. 16, 1884.

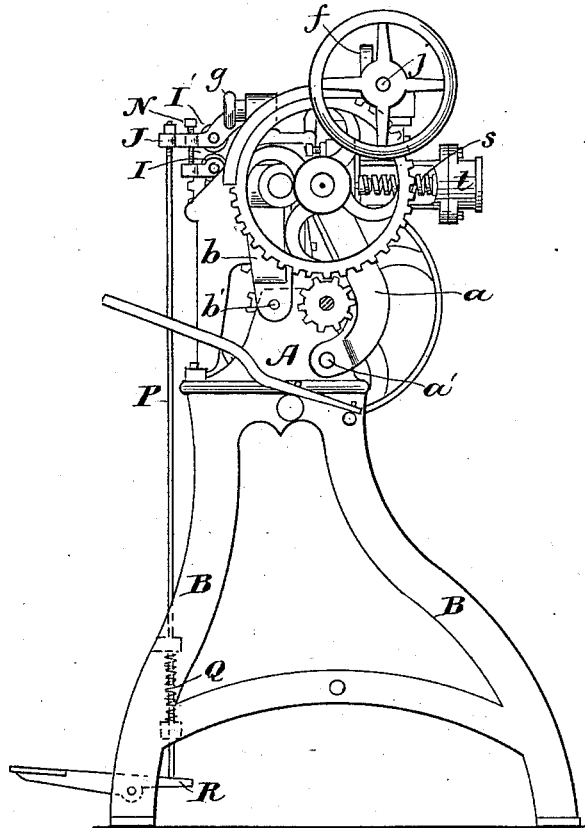


Fig. 1.

WITNESSES

H. Brown.
A. L. White

INVENTOR

J. A. Safford
by Wright & Brown
Attys.

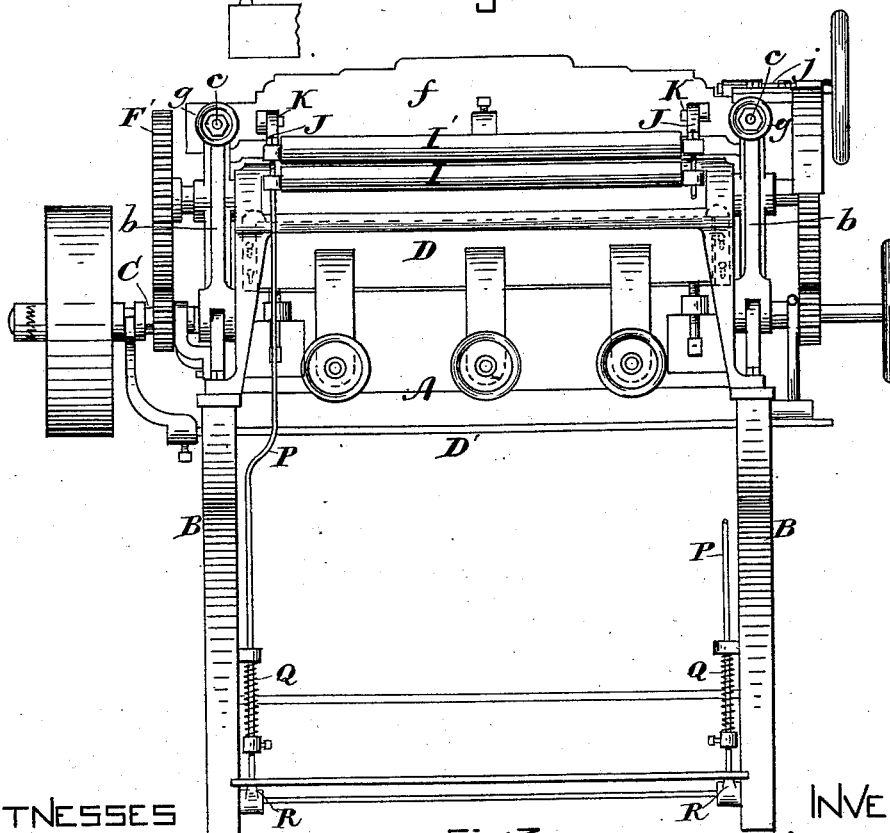
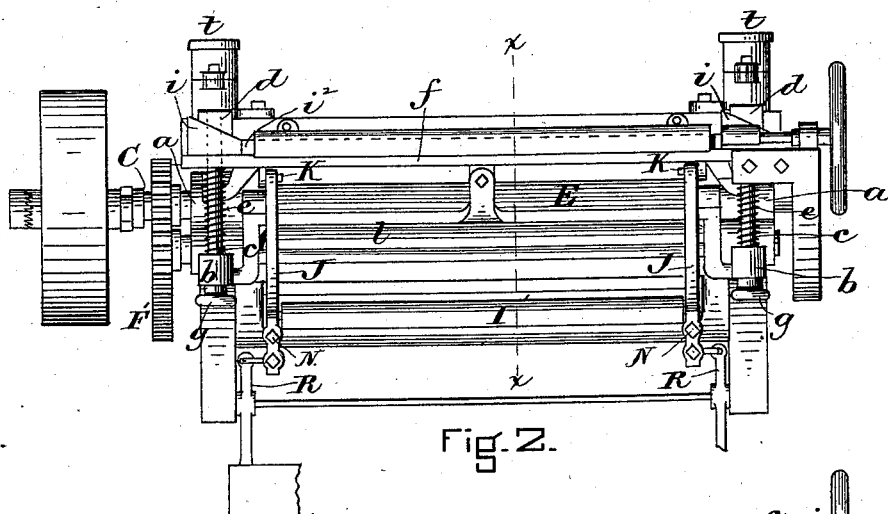
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WITNESSES

H. Brown
A. L. Noble

Fig. 3

INVENTOR

J. A. Safford
by M. H. Brown
Attys.

(No Model.)

3 Sheets—Sheet 3.

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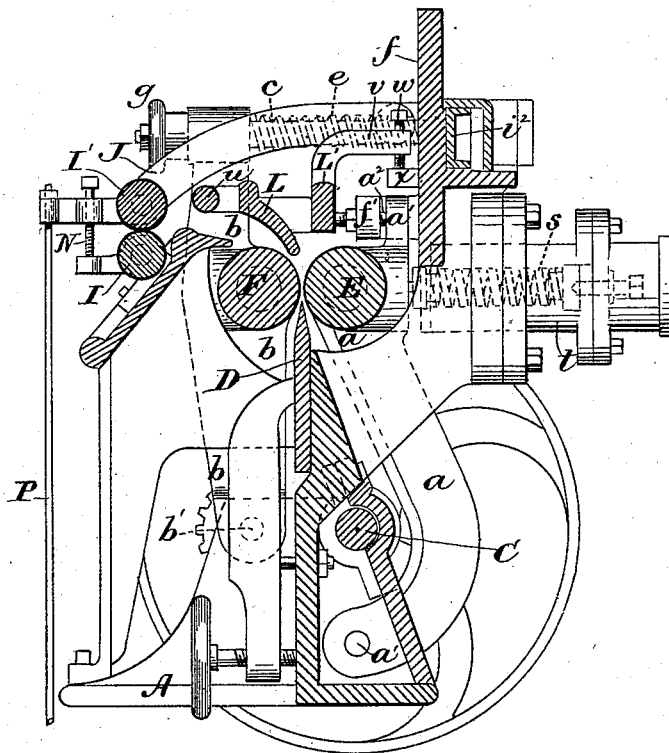


Fig. 4.

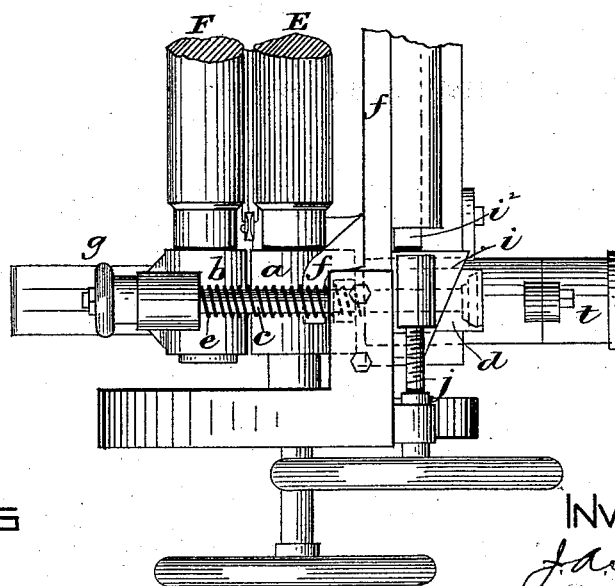


Fig. 5.

WITNESSES

H. Brown.
A. L. White

INVENTOR

J. A. Safford
by M. H. Brown
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH A. SAFFORD, OF BOSTON, MASSACHUSETTS.

LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 305,240, dated September 16, 1884.

Application filed May 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. SAFFORD, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Leather-Splitting Machines, of which the following is a specification.

This invention relates to the class of leather-splitting machines shown in various Letters Patent heretofore issued to me, and particularly in Letters Patent No. 230,895, dated August 10, 1880.

The invention consists, first, in the provision of pivoted arms containing the bearings of the gage and feed-roll journals, the adjustment of said rolls being effected by swinging said arms on their pivots, instead of by sliding the bearings in guides, as heretofore.

The invention consists, secondly, in the means employed for adjusting said rolls, all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents an end elevation of a leather-splitting machine embodying my improvement. Fig. 2 represents a top view. Fig. 3 represents a front elevation. Fig. 4 represents an enlarged section on line *xx*, Fig. 2. Fig. 5 represents an enlarged top view of a portion of the machine.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the main frame or bed of the machine, supported upon legs B B, and having suitable bearings, in which are mounted the driving-shaft C and shipper-rod D'.

E represents the pressure or feed roll, and F the gage-roll, said rolls being connected by gears, which compel them to rotate in unison and in opposite directions. The shaft of the gage-roll has a gear-wheel, F', which meshes with a pinion on the driving-shaft, the gage-roll being thus positively rotated, as heretofore.

D represents the knife, which is detachably secured to the main frame, and is located in the usual relation to the rolls E F, as shown in my above-named patent. Heretofore the rolls E F have been mounted in sliding boxes fitted to and adjustable horizontally in housings in the main frame, as shown in my Patent No. 230,895, before cited.

In carrying out my present invention I have dispensed with said sliding boxes and their housings, and instead have mounted the journals of the rolls E and F, respectively, in the swinging ends of arms or levers *aa* and *bb*, the arms *aa* supporting the roll E and the arms *bb* the roll F. The arms *aa* are pivoted at *a' a'*, and the arms *bb* at *b' b'* to the main frame. These pivoted supports enable the rolls to be adjusted relatively to each other and to the knife with the minimum of friction, the resistance caused by friction being considerably less than that caused by the sliding boxes and housings heretofore used. Moreover, the pivoted arms are considerably less expensive than said boxes and housings, so that the cost of the machine is reduced, while its desirability is increased by this improvement. The arms *bb*, supporting the gage-roll, are held at their swinging ends by means of bolts *cc*, attached to beveled blocks *dd*, bearing against wedges *ii*, as more fully described hereinafter, and springs *ee*, supported by said bolts and bearing at their respective ends against a fixed bar, *f*, through which the bolts *c* pass, and against the ends of the arms *bb*, so as to normally press said arms away from the bar *f*, and thus force the roll F away from the knife. The bolts *cc* pass through enlarged orifices in the arms *b*, and are provided on their outer ends with adjustable nuts *g*, against which the arms *b* are pressed by the springs *e*. By the adjustment of said nuts on the bolts *c* the initial position of the roll F is determined.

The gage-roll F is adjusted toward or from the knife, to determine the thickness of the evened portion of the split stock by a movement of the wedges *ii*, said wedges being connected by a rod, *i'*, and moved by an adjusting-screw, *j*, the wedges acting on the beveled blocks *dd* in such manner that an endwise movement of the wedges in one direction will draw bolts *cc* inwardly, and thus move the gage-roll bodily toward the knife, while a movement of the wedges in the opposite direction will enable the springs *ee* to force the arms *b* outwardly and move the gage roll away from the knife.

The arms *aa*, supporting the feed-roll E, are provided at their swinging ends with lugs *a'*,

which bear against adjustable bolts or stops a^2 , (see Fig. 4,) supported in lugs f' on the fixed bar f . Springs $s s$, contained in holders $t t$, affixed to the main frame, press the arms $a a$ toward the stops a^2 , and thereby press the feed-roll toward the knife, the approach of the feed-roll to the knife being determined by the stops a^2 , which are threaded bolts adapted to work in threaded sockets in the lugs f' . The feed-roll is therefore adapted to yield and conform to variations in the thickness of the leather, as in my former patents, but its yielding movement is attended with much less friction than heretofore, in consequence of the pivoted supports; hence the machine is more easily operated, and, as I have found by practical tests, the edge of the knife can be brought nearer to the line of nearest approach of the rolls than heretofore, so that thinner splits can be produced by the machine than by one in which the feed-roll works in sliding boxes.

L represents the weighted pressure-bar shown in Patent No. 230,895, said bar being pivoted in the present case at $u u$ to the arms $b b$ of the gage-roll, so as to move with said arms, and extending over the gage-roll, so as to press upon the stock being fed between it and the roll, and smooth out any wrinkles in the stock. The pressure-bar is weighted by the supplementary bar L' , having a lug, v , in which is a screw-stop, w , bearing on a fixed lug, x , on the bar f , and regulating the distance between the rear edge of the bar L and the gage-roll, substantially as in my above-named patent.

$I I'$ represent a pair of idle-rolls adapted to act on and smooth the leather before it reaches the gage-roll. The roll I is mounted in fixed bearings on the frame, and the roll I' is

mounted in arms $J J$, which are pivoted at $K K$ to the main frame, and are provided with adjustable screw-stops $N N$, which regulate the approach of the roll I to the roll I' . Rods P , connected to the arms J , extend downwardly, and are forced by springs Q against treadle-levers $R R$, pivoted to the main frame. The operator, by pressing his foot on the treadle, can raise the arms J and roll I' to enable the leather to be inserted between the rolls I and I' . When the treadle is released, the rolls press the leather and eradicate wrinkles therefrom.

I claim—

1. In a leather-splitting machine, the combination, with the knife and feed-roll, of a gage-roll, pivoted arms supporting said roll, and means, substantially as described, for holding said roll and arms in any position to which they may be adjusted, as set forth.

2. In a leather-splitting machine, the combination, with the knife and gage-roll, of a feed-roll, pivoted arms supporting said roll, springs bearing against said arms and pressing the feed-roll toward the knife, and adjustable devices for limiting the approach of the arms and feed-roll toward the knife, as set forth.

3. In a leather-splitting machine, the combination, with the knife, of the feed-roll, the gage-roll, and pivoted arms supporting said rolls, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 2d day of May, 1884.

JOSEPH A. SAFFORD.

Witnesses:

C. F. BROWN,
A. L. WHITE.