(No Model.) 2 Sheets—Sheet 1.

A. F. STOWE.

LEATHER SPLITTING MACHINE.

No. 346,389. Patented July 27, 1886.

Fig. 1

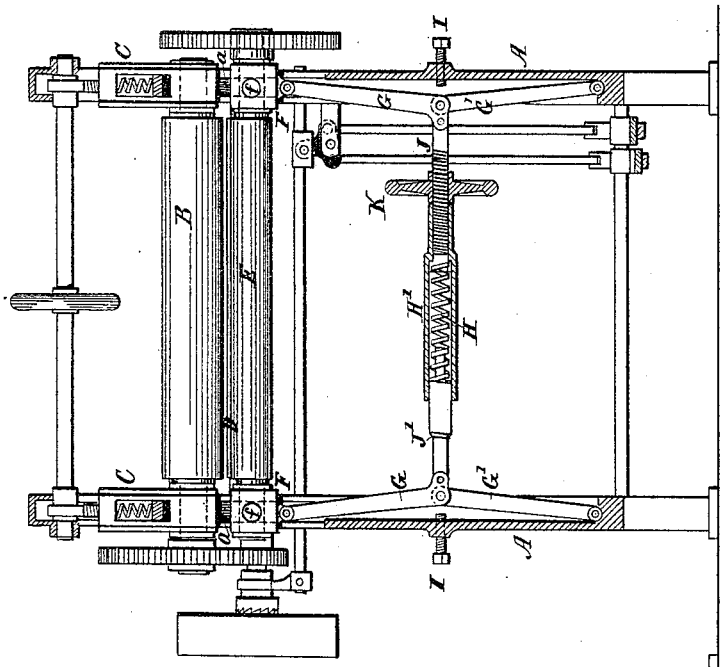
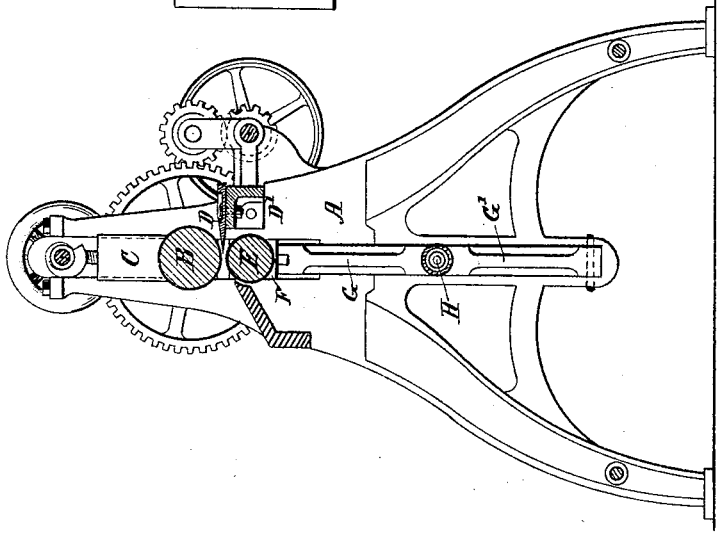


Fig. 2



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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LEATHER SPLITTING MACHINE.

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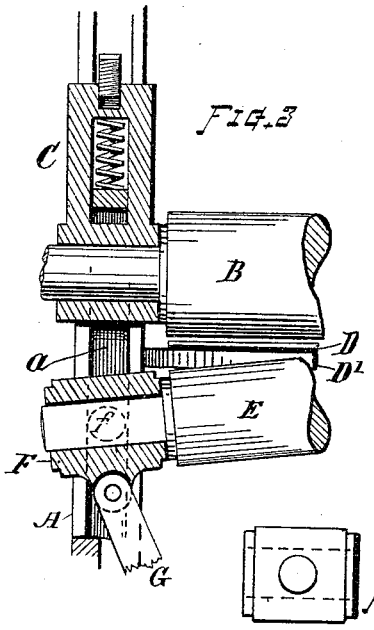

FIG. 3

FIG. 5

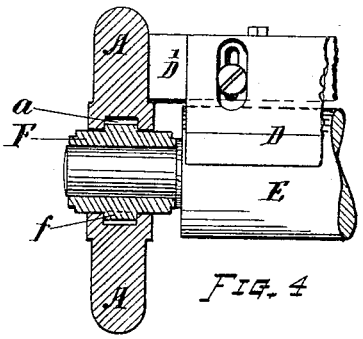

FIG. 4

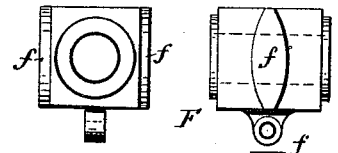

FIG. 6

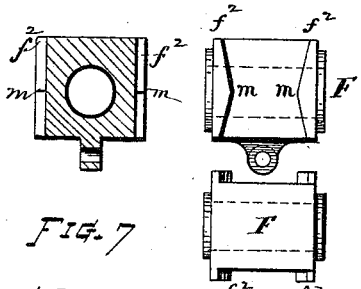

FIG. 7

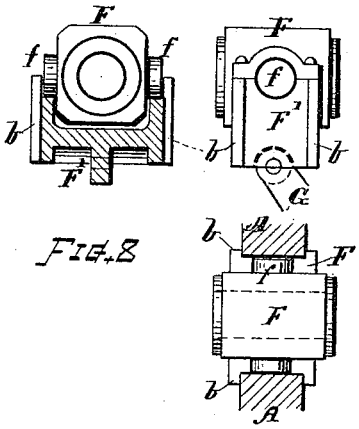

FIG. 8

WITNESSES

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UNITED STATES PATENT OFFICE.

AARON F. STOWE, OF WORCESTER, MASSACHUSETTS.

LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 346,389, dated July 27, 1886.

Application filed April 2, 1885. Serial No. 161,004. (No model.)

To all whom it may concern:

Be it known that I, AARON F. STOWE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Leather-Splitting Machines; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In leather-splitting machines as heretofore constructed it has been customary to support the journal-bearing boxes of the movable presser-roll in the guideways of the frame by means of parallel lips formed upon the sides of the boxes, which lips project past the angles of the guiding-frame. This construction admits of the boxes moving only in the track-line of the guide, so that the presser-roll in moving to and from the gage-roll and cutter maintains a position substantially parallel with the gage-roll. Any tendency of the presser-roll to take a diagonal position causes the lips of the box to bind or cramp in the guides. Consequently, when passing pieces of stock through the machine which are thicker at one side than at the other, the thin portions of the stock are not held to the guide-roll with the same degree of firmness as the thicker portions, while the action of the machine is somewhat interfered with by the friction caused by the boxes gripping on the guides.

The object of my present invention is to provide in a leather-splitting machine rocking boxes for supporting the journals of the presser-roll, so that either end of said presser-roll can move away from the guide-roll and knife to a greater or less extent, and with perfect freedom of action, irrespective of the position of the opposite end of the roll; also, to provide in a leather-splitting machine, in combination with the rocking boxes which support the journals of the presser-roll, yielding presser devices that will give uniform pressure on the boxes at each end of the roll, while permitting either box to move downward to a greater or less degree, in accordance with the variations in the stock passing through the machine. These objects I attain by the mechanism the construction, nature, and operation of which are illustrated in the drawings and explained in the following description, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 represents a longitudinal vertical sectional view of a leather-splitting machine constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a vertical section through the roll-supporting box at one end of the machine on a somewhat larger scale. Fig. 4 is a horizontal section through the rocking box and frame at one end of the presser-roll. Fig. 5 is a side view of the rocking box. Fig. 6 shows an end, side, and top view of the rocking box made with an elongated trunnion. Fig. 7 shows a section, side and top view of the rocking box in modified form. Fig. 8 shows an end, side, and top view of a rocking box mounted in a guiding-block.

In reference to parts, A denotes main frame.

B indicates the gage-roll, mounted in the usual manner in adjustable boxes C.

D indicates the knife, supported at stationary position on the bar D′, extending across the frame parallel with the gage-roll.

E indicates the presser-roll, the journals of which are supported by the rocking boxes F, which boxes are supported by knuckle-joint arms G G′, the upper ends of which are pivoted to the boxes, while the lower ends of said arms are pivoted to and seated on the frame A in the manner illustrated.

The boxes F are provided on their sides with trunnions *f*, which trunnions extend into grooves and are guided by grooves *a*, formed on the frame A in the guideway. These trunnions may be made cylindrical, as shown in Fig. 5, or elongated to an elliptical form, as illustrated in Fig. 6. The trunnions, while confined in the guiding-grooves, keep the box in proper relative position while they move to and from the boxes of the gage-roll, and at the same time permit the boxes to rock freely or take diagonal position in relation to the plane of the knife, so that either end of the presser-roll can move away from the knife independent of the opposite end, and thus avoid any liability of the boxes binding or cramping in or upon the guides, thus permitting the presser-

roll to accommodate itself in position to the thickness and irregularity of the piece of stock passing through the machine.

The devices for imparting pressure on the roll E consist of a spring, H, arranged for exerting its force on the knuckle-joints of the arms G G′, the strain being exerted from one pair of arms to the other, said spring mechanism being arranged substantially as shown and described in my Letters Patent for leather-rolling machine, No. 198,473, dated December 25, 1877. The spring is arranged within an adjustable sleeve, H′, mounted on bars J J′, that extend and are pivoted to the knuckle-joints of the arms G G′. The spring exerts its force for straightening the knuckle-joints, and acts with uniform power on each of said arms. A hand-wheel, K, mounted with a screw-thread on the bar J, serves for adjusting the tension of the spring H, to give greater or less pressure on the roll. Adjustable stops or set-screws I are arranged at the back of the knuckle-joints to prevent the arms G G′ from being straightened to that degree that would force the roll E against the edge of the knife.

The devices for adjusting the gage-roll to split different thickness of stock may be constructed in the usual or any suitable manner, as desired, as may be, also, the gearing for operating the rolls and the driving and shipper mechanisms.

Among the advantages of a splitting-machine constructed with rocking boxes for the presser-roll, as herein described, may be mentioned that the work of splitting leather can be performed with less labor and in a better manner and with less waste of stock than with machines of ordinary construction, wherein the presser-roll moves down in sliding boxes having parallel guiding-lips, since the stock passes through the machine with greater freedom, while it is sustained against the gage-roll more accurately and firmly, and rough or irregular pieces of leather are readily carried through the machine by the rolls without the necessity of the operator pulling and hauling on the stock to force it through.

As a modification in the construction of the rocking box F, it might in some cases be made of the form indicated in Fig. 7, with angular flanges f^2 in lieu of the trunnions, said angular flanges to take bearing on the sides of the frame A at the points *m*, so that they will rock on said points and allow the box to take angular position in relation to the frame or the plane of the knife. The flanges might also be made with rounded or curved bearing-edges, instead of being pointed at an angle at *m*, and, if desired, such flanges at one end of the box might be omitted, so as to have a guiding-bearing only at one side of the frame.

As another modification in the construction, the box with trunnions or pivots *f* may be mounted in a guiding-block, F′, said block being fitted to the guideways of the frame A by parallel lips *b*. In this case the guide-block would slide in the guideway of the frame, and the box would rock on the guide-block F′, the presser mechanism or arm devices acting against the guide-block.

In the present instance I have shown my invention as applied to the sole-leather-splitting machine; but it will be understood that my improvement may be applied to any leather-splitting machine in which the gage-roll, knife, and presser-roll are employed with equally beneficial results; and rocking boxes for supporting the presser-roll in leather-splitting machines may be employed in combination with other mechanism for imparting pressure thereto than the arms G G′ or those herein shown.

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

1. In a leather-splitting machine, the combination of the frame A, having guides *a*, the knife D, the gage-roll B, the presser-roll E, and the rocking box F, having trunnions or projections *f*, substantially as and for the purpose set forth.

2. In a leather-splitting machine, the combination, with the presser-roll E, mounted in rocking boxes F, of the knuckle-joint arms G G′ and the pressure devices acting from the angle of one pair of said arms to the other, substantially as and for the purposes set forth.

3. The combination, with the roll E, boxes F, and knuckle-joint arms G G′, of the adjustment-stops I, for limiting the movement of said arms, substantially as and for the purpose set forth.

4. In a leather-splitting machine, the combination, with the frame having guideways formed with guiding-angles and an intermediate groove, of the gage-roll having boxes C fitted to said guideway, with lips that embrace the angles of the frame, and the presser-roll having boxes F fitted with projections that work and rock in the groove of said guideway, the knife D, and yielding pressure mechanism for sustaining said presser-roll boxes, substantially as set forth.

Witness my hand this 28th day of March, A. D. 1885.

AARON F. STOWE.

Witnesses:
CHAS. H. BURLEIGH,
CHARLES S. JACKSON.