

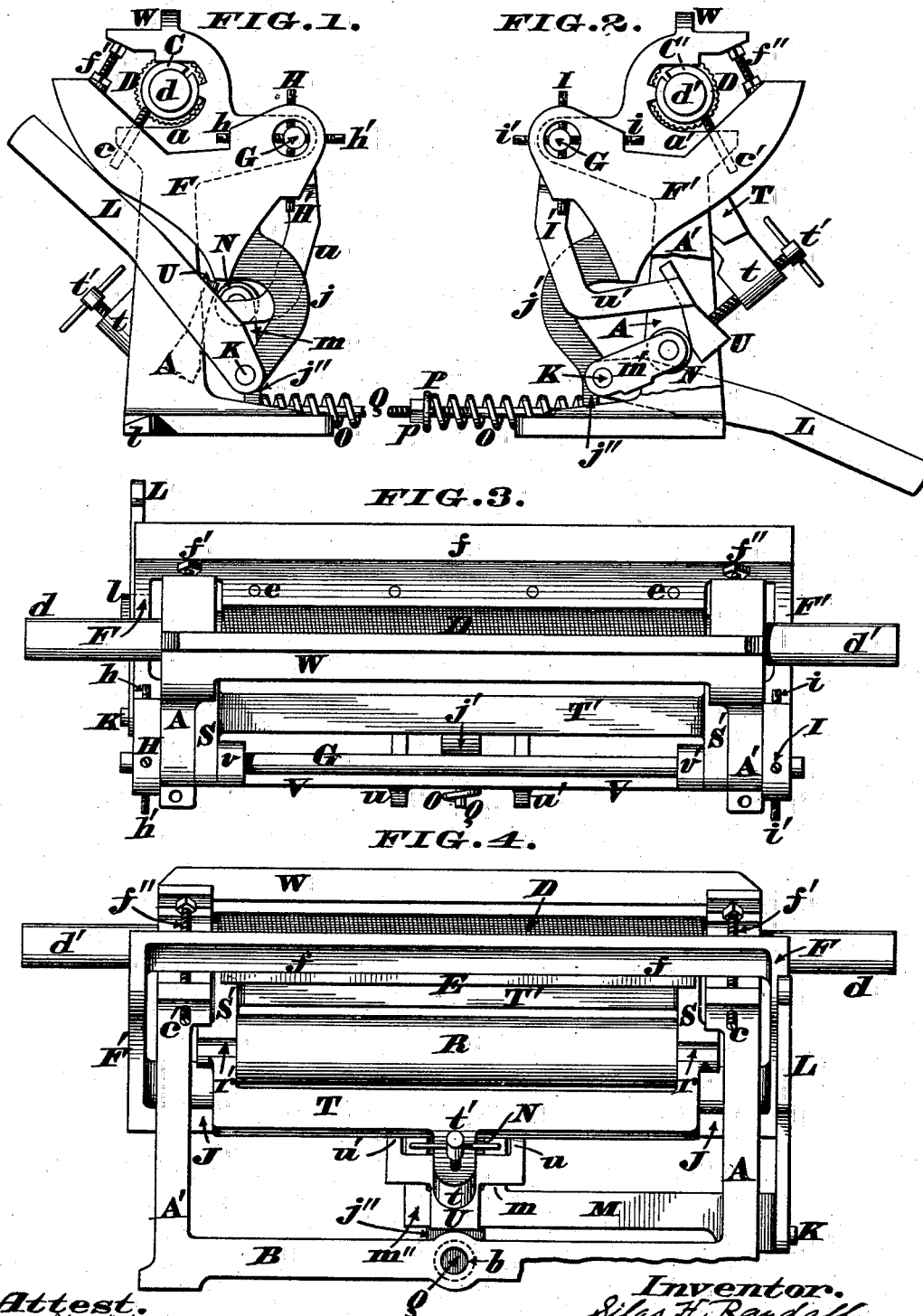
(No Model.)

2 Sheets—Sheet 1.

S. H. RANDALL.
LEATHER SPLITTING MACHINE.

No. 524,768.

Patented Aug. 21, 1894.



Attest.
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Samuel M. Quinn

Inventor.
Silas H. Randall.
by James H. Layman.
Atty.

(No Model.)

2 Sheets—Sheet 2.

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FIG. 5.

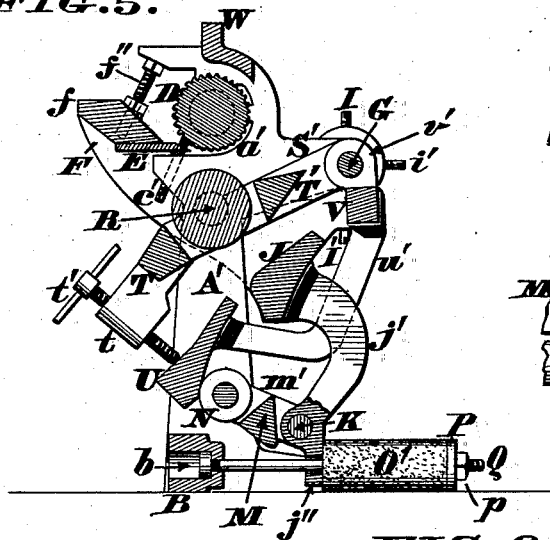


FIG. 8.

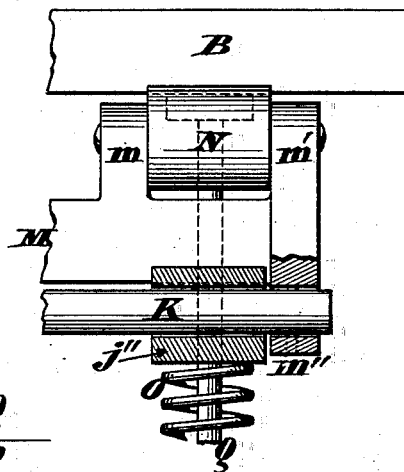


FIG. 6.

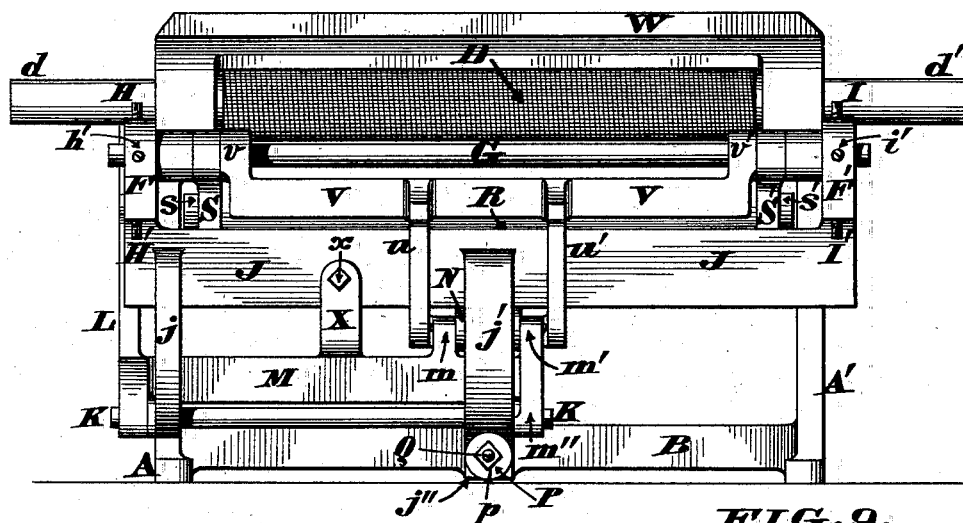
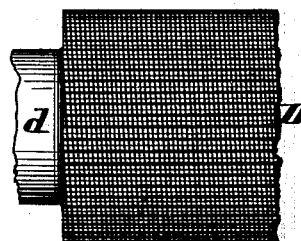
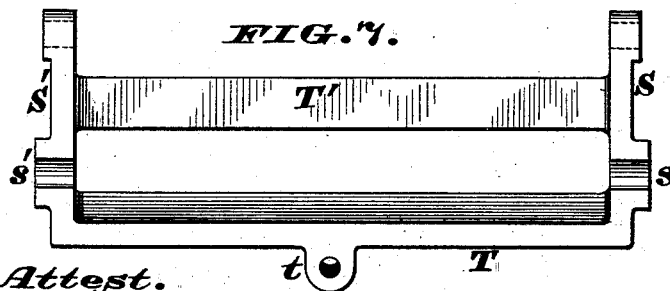


FIG. 9.

FIG. 7.



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UNITED STATES PATENT OFFICE.

SILAS H. RANDALL, OF WYOMING, ASSIGNOR TO RANDALL & CO., OF CINCINNATI, OHIO.

LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 524,768, dated August 21, 1894.

Application filed March 19, 1894. Serial No. 504,170. (No model.)

To all whom it may concern:

Be it known that I, SILAS H. RANDALL, a citizen of the United States, residing at Wyoming, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Leather-Splitting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

This invention relates to those machines used for splitting or skiving leather, and the leading features of my improvements comprise certain novel combinations of devices for effecting a very accurate adjustment both of the knife-bar and the gage-roll, the details of these devices being hereinafter more fully described, by reference to the annexed drawings, in which—

Figure 1 is an end elevation of my leather-splitter, the lever that operates the gage-roll being swung up to shift said roll away from the feed-roll. Fig. 2 is an elevation of the opposite end of said machine, a portion of its near standard being broken away, and the operating lever being depressed to raise the gage-roll. Fig. 3 is a plan of the machine. Fig. 4 is a front elevation of the same, all the operative parts being in the positions seen in the first illustration. Fig. 5 is a vertical section taken transversely through the center of the machine, the gage-roll being elevated. Fig. 6 is a rear elevation of the machine, all the operative parts being in the positions seen in Figs. 1 and 4. Fig. 7 is a plan of the gage-roll frame detached from the machine. Fig. 8 is an enlarged horizontal section at one end of the shaft K, and its accessories. Fig. 9 is an enlarged elevation of a portion of the feed-roll.

The main frame of the machine consists of a pair of vertical standards A, A', united at bottom by a longitudinal bar B, and coved or recessed near their upper ends, as at *a, a'*, to admit split-bushings C, C', which latter are retained in place by screws *c, c'*, tapped in said standards, in the manner shown. These bushings have journaled in them the bearings *d, d'*, of a feed-roll D, the surface of which is first fluted longitudinally and then scored

to intersect said flutes, as more clearly seen in Fig. 9, for the purpose of affording a very secure hold on a piece of leather or other work to be run through the machine.

The cutter consists of a blade E, secured to the under side of a knife-bar *f* by screws *e*, said bar being integral with a pair of wings F, F', located outside of the standards B, B', and adapted to vibrate with a shaft G carried by rearward projections from said standards.

H, H', are vertical set-screws tapped in the wing F and adapted to bear against the shaft G; and *h, h'*, are horizontal set-screws, also bearing against said shaft; these devices being exactly duplicated for the other wing F', as seen at I, I', *i, i'*, in Fig. 2. The object of these set-screws is to so adjust the wings F, F', as to cause the cutting edge of knife E to be exactly parallel, both vertically and horizontally, with the axis of feed roll D, and when this accurate adjustment has been effected, a pair of stop-screws *f', f''*, prevent said knife approaching said roll. These stop-screws *f', f''*, are tapped in the knife bar *f*, and have their upper ends in contact with lugs projecting from the front of the standards, and above the coves or recesses *a, a'*.

J is a longitudinal-plate uniting the rear portions of wings, F, F', and being integral with them, a pair of hangers *j, j'*, being carried down from said plate, and having a shaft K secured in them, the outer end of said shaft being provided with a lever L, whose downward, or effective stroke, may be arrested by a stop-lug *l* at the base of standard A. Cast with this lever is a longitudinal bar M, that extends a little distance beyond the mid length of the machine, and has, at its inner end, a pair of lugs *m, m'*, between which a roller N is journaled. The extreme inner-lug M', is prolonged at *m''*, as more clearly seen in Fig. 8, to engage over the shaft K, by which arrangement the bar M and lever L partake of any slight swinging-motion of the wings F, F', and their accessories; the other shaft G being the center of vibration for said devices. These wings, and their attachments, are held in their normal positions by a spring O, one end of which bears against a projection *j''*, at the bottom of hanger *j'*, while its other end is in contact with a washer P, the

latter being held in place by a nut *p*, engaged with the screw-threaded portion of a bolt *Q*. This bolt traverses the nut, washer, and spring and then passes freely through a perforation in the projection *j''*, and has its head seated in a transverse bore *b* of bar *B*, as seen in Fig. 5. By this arrangement, the knife *E* is held up to its proper position, with reference to feed-roll *D* and yet is free to swing away from it when necessitated by any unusual thickness of the strap, the excess of leather, in this case, passing between the knife and feed roll; the shaving being thickened, while the thickness of the skived strap, which passes between the knife and gage-roll, is uniform.

The gage-roll *R* has a smooth periphery, and its journals *r, r'*, seen only in Fig. 4, turn in bearings *s, s'*, of a pair of arms *S, S'*, whose rear and upper ends are pivoted to the shaft *G*, a pair of longitudinal ties *T, T'*, being used for uniting these arms securely to each other, the front tie *T* being provided with a lug *t* having an adjusting screw *t'*, engaged with it. The point of this screw bears upon a plate *U*, whose rear surface is curved, to act as a cam, as seen in Fig. 5, and said plate is connected by arms *u, u'*, with a rear bar *V*, hung from the shaft, *G*, at the bearings *v, v'*.

W is a rib uniting the tops of the standards.

My machine is adjusted and operated in the following manner: The knife *E* being first secured to bar *f*, care must then be taken to have the cutting edge of said knife accurately adjusted with reference to the axis of feed-roll *D*, and if it should be found that one end of said knife is too near or too remote from the roll, the difficulty can be readily overcome by properly turning the horizontal set-screws *h, h'*, or *i, i'*, so as to slightly advance or retract the wings *F, F'*. But if it should be found that the knife is a little too high or too low at either end, it can be accurately leveled by adjusting the vertical set-screws *H, H'*, or *I, I'*, so as to raise or lower the wings. After these adjustments have been effected, the set-screws *f', f''* are properly turned to prevent the knife coming in contact with the feed-roll *D*. Screw *t'* is then turned, for the purpose of regulating the distance between the knife and gage roll *R*, thereby determining the thickness of the strap.

If it is desired to insert work at the front of the machine, lever *L* is swung up, as seen in Figs. 1, 3, 4, and 6. This act brings the roller *N* almost vertically over the shaft *K*, and thereby permits the cam-plate *U*, to swing down, and as the frame of the gage-roll is supported from this plate, by means of said screw *t'*, it is evident the free or front edge of said frame *SS'TT'*, must also fall. Consequently, ample space is left between the rolls for the insertion of the work, which is laid upon the gage-roll. The operator then grasps the lever *L* and swings its free end down as far as

the stop *l* will permit, and in so doing, the roller *N* bears against the cam-plate *U*, and swings it both forward and up, the result being a corresponding elevation of the frame *S S'TT'*, and an approach of the gage roll *R* toward the feed-roll *D*, which latter is then turned either by hand or power. Now, as the periphery of this roll *D* is roughened, in the manner previously described, it is evident the leather is forced through the machine with a positive feed, the strap passing under the knife, while the skive or shaving escapes over it. In most cases, however, the work will be introduced from the farther side of the machine, and then it will not be necessary to use the device for widely separating the gage-roll and knife. This device will be used only when it is desired to split a strap part of its length, a portion being held by the operator. Ordinarily, the leather will require splitting from end to end, in which event it will be inserted from the farther side. Again, the strap having been inserted, as before mentioned, and the lever depressed until the strap touches the knife; if now the strap is pulled through while said lever is gradually depressed still further, the strap will be beveled.

The above is a description of the preferred form of my leather-splitter, but it is evident that the details of construction may be varied without departing from the spirit of the invention, one evident modification being seen in Fig. 5, where a cushion *O'*, of rubber, or other compressible material, is substituted for the spiral-spring. Another change is seen in Fig. 6, where the bar *M* has a lug *X*, projecting from it, the upper end of said lug being provided with a set screw *x*, whose point bears against the back of plate *J*, and thus regulates the swing of lever *L*.

I claim as my invention—

1. In a leather-splitting machine, the combination of a frame; a feed-roll journaled therein; a knife borne by a swinging-piece; a gage-roll borne by another swinging-piece; and a device that regulates the distance of the knife from the gage-roll; thereby determining the thickness of the strap.

2. In a leather-splitting machine, the combination of a frame; a feed-roll journaled therein; a knife borne by a swinging piece; a gage-roll borne by another swinging piece; a device that regulates the distance of the knife from the gage-roll; and a device which brings the knife near the feed-roll.

3. In a leather-splitting machine, the combination of a frame; a feed-roll journaled therein; a knife borne by a swinging piece; a gage-roll borne by another swinging-piece; a device that regulates the distance of the knife from the gage-roll; a device which brings the knife near the feed-roll; and devices which prevent contact of the knife with the feed-roll.

4. In a leather-splitting machine, the combination of a frame; a feed-roll journaled therein; a knife borne by a swinging-piece;

a gage-roll borne by another swinging-piece; a device that regulates the distance of the knife from the gage-roll; and a device which permits a sudden and wide separation of gage-roll and knife, for the insertion of work.

5 5. The combination, in a leather-splitting machine, of the standards $A A'$; a shaft G , vibrating therein; wings F, F' , having openings through which the ends of said shaft
10 pass freely; two pairs of adjusting screws tapped in each wing, and bearing against said shaft; a bar f , connecting said wings; and a knife E , secured to said bar, for the purpose described.

15 6. The combination, in a leather-splitting machine, of the standards $A A'$, carrying a feed-roll D , and shaft G ; a pair of wings F, F' , hung upon said shaft, and connected by a bar f , to which latter the knife E is secured; a pair
20 of hangers j, j' , projecting from another bar J , that connects said wings; a shaft K , hung in the free ends of said hangers; a lever L fas-

tened to the outer end of said shaft; a lug
 m' applied to its other end; a bar M , connect- 25
ing said lever and lug, and provided with a
lug m ; a roller N , journaled in these lugs m, m' ; a cam-plate U against which said roller
acts; arms u, u' that carry said plate; a bar
 V , hung upon the shaft G , and having said
arms projecting therefrom; a swinging frame 30
 $S S' t$, pivoted to this shaft; a gage-roll R
journaled in this frame, $S S' t$; an adjusting
screw t' , tapped in said frame, and bearing
against said cam-plate; and a spring that re-
tains said wings, and attachments, in their 35
normal positions; all as herein described, and
for the purpose set forth.

In testimony whereof I affix my signature in
presence of two witnesses.

SILAS H. RANDALL.

Witnesses:

JAMES H. LAYMAN,
ARTHUR MOORE.