

(No Model.)

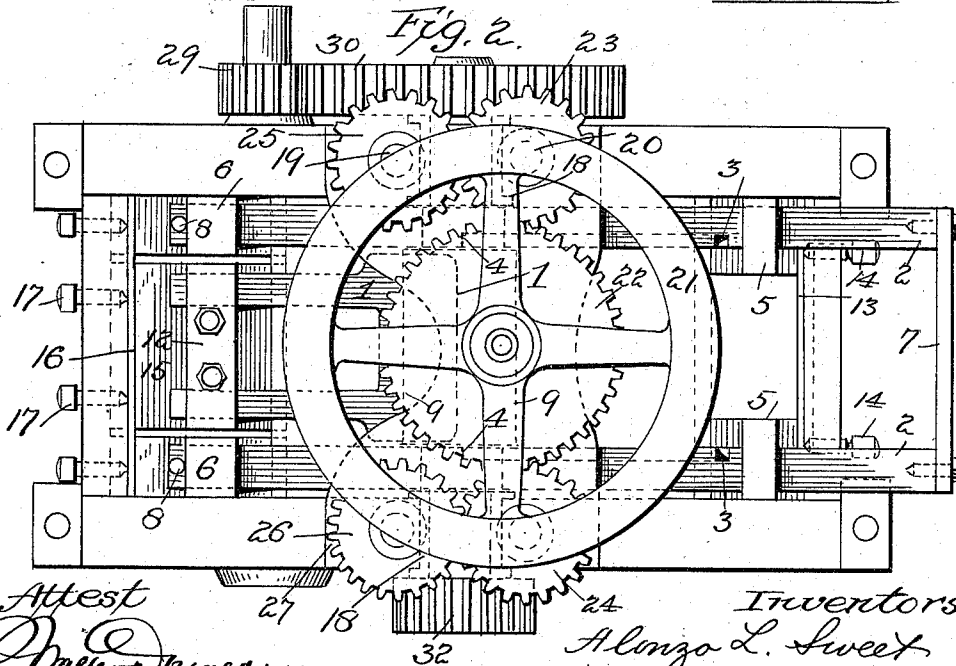
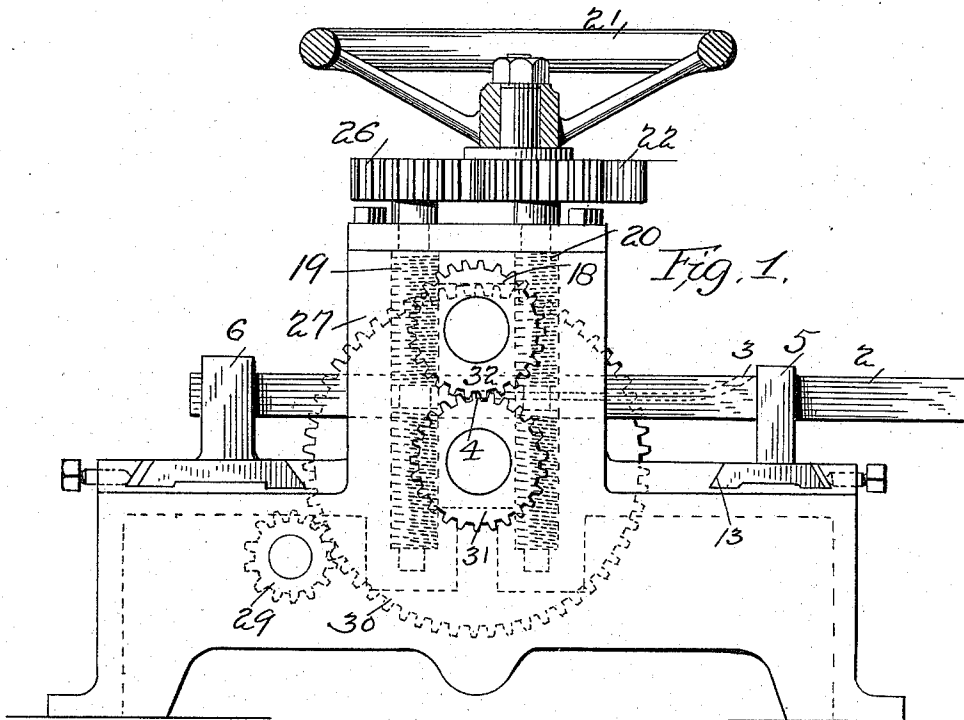
5 Sheets—Sheet 1.

A. L. SWEET.

MACHINE FOR SPLITTING LEATHER FOR FORMING POCKETS.

No. 571,291.

Patented Nov. 10, 1896.



Attest
J. L. Middleton

Inventors
Alonso L. Sweet
by
Wm. Spar
Atty.

(No Model.)

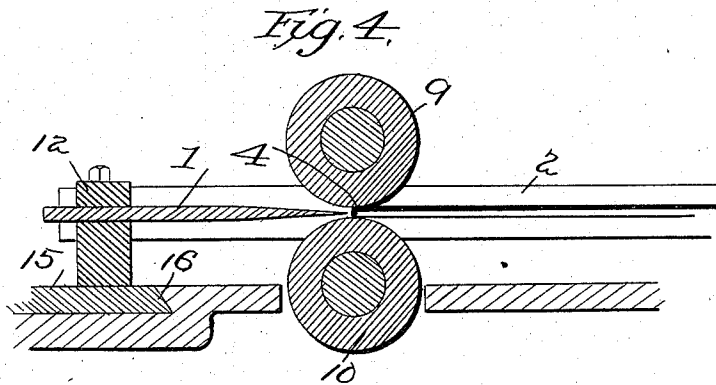
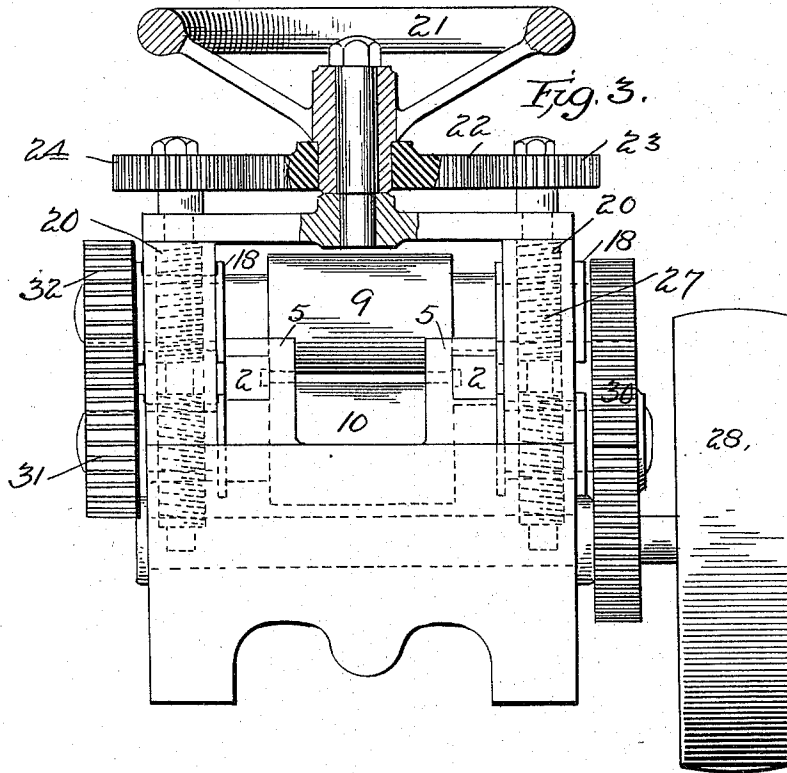
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Attest
Walter Donaldson
J. L. Middleton

Inventors
Alonso L. Sweet,
by Wm. Spear
ATTY.

(No Model.)

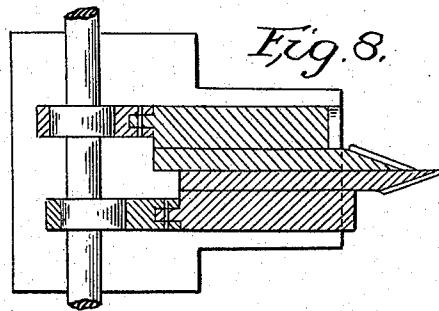
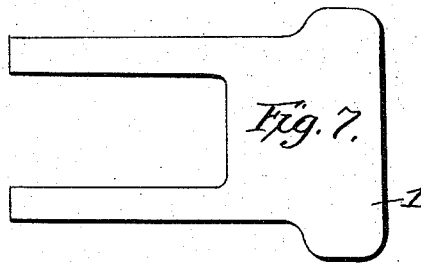
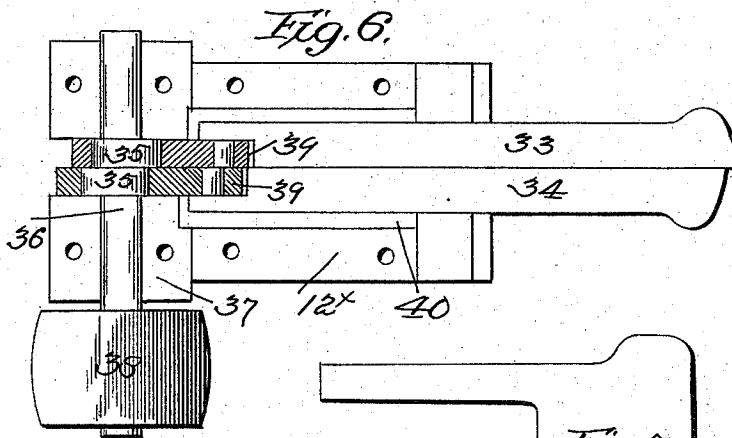
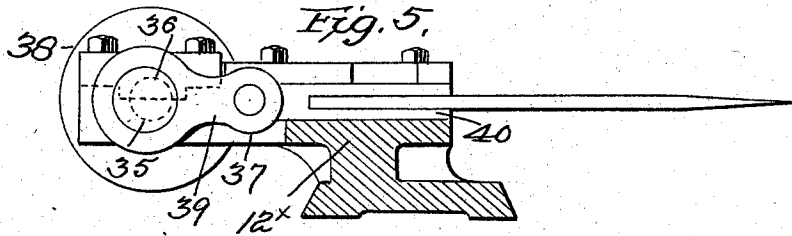
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Attest
Walter Madsen
J. L. Madsen

Inventors
Alonzo L. Sweet
by Ellis Sprar
Atty.

(No Model.)

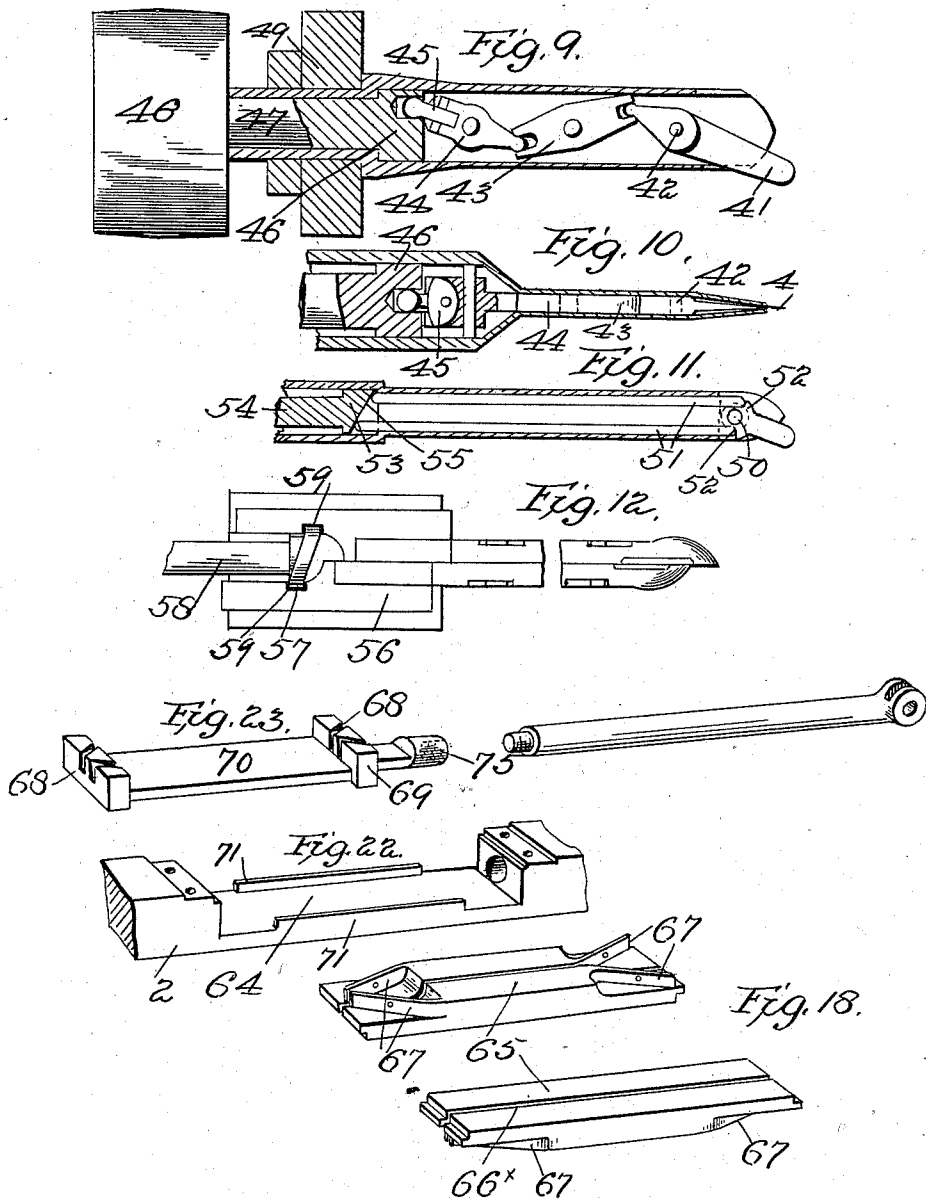
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Attest
J. L. Middleton
J. L. Middleton

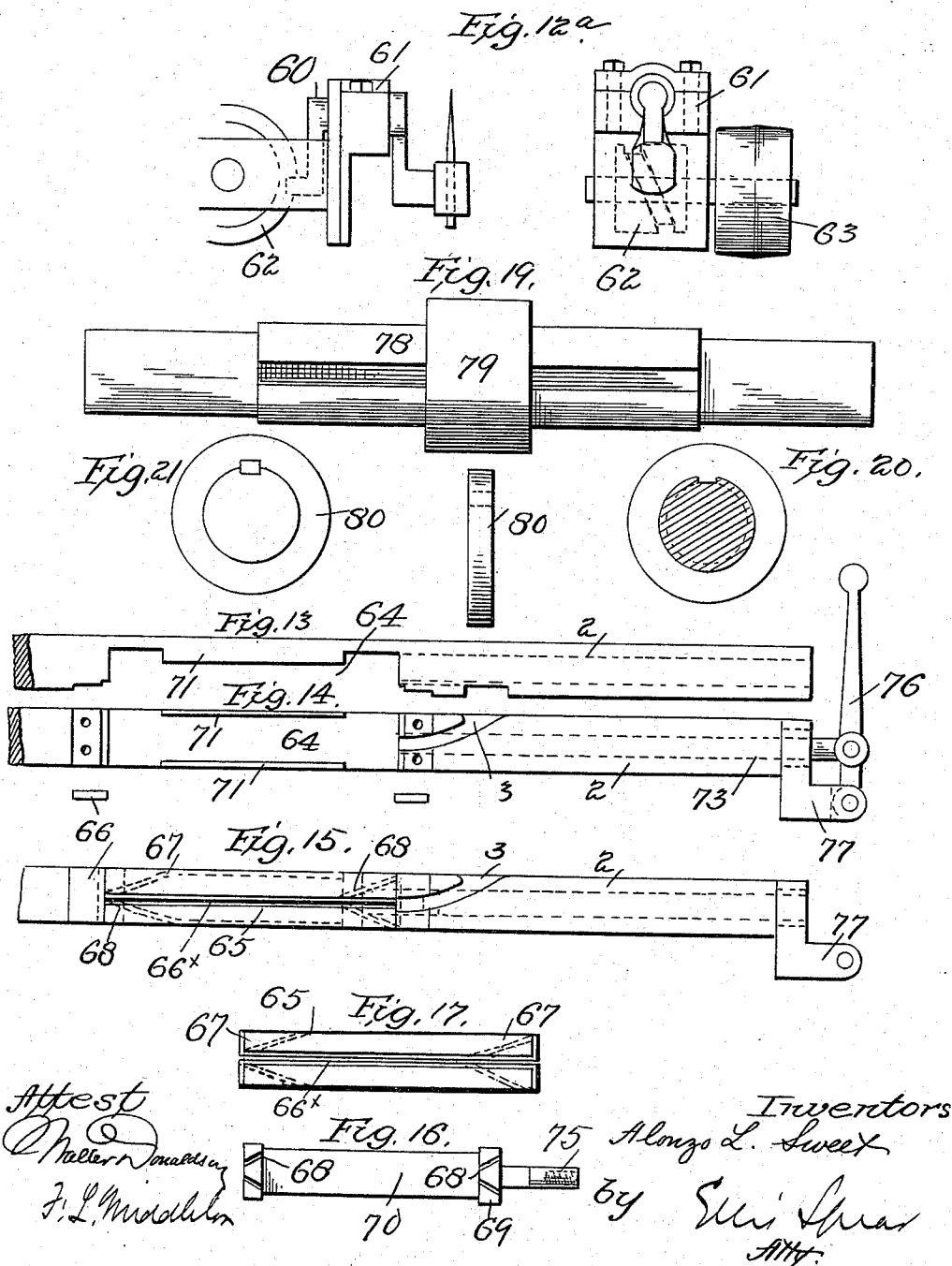
Inventor
Alonso L. Sweet.
By Eli Spear
ATTY.

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Patented Nov. 10, 1896.



UNITED STATES PATENT OFFICE.

ALONZO L. SWEET, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE SEAMLESS LEATHER COMPANY, OF ILLINOIS.

MACHINE FOR SPLITTING LEATHER FOR FORMING POCKETS.

SPECIFICATION forming part of Letters Patent No. 571,291, dated November 10, 1896.

Application filed May 7, 1895. Serial No. 548,433. (No model.)

To all whom it may concern:

Be it known that I, ALONZO L. SWEET, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Splitting Leather to Form Pockets, of which the following is a specification, reference being had therein to the accompanying drawings.

It is the object of my invention to produce a simple and efficient machine for cutting pockets or splitting bridle-blinds and the like from leather.

While the machine is specially adapted for making pockets, other articles may be cut or split on the machine.

In the accompanying drawings, Figure 1 is a side view of the machine; Fig. 2, a plan view; Fig. 3, an end elevation, partly in section; Fig. 4, a sectional detail view of the cutting-knife and the rollers; Fig. 5, a sectional detail view of a modification of the knife-holder. Fig. 6 is a plan view, partly in section, of the same; Fig. 7, a detail view of the cutting-knife. Figs. 8, 9, 10, 11, 12, and 12^a show different forms of cutting-knives, adapted to different kinds of work, as herein-after set forth. Fig. 13 is a plan view of the preferred form of guide-bar for the leather combined with clamping means therefor. Fig. 14 is a face view of the guide-bar. Fig. 15 is a face view of the guide-bar and the clamping-jaws. Fig. 16 shows details relating to the clamp-operating plunger. Fig. 17 shows the clamping-jaws in front view, and Fig. 18 shows the jaws in perspective view. Figs. 19, 20, and 21 show details relating to the feed-rollers. Fig. 22 is a perspective view of part of the guiding-bar, and Fig. 23 a perspective view of the clamp-operating plunger.

The leather is held and guided to the knife 1, Fig. 4, by the bars 2, which have grooves in their inner sides to receive the edges of the leather, which is inserted into place through the mouth of the groove, which opens upwardly at 3 to the upper side of the bar, forming a curved continuation of the main part of the groove. The forward edge of the leather abuts against the shoulder or end of the groove 4, which thus acts as a stop. The guide-bars slide in the bearings 5 6 at the op-

posite ends of the machine, said slide-bars being connected at the front by the cross-bar 7, bolted thereto. The outward movement of the slides is limited by the pins 8 thereon abutting against the rear bearings 6. When the slides are in their outward position, the stop-shoulder 4 is between the upper and lower rollers 9 10, and when the leather is inserted its edge, abutting against the stop-shoulder 4, will be just within the bight of the upper and lower rollers. The cutting-knife is held by the central clamp 12, and its cutting edge extends forward so as to just touch the edge of the leather between the rollers, as in Fig. 4. The rollers now turn and the leather held by the slide-bars is advanced against the knife, which splits the leather, but, as shown in Fig. 2, the knife is not quite as wide as the space between the slides, and thus the leather is left uncut along its side edges, which edges are held in the grooves of the slide-bars. The leather is not split all the way from front to back either, and thus the split portion forms a pocket, the edge on three sides being left uncut, while the fourth side forms the mouth of the pocket.

The bearings 5 for the slides are laterally adjustable in ways 13, Figs. 1 and 2, set-screws 14 holding the bearings in any position to which they may be adjusted. The rear bearings 6 are similarly adjustable, as is also the central bearing 12 for the cutting-knife. This bearing is carried by the block 15, movable in the ways 16 and held by screws 17. By these adjustable bearings the slides may be set for different widths of leather and pockets and the knife may be removed and replaced by other knives adapted to various purposes. The rolls are carried in vertically-adjustable boxes 18, which are moved toward and from each other simultaneously and to equal degrees by the right and left screws 19 and 20, engaging threads on the boxes, said screws being operated from a hand-wheel 21 on top of the incline frame through a gear 22, meshing with pinions 23 24 on the upper ends of opposite screw-shafts, said pinions meshing with pinions 25 26 on the adjacent screw-shafts. These boxes slide in ways formed in the upper extensions 27 of the supporting-frame. The rollers are driven from a pulley

28, the shaft of which has a pinion 29 meshing with a gear 30 on the axis of one roller having a pinion 31 at its opposite end meshing with a pinion 32 on the axis of the upper roller.

In Figs. 5 and 6 a modified form of splitting-knife is shown, composed of two sections 33 34, arranged to slide against each other and thus projecting the cutting edges alternately, this alternate reciprocation being given by eccentrics 35 on the supplemental shaft 36, arranged in the rear extensions 37 of the bearing 12^x and driven by a pulley 38. The knives are carried in blocks 40, connected with the eccentrics by straps 39, which straps are pivoted to the blocks. In Fig. 8 is shown a modification of these reciprocating knives, the principle of operation being the same as that described in connection with Figs. 5 and 6, the knives, however, having inclined cutting edges.

In Figs. 9 and 10, which show a knife in plan and in side elevation, the knife 41 has a reciprocating movement laterally, being pivoted to the knife-carrier at 42 and oscillated from a face-wheel 46 through oscillating links 43 44, the latter having a swiveled connection 45 with the face-wheel and eccentrically thereof. The face-wheel shaft 47 extends lengthwise of the machine and has upon its end a pulley 48. Suitable bearings 49 are provided for the shaft. In Fig. 11 a similar oscillating or laterally-reciprocating knife is shown pivoted at 50 and operated by push-rods 51, engaging shoulders 52 on opposite sides of the pivot, said push-rods being operated from a face-wheel 53 on the shaft 54 and having an inclined face 55, against which the push-rods bear.

In Fig. 12 reciprocating knives with rounded or curved cutting edges are shown, and the blocks 56 carrying these knives are reciprocated by a cam 57 on the shaft 58 and engaging notches 59 in the said knife-blocks.

Fig. 12^a shows a side and face view of a knife carried on a rocker-shaft 60, journaled in bearings 61 and operated by a groove in a cam 62, which is operated by a pulley 63. This knife also has a reciprocating or oscillating movement and is adapted for special work.

In order that the leather piece may be securely held by the guide or carrier bars and forced uniformly and evenly against the cutting edge of the knife, the carrier-bars 2 are provided with clamping means to grip the edges of the leather. For this purpose the bars 2 are recessed at 64, and clamping-jaws 65 are placed therein, being confined by the plates 66, secured to the guide-bars and projecting slightly over the ends of the jaws to confine and guide the same. These jaws have their meeting edges shouldered or cut away at 66^x to form continuations of the slots or grooves in the guide-bars. On their rear sides the jaws have inclined ribs 67, and these fit in inclined grooves or seats 68 in the faces

of studs 69, projecting from a clamp-operating slide 70, which is held by the upper and lower ribs 71 of the guide-bar recess. These clamp-operating slides, engaging the jaws, hold the same in position, and by moving the slide to the right of Fig. 15 the jaws will be moved together to clamp the leather inserted between them through the grooves of the carrying-bars 2. There is an inclined rib at each end of each jaw and there are inclined ways at each end of the clamping-slide.

The clamping-slide is operated by a bar 73, extending through the slide and having a threaded end engaging a threaded stud 75 on the clamping-slide, the said bar 73 being operated by a lever 76, pivoted to the bracket 77.

Both of the bars 73 may be connected by a cross-piece, so as to move in unison and thus clamp the opposite edges of the leather piece simultaneously and evenly. In adjusting the bars 2 for different widths of work the rollers must also be adjusted, and for this purpose the roller-shaft 78, Fig. 19, has a keyway on each side of a solid central roll portion 79, and on each side of this solid portion collars 80 are arranged, having keys fitted in the keyways. By removing the guide-bars 2 the said collars, which are in effect roll-sections, may be adjusted to secure the desired width of roll, and then the guide-bars 2 are replaced and are adjusted at such a distance apart as to hold the roll-sections or collars in proper place, dividing those which constitute the roll from those which are rendered inactive by being adjusted along the shaft or outside of the leather-surface to be acted on.

I claim as my invention—

1. In a splitting-machine, the combination of the knife, the rollers and the guides for the leather having ways or grooves for the side edges thereof, said knife being intermediate of and in line with said ways.

2. A splitting-machine for leather and the like comprising a knife, the rollers foreengaging the leather and guiding the same, and means for holding and guiding the leather at its edges consisting of the movable frame having bearings for the edges of the leather, substantially as described.

3. A splitting-machine comprising the knife, the rollers and the movable carrier for the leather engaging the side edges thereof and means for operating the rollers to feed the leather with its carrying-frame forward to the knife, substantially as described.

4. A leather-splitting machine comprising the knife, the rollers, the carrying-frame comprising the side bars having shoulders against which the leather abuts and means for operating the rollers to feed the leather with said guide-bars forward, substantially as described.

5. A leather-splitting machine, comprising the knife and the leather-carrying means consisting of the side bars having grooves in the inner sides to receive the edges of the leather and means between the bars for engaging and

guiding the leather to the knife, substantially as described.

6. A leather-splitting machine comprising the knife and the guide and holding bars having grooves in their faces to receive the edges of the leather and the rollers arranged to engage and guide the leather intermediate of the said grooved bars, substantially as described.

7. A leather-splitting machine, comprising the knife, the guide-bars having the grooves to receive the edges of the leather and the stop-shoulders at the ends of said grooves and the guiding means for the leather intermediate of the guide-bars, said knife being of less width than the distance between the grooves of the guide-bars.

8. A leather-splitting machine, comprising the knife, the grooved bars for holding the leather, the intermediate guiding means for the leather, said grooved bars being adjustable toward and from each other, substantially as described.

9. A leather-splitting machine comprising the knife, the grooved guide-bars, the rollers and the bearings for the grooved bars, arranged to slide laterally in ways in the frame, substantially as described.

10. A leather-splitting machine, comprising the knife, the grooved guide-bars, adjustable laterally of the machine and the rollers made up of sections arranged to be held by said guide-bars to make a roller of greater or less length, substantially as described.

11. A leather-splitting machine, comprising the knife, the grooved guide-bars, adjustable toward and from each other laterally of the machine, and the roller made up of adjustable sections, splined to the roller-shaft on each side of a solid shaft portion, said sections being arranged to be held in engagement or separated to make a longer or shorter roller, substantially as described.

12. In combination in a leather-splitting machine, the rolls, the carrying-frame for the leather having ways engaging the side edges thereof and arranged to move the said leather against the knife, and the knife with means for reciprocating or oscillating the same, intermediate of said ways leaving the side edges of the leather intact substantially as described.

13. In combination, the frame, the guide-bars for holding the leather, the upper and lower rolls, the knife and means for adjusting the rollers toward and from the cutting-line consisting of the right and left screws and the movable boxes having threads engaging the screws, substantially as described.

14. A leather-splitting machine, comprising

the knife, the carrying-frame for the leather and the clamping means thereon for clamping the edges of the leather, substantially as described.

15. A leather-splitting machine, comprising the knife, the carrying-frame for the leather comprising the two guide-bars and the clamping means carried by said guide-bars to clamp the edges of the leather, substantially as described.

16. A leather-splitting machine, comprising the knife, the grooved guide-bars for holding the leather and the clamping means for holding the leather edges in said grooves, substantially as described.

17. In combination the knife, the grooved guide-bars, the clamping-jaws carried thereby and forming between them continuations of the said grooves and means for operating the said clamps, substantially as described.

18. In combination, the knife, the guide-bars having recesses, the clamping-jaws carried thereby and having inclined ribs, the clamping-slide having inclined recesses engaging therewith and the operating-rod extending through the guide-bars, substantially as described.

19. In combination, the knife, the guide-bars arranged to receive the leather, the clamps carried by the guide-bars and the operating connections between the clamp arranged to operate them simultaneously and uniformly, substantially as described.

20. In combination, the knife, the recessed and grooved guide-bars, the clamping-jaws forming continuations of the grooves and movable toward and from each other and the clamping-slides with means for operating the same longitudinally, said slides having connections with the clamping-jaws, substantially as described.

21. A leather-splitting machine, comprising the leather-carrying bars adjustable toward and from each other, the knife arranged between the bars and the rollers adjustable as to width, substantially as described.

22. In combination in a leather-splitting machine, means for holding and guiding the side edges of the leather, the knife arranged between said holding means to act on the leather intermediate of its side edges, means for reciprocating or oscillating the knife and the feed-rolls for feeding the leather to the knife, substantially as described.

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

ALONZO L. SWEET.

Witnesses:

IRVING S. BERNHEIMER,
HARRY D. KOHN.