C. DANCEL & E. C. SMITH.

Machinery for Splitting and Beveling Leather.

No. 196,197. Patented Oct. 16, 1877.

Fig.1.

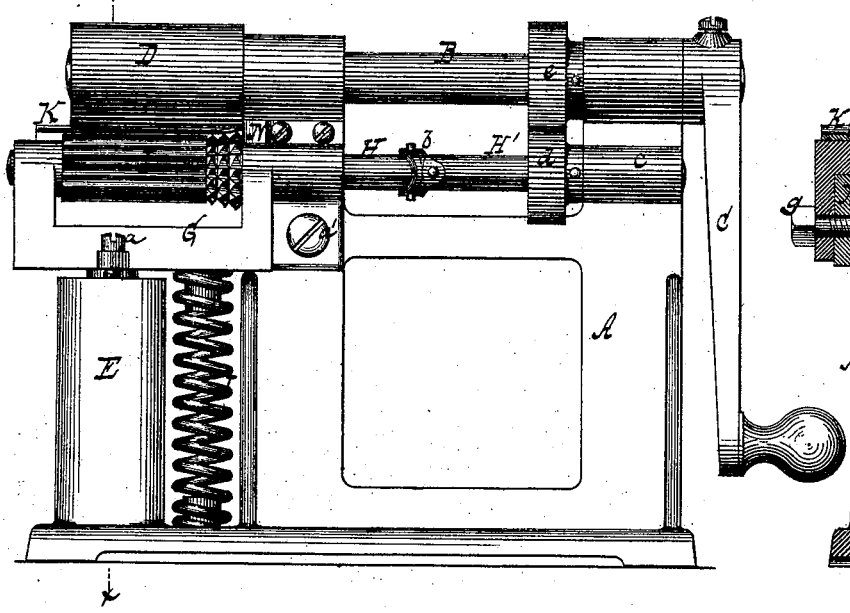


Fig.3.

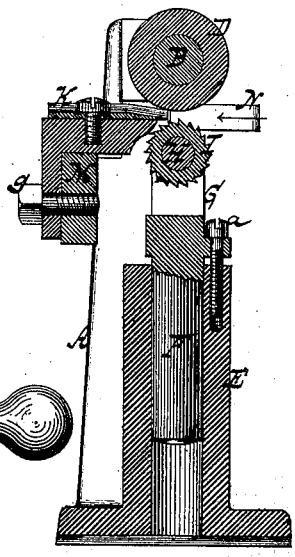
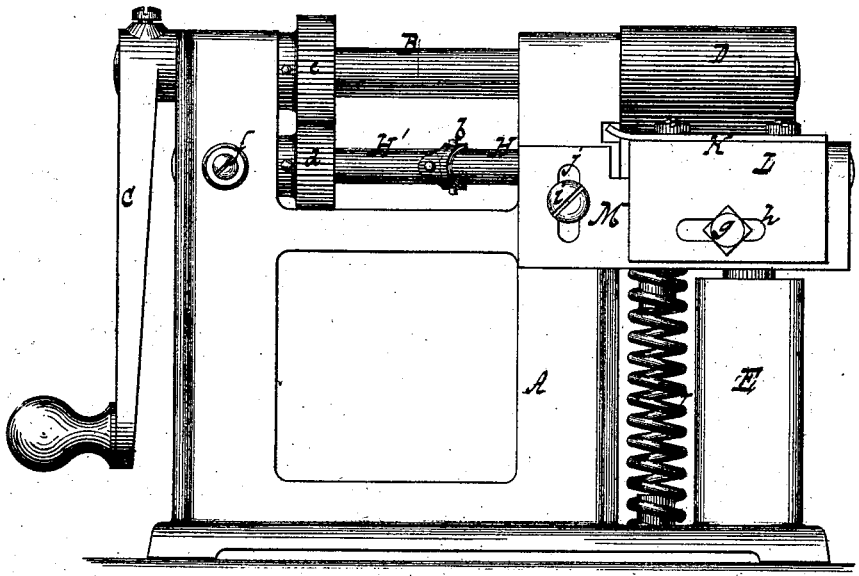


Fig.2.



Witnesses

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Fig.4.

Fig.5.

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UNITED STATES PATENT OFFICE.

CHRISTIAN DANCEL, OF NEW YORK, AND EDMOND C. SMITH, OF BROOKLYN, N. Y.

IMPROVEMENT IN MACHINERY FOR SPLITTING AND BEVELING LEATHER.

Specification forming part of Letters Patent No. **196,197**, dated October 16, 1877; application filed September 6, 1877.

To all whom it may concern:

Be it known that we, CHRISTIAN DANCEL, of the city, county, and State of New York, and EDMOND C. SMITH, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Splitting and Beveling Leather and other materials, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents an elevation, showing one side of our machine. Fig. 2 is a similar view, showing the other side. Fig. 3 is a transverse vertical section in the plane *x x*, Fig. 1. Fig. 4 is a section of the blank after the same has been passed once through our machine. Fig. 5 is a similar view when the blank is finished.

Similar letters indicate corresponding parts.

This invention consists in the combination, in a machine for splitting and beveling leather and other materials, of a gage-roller, a feed-roller, an edge-gage, and a knife the cutting-edge of which is curved upward at one end, so that a piece of leather or other material, in being passed through between the gage-roller and the feed-roller, is split and beveled in one operation. The diameter of the feed-roller increases at one end to correspond to the curvature of the cutting-edge of the knife, so that the same will take hold of and feed the material when being passed through the machine for the second time, and after it has already been split by the first operation. The knife is so arranged that it can be adjusted toward and from the gage-roller, and also in the direction of the length of this roller; and its cutting-edge is made longer than the feed-roller, so that when it is adjusted in the direction of the length of the gage-roller its cutting-edge will always act throughout the entire length of the feed-roller. The feed-roller is mounted in a head which is adjustable toward and from the knife and the gage-roller, and its shaft is made in two sections, which are connected by a universal joint, so that said shaft will remain in gear with the driving-shaft, and the feed-roller, when being moved up or down, will remain parallel with the gage-roller.

In the drawing, the letter A designates the frame of our machine which forms the bearings for the driving-shaft B. On one end of this driving-shaft is mounted a handle or winch, C, and on its other end is firmly secured a smooth roller, D, which we term the "gage-roller." From the bed-plate of the frame A rises a hollow column, E, which forms the guide for the shank F of a head, G. This head forms the bearings for the shaft H of the feed-roller I, and it is exposed to the action of a spring, J, which has a tendency to force the feed-roller up toward the gage-roller. A set-screw, *a*, Figs. 1 and 3, prevents the feed-roller from rising beyond the desired point, and it serves to adjust the distance between the feed-roller and the gage-roller.

The shaft H of the feed-roller is connected, by a universal joint, *b*, to a shaft, H′, which has its bearing in a box, *c*, and which is geared together with the driving-shaft B by cog-wheels *d e*. The box *c* is secured to the frame A by a single screw-pivot, *f*, Fig. 2, so that it can turn thereon. The feed-roller, in being raised or lowered, must preserve its parallelism with the gage-roller, since its supporting-head G is guided in the vertical column E. But as the feed-roller is raised or lowered its shaft H is thrown out of line with the shaft H′, and for this reason the universal joint *b* and the swivel-box *c* have to be applied. A screw, *a*′, which extends through a slot in the head G, and screws into the frame A, assists in preserving the parallelism of the feed-roller.

On the side of the frame A opposite to that of the feed-roller is situated the knife K, which is secured to a support, L. (See Figs. 2 and 3.) This support rests upon a bracket, M, and is held in position by a set-screw, *g*, which extends through a slot, *h*, Fig. 2, so that the knife can be adjusted in the direction of the length of the gage-roller. The bracket M is secured to the frame A by a set-screw, *i*, which extends through a slot, *j*, Fig. 2, so that the knife can be raised or lowered.

The cutting-edge of the knife is curved upward at its inner end, (see Figs. 1 and 2,) and the diameter of the feed-roller is increased at its inner end to correspond to the curvature of the cutting-edge of the knife. The cutting-edge of the knife is made longer than the feed-

roller, so that when the knife is adjusted in the direction of the length of the gage-roller its outer end will always extend beyond the outer end of the feed-roller. Close to the inner ends of the gage-roller is situated the edge-gage N, which assists in guiding the material during the operation of splitting and beveling. The feed-roller is provided with teeth throughout its whole length, so that the same takes a firm hold of the material to be operated upon.

After the feed-roller has been adjusted at the desired distance from the gage-roller corresponding to the original thickness of the material to be acted upon, the knife is set at a distance from the gage-roller corresponding to the thickness which the material is to have after it has been split, and then the knife is adjusted in the direction of the length of the gage-roller, so that its curved edge coincides with the corner formed between the edge-gage and the bottom line of the gage-roller. The leather or other material, which is first cut up into blanks of the desired shape—such, for instance, as counters or boxes for boots and shoes—is then inserted between the feed-roller and gage-roller, one edge of the blank being held up against the edge-gage, and by turning the handle C the blank is split to the desired thickness, and its inner edge is beveled off (see Fig. 4) without leaving a deficient ridge upon the surface of the blank, as is the case in machines using a straight knife or cutter. After the blank has thus been split and beveled at one edge its opposite edge is brought against the edge-gage, and by passing the blank through the machine the second time this inner edge is also beveled off to the desired shape. (See Fig. 5.) It will be readily seen that this second operation could not be performed if the feed-roller was made of uniform thickness throughout its entire length, since the blank is split by the first operation, so that the parallel portion of the feed-roller would not feed it a second time. During the second operation the blank is fed by the action of the increased inner end of the feed-roller.

The form of the edge-gage must be changed for blanks of different shape.

Our machine is designed particularly for splitting and beveling counters and boxes for boots and shoes; but it can be used for blanks of any other description made of leather, pasteboard, or other material of a similar nature.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the upper plain gage-roller D, the lower vertically-moving corrugated feed-roller I, enlarged at its rear end, the edge-gage N at the inner end of the gage-roller, and the laterally and longitudinally adjustable knife K, having its cutting-edge curved upward to correspond to the enlarged end of the feed-roller, substantially as and for the object set forth.

2. The combination of the upper plain gage-roller D, the longitudinal knife K, and the vertically-adjustable corrugated feed-roller I, enlarged at its rear end, substantially as and for the object set forth.

3. The combination, with a gage-roller and with a knife the cutting-edge of which is curved upward at one end, of a corrugated vertically-moving feed-roller, the diameter of which increases toward one end to correspond to the curved edge of the knife, substantially as and for the purpose described.

4. The combination, with the gage-roller D, the feed-roller I, head G, and driving-shaft B, of two shafts, H H′, connected by a universal joint, *b*, and a swivel-box, *c*, all constructed and adapted to operate substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 30th day of August, 1877.

CHRISTIAN DANCEL. [L. S.]
EDMOND C. SMITH. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.