J. CUTLAN.

MACHINES FOR CHANNELING AND BEVELING THE SOLES OF BOOTS AND SHOES.

No. 179,527. Patented July 4, 1876.

FIG 6

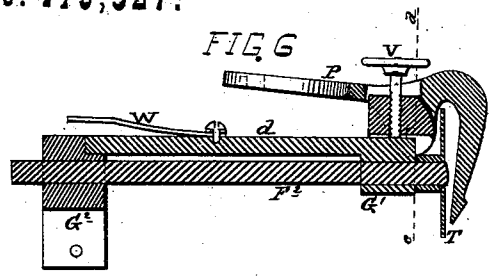


FIG 7

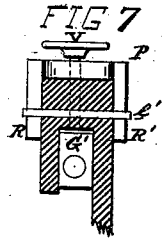


FIG 1

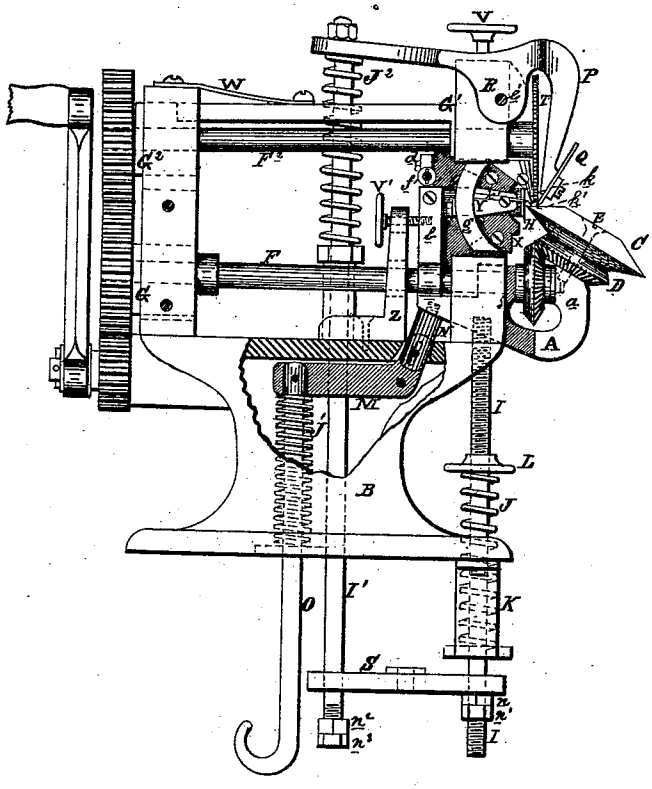


FIG 2

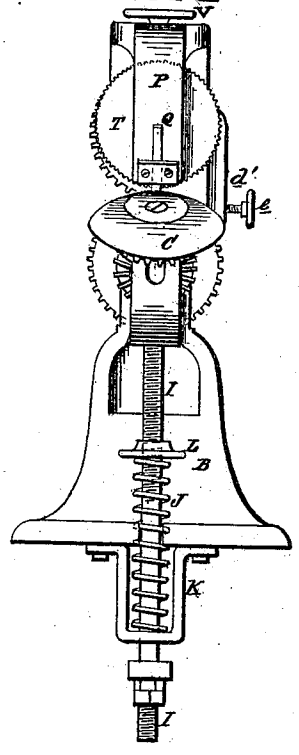


FIG 3

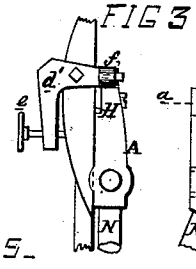


FIG 4

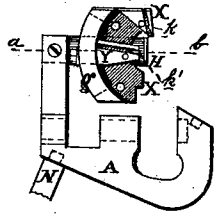
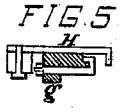


FIG 5



WITNESSES.

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JOHN CUTLAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CUTLAN SHOE SEWING MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CHANNELING AND BEVELING THE SOLES OF BOOTS AND SHOES,

Specification forming part of Letters Patent No. **179,527**, dated July 4, 1876; application filed June 9, 1876.

To all whom it may concern:

Be it known that I, JOHN CUTLAN, of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Channeling and Beveling Machines for the Soles of Boots and Shoes, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention consists in the employment of an angular frame carrying a revolving table or rest, and a suitable guide for regulating the distance of the channel from the sole-edge. The frame is arranged for horizontal and vertical adjustment within the frame proper of the machine, and also supports one end of a shaft, upon which is a bevel-gear wheel for rotating the table. The object of this part of my invention is to confine the periphery of the revolving table at all times as near as possible to the guide, in order to retain a solid bearing under the leather during the channeling and beveling operation, and also to prevent any leather passing between them (the table and guide) when a sliding movement is required.

My invention also consists in the employment of three knives, two of which are made perfectly straight. One, for cutting the shoulder in the leather, is in a fixed position, while the other, which is for cutting the bevel, is attached to a lever moving in an arc of a circle, and is regulated and held at any angle desired. The third knife, which is slightly curved at the point for cutting the channel in the leather, is connected to the downward-projecting end of a curved lever. The curved knives heretofore used are required to be made of different shapes to cut different thicknesses of leather. They are also easily broken, and require considerable care and skill in sharpening them, whereas in using the straight knives as I have shown, which will answer for any thickness of leather, a great difficulty is overcome, the knives are much stronger, are less liable to get out of order, and are more easily sharpened.

My invention further consists in connecting the angular sliding frame, carrying the revolving table and the curved lever which supports the channeling-knife, both to the same foot-treadle, the connection being made so that a slight pressure on the treadle, during the channeling and beveling operation, will cause the sliding frame, with the table, to yield sufficiently to compensate for any inequalities in the leather without interfering with the other movements of the machine. Increased pressure applied to the treadle depresses the sliding frame, and elevates the curved end of the lever carrying the channeling-knife.

My invention still further consists in applying a spring and set-screw to the sliding box, which carries the feed-wheel shaft, the object being to raise or lower the feed-wheel to increase or regulate the depth of the channel. Provision is also made for regulating the distance between the feed-wheel and guide.

Figure 1 is a side elevation of my improvement in channeling and beveling machines for the soles of boots and shoes. Fig. 2 is a front elevation of the same. Fig. 3 is an end view, detached, of a part of the device for regulating the distance between the table and the feed-wheel. Fig. 4 is a side view of the angular sliding frame, with the guide and knife-supporting plate in position. Fig. 5 is a sectional view on line *a b* of Fig. 4. Fig. 6 is a sectional view of the feed-wheel and shaft, sliding box, and curved lever. Fig. 7 is a sectional view on the line *c d* of Fig. 6.

A, Figs. 1, 3, and 4, is the angular frame, which is arranged to move vertically and horizontally in the front end of the frame B. C is the revolving table, upon which the leather rests while undergoing the process of channeling and beveling. D is a bevel-gear wheel attached to the under side of said table. E is a central pin, which passes through the table and gear-wheel, and is secured to the vertical projection *a* of the frame A. F, Fig. 1, is a shaft passing through the sliding frame, with one end supported in the vertical projection *a*, and furnished with a bevel-wheel, which gears with the wheel D, for rotating the table. G, Fig. 1, is a box for supporting the rear end of the shaft F, and is pivoted in a slot in the vertical portion of the frame B, so as to permit the front end of the shaft to rise and fall freely with the sliding frame A, the frame

being also arranged to slide in and out on the shaft. H, Figs. 1, 4, and 5, is a guide attached to the upper end of the vertical projection *b* of the sliding frame, for regulating the distance of the channel from the edge of the sole. I, Figs. 1 and 2, is a rod connected to a foot-treadle for adjusting the sliding frame A vertically. J is a spiral spring encircling said rod, and supported in a saddle, K, secured to the under side of the frame B, for pressing the sliding frame upward. L is a thumb-screw for regulating the elasticity of the spring. M is a lever pivoted within the frame B, and curved upward at one end. N is a projection at the rear end of the sliding frame, which is connected with the curved end of the lever M by means of a pin passing through a slot in the lever. O is a rod connecting the lever with a separate foot-treadle, which is used in sliding the frame A in or out, to regulate the bevel on the edge of the sole. J^1 is a spiral spring encircling said rod and pressing on the lever to elevate it. P, Figs. 1 and 6, is a lever with the front end curved downward, for supporting the channeling-knife Q. R and R′, Figs. 1, 6, and 7, are downward-projecting jaws formed on the lever, which pass over the upper part of the frame B, and are pivoted to the same by means of a pin, *e′*. I′, Fig. 1, is a rod leading to a bar, S, which is connected with the rod I, and also with the foot-treadle. J^2 is a spiral spring for elevating the rear end of the lever and depressing the channeling-knife. T, Figs. 1 and 6, is the feed-wheel, and F^2 the feed-wheel shaft, the front end of which works in a vertical sliding box, G^1, and the rear end passes through a pivoted box, G^2, similar to the lower shaft F. V is a set-screw, which bears upon the sliding box G^1, and depresses the feed-wheel, to increase or regulate the depth of channel. W is a spring secured to the frame of the machine and to the bar *d*, which bears upon the boxes G^1 and G^2, and is arranged to press the box G^1 up against the lower end of the set-screw V. X is a knife-supporting plate secured to the frame of the machine, and is provided with a segmental guide, *g*. The knife *k*, which cuts the shoulder in the sole for the upper to sew against, is secured in an upright position, with the point at right angles to the leather, and the beveling-knife *k′* is secured to a lever, Y, which moves through an arc of a circle described from the point of the vertical knife as a center. The inner end of the lever, passing through the slot in the guide *g*, is furnished with a screw-nut for clamping it in position. By this means the knife may be set so as to cut the edge of different thicknesses of leather, leaving any substance edge required. The knives, being made straight, will cut better, are easily sharpened, and are not liable to break in running the machine.

Z, Fig. 1, is a standard secured to the frame B a short distance back of the sliding frame A, and is provided at the upper end with a slot, through which is passed a set-screw, V′, the end of which is screwed into the upright *b*. By adjusting the set-screw to move the frame A in or out, the distance between the guide H and the feed-wheel T may be regulated. *d′*, Figs. 1 and 3, is an angular lever pivoted to the frame B, with the long arm provided with a set-screw, *e*, and the short arm projecting over the sliding frame A, and provided with a frictional roller, *f*, which bears upon the frame and permits it to slide freely. The object of this device is to regulate the distance between the table and feed-wheel. To accomplish this the short arm of the lever is thrown up by means of the set-screw *e*, which permits the sliding frame to move upward, carrying the revolving table nearer the feed-wheel.

It will be observed that the sliding frame A, the revolving table, gear-wheels, and guide H are attached together, and slide in unison by a single movement of the lever M, which is manipulated through a treadle connected to the rod O. In removing the sole from the machine, the treadle connected with the bar S is pressed upon, which operation depresses the rods I and I′, and draws the sliding frame and table downward, and at the same time elevates the curved end of the lever P, and throws the channeling-knife out of the channel. The bar S, which is connected to the foot-treadle, is adjusted on the rod I by means of the jam-nuts *n* and *n′*, so that the rod may be depressed a short distance by a slight pressure of the foot before the rod I′ is acted upon. This movement will draw the table down sufficiently to compensate for different thicknesses of leather.

What I claim as my invention is—

1. The sliding frame A, carrying the revolving table C, bevel-gear wheel D, and guide H, arranged to move vertically and horizontally, as and for the purpose shown and described.

2. The combination of the sliding frame A, shaft F, pivoted box G, bevel-gear wheels D D, and revolving table C, substantially as and for the purpose shown and described.

3. The combination of the sliding frame A, guide H, rod I, spring J, set-screw L, bar S, and jam-nuts *n* and *n′*, substantially as and for the purpose shown and described.

4. The combination of the frame A, guide H, projection N, lever M, rod O, and spring J^1, substantially as and for the purpose shown and described.

5. The combination of the curved lever P, carrying the channeling-knife Q, open jaws R and R′, rod I, spring J^2, and bar S, substantially as and for the purpose shown and described.

6. The combination of the sliding frame A, rod I, spring J, lever *d′*, set-screw *e*, and frictional roller *f*, substantially as and for the purpose shown and described.

7. The combination of the sliding box G^1 and set-screw V, for depressing or elevating the feed-wheel T, to increase or diminish the depth of the channel and shoulder, and also

to remove more or less of the leather in forming the bevel, as set forth and shown.

8. The combination of the knife-supporting plate X, segmental guide *g*, lever Y, and knives *k* and *k'*, substantially as and for the purpose shown and described.

9. The combination, in a channeling and beveling machine for boot and shoe soles, of a revolving table, C, feed-wheel T, and three knives, Q, *k*, and *k'*, for cutting the channel, shoulder, and bevel, two of which (the shoulder and bevel cutting knives) are made with straight blades, to facilitate the cutting and sharpening operation.

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Witnesses:
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