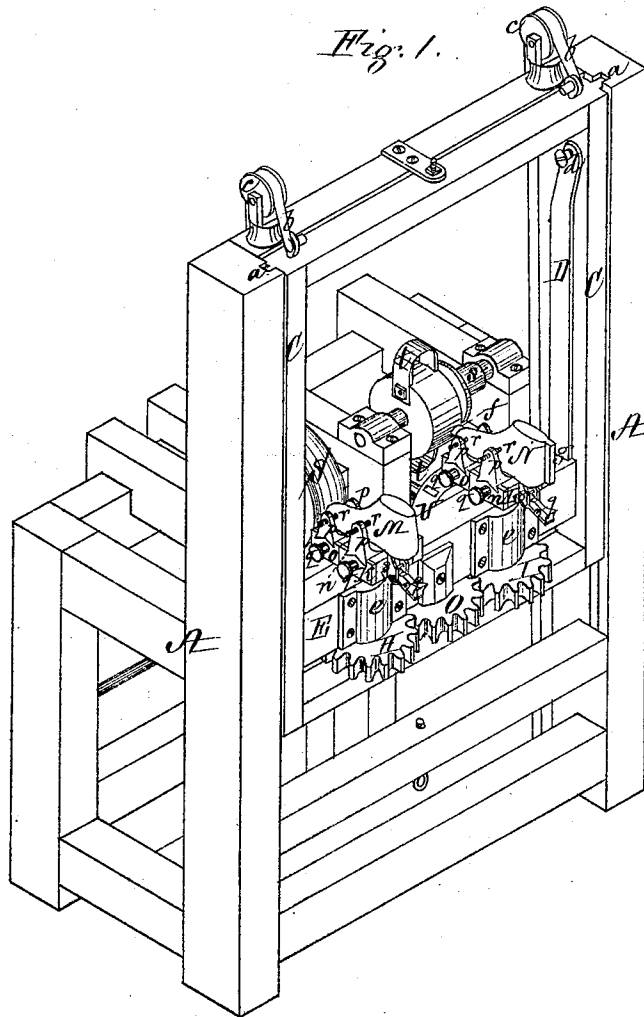


J. D. SPILLER.

Improvement in Machines for Finishing Lasts.

No. 130,251.

Patented Aug. 6, 1872.



Witnesses,  
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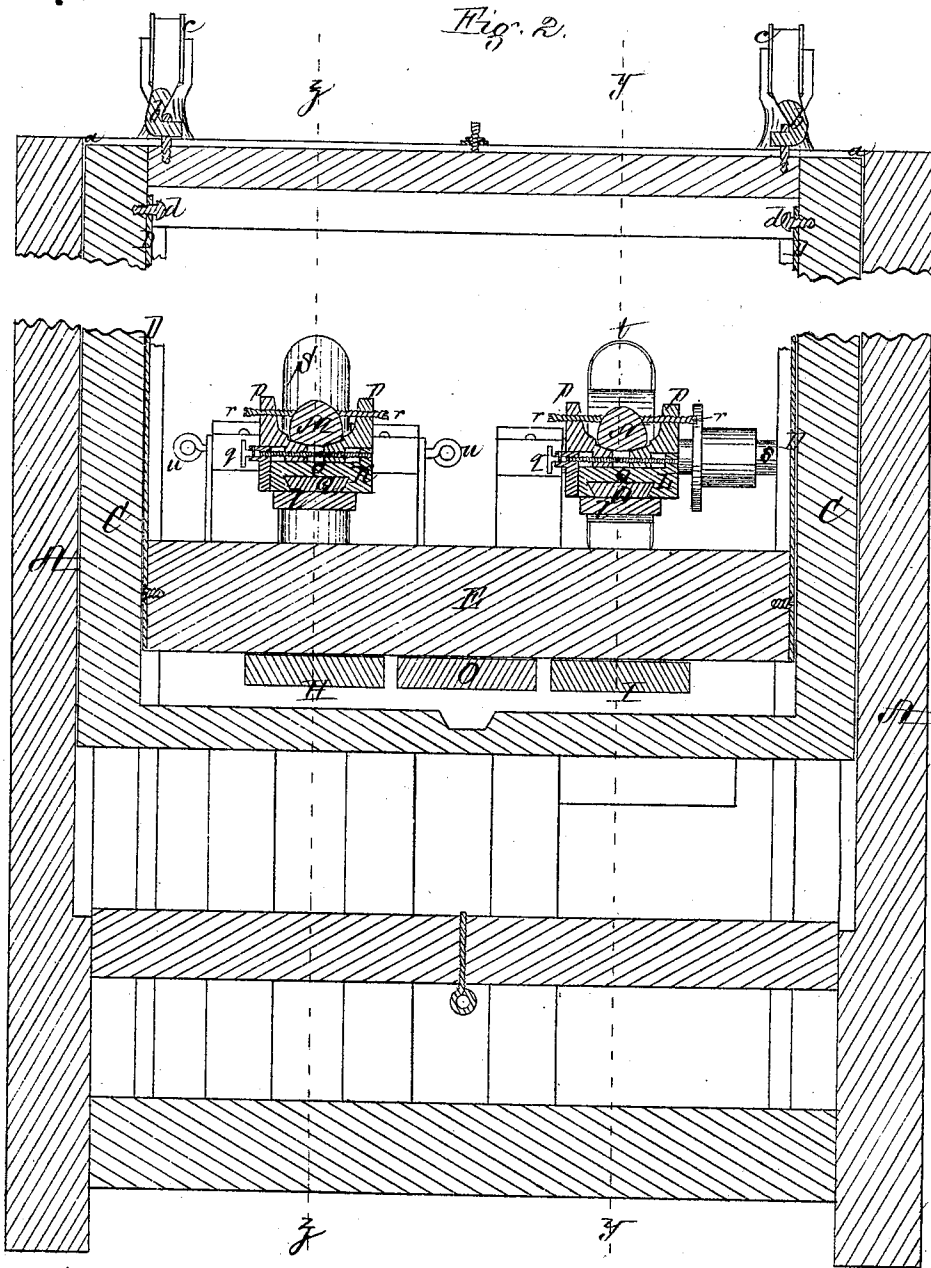
Inventor,  
Joseph D. Spiller  
Per His Attorneys  
Teschmacher & Stearns

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Fig. 3.

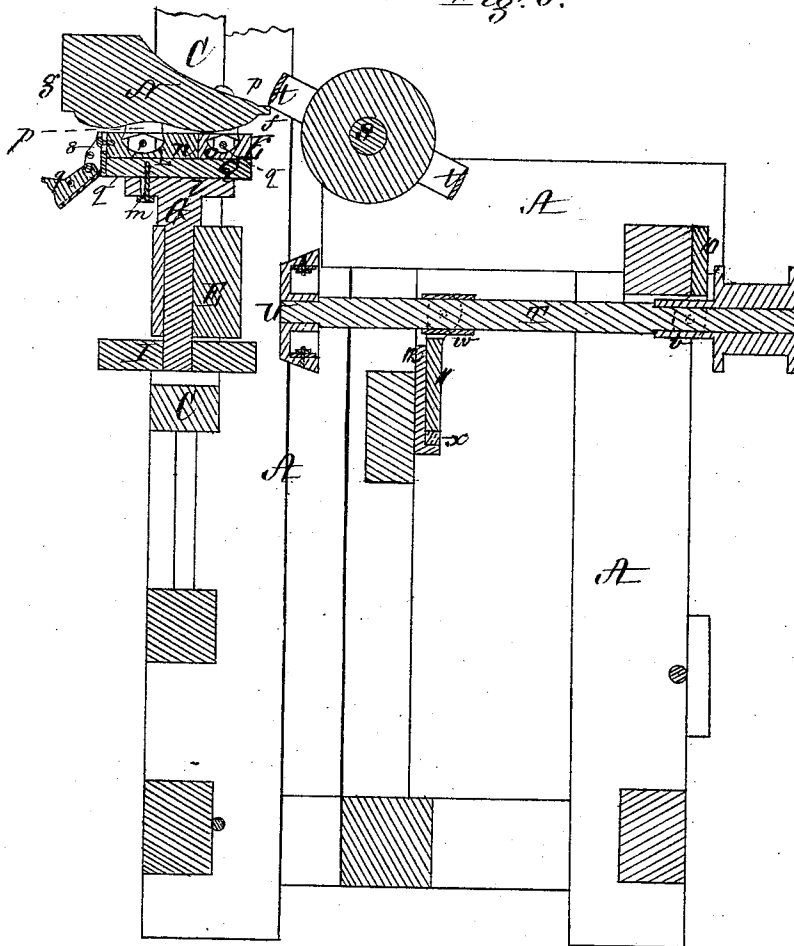
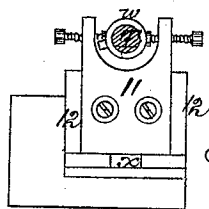


Fig. 5.



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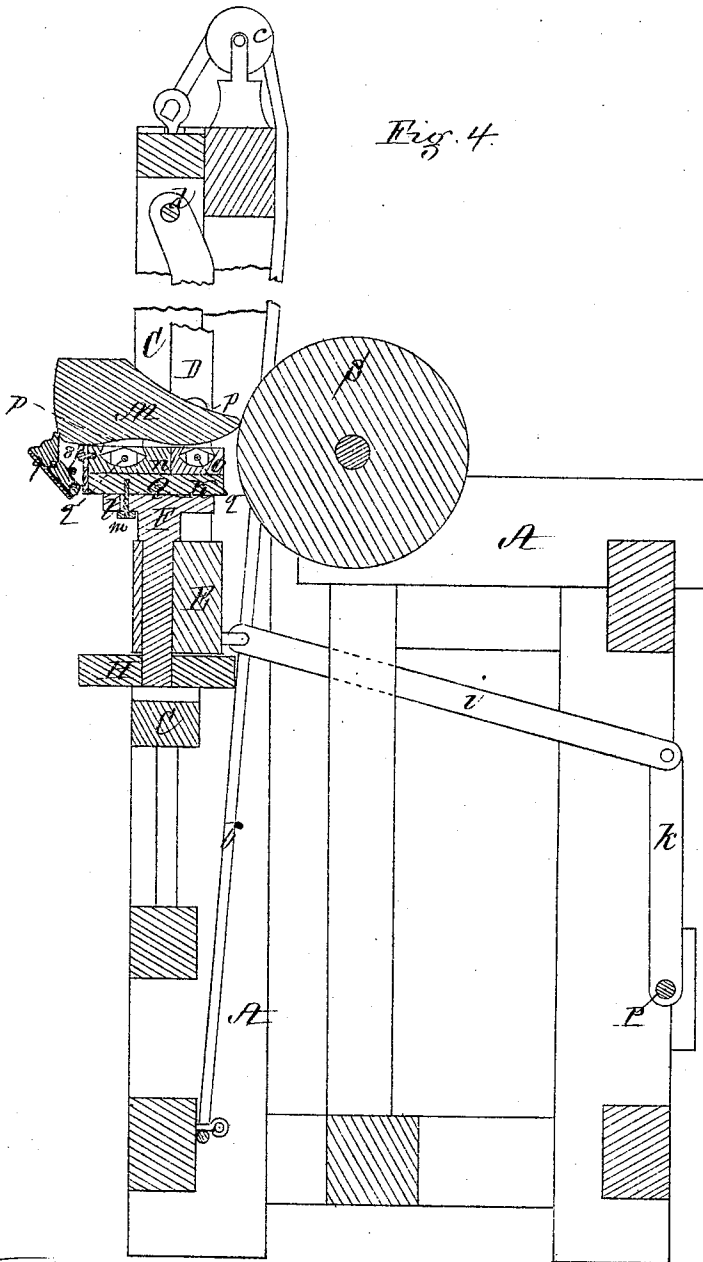


Fig. 4.

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Joseph D. Spiller  
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# UNITED STATES PATENT OFFICE.

JOSEPH D. SPILLER, OF MALDEN, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR FINISHING LASTS.

Specification forming part of Letters Patent No. 130,251, dated August 6, 1872.

To all whom it may concern:

Be it known that I, JOSEPH D. SPILLER, of Malden, in the county of Middlesex and State of Massachusetts, have invented an Improved Machine for Removing the "Stub-Shorts" of Lasts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of the front of my improved machine. Fig. 2 is a transverse vertical section through the same. Fig. 3 is a vertical section on the line *yy* of Fig. 2; Fig. 4, a vertical section on the line *zz* of Fig. 2; Fig. 5, detail to be referred to.

In the manufacture of lasts for boots and shoes, each last comes from the lathe with irregular portions, usually denominated "stub-shorts," projecting beyond its toe and heel; and to remove these "stub-shorts" preparatory to smoothly finishing the last is the object of my invention, which consists in an organized machine provided with holders for the reception of a pattern or "former," and a last from which the "stub-shorts" are to be removed; the "former" being brought into contact with a guide, and one of the "stub-shorts" on the unfinished last simultaneously brought into the path of a revolving cutter by means of a movable frame or otherwise, whereby the "stub-shorts" are removed and the last given the exact size and shape of the "former" employed, a revolving cutter being also used for trimming off the under side of the toe of the last.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing, A is the frame-work, in upright standards in which are formed vertical grooves *a*, in which fit tongues on the sides of a movable frame, C, which is drawn up, as seen in Fig. 1, by elastic cords or straps *b*, which are secured to its top, and, passing over pulleys *c*, are led down and secured to the bottom of the frame-work. To the inside of this movable frame, near its top at *d d*, are pivoted the upper ends of two long arms, D, the lower ends of which are secured to the opposite ends of a horizontal cross-beam, E, in bearings *e*, in which revolve two vertical shafts, F G, which carry at their lower ends

gear H I and at their upper ends holders K L, in one, K, of which is secured the pattern or "former" M, consisting of a finished last of the required size and shape, and in the other, L, is secured the last N as it comes from the lathe, with the "stub-shorts" *fg* projecting from its toe and heel. The motion of the gear H is communicated to the gear I through an intermediate gear, O, which revolves on a stud projecting down from the under side of the cross-beam. To each end of the cross-beam is secured an arm, *i*, pivoted to one end of an arm, *k*, secured to a rocker-shaft, P, which serves to prevent the frame from springing or twisting. Each holder K L is constructed in the following manner, viz.: To the upper end of each shaft F G is secured a plate, *l*, provided with a slot, through which a bolt, *m*, passes into a dovetailed piece, Q, upon which the two portions *no* of the holder slide, so that their distance apart may be varied to accommodate lasts of different lengths. In a suitable way in each of the portions *no* of the holder slide two standards, *pp*, which are made to approach and recede from each other by turning a screw, *q*, having a right and left hand thread, in order to accommodate lasts of different widths. *rr* are set-screws passing through the standards near their tops, and bearing against the last to keep it in position when properly adjusted. To the back of the portion *n* is secured a plate, *s*, to which is pivoted a spring-gage, 9, which strikes against a stop. When the gage is in the position seen in Fig. 4 the heel of the last is brought into contact therewith to determine its position, after which the gage is thrown down out of the way, as seen in Fig. 3. The sides of the bottom of the last at that point corresponding to the ball of the foot rest on projecting portions of the front standards *pp*, which serve as guides to insure the last being held perfectly plumb within its holder. *s* is a shaft carrying a revolving wheel provided with curved cutters *t t*, for removing the "stub-shorts" from the toe and heel of the last N. S is a circular guide having its periphery rounded, as seen in Fig. 1, and against which the toe and heel of the "former" or pattern-last M is moved in cutting off the "stub-shorts" of the last N, the curvature of the guide corresponding to that of the cutters *t t*. This guide

can be moved laterally in either direction by screws *u*, so that it may be adjusted to the exact position required, and it may also be revolved on its center to utilize different portions of its periphery. T is a horizontal shaft placed underneath and in a direction at right angles to the shaft *s*, and carrying at its front end a cutter-wheel, V, for shaving the under side of the toe of the last N, which is brought into contact therewith by depressing the frame C. The shaft T is supported in bearings *v w*, the bearing *v* being pivoted to a plate, 10, and the bearing *w* pivoted to a plate, 11, which latter slides in a suitable guide, 12, Fig. 5, to allow the cutter-wheel to yield to enable it to follow the under side of the toe of the last N and to prevent charring, a spring, *x*, being employed to raise the plate 11 and its bearing to return the cutter-wheel to its original position. The "former" or pattern-last M being properly secured in its holder K, the unfinished last N as it comes from the lathe is also properly secured in its holder L, when the operator depresses the swinging frame C and swings in the cross-beam E, so as to bring the under side of the toe of the last N into contact with the cutter-wheel V to give it the required taper. The frame is now allowed to be carried up till the "stub-short" *f* on the toe of the last N is brought in contact with the cutters *t t* and the operator swings the pattern M around slightly in a horizontal plane until it touches the guide S, when the exact form of the toe of the pattern is given to the toe of the last N; the motion of the pattern M being communicated thereto through the connections above described. The operator now gives a half revolution to the holder K, which brings the

heel of the pattern-last M in line with the guide S, and the frame C is depressed and the cross-beam E swung in so as to bring the top of the "stub-short" *g* of the heel of the unfinished last N in contact with the cutters *t t*, the frame and beam rising during the cutting, and the operator moving the pattern-last slightly from side to side in front of the guide till the "stub-short" is removed from the top to the bottom of its heel portion, when the heel of the pattern-last touches the guide, by which means I am enabled to produce the exact counterpart of the pattern-last. When the "stub-shorts" of one last are removed another last from the lathe is placed in the holder L and properly secured, and the operation is continued, as before described. In the working machine the elastic cords *b* will be dispensed with and weighted cords or springs be substituted therefor, and one cutter, *t*, may be employed instead of two, if desired.

*Claim.*

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

1. The cutter-wheel V with its shaft T, provided with movable bearings to allow the said wheel to yield when the last N is brought in contact therewith, substantially as described.

2. I also claim the spring-gage 9, in combination with the holder K or L of the pattern or last, as and for the purpose set forth.

Witness my hand this 13th day of March, 1872.

JOSEPH D. SPILLER.

In presence of—

P. E. TESCHEMACHER,  
N. W. STEARNS.