J. M. WATSON.

Machine for Making Boot and Shoe Shanks.

No. 198,525. **Patented Dec. 25, 1877.**

Fig. 1.

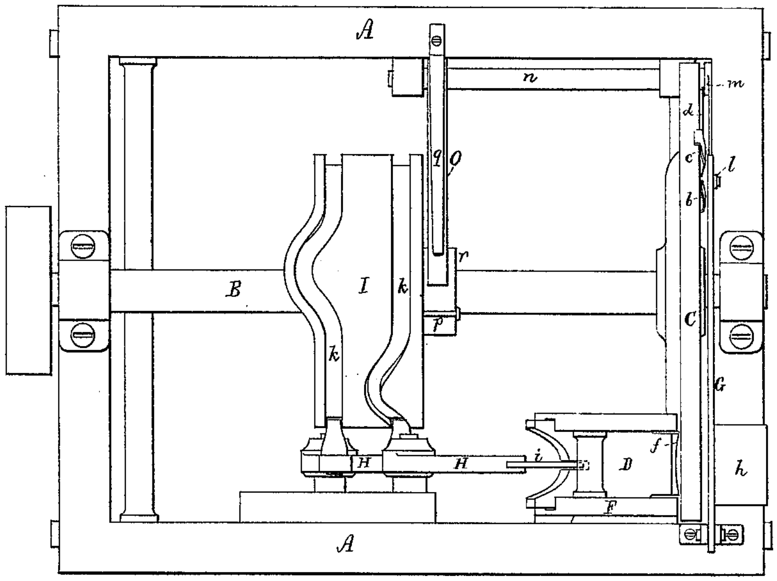
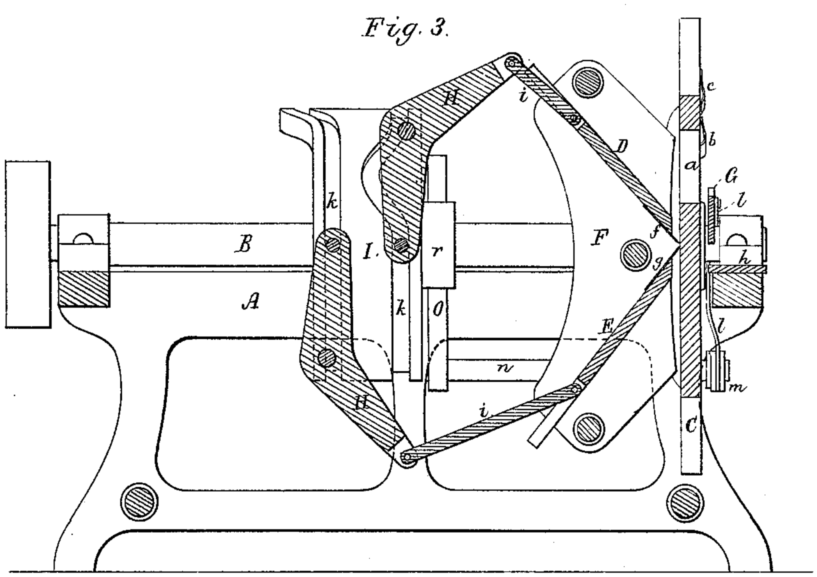


Fig. 3.



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2 Sheets—Sheet 2.

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Fig. 4.

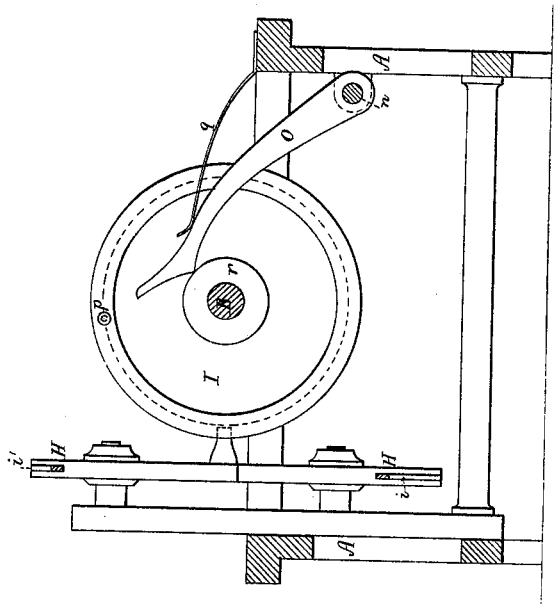

Fig. 8.

Fig. 7.

Fig. 2.

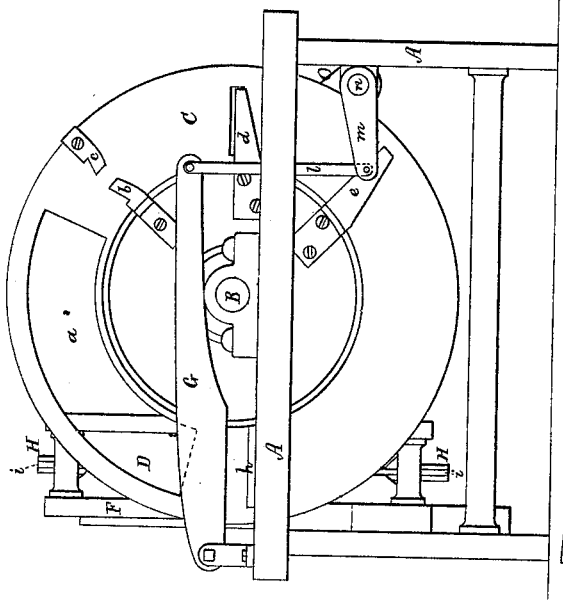

Fig. 5.

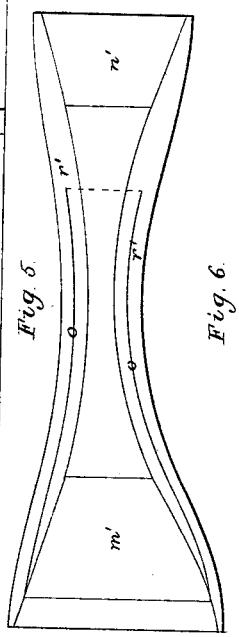

Fig. 6.

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UNITED STATES PATENT OFFICE.

JEREMIAH M. WATSON, OF SHARON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING BOOT AND SHOE SHANKS.

Specification forming part of Letters Patent No. **198,525**, dated December 25, 1877; application filed November 20, 1877.

To all whom it may concern:

Be it known that I, JEREMIAH M. WATSON, of Sharon, of the county of Norfolk and State of Massachusetts, have invented a new and useful Machine for Manufacturing Boot or Shoe Shanks; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 an end elevation, Fig. 3 a longitudinal section, and Fig. 4 a transverse section, of it, the plane of section of Fig. 3 being through the knives for effecting the chamfering of the blank lengthwise. Fig. 5 is a top view, Fig. 6 an edge elevation, Fig. 7 a longitudinal section, and Fig. 8 a transverse section, of a shoe-shank as made by such machine.

In the drawings, A denotes the frame of the machine as provided with a driving-shaft, B, carrying near one end a cutter-wheel, C. This wheel has in it a circular arcal slot, *a*. It also has affixed to its face or side two cutters, *b c*, for producing the end or transverse chamfering of the shank. It also has on its face one or more cutters, *d*, for splitting the shank partially lengthwise. Furthermore, such wheel has on its face a cutter, *e*, for separating a shank from a block. It also has, or may have, for such cutters suitable throats for discharge of the block and any shavings resulting from forming the end chamfers.

In rear of the cutter-wheel C there are two cutter carriers or stocks, D E, provided with knives or cutters *f g*, for producing the lengthwise chamfers of the shank. These cutter-carriers, arranged as shown, slide lengthwise when in operation, and during the movement of each it crosses the path of movement of the other. They are supported in grooves in a bracket, F, arranged as shown. Their cutters work through the slot *a*, and cut successively into and through a block, when laid upon a bed, *h*, and held down thereupon by a lever, G.

The cutter-slides D E are connected by rods *i i* to two levers, H H, from which studs extend into two grooves, *k k*, of a cam, I, fixed on the driving-shaft. On the said shaft being revolved, the levers will be alternately moved, so as to effect, at proper times, the necessary movements of the stocks D E of the chamfering-knives *f g*.

By a connecting-rod, *l*, the lever G is conjoined with an arm, *m*, extending from a rock-shaft, *n*, arranged as shown. From the said shaft another arm, O, projects alongside of the cam I, which has extended from it a stud or pin, *p*. A spring, *q*, fixed to the frame A, bears upon the arm O, and forces it toward the hub *r* of the cam.

During each revolution of the cam the stud will be carried against the arm O, and will raise it, so as to cause the lever G to be moved upward off the block, the spring on the stud passing the arm serving indirectly to cause the lever G to be forced down upon the block, and to hold it still, while a shank may be in the act of being formed. While the lever G is raised off the block the latter is to be advanced up to the face of the wheel.

As the wheel may revolve, the beveling-cutters *f g* will be brought into action, and will effect the lengthwise chamfer *r' r'* of the block. Next, the block near its ends will be chamfered, in order to form the shank with the end bevels *m' n'*. (See Figs. 5, 6, and 7.) This having been done, the splitting-cutter next passes through the block, in order to produce the slit *o* of the shank, which usually extends in such shank in manner as shown in Figs. 6 and 7. Finally, the severing-cutter *e* will separate the blank from the block, after which the lever G will rise to allow the block to be advanced.

I do not claim for making shoe-shanks the combination of one or more slitting-cutters and a severing-cutter with a rotary wheel or disk, and with a guide or support for a blank to be slit and severed by such cutters, all being as represented in the United States Patent No. 145,024, dated February 25, 1873.

In carrying out my invention I have combined with such devices mechanism for beveling or chamfering the block, in order that when a shank is severed from it such shank may have the lengthwise or widthwise, or both lengthwise and widthwise, chamfers, as shown in the drawings. I have also combined therewith mechanism for firmly holding the block

upon its supporting-bed while such block may be in the act of being cut, all of which I have hereinbefore described.

What, therefore, I claim as my invention is as follows:

1. In combination with the rotary disk C and its severing-cutter *e*, the cutters *b c*, for producing the end or transverse chamfer of the shank.

2. In combination with the rotary disk C and its slitting and severing cutters *d e*, the cutters *b c*, for producing the end chamfers or bevels of the shank, as described.

3. In combination with the rotary disk C and its severing-cutter *e*, the cutters *f g*, for producing the side chamfers or bevels of the shank, such cutters *f g* being arranged, and provided with mechanism for operating them, substantially as described.

4. In combination with the rotary disk C and its severing-cutter *e*, the cutters *b c f g*, for producing the end and side bevels or chamfers of the shank, such cutters *f g* being arranged, and provided with mechanism for operating them, substantially as set forth.

5. In combination with the rotary disk C and its slitting and severing cutters *d e*, the cutters *b c f g*, for producing the end and side bevels of the shank, such cutters *f g* being arranged, and provided with mechanism for operating them, substantially as explained.

6. In combination with the rotary disk and its cutter or mechanism, for slitting and severing the block, or for slitting, chamfering, and severing it, mechanism for supporting and holding the block, consisting of the bed *h*, the lever G, rod *l*, arm *m*, shaft *n*, arm O, cam-pin *p*, and spring *q*, all operating as set forth.

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Witnesses:
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