

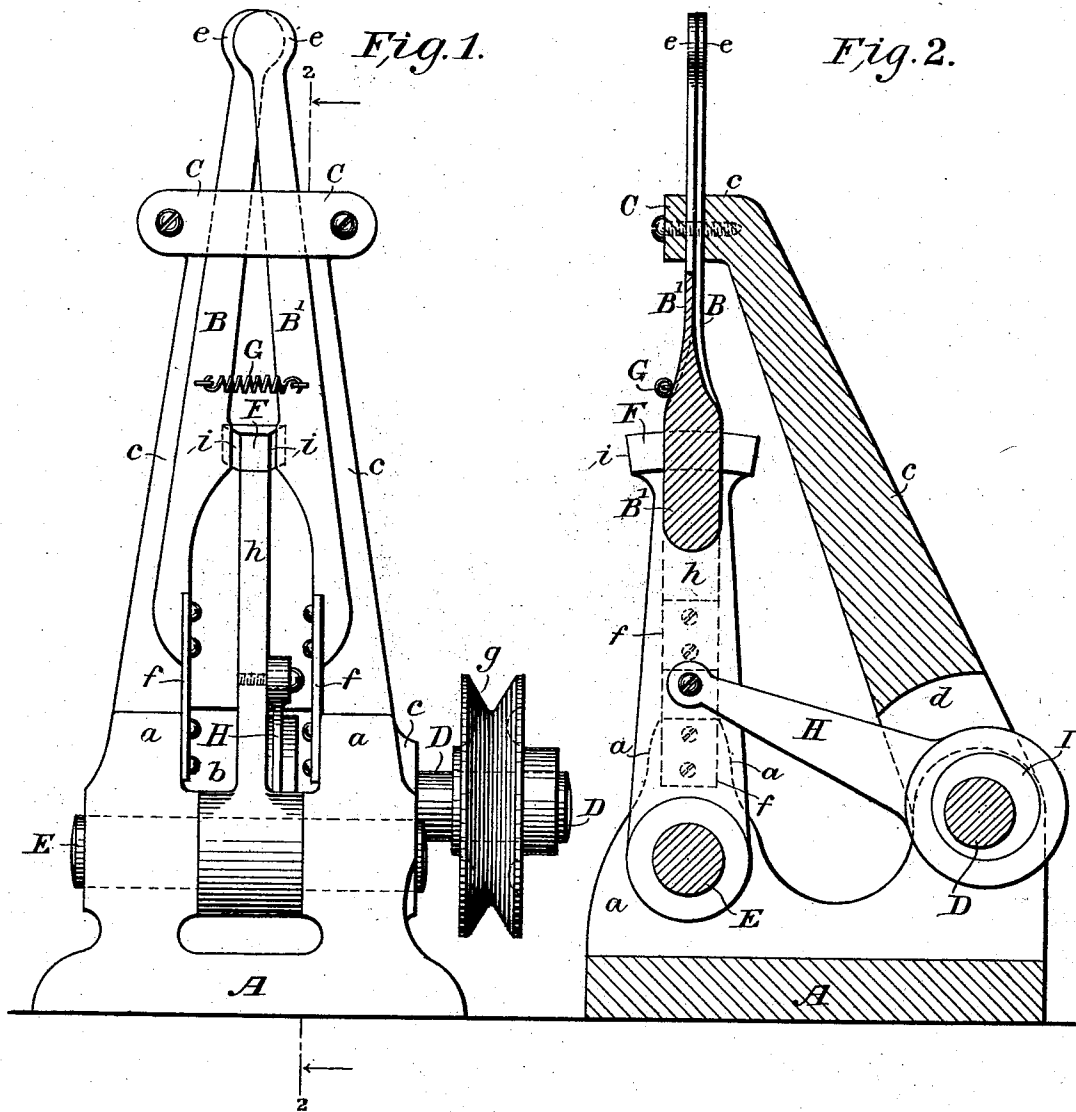
(No Model.)

2 Sheets—Sheet 1.

Q. W. BOOTH.
TURNING MACHINE.

No. 506,664.

Patented Oct. 17, 1893.



Witnesses
Jos. S. Latimer
Carlton E. Snell

Inventor
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his Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

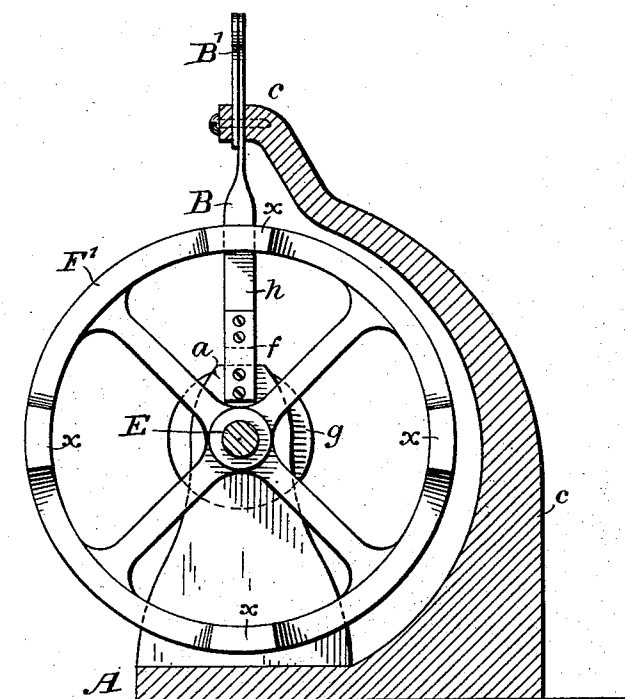
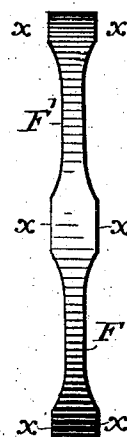


Fig. 4.



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UNITED STATES PATENT OFFICE

QUENTIN W. BOOTH, OF ROCHESTER, NEW YORK.

TURNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 506,664, dated October 17, 1893.

Application filed May 20, 1893. Serial No. 474,888. (No model.)

To all whom it may concern:

Be it known that I, QUENTIN W. BOOTH, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Turning-Machines, of which the following is a specification.

This invention relates to that class of turning machines (also called "beading" machines) wherein the turning blade, finger, iron or "turner," has a rapid vibrating lateral or spreading movement, the main object in view being to turn, spread, stretch out, and smooth a seam, and particularly the scallops of a shoe upper. Heretofore the laterally-moving turner or turners of such machines have been pivoted so as to swing or oscillate.

The present invention consists primarily in providing such a machine with a laterally-flexible elastic turner which is secured at one end to a fixed support, mechanism being provided to oscillate the turner, the elasticity of the turner permitting its lateral movement or oscillation. With this laterally-flexible and elastic turner secured at one end to a fixed support, is preferably and usually employed a second turner, which may be stationary or may have any of the movements now known in the art, that is to say, it may move longitudinally, it may swing laterally on a pivot, it may have a combined longitudinal and lateral movement, it may have a rotary movement continuously in the same direction, or it may have an oscillatory rotary movement, but preferably this second turner is also a laterally-flexible and elastic turner secured at one end to a fixed support.

The present improvements in their preferred embodiment are illustrated in the accompanying drawings, wherein—

Figure 1, is a front view of the machine. Fig. 2, is a vertical section thereof in a plane indicated by the line 2—2 in Fig. 1. Fig. 3, is a vertical section of a turning machine having a modified construction of operating mechanism; and Fig. 4, is an edge view of the operating cam wheel shown in Fig. 3.

A, is the fixed framework, standard or support, having side supporting-brackets *a a* with a central space *b* between them, and a rear upwardly-and-forwardly-inclining bracket *c* forked at its lower end so as to form a slot *d*, all preferably cast of iron in a single piece.

B, B', are the two laterally-flexible, elastic, and laterally-movable turners, which are secured at their lower ends to the fixed supporting brackets *a a* respectively. Each turner is preferably composed of two members, a rigid upper working member *e*, and a spring shank or member *f*, both of metal. Each working member *e*, has a flat, thin working end or blade, and becomes thicker at its lower end where it is screwed, riveted, or otherwise secured to the upper free end of the spring shank-member *f*. The spring shank or member *f* consists of a flat strip of metal, preferably steel, which is screwed, riveted, or otherwise secured to the inner face of one of the fixed brackets *a*. The presence of this spring shank renders the turner as a whole laterally flexible.

The two turners B, B', are arranged opposite to each other, and preferably with their flat working ends or blades overlapping each other and lying face to face in close proximity. To prevent any sidewise motion of the turners, the rear bracket *c* is extended upwardly so as to form a guide or guide-plate on one side, and a guide-plate C secured at its ends to the bracket *c* affords the guide or guide-plate on the opposite side. Below the guide-plates, the turners are separated, as shown, with a space between them.

To operate the turners, a rotating main shaft D is employed, which is journaled in the lower end of the rear bracket *c*, and has a drive-pulley *g*. The shaft is rotated rapidly, say twelve hundred rotations a minute. E, is a rock-shaft journaled in the brackets *a a* below the turners. This rock-shaft has an upwardly-extending crank-arm *h* located in the space *b* and between the turners, which at its upper end has a cam-block F with oppositely-inclined cam-faces *i i* on its opposite sides with which the turners respectively co-operate. The spring shanks *f f* are usually sufficient to maintain the turners in proper co-operative relation with the cam-faces *i i*, but if not they are supplemented by a spring G, connected at opposite ends to the two turners respectively. The crank-arm *h* of the rock-shaft is connected by a connecting-rod or link H with an eccentric I (or its equivalent, a crank) located within the slot *d*, and carried by the main shaft D. Hence as

the main shaft is rotated the cam-block F is oscillated back and forth, and the turners are moved laterally in opposite directions. The working flat end of each turner moves edge-wise, or in its own plane.

Various modifications are feasible without departing from the principles of the invention. For example, as shown in Figs. 3, and 4, the rock shaft and link H, are omitted, and the main shaft occupies the position of the rock shaft. Instead of the crank-arm *h* and cam-block F, the main shaft carries a wheel F', provided at its rim on opposite sides with cam faces co-operating with the two turners. As shown, the wheel F', has a plurality of cam-faces *x* on each side, so that the desired number of lateral motions of the turners in a unit of time are effected with a correspondingly smaller number of rotations of the main shaft. In Fig. 3, only the working end of the turner B', is shown, and the spring G is not shown, in order to indicate that the resilience of the spring shanks *f* may alone suffice.

I claim as my invention—

- 25 1. A laterally-flexible and laterally-movable turner having an elastic shank, said turner being secured at one end to a fixed support, in combination with means for moving said turner laterally, substantially as set forth.
- 30 2. Two laterally-flexible and oppositely and laterally movable turners which overlap each other at their free working ends, each having an elastic shank and each being secured at one end to a fixed support, in combination
- 35 with means for moving said turners laterally in opposite directions, substantially as set forth.
- 40 3. A laterally-flexible and laterally-moving turner secured at one end to a fixed support, in combination with a power-driven cam for moving said turner laterally, substantially as set forth.

4. A laterally-flexible and laterally-moving turner secured at one end to a fixed support, in combination with a rock-shaft having a crank-arm with a cam thereon co-operating with said turner, a rotating shaft with an eccentric, and a link connecting said eccentric with said crank-arm, substantially as set forth.

5. A support having two separated brackets with a space between them, two laterally-flexible and oppositely and laterally moving turners fixed at their lower ends to said brackets respectively, said turners being separated at their lower ends, in combination with a rock-shaft journaled in said brackets, a crank-arm on said rock-shaft located in the space between said brackets, a cam-block on said crank-arm located between said turners, said cam-block having cam-faces on its opposite sides with which said turners respectively co-operate, a spring maintaining said turners in operative contact with said cam-block, a rotary main shaft having an eccentric, and a link connecting said eccentric and said crank-arm, substantially as set forth.

6. A laterally-flexible and laterally-moving turner composed of two members connected together, a rigid working member, and a spring member which is secured to a fixed support, substantially as set forth.

7. The two laterally-moving turners, in combination with the bracket *c* and plate C constituting guides for said turners, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

QUENTIN W. BOOTH.

Witnesses:

ROY C. WEBSTER,
EDWARD WEBSTER.