

(No Model.)

2 Sheets—Sheet 1.

J. R. BECKETT, Jr.
TURNING MACHINE.

No. 509,423.

Patented Nov. 28, 1893.

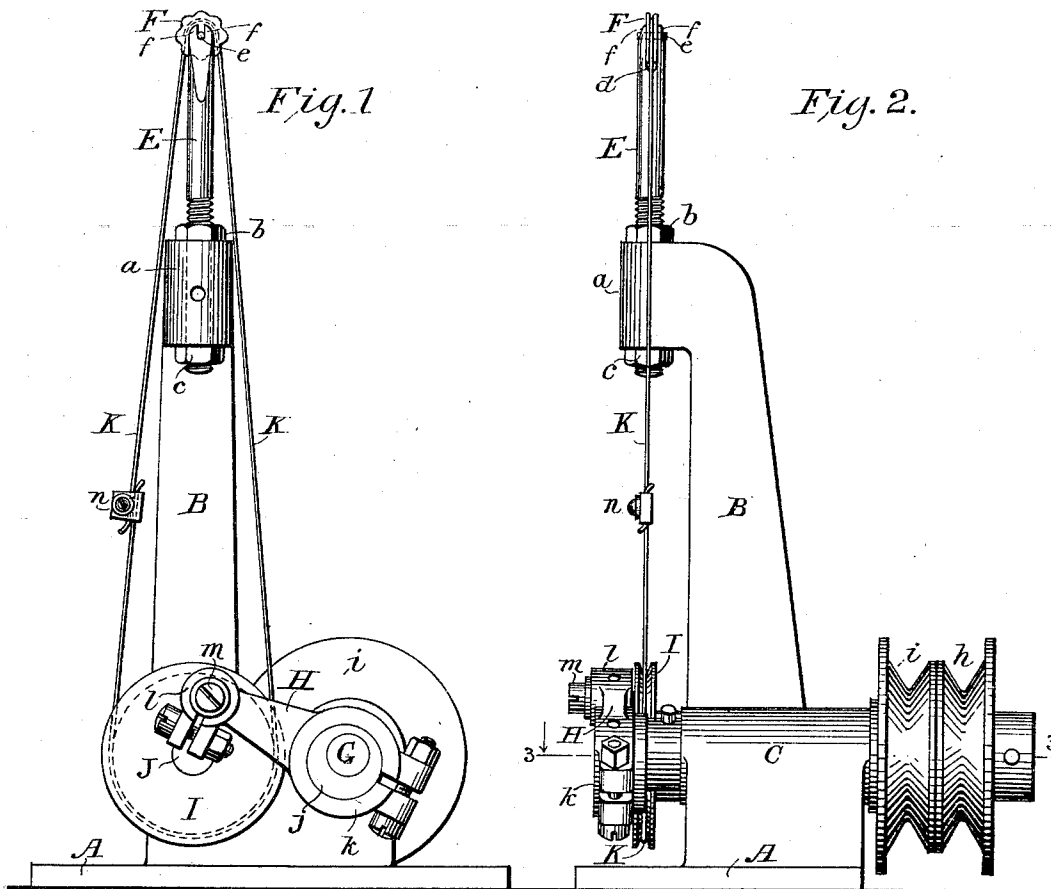


Fig. 3.

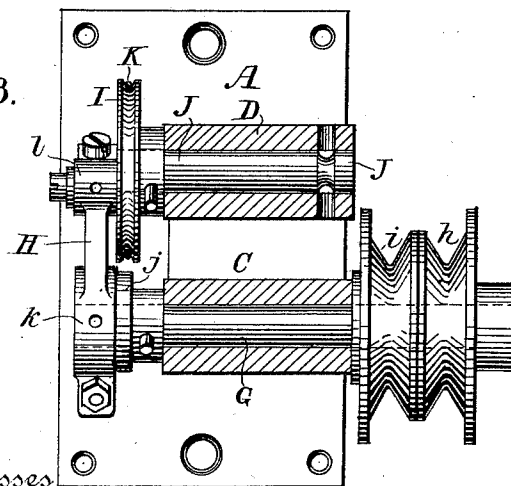


Fig. 4.

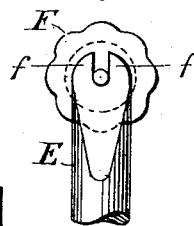


Fig. 5.

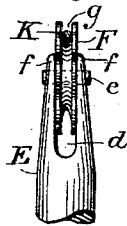
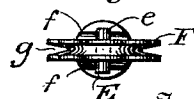


Fig. 6.



Witnesses

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(No Model.)

J. R. BECKETT, Jr.
TURNING MACHINE.

2 Sheets—Sheet 2.

No. 509,423.

Patented Nov. 28, 1893.

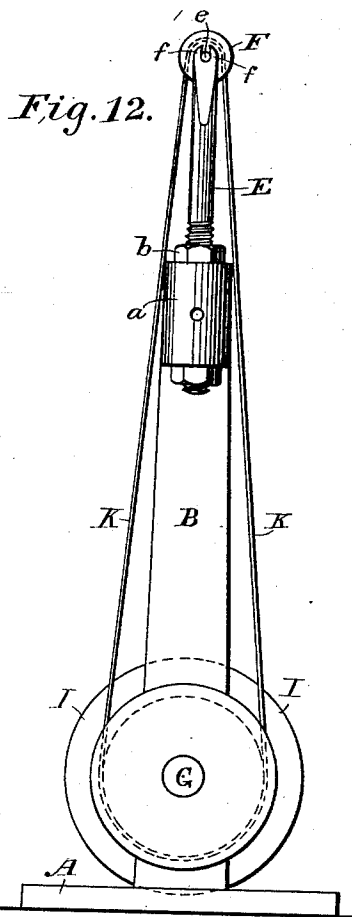
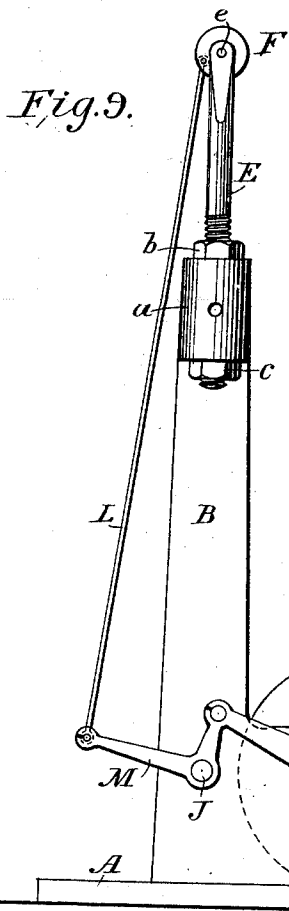


Fig. 10.

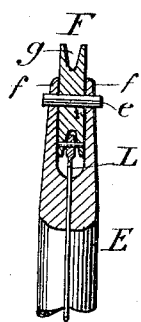


Fig. 11.

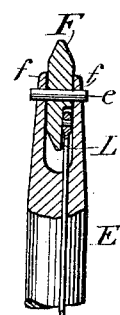


Fig. 7.

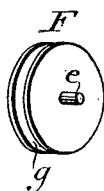
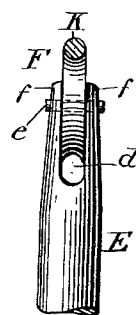


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN R. BECKETT, JR., OF BRADFORD, MASSACHUSETTS, ASSIGNOR TO QUENTIN W. BOOTH AND IRVING E. BOOTH, OF ROCHESTER, NEW YORK.

TURNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 509,423, dated November 28, 1893.

Application filed March 29, 1893. Serial No. 468,141. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. BECKETT, Jr., of Bradford, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Seam and Scallop Turning Machines, of which the following is a specification.

This invention relates to that class of machines known as turning or beading machines, the object and purpose of which are to turn and push out the seams of leather or other material. These machines are most usually employed for turning and pushing out the seams between a piece of leather and its lining, and particularly where the lined leather is used for shoe uppers. These machines are also especially useful in turning or pushing out the scallops of the button-flies of ladies and misses' shoes. As is well known, the lining is sewed to the leather when the leather is wrong side out, so that it is necessary to turn the leather and lining in order to bring the right side of the leather out, and these machines are employed for this purpose. The turning machines are also customarily employed in connection with a hammer for hammering the seams flat, which hammering, properly speaking, constitutes the beading operation. Such prior seam and scallop turning machines have also been heretofore made with rapidly movable and driven turning blades, fingers, irons, or turners for the purpose of facilitating the turning of the leather.

Now the present invention relates more particularly to the construction of the turning element or elements of the turning machine which enters between a piece of material and its lining or into a scallop; to the character and direction of the movement imparted thereto, and the mechanism for effecting and imparting said movement; and the objects of the present improvements are to simplify and cheapen the construction of the machine, to increase the rapidity, effectiveness, and quality of the work done, to abolish or reduce to a minimum the jar upon the attendant or operative, to facilitate the replacement of the turning element or elements in case of undue wear, and to prevent the cutting or rupturing of the leather, the lining, or the threads uniting the same.

The turning element of the machine which enters between the material and its lining or into a scallop will hereinafter be termed "the seam or scallop turner."

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

Figure 1, is a front view of the improved turning machine. Fig. 2, is a side view thereof. Fig. 3, is a horizontal section in a plane indicated by the line 3—3 in Fig. 2. Fig. 4, is an enlarged front view, Fig. 5, an enlarged side view, and Fig. 6 an enlarged plan view of the seam or scallop turner. Fig. 7, is a detail view of a modified construction of the seam or scallop turner. Fig. 8, is a side view of a modified arrangement of the seam or scallop turner and the driving-cord thereof. Fig. 9, is a front view of the turning machine having a modified driving mechanism for the seam or scallop turner. Fig. 10, is a detail view showing the connection between the seam or scallop turner and the driving pitman. Fig. 11, shows a modification of the connection shown in Fig. 10. Fig. 12, is a front view of the turning machine having a seam or scallop turner with a modified motion and a correspondingly modified operating mechanism.

Referring first to the preferred construction shown in Figs. 1, to 6, inclusive, A, is a suitable supporting bed-plate, having a vertical standard B rising therefrom, and journal-boxes C, D, at the base of the standard, said parts being preferably cast of metal in a single piece. The vertical standard B has at its upper end a forwardly-projecting nose *a*, through which extends a vertically-extending and longitudinally-adjustable stem E, which at its upper end carries the turning element F. The lower part of the stem E is screw-threaded, and it is adjustably secured to the nose *a* by means of upper and lower nuts *b* and *c* located respectively above and below the nose *a*. The upper end of the stem E is split or forked by an open slot *d* to receive the seam or scallop turner F, which consists of a wheel or disk which is journaled upon the stem E by an arbor *e* to which the disk F is secured, said arbor *e* extending transversely to the slot *d* and turning in open bearings *f f* formed in the upper end of the

stem E. The disk F has a peripheral groove *g*, and its periphery is also on both sides of the groove *g* irregular or scalloped, as shown in Figs. 1, and 4. The rotatively-mounted seam or scallop turner F is positively rotated, but the rotation in this preferred construction is back and forth through a portion only of a circle, the extent of the partial rotation or oscillation being through about ninety degrees of arc.

The operating instrumentalities for the seam or scallop turner F are as follows:—The main drive shaft G extends longitudinally through the bearing C and has at its rear end fast and loose grooved pulleys *h* and *i*, by means of which the shaft G is rotated from any convenient source of power. At its forward end the shaft G has an eccentric *j*, surrounding which is an eccentric sleeve or strap *k* at one end of a link H which at its other end has a second sleeve or strap *l* which in turn embraces a crank stud or pin *m* fixed eccentrically to an oscillating disk or wheel I, fixed upon the front end of a rock-shaft J extending horizontally through the bearing D. The wheel I is oscillated back and forth by means of the rotating eccentric *j* and the link H. The wheel I has a grooved periphery, and its oscillating movement is imparted to the seam or scallop turner F by means of a drive belt K which extends around and is located in the peripheral grooves of the wheel I and seam or scallop turner F. This drive belt K is preferably formed of inelastic material such as a round strip of cat-gut, and its opposite ends are secured by a suitable clamp *n*. The diameter of the wheel I is considerably greater than that of the seam or scallop turner F, so that a slight throw of the eccentric *j* is sufficient to give the desired extent of oscillation to the seam or scallop turner F. The offsetting or forward projecting of the nose *a* enables the seam or scallop turner F to be located directly above the oscillating wheel I. The vertical adjustment of the stem E, enables it to act as a belt tightener for tightening the drive belt K. The depth of the peripheral groove *g* in the seam or scallop turner F is greater than the diameter of the drive belt K, so that no portion of the drive belt projects above the working edge of the seam or scallop turner.

In using the machine the drive shaft is driven very rapidly, say twelve hundred revolutions a minute, whereby an equal number of complete back-and-forth rotations or oscillations is imparted to the seam or scallop turner. The seam is turned by passing the lined material over the seam or scallop turner with the seam or scallop turner between the lining and the outer material, and holding the seam upon the seam or scallop turner. The rapid movement of the seam or scallop turner pushes and smoothes out the seam, the irregular or scalloped edge materially contributing to the result. The size of the

seam or scallop turner is such that it readily enters between a piece of material and its lining or into the scallops of shoe flies so that its working edge is presented to the seam thereof.

The separation of the outer edges of the seam or scallop turner F by the belt groove *g*, enables the seam itself to enter the groove *g* and the outer edges of the seam or scallop turner F to pass on opposite sides of the seam, thus insuring a smooth and even edge.

In case excessive wear upon the seam or scallop turner renders the same so sharp as to endanger the cutting of the material operated upon, the seam or scallop turner can be readily removed and a new one substituted.

Although an irregular or scalloped seam or scallop turner is preferably employed, it is not essential and a smooth one like that shown in Fig. 7, may be employed. In any case the working edge of the turner presents no sharp corners or edge which would be liable to cut or injure the material. By an "irregular" edge to the turner, I mean any variation in the shape of the working edge from a circular edge concentric with the pivot on which the turner turns. One object of the irregularity is to prevent the seam being held with perfect steadiness upon the turner and to impart an incessant motion to the seam, whereby the smoothing and spreading of the seam are facilitated. The attendant of the machine has simply to hold the seam with a slight continuous pressure against the turner, and the irregularities of the working edge of the turner impart an incessant but slight movement to the seam which is very effective upon the seam without unduly jarring the hands of the attendant. Nor is it essential that the groove *g* in the periphery of the seam or scallop turner should be greater in depth than the diameter of the driving belt, since the opposite may be the case as shown in Fig. 8, where the edge of the driving belt or cord K becomes the part which actually comes in contact with the seam. Nor is it essential that a driving belt or cord may be employed.

In the modification shown in Fig. 9, a pitman L replaces the belt K, and a bell crank lever M replaces the wheel I. The pitman L may be pivoted either within the groove *g* of the seam or scallop turner F as shown in Fig. 10, or exterior thereto as shown in Fig. 11. Fig. 11 also shows that the seam or scallop turner need not have a peripheral groove. The rotation imparted to the seam or scallop turner may also be a continuous rotary movement in the same direction instead of a back-and-forth rotation, and such is the character of rotation in the modification shown in Fig. 12. In this modification, the wheel I is mounted directly upon the drive-shaft G.

The improved turning machine is usually employed, like other turning machines, in connection with a hammer.

It will be noted that, in the preferred con-

struction illustrated in Figs. 1, to 6, inclusive, only the upper portion of the edge of the oscillating rotary seam or scallop turner F is the working portion of the turner; and hence in constructing and shaping the seam or scallop turner only this working edge is material and need be considered. It is, however, desirable and convenient to make the seam or scallop turner as a disk with its entire periphery scalloped, since as one portion wears the seam or scallop turner may be adjusted and a fresh portion can be made the working edge. This statement is true, also, in reference to the modification shown in Figs. 9, 10, and 11.

I claim as my invention—

1. In a seam and scallop turning machine, a rotary seam or scallop turner having a peripheral working edge, said turner being constructed and adapted to enter between a piece of material and its lining or into a scallop and to present its working edge to the seam thereof, in combination with means for rotating said turner, substantially as set forth.

2. In a seam and scallop turning machine, a rotary seam or scallop turner, constructed and adapted to enter between a piece of material and its lining or into a scallop, consisting of a disk having a peripheral working edge which is presented to the seam of the material or scallop, in combination with means for rotating said disk, substantially as set forth.

3. In a seam and scallop turning machine, a rotary seam or scallop turner having a peripheral working edge, said turner being constructed and adapted to enter between a piece of material and its lining or into a scallop and to present its working edge to the seam thereof, and said turner having a back-and-forth rotary movement, in combination with means for imparting a back-and-forth rotary movement to said turner, substantially as set forth.

4. In a seam and scallop turning machine, a seam or scallop turner having an irregular working edge, said turner being constructed and adapted to enter between a piece of material and its lining or into a scallop and to present its irregular working edge to the seam thereof, substantially as set forth.

5. In a seam and scallop turning machine, a seam or scallop turner having a scalloped working edge, said turner being constructed and adapted to enter between a piece of material and its lining or into a scallop and to present its scalloped working edge to the seam thereof, substantially as set forth.

6. In a seam and scallop turning machine, a rotary seam or scallop turner having an irregular working edge, said turner being constructed and adapted to enter between a piece of material and its lining or into a scallop and to present its irregular working edge to the seam thereof, substantially as set forth.

7. In a seam and scallop turning machine,

a seam or scallop turner having an irregular working edge and an oscillatory motion, said turner being constructed and adapted to enter between a piece of material and its lining or into a scallop and to present its irregular working edge to the seam thereof, substantially as set forth.

8. In a seam and scallop turning machine, a rotary seam or scallop turner, constructed and adapted to enter between a piece of material and its lining or into a scallop, having an oscillatory rotary motion, in combination with a driving shaft, an eccentric thereon, and driving connections between said eccentric and said seam or scallop turner, substantially as set forth.

9. In a seam and scallop turning machine, a rotary seam or scallop turner adapted to enter between a piece of material and its lining or into a scallop, consisting of a disk having an irregular edge and a peripheral groove, in combination with a driving wheel, and a driving belt passing around said wheel and in the groove in said disk, substantially as set forth.

10. In a seam and scallop turning machine, a rotary seam and scallop turner, adapted to enter between a piece of material and its lining or into a scallop, consisting of a disk, in combination with a longitudinally-adjustable stem upon which said disk is mounted, substantially as set forth.

11. In a seam and scallop turning machine, a rotary seam or scallop turner, adapted to enter between a piece of material and its lining or into a scallop, consisting of a disk and a longitudinally-adjustable stem upon which said disk is mounted, in combination with a driving wheel, and a driving belt connecting said wheel and turning disk, substantially as set forth.

12. In a seam and scallop turning machine, a rotary seam or scallop turner, adapted to enter between a piece of material and its lining or into a scallop, consisting of a disk having a back-and-forth rotation or oscillation, in combination with a driving-shaft, an eccentric thereupon, a rock-shaft, a link between said eccentric and rock-shaft, and driving connections between said rock-shaft and turning disk, substantially as set forth.

13. In a seam and scallop turning machine, a rotary seam or scallop turner, adapted to enter between a piece of material and its lining or into a scallop, consisting of a disk having a back-and-forth rotation or oscillation, in combination with a driving-shaft, an eccentric thereupon, a rock-shaft, a wheel on said rock-shaft having a crank stud, a link connecting said crank stud and said eccentric, and a driving-belt connecting said wheel and turning disk, substantially as set forth.

14. In a seam and scallop turning machine, the supporting standard having a projecting nose, a stem carried by said nose, and a seam or scallop turner consisting of a turning disk

mounted upon said stem and adapted to enter
between a piece of material and its lining or
into a scallop, in combination with a driving
wheel located beneath said nose and in line
5 with said disk, and a driving belt connecting
said wheel and disk, substantially as set forth.
In witness whereof I have hereunto signed

my name in the presence of two subscribing
witnesses.

JOHN R. BECKETT, JR.

Witnesses:

GEORGE DEAN,
C. L. RUNDLUD.