

(No Model.)

2 Sheets—Sheet 1.

C. H. TRASK

BUFFING MACHINE FOR THE SOLES OF BOOTS OR SHOES.

No. 364,688.

Patented June 14, 1887.

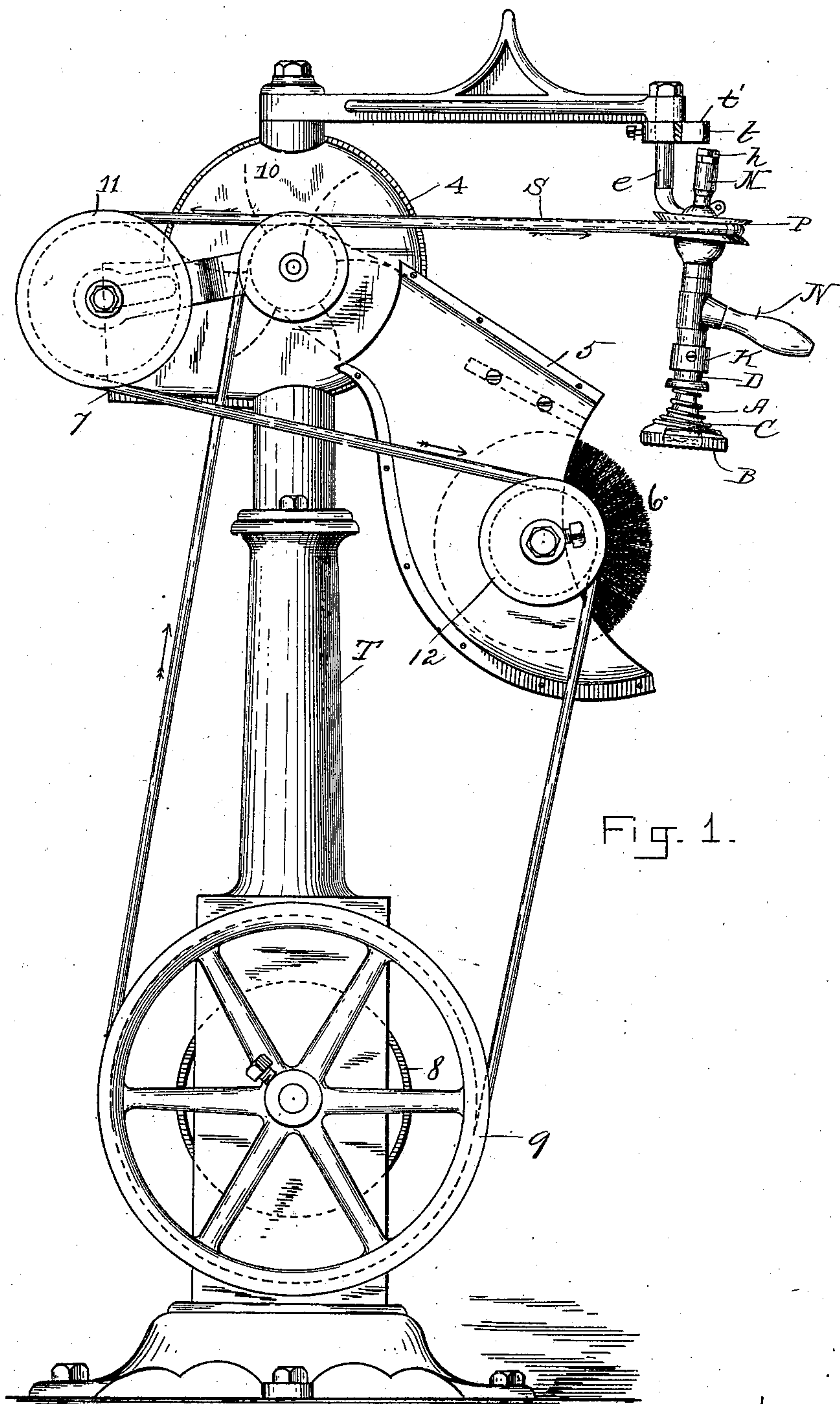


Fig. 1.

WITNESSES:  
Chas. S. Gooding,  
W. H. Ford

INVENTOR:  
Charles H. Trask  
By E. B. Tuttle  
Atty

(No Model.)

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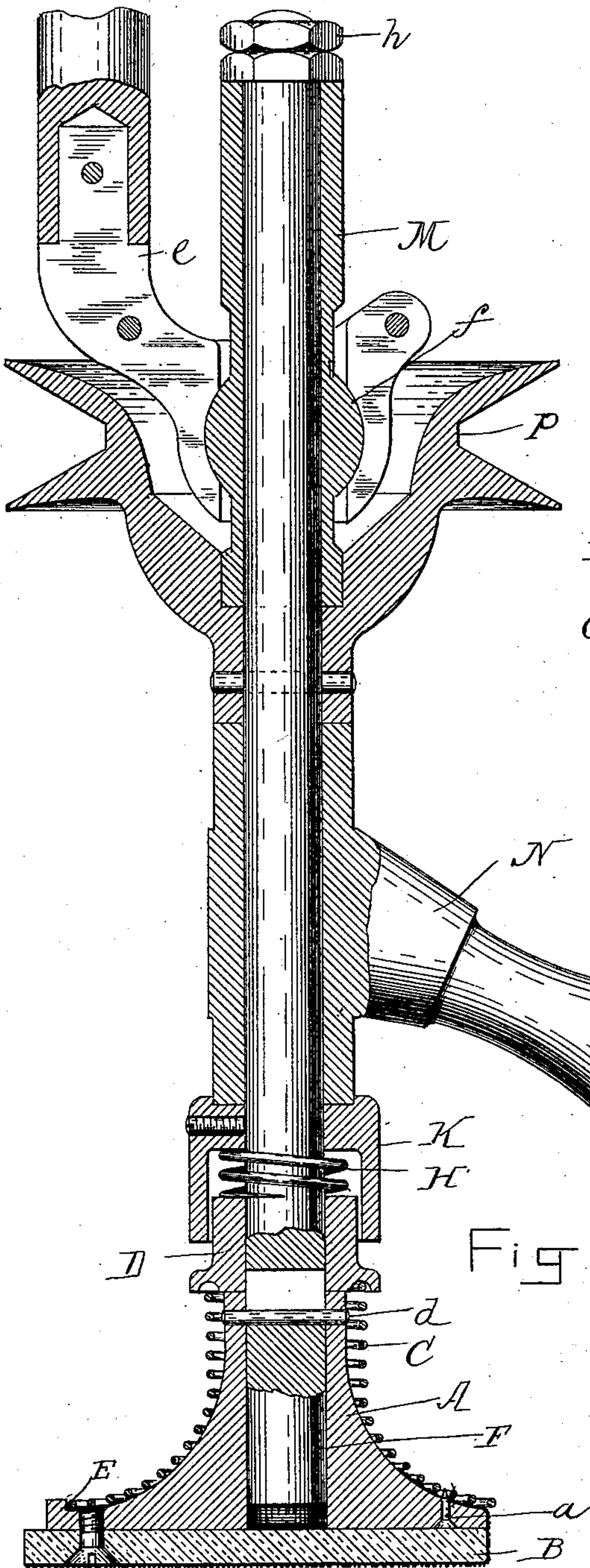


Fig. 2.

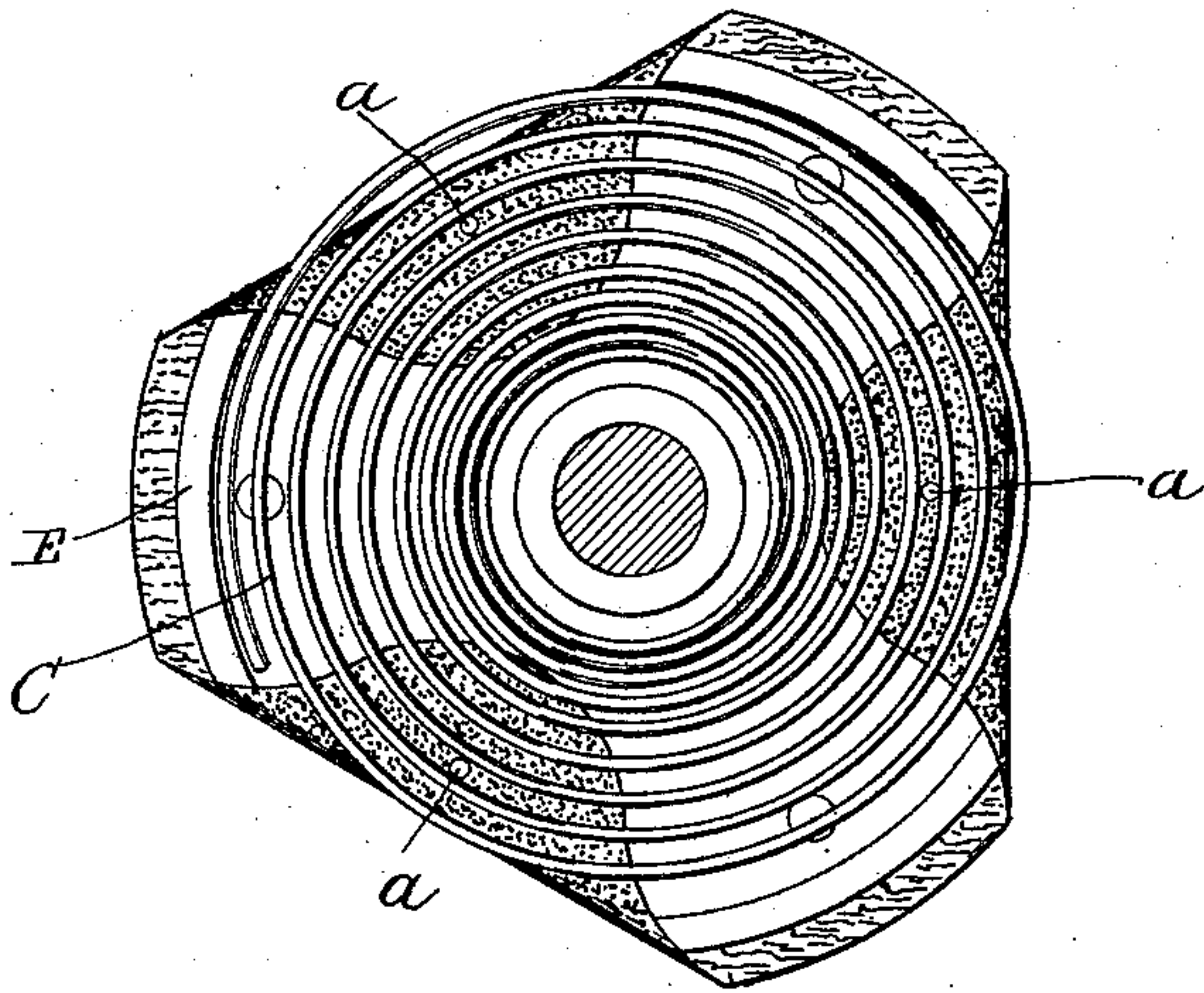


Fig. 3.

WITNESSES:

Chas. S. Wooding.  
W. H. Ford.

INVENTOR:  
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# UNITED STATES PATENT OFFICE.

CHARLES H. TRASK, OF LYNN, MASSACHUSETTS.

## BUFFING-MACHINE FOR THE SOLES OF BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 364,688, dated June 14, 1887.

Application filed October 14, 1885. Serial No. 179,830. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. TRASK, of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Buffing-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to buffing-machines, and particularly to that class of buffing-machines designed for use in finishing the bottoms of boot or shoe soles.

The nature of this invention will fully appear from the description of parts and mechanisms hereinafter given, and it is specifically pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of the complete machine. Fig. 2 is a vertical central section of the abrading foot or pad, its carrying shaft, and supporting arm. Fig. 3 is a plan view of the foot or pad and its attachments in detail, to be more fully referred to and explained hereinafter.

The block A and felt-facing B compose the "foot" or "pad," so called. The abrading material may consist of sand-paper, emery-cloth, or other abrading material, many of which are obvious and common to persons engaged in the art to which this invention pertains. This abrading material is drawn smoothly over the bottom face of the foot or pad, and at certain points or places the edges of the material are turned upward and lapped over the top of the foot to be clamped thereon, while between these lapped portions the abrading material is extended outward in an unbroken line. I call attention specially to this arrangement of the material in connection with the pad, as it is a matter of great importance.

I am aware that it has been a common practice heretofore to draw the material smoothly over the face of the pad, lift or turn the edges upward, and gather them in over the top of the pad. This method of arranging the material I expressly disclaim as no part of my invention. In my arrangement of the abrading material the edges are lapped upward and extended straight outward at alternating points, and in this respect my arrangement is distinguishable from the ordinary practice. The method heretofore in use necessitates the wrinkling of the material as it is gathered above the foot, and these wrinkles, as the pad

is rotated for use, are quickly extended downward over the edge of the foot and into the working-face of the abrading-sheet. This results in a series of ridges that become quickly glazed and prevent the shoe or work from getting into contact with the greater portion of the working-face of the abrading material; hence the pad, or rather the abrading material, is short-lived and great waste ensues. In my arrangement of the abrading material no wrinkles whatsoever are formed. The material is smooth on the face of the pad and also in the lapped portions above the pad, and no ridges will form in the material while the buffing process is going on.

In the accompanying drawings I have represented the foot or pad with an irregular formation, its edges or sides terminating in alternating curved and straight lines, and the abrading-sheet is arranged with its edges extended outward along the curved portions of the foot, but lapped upward over the foot along the straight portions thereof. This arrangement enables me to turn the material upward in wider strips without forming wrinkles. It gives a wider bearing-surface to the lap, and, consequently, gives greater strength than if the foot were circular in its contour. This special formation and arrangement has its special usefulness; but I would not be understood as limiting myself to this form of a foot, as I am aware that the material could be arranged smoothly over a circular pad, only that in such case the edges would have to be turned upward at a greater number of points, thus forming a great number of narrow laps.

There is still another feature of usefulness in the irregularly-formed pad, which I will now proceed to explain, and to this end it may be premised here that in many classes of work it is customary to buff or "clean," as it is termed, the bottom of the sole of a boot or shoe after the heel has been fully blacked and finished. In such cases it is very desirable to get closely into the angle formed by the union of the heel with the sole at the front or breast of the heel. This must be accomplished without scratching the finish of the heel. This work it is impossible to accomplish satisfactorily with the sheet of abrading material drawn upward and gathered above the foot in



the usual way, as the face of the upturned material bears directly against the breast of the heel, thereby destroying its finish.

In the case of a pad having the described irregular contour it will be observed that as the pad is rotated the circles described by the straight sides are always of smaller diameter, and, consequently, within the circle described by the curved sides of the foot, and when the foot is rotated very rapidly these curved edges of the foot follow each other so rapidly as to present a practically continuous surface reaching outward beyond the surface presented by the face of the turned up edges. This allows the pad to be brought sufficiently close to the heel to clean closely up to edge or breast thereof without injuring or damaging the finished surface. It will be evident from the foregoing that to accomplish this purpose it is only necessary that the unturned edges of the material should be extended outward sufficiently to describe a circle large enough to contain the circles described by the turned faces of the material. It is not, therefore, necessary to form the pad or foot with the described contour, as shown in the drawings; but this formation I have thus far found to be the most convenient.

In the block A are brads *a*, arranged to pierce the overturned or lapped portion of the material, and above the pad is a coil-spring, C, that bears one end upward against the collar D and the other end downward upon the overturned or lapped edges of the abrading material, thus preventing the laps from lifting off the brads. In applying the material the bottom end of the spring C is to be lifted upward to permit the edges or laps to be folded down upon the brads.

In the block A is formed a recess to receive the bottom end of the spring C, and so prevent it from expanding too much and escaping over the end of the foot. The block A is fixed upon the shaft F by a pin, *d*, which passes through a vertical groove in the shaft, as fully shown in Fig. 2. The foot is thus compelled to turn with the shaft, but permits a slight vertical movement on the shaft. The upper end of this block bears against the collar D, which is loose upon the shaft, and on the shaft above this collar D is a spring, H, that bears one end against the fixed collar K and its other end against the collar D, as shown in Fig. 2. The force of this spring is exerted to press downward the collar D, and consequently the block A. It yields to any pressure upward against the bottom of the foot, and thus renders the pad soft and yielding in its touch. The shaft F is supported in a hanger, *e*, that extends downward from the arm of the machine-frame. This hanger is formed with a socket to receive a ball formation, *f*, on the exterior of the thimble or collar M, and the shaft F is journaled to permit turning in the said collar, as shown. The nut *h* upon the top end of the shaft prevents it from slipping downward out

of the collar. This ball-and-socket formation constitutes a kind of universal joint that allows the collar or thimble M, and consequently the shaft F, to permit a free movement in any direction laterally. On the shaft F is a handle, N, whereby the shaft may be manipulated to bring the pad into various positions relatively to the work. On the shaft, also, is the fixed pulley P, to which motion is imparted by a belt, S, for the purpose of rotating the shaft. This pulley is chamfered out, as shown at Fig. 2, to allow the said universal joint to be located in the same horizontal plane, or nearly so, with the groove in the pulley, in order to allow the shaft to be moved about without danger of throwing the belt off the pulley. On the hanger *e* is a yoke, *t*, provided with an opening, *u*, to receive the end of the tube or collar M, and whenever it is desired to run the foot without any lateral movement the shaft F may be locked by dropping this yoke over the end of the thimble or tube M, the yoke being to this end arranged to permit vertical adjustment on the hanger-rod.

The column T is provided with a chamber, 4, and communicating with this is a horn, 5. In the horn is located a brush, 6, and in the chamber is a rotary fan. There is also an exhaust, 7, from the chamber. These features are common to this class of machines, and will not be described here in detail. In the lower end of the column is the driving-shaft, having on one end the driving-pulley 8, and carrying on the other end a pulley, 9. The belt S receives its motion from this pulley and passes first to the pulley 10, thereby revolving the fan; thence it passes to the pulley P, thereby revolving the shaft F, and consequently the pad; thence to the pulley 11, which is designed to take up slack in the belt; thence to the pulley 12, thereby revolving the cleaning-brush, and thence again to the point of starting. The pad is located just above the cleaning-brush and a little below the top edge of the horn. In operation the workman holds the shoe in hand and presses it upward against the pad, and thence he passes it to the brush to clean it. All dust is, by action of the fan, drawn into the horn and exhausted at the opening 7.

I claim—

1. The combination, in a buffing-machine, of a pad or foot connected therewith so as to be operated thereby, a covering for said pad or foot consisting of emery-cloth or like material applied smoothly to the face thereof, having its edge extended outwardly in an approximately straight line at some points, and turned up at intermediate points for attachment to the pad or foot, substantially as described.

2. In a buffing-machine, and in combination, the foot or pad, a covering therefor consisting of abrading-cloth applied smoothly to the face thereof, having its edges extended outwardly at certain points and turned up at intermediate points upon the pad or foot, means



for clamping the cloth to the pad or foot, and means for rotating the pad, substantially as described.

3. In a buffing-machine, the combination of  
5 a pad or foot having its circumferential contour formed in irregular lines, so that some portion will be at a greater distance from the center than others, abrading material applied to the face of the pad, having its edge  
10 turned up for attachment to the pad at the points nearer the center only, and means for rotating the pad, substantially as described.

4. In a buffing-machine, the combination of  
15 a buffing pad or foot, having a circumferential contour formed in irregular lines, as set forth, and means for rotating the pad or foot.

5. In a buffing-machine, the combination of  
20 a buffing-pad, the shaft for rotating the same, the pulley P, fixed to the shaft, the thimble M, and hanger e, provided with a ball-and-socket connection, substantially as described.

6. In a buffing-machine, the combination of  
25 a buffing-pad mounted on a rotating spindle or shaft, a supporting-arm for said shaft having a universal-joint connection, whereby the shaft is adapted to permit a swinging movement laterally, as described, means, substantially as described, for locking the shaft to prevent said lateral movement, and means for rotating the shaft, substantially as described.  
30

7. In a buffing-machine, the combination of

a rotary shaft, means for revolving the same, a buffing pad or foot carried by the shaft, a pin-and-groove connection between the pad and shaft, whereby the pad rotates with the shaft  
35 and is allowed slight vertical movement thereon, and a spring acting upon the pad or foot, whereby the same will yield to pressure, substantially as described.

8. In a buffing-machine, the combination of  
40 the block A, the abrading material carried thereby, and the spring C, arranged to bear upon the material, substantially as described.

9. In a buffing-machine, the combination of  
45 the block A, having recess E, and the spring C, having its bottom wire located in the recess and adapted to be lifted to permit the introduction of the abrading-sheet, substantially as described.

10. In a buffing-machine, the combination of  
50 the buffing-pad having the brads a, the abrading material stretched over the pad and having laps turned upward and over the brads a, as shown, and a spring, C, adapted to press down upon the laps, substantially as set forth.  
55

Witness my hand this 10th day of August, 1885.

CHARLES H. TRASK.

In presence of—

C. B. TUTTLE,  
JOHN M. BACON.