

A. A. McINTYRE.
MACHINE FOR SHAPING SHANKS OF SHOES.
APPLICATION FILED APR. 22, 1908.

967,036.

Patented Aug. 9, 1910.

Fig. 2.

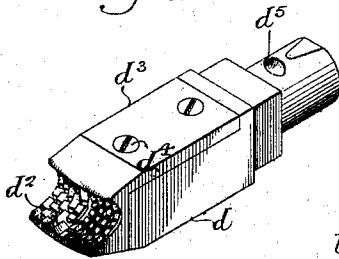


Fig. 1.

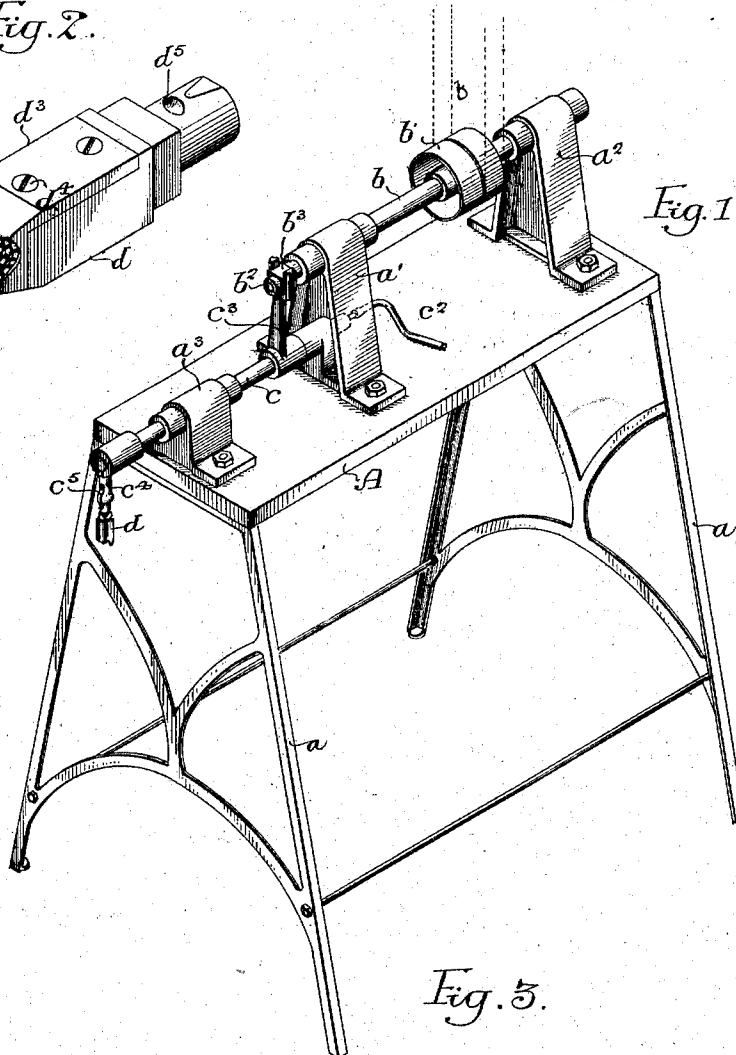


Fig. 3.

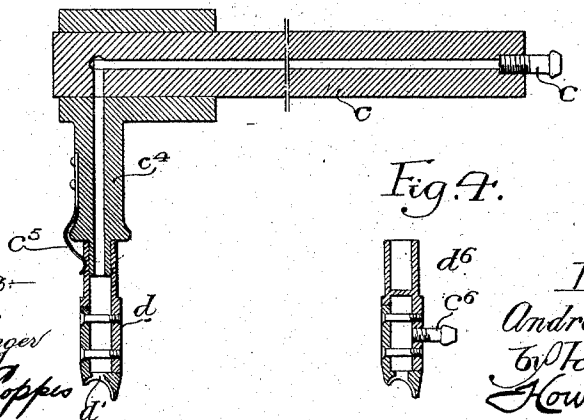
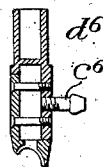


Fig. 4.



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ANDREW A. MCINTYRE, OF CAMDEN, NEW JERSEY.

MACHINE FOR SHAPING SHANKS OF SHOES.

967,036.

Specification of Letters Patent.

Patented Aug. 9, 1910.

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To all whom it may concern:

Be it known that I, ANDREW A. MCINTYRE, a citizen of the United States, residing in Camden, New Jersey, have invented certain Improvements in Machines for Shaping Shanks of Shoes, of which the following is a specification.

One object of my invention is to provide a tool which shall clear itself of the pieces cut or otherwise detached from the material operated on.

Another object of my invention is to provide a device whereby it shall be possible to finish or finally trim that portion of the shank of a shoe which, so far as I am aware, has been hitherto trimmed by hand.

A further object of my invention is to provide a device for trimming the shanks of shoes which shall be of such a construction as to keep itself clear of the chips or shreds of leather removed from the shank under operating conditions.

Another object of the invention is to provide a machine having the above characteristics, by which the time and labor necessary for trimming that portion of the shank of a shoe adjacent to the heel shall be materially reduced; the machine being also of such a construction that when its operating member becomes worn, it may be conveniently removed and replaced without loss of time.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a perspective view of a machine constructed according to my invention; Fig. 2, is a perspective view of the form of finishing tool preferably used in my machine; Fig. 3, is a vertical section of the oscillatory tool supporting shaft and arm forming a portion of my invention, and Fig. 4, is a perspective view of a modification of the tool.

In the above drawings, A represents the top or main supporting portion of the machine, which in the present instance is carried upon a pair of suitably braced legs or standards *a*.

Mounted upon and projecting upwardly from the main table structure are three standards *a*², *a*¹ and *a*³, of which the first two are provided with bearings for a shaft *b* having on it a driving pulley *b*¹ as well as a loose pulley *b*² for the reception of a driv-

ing belt. One end of this shaft has fixed to or formed as part of it, a crank or eccentric portion *b*² upon which is mounted a block *b*³. The standard *a*¹ has a second bearing for the support of a shaft *c*, which also extends into a bearing provided in the standard *a*³. In one embodiment of my invention this shaft, as shown in Fig. 3, is hollow, and has at one end a nipple *c*¹ for the reception of a flexible or other suitable conduit *c*² connected to a source of supply of air under pressure. Mounted upon and fixed to this shaft *c* is an arm *c*³ projecting upwardly therefrom and forked at the end for the reception of the block *b*³, which is free to slide in said forks. Upon the end of the shaft *c* opposite that having the nipple *c*¹, is fixed a second arm *c*⁴, removably carrying at its end the finishing tool *d*. This arm, as well as the tool, is hollow and the former communicates with the passage in the shaft *c*.

The tool is provided at one end with a transverse curved recess or depression whose longitudinal axis extends in the plane of oscillation of the arm *c*⁴ and which has substantially the cross section or outline which it is desired to impart to the finished shoe shank. It will be noted that the recess is deeper at its ends than at its middle and has a series of teeth, preferably though not necessarily, interrupted, and extending in a plane substantially at right angles to its longitudinal axis or in a plane substantially at right angles to the plane of oscillation of the tool. The lowest portions or roots of the teeth have passages extending into and communicating with the interior of the tool, and while said passages may be made in any desired manner best suited to deliver air under pressure to the teeth so as to clear particles of leather or any other material therefrom, I preferably give them a narrow elongated form as indicated at *d*¹. These openings from the interior of the tool to the teeth may be of any desired number and arrangement as found best suited to the work, and the teeth are preferably formed each with a series of transverse cuts similar to those in the teeth of a file, as indicated at *d*², so as to increase its effectiveness under operating conditions.

The portion of the tool upon which the teeth are formed may, if desired, be made removable from the body of the tool, being, for this purpose, constructed as illustrated at *d*³

in Fig. 2, with a side extension fitting into a suitable recess in the side of the body of the tool, to which it is held by screws d^4 . By removing these screws, this tooth-carrying end of the tool may be removed, it being understood that this is fitted to the body so as to prevent the escape of air therefrom. The tool is removably held to the end of the arm c^4 by means of a spring c^5 fitting into a suitable notch or recess d^5 in the shank of the tool.

In Fig. 4, I have shown a form of tool d^6 which, instead of communicating with a source of air supply through an arm c^4 , shaft c , and the nipple c' , is made hollow as before and has screwed or otherwise attached to its back portion, a nipple c^6 , to which the flexible pipe may be directly connected. The crank or eccentric b^2 is so proportioned as to give the tool d under working conditions an oscillation of about $1/16''$, said tool being driven through the pulley b' , shaft b , eccentric b^2 , block b^3 , arm c^3 , shaft c , and arm c^4 . At the same time, air under pressure is supplied to the interior of the tool through the tubular shaft c^3 and the arm c^4 , or else directly through the nipple c^6 as shown in Fig. 4, so that as the tool is oscillated, the air is delivered in small jets between its teeth. The machine is caused to impart to the tool from 600 to 3000 oscillations a minute, and very effectively acts upon the rear portion of the shank of the shoe to completely trim and finish this all the way up to the heel. Any particles of leather which would otherwise be caught between or retained by the teeth are instantly expelled therefrom by the jets of air delivered, and the work is performed in a much quicker and more satisfactory manner than is possible when hand labor is employed.

The ability of the tool to work on a shank close up to the heel is due to the fact that its two sides are flat so that it is free to operate upon and finish the back part of the shank in a minimum time.

As shown best in Fig. 2, I preferably so form the teeth of my improved tool that one half of these face one way from the center of the tool and the other half face the other way; that is to say, each set of the teeth will cut only while said tool is being moved in one direction.

I claim.

1. The combination in a shoe shank finishing machine of an oscillatory shaft, a tool having a toothed portion and mounted upon said shaft, said toothed portion being removable from the body of the tool and having openings, with means for connecting said tool to a source of air under pressure so that air is delivered from said openings to clear the teeth of said portion.

2. A tool for a shank finishing machine consisting of a body portion having in one end a transversely extending recess formed with substantially the same section as the shank of a shoe, with teeth in said recess extending in planes substantially at right angles to the line thereof.

3. A tool for a shoe shank finishing machine consisting of a body portion having a recess in its end, a series of substantially parallel teeth in said recess, certain of said teeth facing in one direction and others in an opposite direction.

4. A tool for a shoe shank finishing machine consisting of a body portion having a recess in its end, a series of substantially parallel teeth in said recess, said teeth being sub-divided.

5. A tool for a shoe shank finishing machine consisting of a body portion having a recess in its end, and a series of substantially parallel teeth in said recess, said teeth being sub-divided and being connected to a source of supply of air under pressure.

6. A tool for a shoe shank finishing machine having a transversely extending recess, said recess being deeper at the edges than at the middle, and having a series of teeth.

7. A tool for a shank finishing machine consisting of a body portion having in one end a transversely extending recess formed with substantially the same section as the shank of a shoe, teeth in said recess extending in a plane substantially at right angles to the line thereof, and means connecting said teeth with a source of supply of air.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ANDREW A. MCINTYRE.

Witnesses:

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