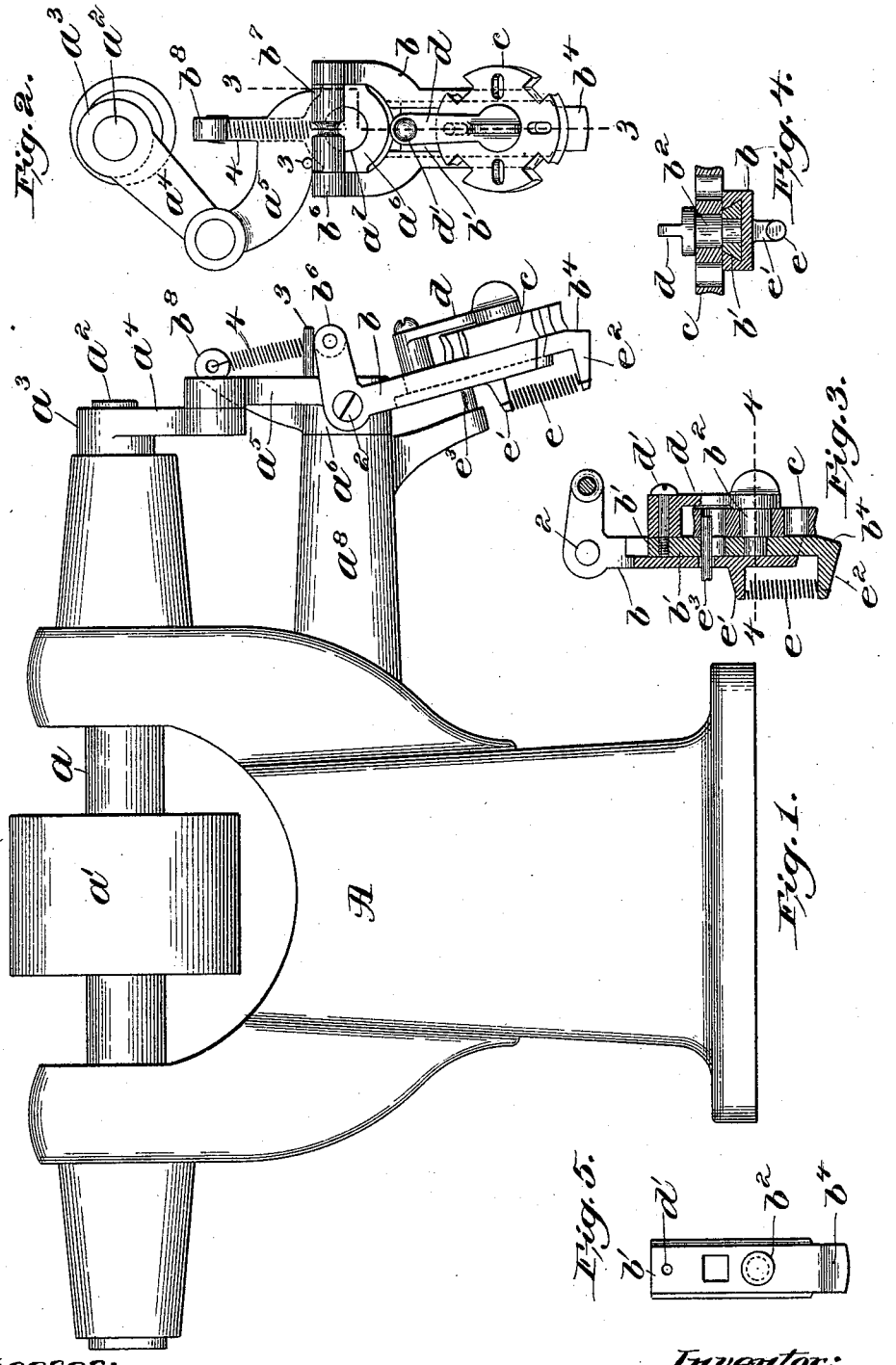
(No Model.)

S. D. TRIPP.

EDGE FINISHING MACHINE.

No. 587,378. Patented Aug. 3, 1897.



Witnesses:
Arthur L. Rundell.
L. M. Gilbritt.

Inventor:
Seth D. Tripp
by R. J. Hayes,
atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SETH D. TRIPP, OF LYNN, MASSACHUSETTS.

EDGE-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 587,378, dated August 3, 1897.

Application filed October 7, 1896. Serial No. 608,154. (No model.)

To all whom it may concern:

Be it known that I, SETH D. TRIPP, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Edge-Finishing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention relates to edge-finishing machines for boot and shoe work, and is intended as an improvement upon the edge-finishing machine for which Letters Patent were granted to me September 1, 1896, No. 566,819. In said patent an edge-finishing tool was carried by a frame which was moved back and forth by means provided for the purpose, being thereby vibrated, and said tool was given an independent oscillatory movement in unison with the vibratory movement of its supporting-frame, so that it really has a compound motion.

My present invention comprises means for giving to the edge-finishing tool such a compound motion which specifically differs from the means shown in said patent. In this instance the edge-finishing tool is mounted upon a pivot-pin which is borne by a vibrating frame—*i. e.*, a frame movable back and forth—and means are provided for turning or oscillating said tool upon said pivot-pin as its supporting-frame vibrates. For simplicity the frame bearing said oscillating tool is made to swing on a pivot and therefore oscillates; but so far as my invention is concerned it may be constructed and arranged to be moved back and forth in any desirable or suitable way, and therefore my invention includes any kind of a vibrating frame, and the means herein shown for oscillating the tool as its supporting-frame vibrates consists of a fixed stud in direct engagement with said tool, which, as the frame vibrates, causes said tool to oscillate. The vibrating frame bearing the oscillating edge-finishing tool is adapted to yield—as, for instance, it may have as a coöperative part of it a yielding arm bearing the tool, so that said tool may be bodily moved toward and from the operator, and, furthermore, the parts herein shown are so constructed and arranged that the edge-finishing tool is also adapted to yield in a substantially vertical direction.

As a further and quite essential feature of this invention a rest or support for the work is provided which is adapted to be vibrated—as, for instance, it may be oscillated, but instead of oscillating with the edge-finishing tool, as it would do if formed thereon, it vibrates with the frame carrying said tool, thereby having a simple movement back and forth. In practice I find that such a simple vibrating movement for the rest or work-support possesses many advantages over either a stationary rest or one which oscillates with the tool. For simplicity of construction I have attached this rest directly to or formed it integral with the vibrating frame carrying the edge-finishing tool, and by so doing I obtain all the results desired.

Figure 1 shows in side elevation an edge-finishing machine embodying my present improvements; Fig. 2, a front elevation of the machine shown in Fig. 1; Fig. 3, a sectional detail taken on the dotted line 3 3, Fig. 2; Fig. 4, a cross-sectional detail on the dotted line 4 4 of Fig. 3; Fig. 5, a detail of the sliding bar or rest carried by the vibrating frame.

The main frame A is of suitable construction to support the operating parts. The main driving-shaft a has its bearings in said frame and has a driving-pulley a' secured to or mounted upon it. Formed upon or secured to the end of the shaft a is a crank-pin or eccentric a^2, which receives upon it a hub a^3, from which projects an arm a^4, the extremity of which is loosely connected to the extremity of an arm a^5, which projects from a hub a^6, mounted upon or secured to a short shaft a^7, having its bearings in a projecting boss a^8 on the main frame. In lieu of the short shaft a^7 a stud may be employed. As the shaft a revolves, the crank-pin, being free to turn in the hub which is placed upon it, reciprocates said arm a^4, and by so doing oscillates the hub a^6. An arm b depends from said hub a^6, it being formed or provided at its upper end with a yoke the two arms of which astride said hub a^6, and screws 2 or other suitable fastenings pass through said arms and into the hub which secure said arm to the hub. These screws 2 or equivalent fastenings are preferably intended to also serve as pivot-pins for the arm b in order that it may have a slight movement in and

out with relation to the hub. The arm b is formed or provided with a dovetailed groove upon its outer side or face, in which is fitted and free to slide a bar b', which has projecting from it a circular stud b^2, upon which an edge-finishing tool c is mounted and free to be revolved. The arm b and its support and the bar b' carried by said arm bearing the supporting-stud or pivot-pin for the tool c herein constitute the vibrating frame for the tool, but it is obvious that said frame may be constructed in many different ways and yet move back and forth and therefore come within the spirit and scope of this invention. The frame is herein constructed and arranged to oscillate, and hence travels in the arc of a circle, but as the movement which is required of said frame is slight the curvature of the arc in which it travels is but little and does not detract from its utility, and the simplicity of so constructing the frame as well as the means for operating it is so great as compared with other ways of vibrating or moving said frame back and forth that I prefer to employ such simple construction.

The edge-finishing tool c may be constructed in any usual or suitable way and, if desired, may have a plurality of working faces. The edge-finishing tool c may be held in place on its pivot pin or stud b^2 in any desirable way, but as a simple way of thus holding it and enabling it to be readily removed whenever desired, in order that its position on the stud may be changed or that another tool may be substituted for it, an arm d is pivoted to the bar b' at d', which is adapted to overlie and bear upon said tool c and to thus hold it. This arm d may be easily swung aside whenever desired.

With the parts so far described it will be observed that as the hub a^6 is oscillated the arm b is correspondingly moved, as well as the parts carried by it, and consequently the tool c is oscillated or moved bodily back and forth on the axis of the hub a^6 as a center. My invention, however, comprehends means for giving to said tool c an oscillatory movement in unison with the simple vibratory movement just described, and the means herein shown for thus giving to said tool such an independent oscillatory movement consists, essentially, of a fixed stud e^3, secured to the main frame or any other fixed part which projects forward, passing through an elongated slot or opening in the depending arm b and thence through a hole cut or formed in the edge-finishing tool c, and this stud e^3, being stationary, will thus hold the tool at a point above its pivot, so that as the arm b oscillates with the hub a^6, to which it is attached, said tool will be turned on its pivot-pin or oscillated in unison therewith, and its working face is thereby caused to travel a greater distance or make a greater excursion in each direction.

A limiting-stop 3 projects from the hub a^6 to limit the outward position of the tool, and at the upper end of the depending arm b the arms of its yoke project forward, as at b^6, and said forwardly-projecting ends are connected by a cross-bar b^7, which is held up against the pin 3 by means of a strong spiral spring 4, attached at its lower end to said cross-piece b^7 and at its upper end to a lug b^8 on the arm a^5.

In order that the edge-finishing tool may yield in a more or less vertical direction, the bar b' supporting it is free to slide in the dovetailed groove provided for it, and an expansive spiral spring e is secured at one end to a lug e' on the arm b and at the other end to a lug e^2 on the bar b', the action or tendency of said spring being to force said bar b' and parts carried by it downward.

In order that the parts may be moved as described, with the fixed stud passing through them, the slot in the arm b is made of suitable length to permit said arm to oscillate with the hub a^6, and the hole through the bar b' is made of a width corresponding to the length of said slot, as well as being made long enough to permit vertical movement of the bar, and the hole through the tool is made of a length corresponding to the length of the hole in the bar b', but is made narrow to just receive the pin. If the tool c is constructed with several working faces, it will have as many holes.

Heretofore the rest or support for the work has been formed as a flange on the tool, thereby moving with the tool, or has been made stationary; but in practice I find that a rest or support for the work which moves back and forth, but does not have all the movements of the tool, possesses many advantages over either of the constructions referred to, and hence a rest or work-support is herein shown adapted to vibrate with the arm b instead of with the tool, it thereby having a simple movement as contrasted with a compound movement. In constructing such a rest or work-support I have formed it upon the lower end of the bar b', as shown at b^4, it projecting just below the working face of the tool, and when so formed it will have all the movements desired or necessary—that is to say, it will oscillate with the arm and will yield with the bar upon which it is formed or to which it is attached.

So far as the means herein shown for operating the edge-finishing tool is concerned it will be seen that the tool is bodily moved and engaged by a fixed stud, whereby it is turned on its pivot-pin; but I desire to include within the spirit and scope of this invention any other means whereby said tool may be given a compound oscillatory movement such as described by being turned on a pivot-pin in unison with the vibratory movement of the frame carrying said tool.

Furthermore, I desire it to be understood that I believe myself to be the first to construct an edge-finishing machine wherein an oscillating edge-finishing tool is borne by a vibrating frame and the rest or support for

the work has a simple vibratory movement with the frame carrying said tool, and such I desire to broadly claim.

As before stated, the tool-carrying frame is caused to swing back and forth on an axis, and hence oscillates, and that such construction is employed mainly on account of its simplicity; but I desire it to be understood that so far as this invention is concerned I desire to include any form and construction of frame and any means of moving it back and forth and thereby vibrating it.

I claim—

1. In an edge-finishing machine, the combination of a vibratory frame bearing the pivot-pin b^2, an edge-finishing tool placed on said pivot-pin, and the fixed stud e, in continuous engagement with said tool, which causes said tool to turn on its axis as the frame bearing it vibrates, substantially as described.

2. In an edge-finishing machine, the combination of the vibratory frame having as a part of it the sliding spring-pressed bar b', the pivot-pin b^2 projecting from said bar, an edge-finishing tool mounted on said pivot-pin, and means for oscillating said tool independent of but in unison with the vibratory movement of the frame, substantially as described.

3. In an edge-finishing machine, the combination of the vibratory frame having as a part of it the pivoted spring-pressed arm, a pivot-pin borne by said arm, an edge-finishing tool placed upon said pivot-pin, and means for oscillating said tool independent of the vibratory movement of the frame, substantially as described.

4. In an edge-finishing machine, the pivoted arm b, means for oscillating it on an axis at right angles to the axis upon which it is pivoted, the sliding bar b', pivot-pin borne by it, an edge-finishing tool placed on said pivot-pin, and means for oscillating said tool, substantially as described.

5. In an edge-finishing machine, the oscillating hub a^6, arm b pivoted to it bearing a pivot-pin, an edge-finishing tool placed on said pivot-pin, and means for oscillating said tool in unison with the oscillatory movement of the arm b carrying it, substantially as described.

6. In an edge-finishing machine, the oscillating hub a^6, arm b pivoted to it bearing the pivot-pin b^2, the edge-finishing tool placed on said pivot-pin, and the fixed stud e projecting through a hole in said arm b and engaging said tool, substantially as described.

7. In an edge-finishing machine, an oscillating edge-finishing tool carried by a vibrating frame, and a vibrating rest or support for the work, substantially as described.

8. In an edge-finishing machine, an edge-finishing tool, a vibrating frame carrying it, means for oscillating said tool in unison with the vibratory movement of said frame, and a rest or work-support attached to and movable with said frame, substantially as described.

9. In an edge-finishing machine, an oscillating frame bearing a rest or support for the work and an edge-finishing tool also borne by said oscillating frame, and means for oscillating said tool in unison with the movement of said frame, substantially as described.

10. In an edge-finishing machine, an oscillating rest or support for the work, an edge-finishing tool, and means for oscillating said tool in unison with the oscillatory movement of said rest, substantially as described.

11. In an edge-finishing machine, a frame, means for moving it back and forth, an edge-finishing tool carried by said frame, and means for oscillating said tool in unison with said frame, and a rest or work-support movable back and forth with said frame, substantially as described.

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

SETH D. TRIPP.

Witnesses:
B. J. NOYES,
L. M. GARBUTT.