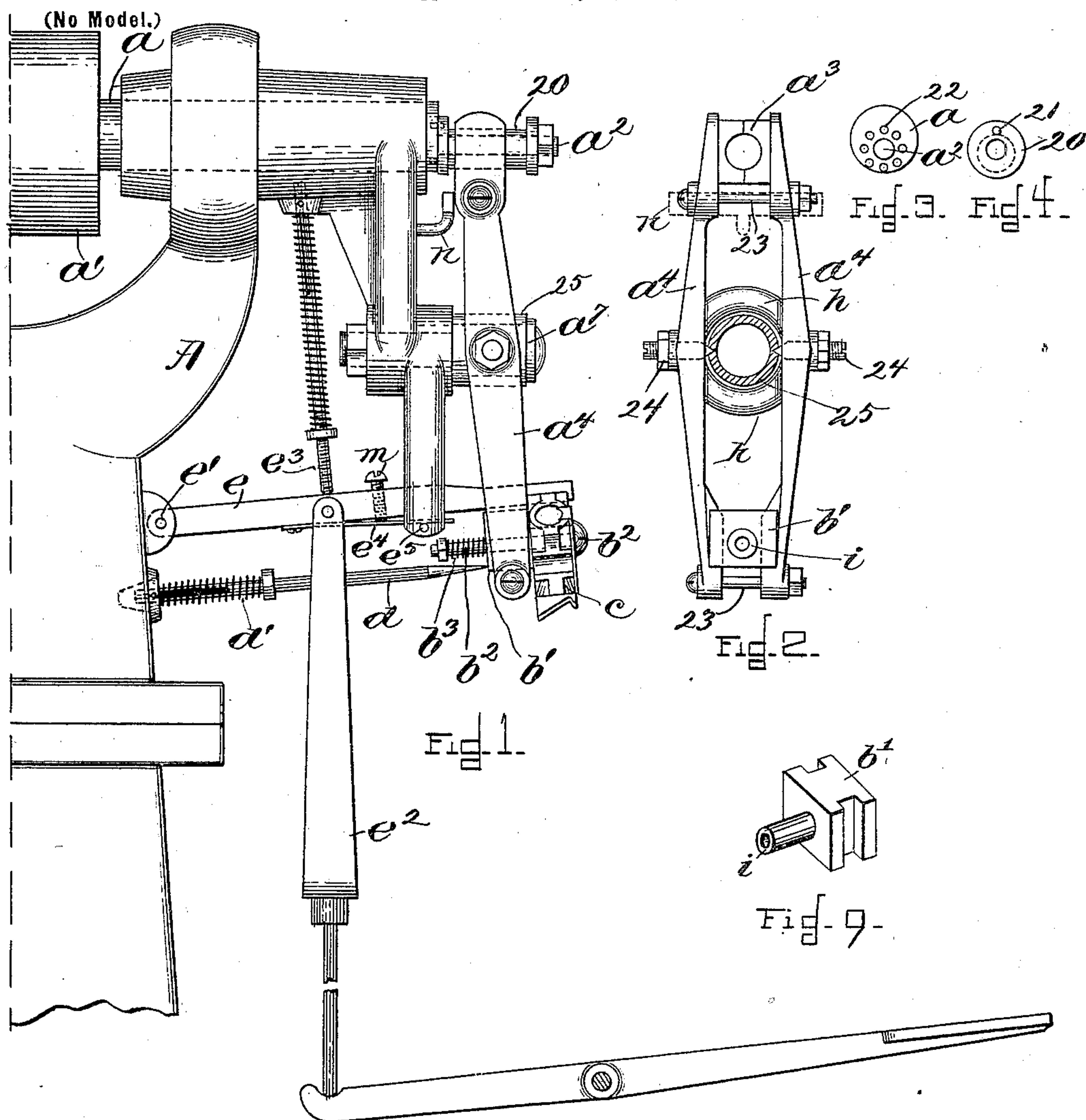


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S. D. TRIPP, Dec'd.
T. N. TRIPP, Administrator.
EDGE FINISHING MACHINE.
(Application filed May 28, 1898.)



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UNITED STATES PATENT OFFICE.

THAXTER N. TRIPP, OF LYNN, MASSACHUSETTS, ADMINISTRATOR OF SETH D. TRIPP, DECEASED, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SAID THAXTER N. TRIPP.

EDGE-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 701,425, dated June 3, 1902.

Application filed May 28, 1898. Serial No. 681,982. (No model.)

To all whom it may concern:

Be it known that I, THAXTER N. TRIPP, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, administrator of the estate of SETH D. TRIPP, deceased, late a resident of same place, do declare that SETH D. TRIPP invented certain new and useful Improvements in Edge-Finishing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to edge-finishing machines for boots and shoes and is intended as an improvement upon the edge-finishing machine shown and described in reissued Letters Patent No. 11,580, dated December 29, 1896, and in Letters Patent No. 587,378, dated August 3, 1897. In the machine shown in said patents an edge-finishing tool was carried by a vibratory frame and means employed for imparting to said tool a movement back and forth in unison with the frame as the latter vibrates and the tool thus given a compound motion, and in said patents the tool was formed or provided with a number of acting or working faces, each face of which served as the equivalent of a tool and really constituted a tool, and any one of said working faces or "tools" could be brought into position to act upon the work by proper manipulation of the parts.

It frequently happens that it is necessary to change from one kind or style of tool to another on the same work, and such change must be quickly and easily accomplished, and the present invention has for its object to provide means whereby the acting tool may be given a compound motion—such, for instance, as shown in said patents—and may also be quickly removed from its operative or working position and another tool brought into such position while the machine is in motion and without necessarily decreasing its high rate of speed.

In the present invention the different tools are affixed to a tool-holder which is supported by the vibratory frame, and the means employed for giving to the tool its motion in-

dependent of the frame is adapted to engage said tool-holder and to be moved into and out of engagement therewith, and when removed from engagement therewith the tool-holder is free to be turned to bring another tool into operative position. The tool-holder bearing the tools in addition to having imparted to it the compound motion referred to is adapted to rise and fall, and it is held down in a yielding manner. The said tool-holder is held in a normal or predetermined position and is adapted to be moved forward and also rearward from said normal position, and, as herein shown, said tool-holder normally occupies a position adjacent the frame bearing it, and when moved forward it moves bodily away from said frame and when moved rearward it moves with said frame. The tool-holder as herein shown is of novel construction, and so, also, are the tools carried by it.

Figure 1 shows in side elevation a sufficient portion of an edge-finishing machine to illustrate the present invention; Fig. 2, a detail showing a front view of the vibratory frame; Fig. 3, a detail showing the end of the rotating shaft having a crank-pin thereon; Fig. 4, an inner end view of an eccentric bushing which is mounted on said crank-pin; Fig. 5, a rear side view of the tool-holder adapted to receive a number of tools and bearing a single tool for illustration; Fig. 6, an edge view of said tool-holder; Fig. 7, a front view of said tool-holder; Fig. 8, a vertical section of the tool-holder shown in Fig. 5, taken on the dotted line 8 8; and Fig. 9 a detail view of the block bearing the tool-holder.

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 on it.

Formed upon or secured to the end of the shaft a is a crank-pin a^2 , and a cylindrical bushing 20 is provided having a hole through it or socket eccentrically disposed to its axis, which receives said crank-pin a^2 , and said bushing 20 being thus mounted on said crank-pin a^2 is adapted to be adjusted on said crank-pin by rotating it relatively to the crank-pin,

and to hold said adjustable bushing 20 in different positions relative to the crank-pin a stud 21 projects rearwardly from the bushing, which is adapted to enter any one of a series
 5 of holes 22, formed in the end of the shaft a concentrically around the crank-pin a^2 . By adjusting the eccentric bushing 20 around the crank-pin a^2 it may be set or caused to occupy such relative position on said crank-
 10 pin that said crank-pin and bushing together will occupy a position concentric to the shaft a or said bushing may be adjusted so as to occupy different positions on said crank-pin, whereby together they are eccentric to the
 15 shaft a with any degree of eccentricity. When said bushing is adjusted on the crank-pin to occupy a position concentric to the shaft a , said shaft a is free to revolve without moving any parts which may be mounted on said
 20 bushing, and when adjusted on the crank-pin to occupy a position eccentric to said shaft any parts mounted on said bushing will be moved. It is important in the machine herein shown to provide a range of adjustment for
 25 the bushing from a concentric position to the rotating shaft to a variable eccentric position to said shaft, for the reason that usually machines of this type are made with two heads adapted to be actuated by a single shaft, an
 30 operator standing on each side of the machine, and when only one head is being used it is necessary that the other head should remain idle, and by adjusting the bushing 20 to a position concentric to the shaft a the head
 35 connected with said bushing will remain idle; yet when both heads are being used the bushings will be adjusted to any degree of eccentricity desired independently of each other. Thus either head may be used exclusively of
 40 the other or both may be used at the same time.

A vibratory frame is mounted upon a stud a^7 , projecting from a depending portion of the head of the machine, and said frame consists,
 45 essentially, of two vertical arms a^4 a^4 , connected by the intermediate braces h h , which are herein shown as formed integral with the arms and as curved from end to end, and the outer ends of said arms above and below said
 50 intermediate braces are bolted together by bolts 23, and said frame loosely receives at its upper end a box or bearing-block a^3 , which has a hole through it to receive and be supported upon the bushing 20, said box or bearing-block a^3 moving independently of the vibratory frame as the shaft a revolves. The vibratory frame has at points substantially
 55 midway its length a pair of trunnions or pivot-pins 24, which project therefrom inwardly and engage a sleeve 25, which is placed on the stud a^7 . The sleeve 25 is free to turn on the stud to permit the frame to vibrate, and by providing pivot-pins, which engage said sleeve, said frame will be free to swing on said
 60 pivot-pins in and out as may be required. The vibratory frame has at its lower end a block b' , which is formed with grooved sides

adapted to receive guide portions formed on the adjacent sides of the two parts a^4 a^4 of the frame, and said block b' is free to rise and
 70 fall on the guides thus provided. The block b' has projecting from its front side a stud i , and said block and stud i thereon have a hole through them, through which passes a pin b^2 , the head of which bears against the end of the
 75 stud i and the opposite end projects from the rear side of said block and receives upon it a spiral spring b^3 , which acts by expansion to draw said pin b^2 rearwardly and to hold its head firmly against the end of the stud. A
 80 tool-holder c , bearing the edge-finishing tools, is loosely mounted upon said stud i , being held in place thereon by the head of the pin b^2 ; yet said stud i is made long enough so that the head of the pin b^2 will not bear directly
 85 upon the tool-holder and bind, yet it affords a means of holding said tool-holder on the stud. The tool-holder c may be moved longitudinally on the stud i in a forward direction or away from the frame a^4 , and when so
 90 moved it will be brought to bear upon the head of the pin b^2 , and will thereby move said pin b^2 with it, compressing the spring b^3 , which is placed upon and connected with the rearwardly-projecting end of said pin b^2 . The
 95 spring b^3 thereby serves as a means of returning the tool-holder to its normal position when the latter is drawn forward or away from the frame a^4 . This bodily movement of the tool-holder is desirable for the purpose of taking
 100 up some of the jar when working on certain parts of the sole—as, for instance, when following the “spring” of the sole. The lower end of the vibrating frame bears against a yielding abutment, which is herein represented as a rod d , the forward end of which
 105 is pointed and bears directly against the block b' or other portion of the vibratory frame and entering a slight indentation in said block or frame and the rear end of which
 110 enters a socket formed or provided in the frame of the machine, and said rod d receives upon it a spiral spring d' , by means of which said rod is thrust forward to hold the lower end of the vibratory frame in its normal or
 115 predetermined position, with its upper end bearing against a stop n . By pressure upon or against a tool borne by the tool-holder c the vibratory frame may be moved rearwardly a short distance against the stress of the spring
 120 d' . Thus it will be seen that the tool-holder c may be moved up and down and forward and also rearwardly. An arm e is pivoted at e' to the frame, which extends forward and overlies and engages the tool-holder c ,
 125 and said arm is connected with a treadle-rod e^2 , by means of which it may be raised and lowered. When said arm is raised, the tool-holder c will be disengaged, and when said arm is lowered said tool-holder will be
 130 engaged. A spring-pressed rod e^3 bears upon the top of said arm e , the function of which is to depress said arm and keep it in engagement with the tool-holder c , and when said

arm is lifted by the treadle it will rise against the action of said spring-pressed rod e^3 . To prevent said spring-pressed rod from acting so severely upon said arm as to cause said arm to engage the tool-holder c sufficiently to produce too great wear, another spring e^4 is secured to the under side of said arm e , which engages a stop or abutment e^5 on the frame, the tension of said spring e^4 being adjusted by the adjusting-screw m . The tool-holder c is formed or provided with engaging portions which receive said arm e , said engaging portions being herein represented as semi-circular recesses formed in the periphery of the tool-holder, (see Figs. 5, 6, and 7,) and as said tool-holder c is adapted to receive a number of tools it will have a corresponding number of engaging portions. As herein shown, the tool-holder is constructed and arranged to receive three tools. Consequently it has three engaging portions. Whenever it is desired to change from one tool to another, the arm e will be positively raised by the treadle, thereby disengaging the tool-holder, and the latter will then be turned to bring any other tool into the operative position, and then said arm e is again brought into engagement with said tool-holder. It will be seen that when the arm e is in engagement with the tool-holder and the frame bearing said tool-holder vibrates the said tool-holder will be oscillated at the same time that it is bodily moved by the vibrating frame, and as a result the tool carried by said tool-holder will be moved back and forth as the frame vibrates, and such compound motion of the tool is substantially the same as in the patents granted to me, which are heretofore referred to. The engaging portions or recesses in the tool-holder extend transversely from side to side in parallelism with the case, and as the pivoted spring-pressed arm e rests easily therein it will be seen that the tool-holder will oscillate as the frame bearing it vibrates, even while it is raised from its normal position or moved out or in. In the ordinary manipulation of the shoe it is easier for the operator when turning the shoe to retain a firm grip on it, and in such event the tool-holder will be raised more or less from its normal position. Referring to Figs. 5, 6, 7, and 8, said tool-holder is formed or provided with a central hole c' , which receives the stud i , upon which said holder is loosely mounted, and is formed or provided with three conical recesses c^2 , which receive the conical shanks f of the tools, and at one side of each conical recess c^2 a small notch c^3 is formed, which receives a pin f' , projecting from the tool, and said tool is formed with a head f^2 of any well-known or suitable shape and with a notch f^3 , adjoining said head, which is formed with an oblique wall, and a detent c^4 is provided on said tool-holder c , which enters said notch. As herein shown, the notch f^3 , having an oblique wall, passes entirely around the tool; but in practice it need not do so. The de-

tent c^4 is preferably made spring-acting, and by acting upon the oblique wall of the notch tends to thrust inwardly the tool, causing its conical shank f to bottom in the recess provided for it. The tools may be thus held in engagement with the tool-holder and will be quite securely retained.

As herein shown, several spring-acting detents are made as a single piece of spring-acting metal, yet it is obvious that they may be made of separate pieces.

What is claimed is—

1. In an edge-finishing machine, the combination of a vibratory frame, a tool-holder carried by it bearing one or more tools, a tool-operating device for oscillating the tool as the frame bearing it vibrates, and means for moving said tool-operating device into and out of operative position, substantially as described.

2. In an edge-finishing machine, the combination of a vibratory frame, a tool-holder carried by it bearing one or more tools, and a pivoted arm engaging said tool-holder which causes the acting tool to oscillate as the frame bearing it vibrates, substantially as described.

3. In an edge-finishing machine, the combination of a vibratory frame, a tool-holder carried by it bearing one or more tools, a pivoted arm engaging said tool-holder which causes the tool to oscillate as the frame bearing it vibrates, and means for moving said arm into and out of engagement with said tool-holder, substantially as described.

4. In an edge-finishing machine, the combination of a vibratory frame, a tool-holder pivotally supported thereon, a pivoted arm for engaging said tool-holder which causes it to oscillate as the frame bearing it vibrates, and means for moving said arm out of engagement with said tool-holder, substantially as described.

5. In an edge-finishing machine, the combination of a vibratory frame, a rising and falling tool-holder carried by it bearing one or more tools, a spring-pressed arm engaging said tool-holder, which causes the tool to oscillate as the frame bearing it vibrates, and which yieldingly holds down said tool-holder, substantially as described.

6. In an edge-finishing machine, the combination of a vibratory frame, a rising and falling tool-holder carried by it bearing one or more tools, a spring-pressed arm engaging said tool-holder, which causes the tool to oscillate as the frame bearing it vibrates, and which yieldingly holds down said tool-holder, and means for moving said arm to disengage the tool-holder, substantially as described.

7. In an edge-finishing machine, a vibratory frame, a tool-holder carried by it bearing one or more tools, a spring for holding said tool-holder in a predetermined position relative to the frame bearing it, yet permitting it to be moved bodily forward by the work, and means for oscillating said tool-

holder as the frame bearing it vibrates, substantially as described.

8. In an edge-finishing machine, a vibratory and rearwardly-moving frame, a tool-holder carried by it bearing one or more tools, a spring for holding said tool-holder in a predetermined position relative to the frame bearing it, yet permitting it to be moved bodily forward by the work, and means for oscillating said tool-holder as the frame bearing it vibrates, substantially as described.

9. In an edge-finishing machine, a vibratory and rearwardly-moving frame, a tool-holder carried by it bearing one or more tools, means for oscillating said tool-holder as the frame bearing it vibrates and a spring-pressed bar against which the lower end of said frame bears which serves as a yielding abutment therefor resisting its rearward movement, substantially as described.

10. In an edge-finishing machine, the combination of a vibratory frame, a tool-holder carried by it bearing one or more tools, a pivoted arm engaging said tool-holder which causes the tool to oscillate as the frame bearing it vibrates, and means for moving said arm into and out of engagement with said tool-holder and a spring upon which said arm bears as it engages the tool-holder, substantially as described.

11. In an edge-finishing machine, the rotating shaft a having a crank-pin a^2 projecting from it, a cylindrical bushing having an eccentrically-disposed hole adapted to receive said crank-pin, means for holding said cylindrical bushing in any position of rotary adjustment on said crank-pin, a vibratory frame having an independently-movable box a^3 on said bushing and a tool-holder operated by said vibratory frame bearing one or more tools, substantially as described.

12. In an edge-finishing machine, a vibrating frame, a tool-holder having a number of tools and having a corresponding number of engaging portions, combined with a tool-op-

erating device and means for operating it to engage any one of said engaging portions, to thereby hold the tool-holder with any one of its tools in operative position, and to also operate said tool as the frame bearing it vibrates, substantially as described.

13. In an edge-finishing machine, a vibrating frame, a tool-holder having a number of tools and a number of recesses, combined with a pivoted spring-pressed arm and means for operating it to engage any one of said recesses to thereby hold the tool-holder with one of its tools in operative position and to also operate said tool as the frame bearing it vibrates, substantially as described.

14. In an edge-finishing machine, a vibratory frame, a tool-holder having a number of tools and having a corresponding number of engaging portions, combined with a movable tool-operating device engaging any one of said engaging portions to thereby hold the tool-holder with any one of its tools in operative position, and to also operate said tool as the frame bearing it vibrates, substantially as described.

15. In an edge-finishing machine, a vibratory frame, a tool-holder having a number of tools and having a corresponding number of engaging portions, combined with a pivoted spring-pressed arm engaging any one of said engaging portions to thereby hold the tool-holder with any one of its tools in operative position and to also operate said tool as the frame bearing it vibrates, substantially as described.

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

THAXTER N. TRIPP,
Administrator of estate of Seth D. Tripp,
deceased.

Witnesses:

B. J. NOYES,
JENNIE L. HUTCHINSON.