(No Model.) 3 Sheets—Sheet 1.

A. S. VOSE & A. E. AYER.

ROTARY TRIMMING MACHINE.

No. 583,778. Patented June 1, 1897.

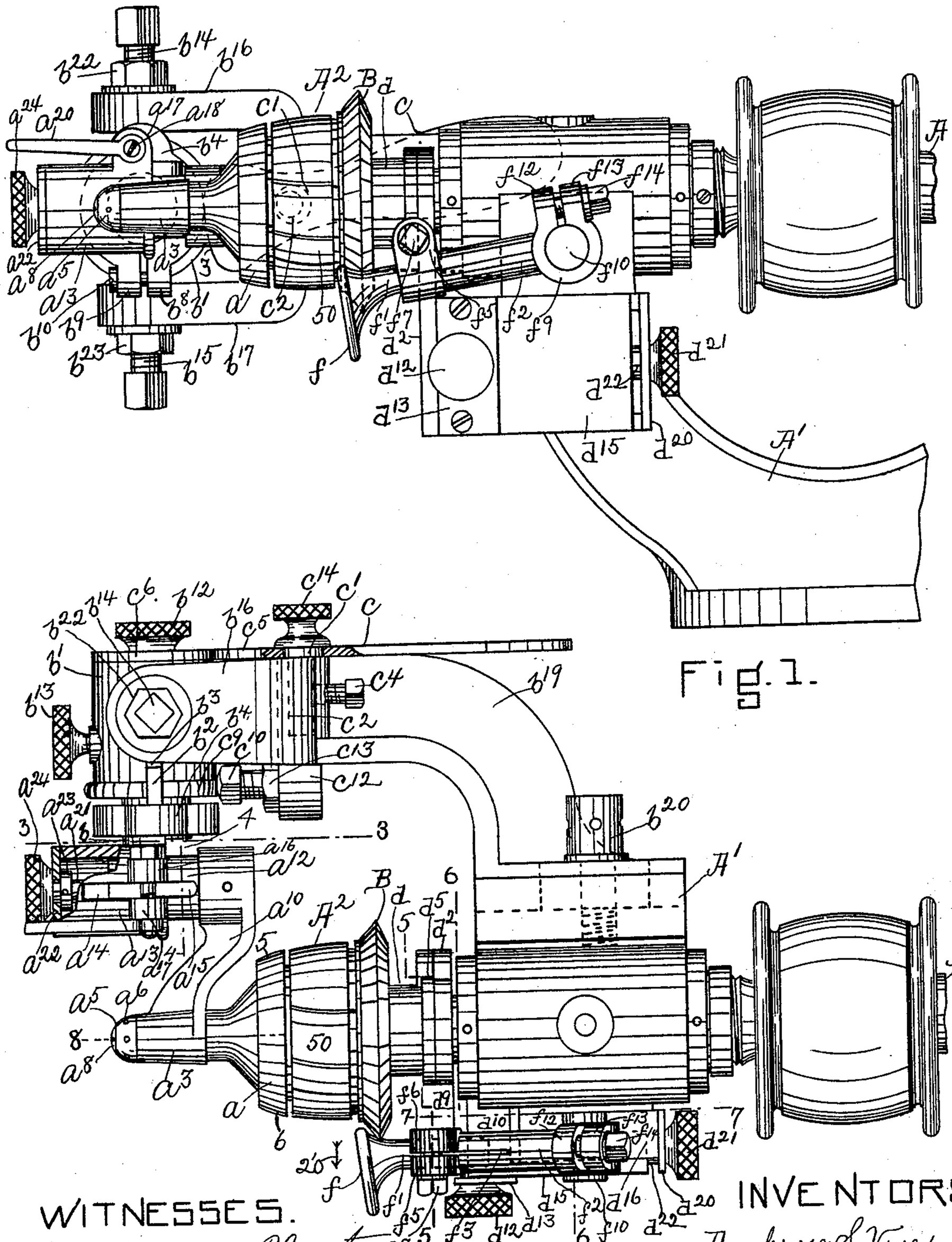

Fig. 1.

Fig. 2.

WITNESSES.

Matthew M. Blunt.

C. G. Alexander.

INVENTORS.

Ambrose S. Vose

Albert E. Ayer

by Jas. H. Churchill

ATT'Y.

(No Model.) 3 Sheets—Sheet 2.

A. S. VOSE & A. E. AYER.

ROTARY TRIMMING MACHINE.

No. 583,778. Patented June 1, 1897.

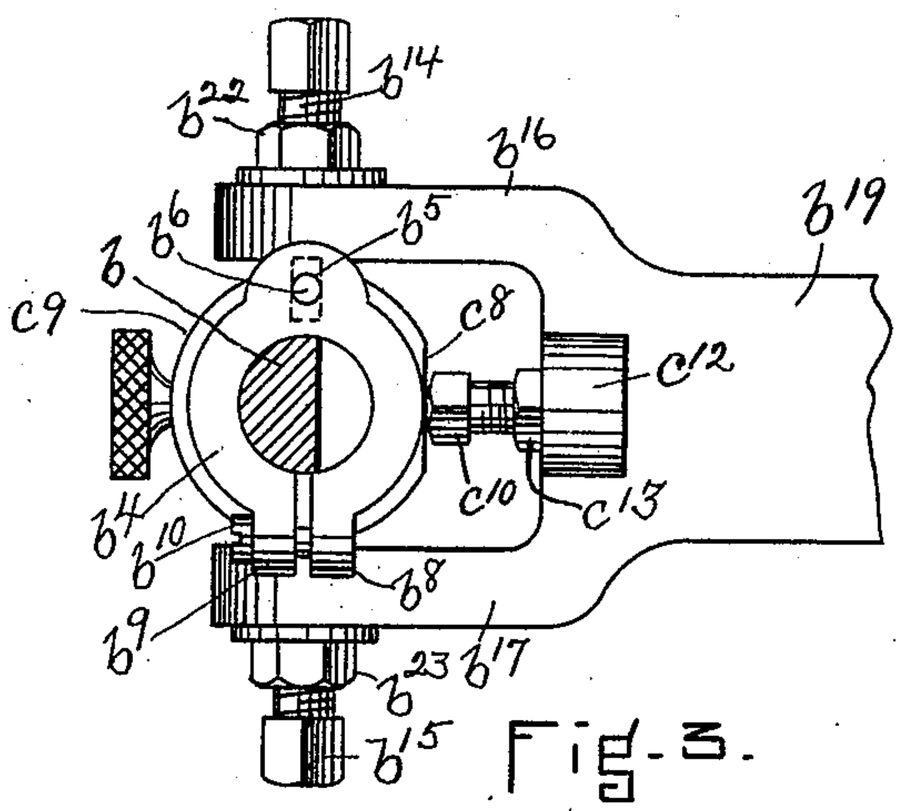

Fig. 3.

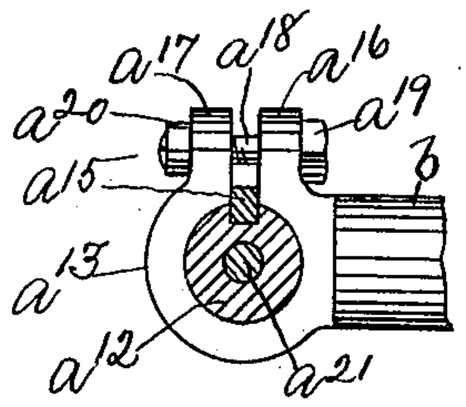

Fig. 4.

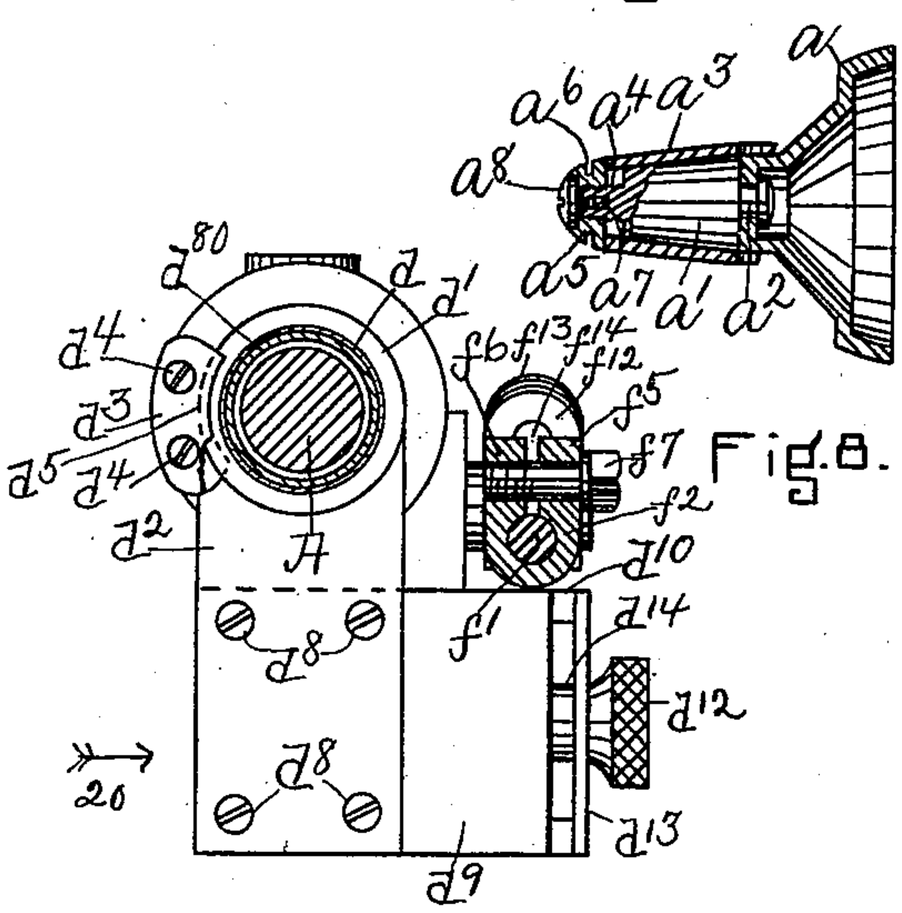

Fig. 5.

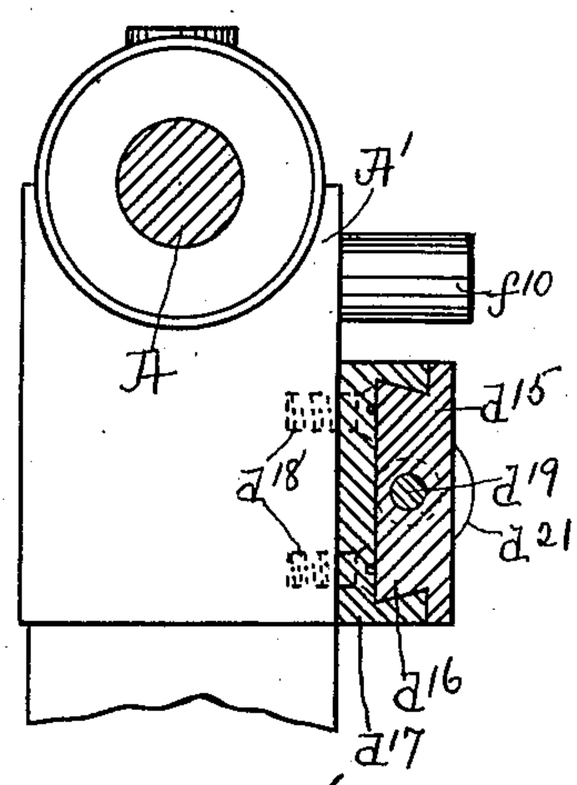

Fig. 6.

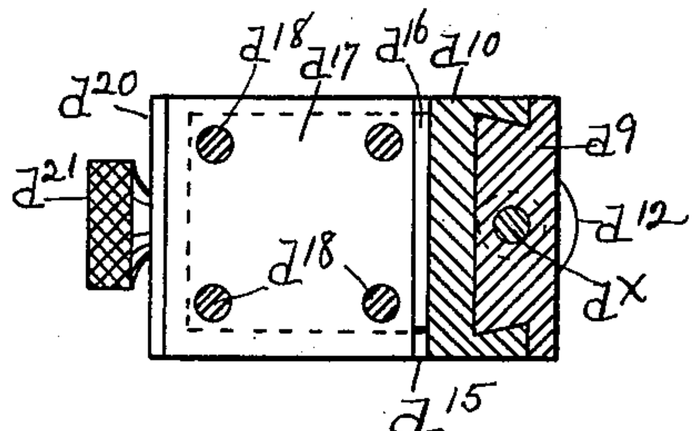

Fig. 7.

WITNESSES.

Matthew M. Blunt.

C. G. Alexander.

INVENTORS.

Ambrose S. Vose

Albert E. Ayer

by Jas. H. Churchill

ATT'Y.

(No Model.) 3 Sheets—Sheet 3.

A. S. VOSE & A. E. AYER.

ROTARY TRIMMING MACHINE.

No. 583,778. Patented June 1, 1897.

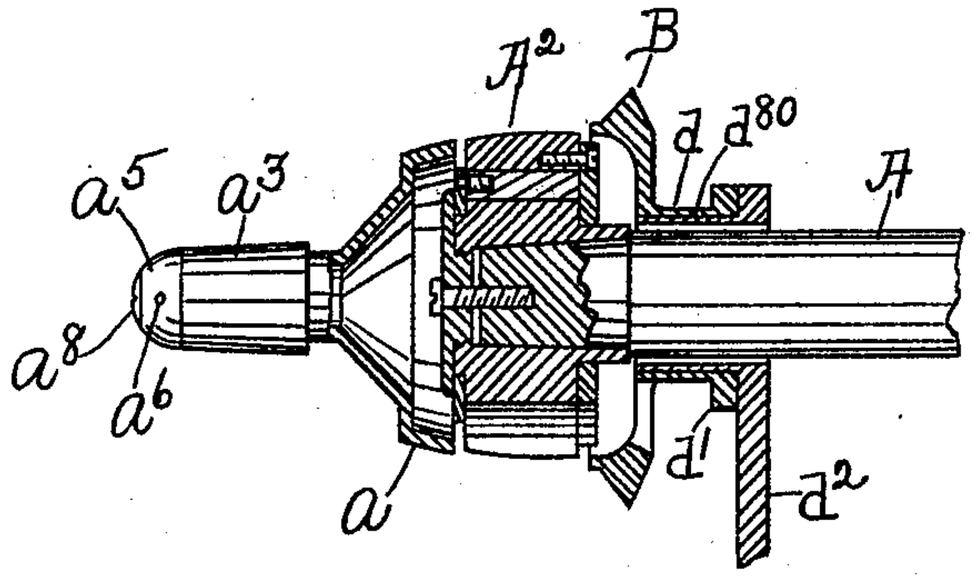

Fig. 9.

WITNESSES.

Matthew M. Blunt
J. Murphy.

INVENTORS

Ambrose S. Vose
Albert E. Ayer
by Jas. H. Churchill
ATT'Y.

UNITED STATES PATENT OFFICE.

AMBROSE S. VOSE AND ALBERT E. AYER, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO THE VOSE EDGE FINISHING COMPANY, OF NASHUA, NEW HAMPSHIRE.

ROTARY TRIMMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 583,778, dated June 1, 1897.

Application filed September 24, 1895. Serial No. 563,485. (No model.)

To all whom it may concern:

Be it known that we, AMBROSE S. VOSE and ALBERT E. AYER, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Rotary Trimming-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 is an improvement in machines of that class employing rotary cutters, and is herein shown as embodied in a machine especially adapted for trimming the heels of boots and shoes.

One feature of this invention consists in a novel construction of supporting mechanism for the guard for the rotary cutter whereby the said guard may be adjusted in various directions, as will be described, with relation to the rotary cutter and its shaft.

Another feature of this invention consists in a novel supporting mechanism for a revoluble top-lift guard whereby the latter may be adjusted in various directions with relation to the rotary cutter and its shaft, for a purpose as will be described.

Still another feature consists in a novel construction of heel-rest, as will be described.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a side elevation of a sufficient portion of a rotary trimming-machine to enable this invention to be understood; Fig. 2, a top or plan view of the apparatus shown in Fig. 1; Fig. 3, a vertical section on the line 3 3, Fig. 2, looking toward the top of the sheet; Fig. 4, a sectional detail on the line 4 4, Fig. 2, looking toward the left; Fig. 5, a sectional detail on the irregular line 5 5, Fig. 2, looking toward the right; Fig. 6, a section on the irregular line 6 6, Fig. 2, looking toward the right; Fig. 7, a vertical section on the line 7 7, Fig. 2, looking toward the bottom of the sheet; Fig. 8, a sectional detail on the line 8, Fig. 2; and Fig. 9, a sectional detail to be referred to.

Referring to Figs. 1 and 2, A represents the main shaft of a rotary trimming-machine, which is supported in a suitable framework A', and which may be of any usual or suitable construction and preferably that shown in United States Patent No. 538,055, dated April 23, 1895, the said main shaft being provided with oppositely-extended tapering journals. The main shaft A has mounted upon it at one end a rotary cutter A^2, which may be of any usual or suitable construction, such as now commonly employed in boot and shoe trimming machines and which in the present instance is shown as a heel-trimmer. The cutter A^2 has coöperating with it on one side thereof a guard *a*, which, when employed on boot and shoe heel trimming machines, is commonly referred to as the "rand-guard."

One feature of this invention has for its object to provide a support for the guard referred to whereby the latter may be moved in various directions with relation to the cutter A^2 and its shaft A, for a purpose as will be described. The guard *a*, in accordance with this invention, is preferably provided with a tapering journal a', (see Fig. 8,) which may be secured to or form part of the guard, but which in the present instance is shown as detachably secured thereto by a threaded rod or screw a^2, extended through an opening in the end of the guard and into a threaded socket in the journal a'. The tapering journal a' is mounted to revolve in a tapering bearing a^3 (see Fig. 8) and is provided, as herein shown, with a threaded stud or projection a^4, which extends beyond the outer end of the bearing a^3 and receives upon it an adjusting-nut a^5, preferably annular in shape and provided, as herein shown, with suitable sockets or holes a^6 for the reception of a pin or tool by which the nut a^5 may be turned on the threaded projection or stud a^4, and thereby draw the tapered journal a' into its bearing a^3, for a purpose as will be described.

The stud or projection a^4 is provided with a threaded socket, into which is extended the shank a^7 of a set or lock screw a^8.

We prefer to make the adjusting-nut a^5 annular in form; but we do not desire to limit our invention in this respect. The tapering bearing a^3 is secured to or forms part of an arm a^{10}, which is in turn secured to or forms part of a sliding piston, rod, or arm a^{12}, preferably cylindrical in form and extended into

a cylinder or casing a^{13}, (see Figs. 1 and 4,) within which the piston or rod a^{12} is longitudinally adjustable, as will be described. The cylinder or casing a^{13} (see Figs. 2 and 4) is split or divided longitudinally at its top for a portion of its length to form a slot a^{14}, into which extends an upright projection or key a^{15}, secured to or forming part of the piston or rod a^{12}, the said key or projection being represented in Fig. 4 as a separate piece from the rod a^{12}.

The cylinder a^{13} on opposite sides of the slot a^{14} is provided with upright ears a^{16} a^{17}, through which is extended a threaded rod or bolt a^{18}, provided with a head a^{19}, which engages the ear a^{16}, the said bolt or threaded rod having mounted upon it outside of the ear a^{17} a lever a^{20}, by turning which the ears a^{16} a^{17} may be moved toward each other to grasp or clamp the rod a^{12} in a firm manner and prevent the rod a^{12} being moved longitudinally in the cylinder a^{13} until the lever a^{20} is turned in such direction as will release the rod a^{12} and permit it to be moved or adjusted longitudinally by an adjusting screw or rod a^{21}, extended into a threaded socket or hole in the rod a^{12}, and also extended through the rear end a^{22} of the casing or cylinder a^{13}, the said adjusting-rod a^{21}, as herein shown, having mounted upon it within the casing in contact with the rear end a^{22} a washer a^{23} and having fast on it outside of the casing a thumb-piece a^{24}. The casing or cylinder a^{13} has secured to or forming part of it a rod or arm b, (see Figs. 2 and 3,) which extends from the said casing substantially at right angles to its longitudinal center and substantially at right angles to the rod a^{12}. The rod or arm b is extended into a cylinder or casing b' and is movable longitudinally therein, as will be described, and is guided in its movement in a straight path preferably by means of a key b^2, extended into a longitudinal slot b^3 in the casing or cylinder b'. The key b^2 might be secured to or form part of the rod or arm b, but we prefer to make the said key separate from the rod b and to secure it to the said rod so as to practically form part thereof. This result is preferably accomplished in the following manner: The rod b has mounted upon it a split collar or ring b^4, (see Fig. 3,) provided at its upper end with a cylindrical hole or socket b^5, into which a circular extension b^6 of the key b^2 may be driven, so as to firmly attach the key b^2 to the split collar or ring b^4. The split collar or ring b^4 is provided with ears b^8 b^9, adapted to be drawn toward each other to tightly secure the said collar or ring on the rod or arm b by a set-screw b^{10}. (See Fig. 3.)

The piston rod or arm b may and preferably will be adjusted longitudinally in its casing or cylinder b' by means of a screw-threaded rod extended through the rear end of the casing b' and provided with a thumb-piece b^{12}, the said rod being similar to the rod a^{21}. The rod b may be securely fastened in its adjusted position within the cylinder or casing b', preferably, as herein shown, by means of a set-screw b^{13}, extended through the side of the casing b' and engaging the rod b.

The cylinder or casing b' is pivotally mounted, so that the guard a may be angularly adjusted with relation to the cutter A^2 and so that the said guard may be swung back away from the rotary cutter A^2 when it is desired to gain access to the said cutter. The casing or cylinder b' may and preferably will be pivotally mounted upon centering-points or pivot-screws b^{14} b^{15}, herein shown as vertically arranged with relation to each other and extended through arms b^{16} b^{17} of a yoke secured to or forming part of an arm or bracket b^{19}, (see Fig. 2,) which latter is preferably adjustably secured, as by a bolt b^{20}, to the framework A'. The pivot-screws b^{14} b^{15}, as herein shown, are provided with locking-nuts b^{22} b^{23}, respectively. The cylinder or casing b' in the present instance is mounted to swing in a horizontal plane with relation to the rotary shaft A and its attached cutter A^2, and it may be firmly secured against movement by a locking mechanism, preferably of a construction as herein shown and as will now be described. The locking mechanism referred to consists, as herein shown, of an eccentrically-mounted lever c, (see dotted lines, Fig. 1, and full lines, Fig. 2,) the said lever being pivotally mounted upon a disk or hub c', which is eccentrically mounted upon a pin c^2, (see dotted lines, Fig. 1,) the said pin being extended into a hole in the bracket or arm b^{19} and secured therein against movement by means of a set-screw c^4. (Shown in Fig. 2.) The lever c has its short arm c^5 preferably provided with a substantially flat face 3, (see Fig. 1,) which engages with the periphery of the head or rear end c^6 of the cylinder b'. The cylinder or casing b' is preferably provided at its front end with a substantially straight or flat portion c^8, (see Fig. 3,) which is preferably made by cutting off a portion of an annular flange c^9 at the front end of the cylinder b', the straight or flat portion c^8 having coöperating with it an adjustable stop, shown as a threaded bolt or rod c^{10}, extended into a threaded opening in a boss or lug c^{12} on the front side of the bracket or arm b^{19}, the said adjustable bolt or rod c^{10} being locked in its adjusted position by means of a nut c^{13}. The pin or rod c^2 is adapted to be rotated, for a purpose as will be described, by means of a thumb-piece c^{14}, which may be integral with the pin and its eccentric-disk c' and which serves to keep the lever c on the said disk.

From the above description it will be seen that the guard a is capable of various adjustments with relation to the cutter A^2 and its shaft A. By means of the adjusting-rod a^{21} the guard a may be moved axially in a straight line with relation to the cutter and its shaft to thereby uncover more or less of the knives or blades 50 of the cutter, and to effect this movement the lever a^{20} is turned from substantially the position shown in Figs. 1 and

2 into an upright position, which act loosens the grip of the casing or cylinder a^{13} upon the piston or rod a^{12}, leaving the latter free to be moved longitudinally within the casing or cylinder a^{13} by the adjusting-rod a^{21}, and when the piston or rod a^{12} has been brought into the desired position within the cylinder, so as to place the guard a in the desired position with relation to the cutter A^2, the lever a^{20} is turned back into its normal position (shown in Figs. 1 and 2) and the rod a^{12} is again clamped and held stationary. The guard a is also capable of additional adjustment axially in a straight line, but within a smaller limit or compass, by means of the adjustable nut a^6. This latter axial adjustment is made to insure a close fit of the tapering journal a' in its bearing a^3, whereby the wear of the journal in its bearing is compensated for and lateral or vibratory movement of the guard a is avoided, and as a result the guard always runs true with relation to the knives of the cutter.

The guard a may be adjusted radially to place the edge of the guard in the proper or desired position with relation to the cutter, which adjustment in the present instance is in a substantially horizontal plane with relation to the cutter A^2 and its shaft A. This adjustment may be effected by rotating the thumb piece or wheel b^{13}, so as to release the rod b, and then by rotation of the thumb-wheel b^{12}, moving the rod b into or out of its cylinder or casing b', and when the rod b has been adjusted within its cylinder or casing b', so as to place the guard a into its proper adjusted position laterally with relation to the cutter A^2 and its shaft A, the said rod may be secured in its adjusted position by tightening up the set-screw b^{13}. The guard a may also be angularly adjusted with relation to the cutter A^2 and its shaft A in a radial direction by a pivotal adjustment or movement of the cylinder or casing b'. This latter adjustment may be effected by turning the lever c so as to disengage its front face 3 from the rear end c^6 of the cylinder or casing b' and then adjusting the rod or bolt c^{10} into and out of its socket in the lug c^{12} and then turning the casing or cylinder b' so that its front end will make contact with the adjusting-stop c^{10}.

By reference to Fig. 2 it will be seen that if the angular adjustment of the guard is such that what may be termed its "rear end" (viewing Fig. 2 and marked 5) is moved to the right of the position shown in said figure while its front end is moved toward the left the casing or cylinder b' will be moved so as to occupy relatively the same angular position with relation to a line through its pivot-points b^{14} b^{15} and that the rear end of the cylinder or casing b' will be moved toward the right. (Viewing Fig. 2.) In order to permit of this movement of the casing, the lever c must be withdrawn or moved back from the position shown in Fig. 2, which may be effected by turning the pin c^2, so that the eccentric c' will carry the lever c backward a sufficient distance to permit of the adjustment referred to. When the angular adjustment of the guard a is such that its rear end 5 is tipped toward the left (viewing Fig. 2) from the position shown therein and the front end 6 is at the same time tipped toward the right, (viewing said figure,) the rear end c^6 of the cylinder or casing b' will be turned to the left, (viewing Fig. 2,) and in this case the eccentric c' will be turned so as to bring the lever c forward or toward the left (viewing Fig. 2) and thereby insure the engagement of the front face 3 of the lever c with the rear end or head c^6 of the cylinder when the lever c is turned into its horizontal position. (Represented in Figs. 1 and 2.) At the same time the adjustable stop c^{10} is moved into its socket so as to permit the desired movement of the front end of the cylinder b' toward the right from the position shown in Fig. 2. It will be seen that the adjustable stop c^{10} and the lever c cooperate to form a locking mechanism for the pivoted cylinder or casing and prevent movement of the said cylinder from its adjusted positions.

The adjustable guard a and the mechanism herein shown for effecting its various adjustments are represented as applied to a machine having a rotary cutter for trimming the heels of boots and shoes, but we do not desire to limit this feature of our invention to this particular class of machines, as it is evident that the mechanism for accomplishing the adjustment of the guard a may be employed on other forms of rotary machines—such, for instance, as on rotary edge-trimming machines. The machine herein shown is provided with a top-lift guard B, which may and preferably will be of a construction as will be described, the said top-lift guard being loose upon the shaft A and capable of adjustment in two directions—that is, it is longitudinally or axially adjustable on the said shaft, and it is also laterally or radially adjustable thereon. These adjustments may be accomplished by means of mechanism, as will be described.

The top-lift guard B has secured to or forming part of it a sleeve d, (see Figs. 1, 2, 5, and 9,) the said sleeve having secured to or forming part of it an annular flange or collar d', which is secured to an upright support or arm d^2 in such manner as will permit the top-lift guard B to revolve freely about the shaft A. This connection of the flange d' to its upright support d^2 may be effected by means of a segmental piece d^3, which may be secured, as by screws d^4, (see Fig. 5,) to the upper end of the support d^2, the said segmental piece being provided with a groove d^5, (see Figs. 2 and 5,) into which the flange d' enters. The support d^2 is provided with a hollow boss or hub d^{80} (see Figs. 5 and 9) of larger diameter than the shaft A and through which said shaft extends, and the sleeve d of the top-lift guard revolves on said boss or hub.

The support d^2 is herein shown as secured by screws d^8 to a sliding block d^9, which is connected to a frame d^{10}, so as to slide or move thereon, it being dovetailed into the frame d^{10} and adjustable thereon by means of a threaded rod $d^\times$, (see Fig. 7,) entering a threaded socket in the block d^9 and provided with a thumb-piece d^{12}, which bears against a plate d^{13}, secured to the side of the frame d^{10}, the adjusting-rod $d^\times$ being provided with a washer d^{14} on the opposite side of the bearing-plate d^{13}, as represented in Fig. 5. The frame d^{10} is itself adjustable or movable in a direction substantially at right angles to the direction in which the block d^9 is adjustable and is provided with an arm d^{15} substantially at right angles to the main portion d^{10} and having on its back a rib d^{16}, which is dovetailed into a frame or support d^{17}, secured to the frame A′ of the machine, as by screws d^{18}. (See Figs. 6 and 7.) The frame d^{17} is provided at its end with a bearing-plate d^{20}, through which extends an adjusting-rod d^{19}, (see Fig. 6,) provided with a thumb-piece d^{21} and having mounted on it on the opposite side of the bearing-plate d^{20} a washer d^{22}.

It will thus be seen that the sliding frame d^{10}, by means of the rod d^{19}, is adjustable in its supporting-frame d^{17}, and that this adjustment is in the direction of the length of the shaft, and that when the frame d^{10} is moved the parts carried by it, which include the support d^2 and the sleeve d, are moved axially with relation to the shaft A, and thereby axial adjustment of the revoluble top-lift guard B with relation to the rotary cutter A^2 is effected, which adjustment permits of the proper positioning of the top-lift guard with heel cutters or trimmers of different widths.

It will also be noticed that by means of the adjusting-rod $d^\times$ the slide d^9 is adjustable on the frame d^{10}, and that this adjustment is substantially at right angles to the adjustment of the frame d^{10} itself, which adjustment of the slide d^9 moves the support d^2 and the sleeve d, together with the top-lift guard B, laterally or radially with relation to the shaft A, and thereby effects lateral or radial adjustment of the top-lift guard B with relation to the rotary cutter A^2, and as a result the top-lift guard B is brought into the desired or proper position with relation to the cutting edges of the knives, so that as the cutter revolves the knives can only trim down even with the top lift. This radial adjustment of the top-lift guard B permits cutters of various sizes or diameters to be used for trimming the heels of various sizes with uniformity in the work. To illustrate: If the heel cutter or trimmer is of large diameter or size, the slide d^9 is moved outward or in the direction indicated by arrow 20, Figs. 2 and 5, and the sleeve d is moved in the same direction until the top-lift guard B is moved toward what may be termed the "front" of the machine the required distance to place it in proper position with relation to the edges of the knives as will permit the said knives to trim only down even with the top-lift.

If the heel cutter or trimmer is of smaller diameter, the slide d^9 is moved toward the rear of the machine—that is, in a direction opposite to that indicated by the arrow 20—so as to properly position the top-lift guard with relation to the cutting-knives as will permit them to trim only down even with the top lift.

In practice the operator works at the front of the machine, and the top-lift guard B is adjusted radially with relation to the cutters A^2, which adjustment is toward and from the working position of the operator.

In a heel-trimming machine both features of this invention are and may be advantageously embodied, while in a machine for trimming the edges of the soles of boots and shoes the guard B is not required and may be omitted, while the guard a and the adjustable supporting mechanism connected therewith may be advantageously employed.

By reference to Fig. 2 it will be seen that the guard a and its adjusting mechanism are pivotally supported, and that the adjusting mechanism may be turned on the pivot-points, so as to place the said guard in the desired or proper angular position with relation to the cutter A^2, and when so placed or adjusted the said guard is held fixed in this angular position with relation to the cutter by locking the guard-adjusting mechanism against pivotal movement, as above described. The guard a, having been adjusted angularly with relation to the cutter, is still capable of being adjusted axially and radially with relation to the cutter.

In order to obtain a quick adjustment of the guard a between extreme widths of cutters, the bracket b^{19} is adjustably secured to the main frame A′ by the screw b^{20}.

The machine herein shown is provided with a heel-rest f, which may be of any usual construction, but which is preferably of the construction herein shown, it being provided with a shank f', extended into a sleeve f^2, provided at its front end with a longitudinal slot f^3, extended for a portion of the length of the said sleeve, the latter being provided on opposite sides of the slots f^3 with ears f^5 f^6, (see Figs. 2 and 5,) provided with holes for the reception of a bolt f^7, threaded at its end to engage screw-threads on the interior of the hole in the said ear f^6, the said bolt being adapted to be turned so as to bring the ears f^5 f^6 toward each other and thereby firmly clamp the shank f' of the heel-rest f.

By unclamping the shank f' the heel-rest f may be adjusted in a line substantially parallel with the shaft A to place it in the desired position with relation to the cutter—that is, to move the heel-rest toward or away from the center of the edges of the cutting knives or blades.

The sleeve f^2 is provided at its rear end with a split hub or tubular portion f^9, having a

hole or opening extended transversely with relation to the longitudinal axis of the said sleeve, and into which is extended a stud or projection f^{10} on the frame A′, the said stud being made of sufficient length to permit of movement upon it of the split hub f^9, to thereby adjust the heel-rest in a direction substantially at right angles to the longitudinal adjustment and toward and away from the cutter A^2. The split hub f^9 is provided with ears f^{12} f^{13}, having holes for the reception of a clamping-bolt f^{14}, threaded at one end to engage screw-threads on the circumference of the hole in the ear f^{12}. The sleeve f^2 is pivotally adjustable on the stud f^9 to thereby raise or lower the heel-rest with relation to the cutter A^2.

We claim—

1. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a shaft on which said cutter is mounted, and a rest or guard loosely fitted on said shaft to revolve thereon and capable of radial adjustment with relation to said shaft and cutter, substantially as described.

2. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a shaft on which said cutter is mounted, a revoluble top-lift rest or guard fitted loosely on the said shaft to revolve thereon, and mechanism to effect axial and radial adjustment of the said revoluble rest or guard, substantially as described.

3. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a guard coöperating therewith, a pivoted adjustable supporting mechanism for said guard provided with an arm having a bearing for the guard, and means to effect axial movement of the guard in its bearing to obtain adjustment of the guard without movement of the said supporting mechanism, substantially as described.

4. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a guard coöperating therewith and provided with a tapering journal, a supporting-arm for the guard having a tapering bearing for the tapering journal of the guard and adjustable with relation to the said rotary cutter, and means carried by the said arm and connected to said journal to adjust the said journal in its bearing and effect an adjustment of the guard independent of the supporting-arm, substantially as described.

5. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a guard coöperating therewith, an adjustable supporting mechanism for said guard consisting of a pivoted cylinder or casing, a piston or rod movable therein, a second cylinder or casing attached to the said piston or rod and extended substantially at right angles thereto, a second piston or rod in said second cylinder or casing, and a guard-supporting arm attached to the said second piston and extended at an angle thereto and provided with a tapering journal-bearing for the guard, and means to effect movement of the said guard in its journal-bearing, substantially as described.

6. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a guard coöperating therewith, a pivoted adjusting mechanism for said guard, a stop to limit the pivotal movement of the adjusting mechanism in one direction, and a locking device to limit the pivotal movement of the said mechanism in an opposite direction, substantially as described.

7. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a guard coöperating therewith, a pivoted adjusting mechanism for said guard, a stop to limit the pivotal movement of the adjusting mechanism in one direction, and an eccentrically-mounted locking device to limit the pivotal movement of the said mechanism in an opposite direction, substantially as described.

8. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a shaft on which said cutter is secured to rotate therewith, a revoluble top-lift rest loose on said shaft, a support for the said top-lift rest on which the said rest is free to revolve, and means to move the said support to effect radial adjustment of the revoluble top-lift rest, substantially as described.

9. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a shaft on which said cutter is secured to rotate therewith, a revoluble top-lift rest loose on said shaft, a support for the said top-lift rest on which said rest is free to revolve, and means to move the said support to effect radial adjustment of the revoluble top-lift rest, and means to move the support to effect axial adjustment of the revoluble top-lift rest, substantially as described.

10. In a rotary trimming-machine, the combination of the following instrumentalities, viz: a rotary cutter, a shaft on which said cutter is secured to rotate therewith, a revoluble top-lift rest provided with a sleeve having a flange, a support for the said rest and sleeve, means to secure the said flange to the said support to permit the sleeve and rest to revolve freely, a slide to which said support is secured, and means to effect adjustment of the said slide, a frame in which said slide is supported, and means to move said frame, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

AMBROSE S. VOSE.
ALBERT E. AYER.

Witnesses:
JAS. H. CHURCHILL,
J. MURPHY.