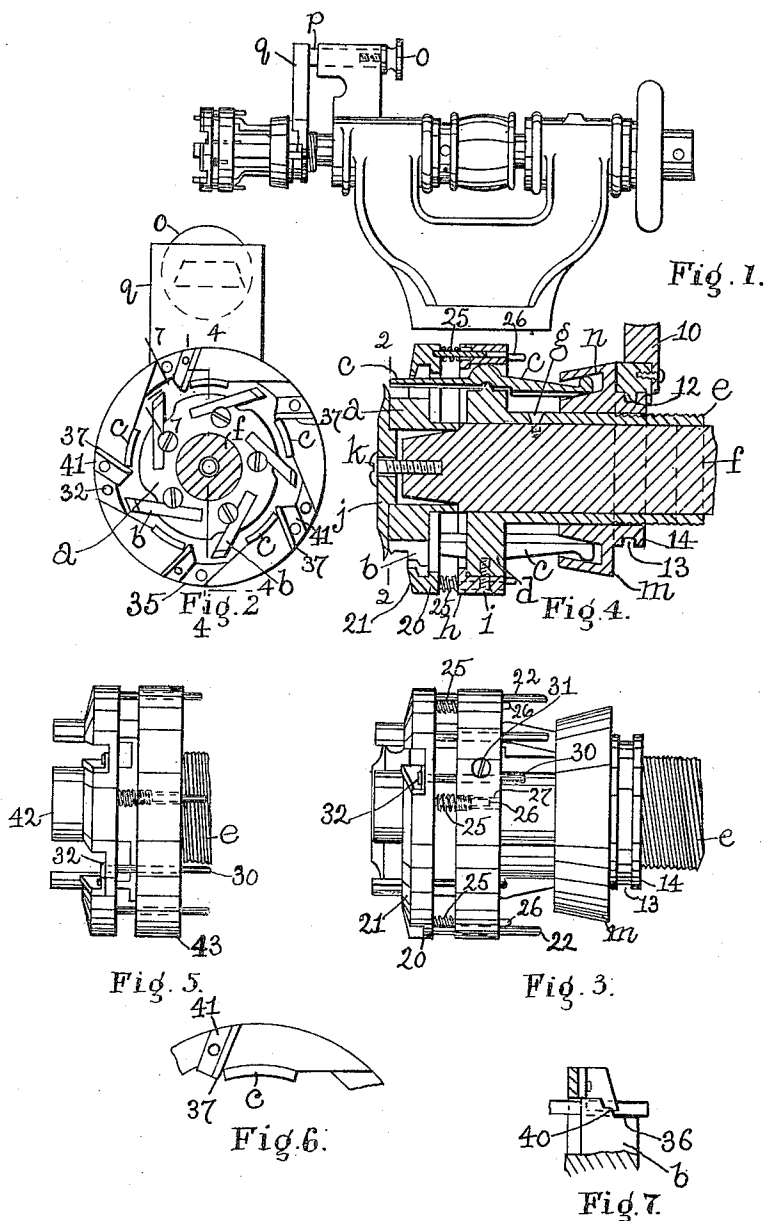


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MACHINE FOR TRIMMING THE SOLES OF BOOTS AND SHOES.
APPLICATION FILED MAY 15, 1909.

971,809.

Patented Oct. 4, 1910.



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UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AMBROSE S. VOSE, a citizen of the United States, residing in Brookline, county of Norfolk, and State of Massachusetts, have invented an Improvement in Machines for Trimming the Soles of Boots and Shoes, 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 a machine for trimming the edges of the soles and heels of boots and shoes, and more particularly to the feather-edger employed in connection with the rotary cutters or knives.

The present invention has for its object to provide a feather edger which is extremely sensitive and readily responds to the contour of the work so as to obtain superior results.

The feather-edger may and preferably will be provided with means as will be described, which enables narrow soles to be feather-edged, and also enables the sole to be feather-edged with a cutter having only a wide cutting blade without any feather-edging portion 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 front elevation of a machine provided with a feather-edger embodying this invention. Fig. 2, a section on the line 2—2, Fig. 4. Fig. 3, a detail in plan view to be referred to. Fig. 4, a longitudinal section on the line 4—4, Fig. 2. Fig. 5, a modification to be referred to, and Figs. 6 and 7, details to be referred to, Fig. 7 being a section on the line 7—7, Fig. 2.

In Figs. 1 to 4, I have shown one form of machine embodying this invention, in which *a* represents a rotary cutter-head having a plurality of blades or knives *b* extended from its periphery and cooperating with a sectional bed for the work. The sectional bed is composed of a plurality of levers *c*, pivoted to a flange *d* on a sleeve *e* fastened to a shaft *f* as by the screw *g*, said levers being secured to said flange by a ring *h*, which is fastened to the flange by one or more screws *i*. The cutter head *a* is secured on the shaft *f* by a guard or shield *j* and screw *k*, and the levers *c* are turned on their pivots to uncover more or less of the knives *b*, by a ring *m* having an inclined annular

slot, channel or groove *n*, into which the rear ends of the levers *c* are extended, said ring being loose on the sleeve *e* and capable of being moved longitudinally thereon by rotation of a screw *o* (see Fig. 1), which engages a slide *p* having an arm *q* which is fastened to a block 10 having a projection 12, which extends into an annular groove 13 in an extension 14 of the ring *m*.

The parts as thus far described are and may be such as shown in U. S. Patent No. 874,821 dated December 24, 1907.

The present invention has for its object to provide a machine of the class shown in the patent referred to with a highly sensitive feather-edger, and for this purpose a feather-edger ring 20 having beveled or inclined projections 21 on its inner circumference and provided with pins or rods 22 extended loosely through the clamping ring *h*, has cooperating with it a plurality of helical springs 25 interposed between the feather-edger ring 20 and the clamping ring *h* and encircling pins or rods 26 extended from the feather-edger ring into openings 27 in the clamping ring. Preferably a plurality of the springs 25 are employed and in practice I may prefer to use as many as four, which are set substantially quartering.

The springs 25 act to move the feather-edger outward or away from the flange *d*, which movement is limited by one or more stops, in the form of stationary pins or rods 30 extended loosely through the feather edger and fastened to the clamping ring *h* as by screws 31, the said rods or pins having heads 32 at their front ends which limit the outward or forward movement of the feather-edger under the influence of the springs 25.

The springs 25 may be made light or substantially small as they are required to overcome only the slight friction between the rods 22 and the walls of the holes in which they are moved, and as a result the feather-edger quickly and easily responds to the shape of the sole of the boot or shoe, it being moved inward by a wide portion of the edge of the sole and being moved outward by the springs 25 when the edge of the sole is narrow.

The beveled projections 21 of the feather-edger ring 20 are separated from one another by spaces or openings 35 into which extend the cutting edges of the knives *b*, and

provision is made for insuring a feather-
edging action with thin soles, that is, with
soles whose thickness is less than the width
of the knife edge 36 (see Fig. 7), which acts
on the edge of the sole. For this purpose,
the projecting portion 21 of the feather-
edger ring 20 is provided with a lip 37,
which extends below the bottom edge of the
said projection at one end thereof (see Figs.
2, 6 and 7) and below the outer surface of
the bed *c* upon which the edge of the sole
bears, so that when the sole is not of suffi-
cient width to force the feather-edger back
far enough to uncover the feather-edger
portion 40 of the knife or cutter, the side of
the sole edge will be firmly supported in
such manner as to enable the wide cutting
edge 36 of the knife to make a clean cut of
the edge of the sole without leaving any
feather-edge thereon. In the present in-
stance, the lip 37 is shown as forming part
of an angle piece 41, which is detachably
secured to the ring 20 in the space 35, so that
the lip engages the end wall of the projec-
tion 21 of the ring. The lip 37 may be de-
signated a feather-edger projection as it en-
ables the sole of the shoe to be feather-
edged with a substantially straight or wide
knife.

In Figs. 1 to 4, I have shown the feather
edger as employed with a bed for the work,
which is the form of movable levers, but I
do not desire to limit the invention in this
respect, as the feather edger is capable of use
with any form of bed or without a bed.

In Fig. 5, I have shown the feather-edger
as used with a sectional bed, whose parts 42
are secured to or form part of an annular
flange 43 on the sleeve *e*, or it may be on the
shaft *f* itself.

Claims.

1. In a machine of the class described, in
combination, a rotary shaft, a cutter head
secured thereto and provided with a plu-
rality of cutters or knives, a sleeve on said
shaft having a flange, a plurality of beds
carried by said flange and extended between
said cutters or knives, a feather-edger ring
having projections coöperating with said
beds and knives and provided with rods or
projections movably supported by said
flange, springs interposed between said
feather-edge ring and said flange, and stops
carried by said flange and coöperating with

said ring to limit the movement of the latter
away from said flange, substantially as de-
scribed.

2. In a machine of the class described, in
combination, a rotary shaft, a cutter head
secured thereto and provided with a plu-
rality of cutters or knives, a sleeve on said
shaft having a flange, a plurality of beds
carried by said flange and extended between
said cutters or knives, a feather-edger ring
having projections coöperating with said
beds and knives and provided with rods or
projections movably supported by said
flange, springs interposed between said
feather-edger ring and said flange, stops
carried by said flange and coöperating with
said ring to limit the movement of the latter
away from said flange, and lips coöperating
with said projections and extended below
the outer surface of said beds, for the pur-
pose specified.

3. In a machine of the class described, in
combination, a shaft, a rotary cutter secured
thereto and provided with a plurality of
knives, a feather-edger ring having projec-
tions which coöperate with said knives, an
annular support for said feather-edger ring
rotatable with said shaft, a plurality of rods
or projections on said ring engaging said
support, yielding means interposed between
said ring and its support, and stops carried
by said support and coöperating with said
ring to limit the movement of the ring away
from its support under the influence of said
yielding means, substantially as described.

4. A feather-edger ring having a plu-
rality of projections on one surface, and
lips coöperating with one end of said pro-
jections and extended below the bottom sur-
face thereof, for the purpose specified.

5. A feather-edger ring having a plu-
rality of projections on one surface sep-
arated from one another, and devices at-
tached to said ring and coöperating with one
end of said projections to extend below the
under surface of the same, for the purpose
specified.

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

AMBROSE S. VOSE.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.