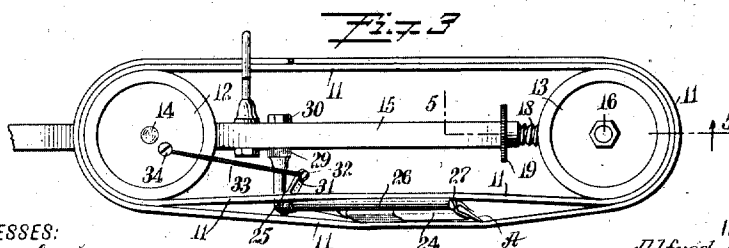
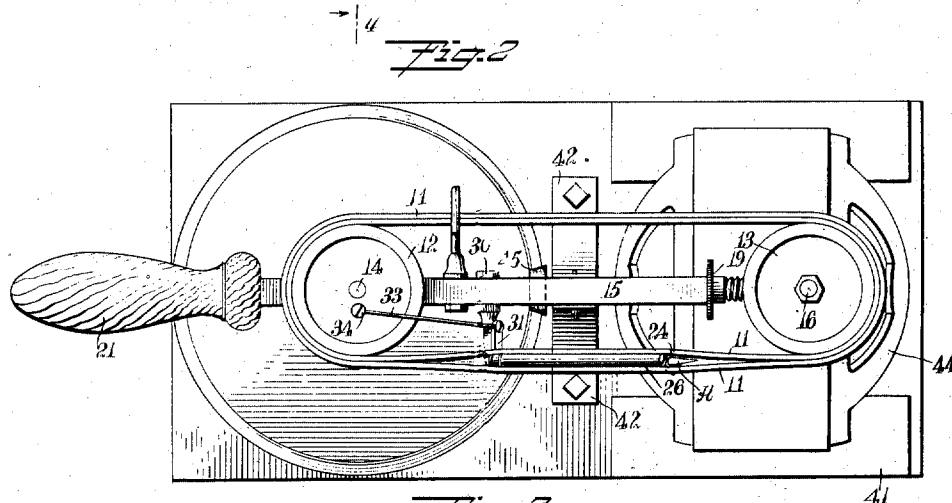
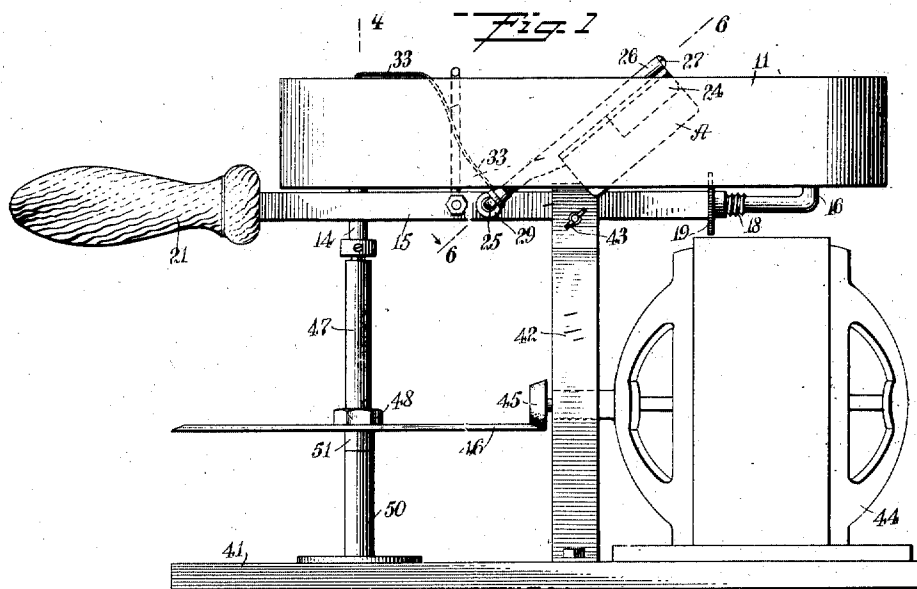


A. FORNANDER.
 RAZOR STROPPING MACHINE.
 APPLICATION FILED JUNE 7, 1910.

994,736.

Patented June 13, 1911.

2 SHEETS-SHEET 1.



WITNESSES:

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E. G. Bromley

INVENTOR

Alfred Fornander

BY *Munn & Co.*

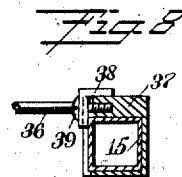
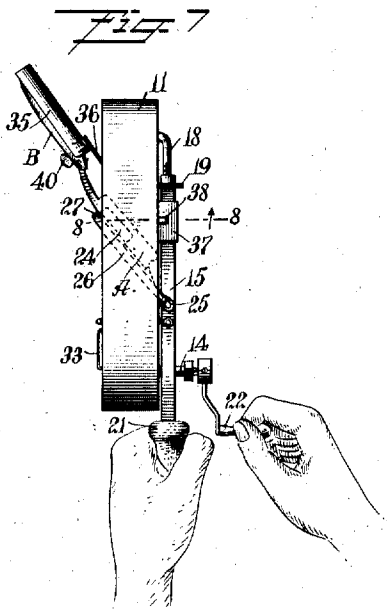
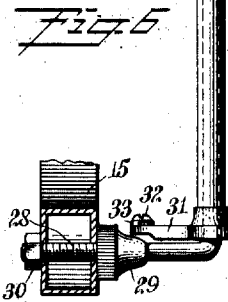
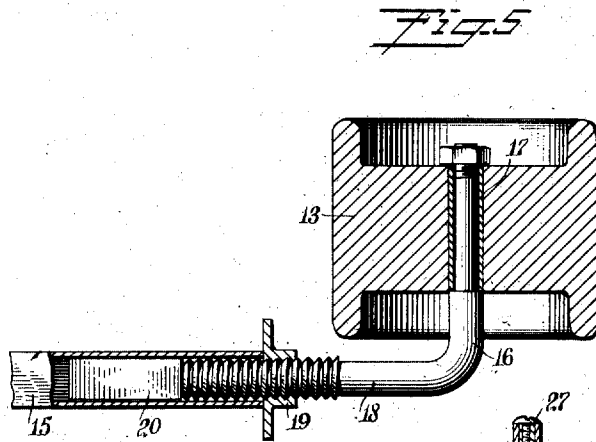
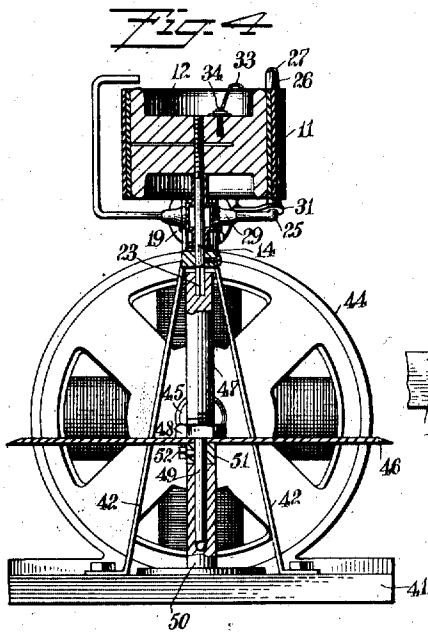
ATTORNEYS

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2 SHEETS—SHEET 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ALFRED FORNANDER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO CLINTON D. HOLSAPPLE, OF NEW YORK, N. Y.

RAZOR-STROPPING MACHINE.

994,736.

Specification of Letters Patent. Patented June 13, 1911.

Application filed June 7, 1910. Serial No. 565,435.

To all whom it may concern:

Be it known that I, ALFRED FORNANDER, a subject of the King of Sweden, and a resident of the city of New York, borough
5 of Manhattan, in the county and State of New York, have invented a new and Improved Razor-Stropping Machine, of which the following is a full, clear, and exact description.

10 Among the principal objects which the present invention has in view are: to provide a motor operated stropping machine; to provide a machine which may be operated alternately by motor or manual power;
15 to provide stropping means wherein the blade is addressed in approved position to the stropping member; to provide mechanical means for oscillating the blade to present opposite sides thereof to the stropping
20 member; to provide a razor stropping device having a continuously moving double belt adapted to receive therebetween the blade to be stropped; to provide a double
25 and face butted stropping member arranged to receive between the faces thereof the blade to be stropped; to provide a device for holding the razor in inclined position while being stropped; and to provide means for
varying the belt tension.

30 One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

35 Figure 1 is a side elevation of a stropping machine constructed and arranged in accordance with the present invention; Fig. 2 is a plan view of the same; Fig. 3 is a
40 plan view of the same shown in position as separated from the motor driving mechanism and the stand therefor; Fig. 4 is a vertical cross section taken on the line 4—4
45 in Fig. 1; Fig. 5 is a vertical section on an enlarged scale of the idler pulley and mounting therefor, the section being taken on the
50 line 5—5 in Fig. 3; Fig. 6 is a detail view, partly in section, and on an enlarged scale, of the blade rocker, the section being taken on the line 6—6 in Fig. 1; Fig. 7 is a side
elevation showing the machine as manually
operated, and as arranged to strop a long
bladed razor; and Fig. 8 is a detail view in
cross section, and on an enlarged scale, taken
on the line 8—8 in Fig. 7.

55 The razor blade in the present machine is

stropped by being placed between a double
and face butted endless belt strop 11. The
belt 11 is mounted on pulleys 12 and 13,
the former of which is power driven, being
mounted for that purpose on a rotary shaft
14, which is provided with suitable bearings
in the frame 15 of the machine. The pulley
13 is an idler, and is mounted on a vertically
disposed shaft 16. The pulley 13 is provided
with a bushing 17 to form a bearing
for the diminished section of the shaft 16,
as shown best in Fig. 5 of the drawings.
The shaft 16 is upbent from a threaded portion
18, the threads whereof are engaged by the
threads of a nut 19. The end of the
portion 18 beyond the threaded section is
provided with a guide block 20, which extends
within the rectangular tubular frame 15.
By means of this construction it is obvious
that the separation of the pulleys 12
and 13 may be varied at will, thereby increasing
or diminishing the tension on the
belt 11.

The belt 11 is illustrated in the drawings
as composed of two duplicate belts, the hair
sides of which are laid together and the
flesh sides of which are outwardly disposed.
This arrangement of the belts forms a very
convenient manner of protecting the same
against settlement of dust on the surface
thereof forming a grit unnatural and undesired.
This is particularly true when the
strop surfaces are dressed or otherwise prepared.

As shown in Fig. 7 of the drawings, the
frame 15 is provided with a hand hold 21,
which may be grasped by the hand of the
operator, and the shaft 14 is provided with
a crank attachment 22. The attachment 22
is mounted on the squared end 23 of the
shaft 14 so that the handle 21 may be rotated
to drive the belt 11, 11. In this manner
the machine is hand operated and
manipulated.

The blade A is placed within a clip holder
24. The clip holder 24 is mounted on a
stationary arm 25, being provided with a
sleeve arm 26 which fits over the arm 25
and is secured thereon by a screw 27. The
arm 25 is provided with a screw threaded
end section 28, having a shoulder 29 to rest
against the side of the frame 15 when the
said end section is inserted through perforations
in the said frame, as shown in Fig. 6 of
the drawings. The end section 28 is screw

threaded to receive a nut 30 whereby the end section and the arm 25 connected therewith are clamped rigidly in adjusted position. The sleeve 26 and the clip holder 24 connected therewith are rocked to throw the blade A from side to side on the pivotal center of the arm 25, forcing outwardly alternately the said belts 11, 11. The lateral swing of the blade when mounted in the clip holder 24 is equal on each side of the pivotal center of the said arm, and this because of the fact that the oscillation of the sleeve 26 is mechanically produced. The sleeve 26 has an offset arm 31 extended from the lower end of the said sleeve. The arm 31 is loosely connected by means of a screw 32 with the eyeleted end of a connecting rod 33. The rod 33 is bent to any suitable shape, and is secured to the pulley 12 by a screw 34 set out from the center of the said pulley 12. The disposition of the screw 34 with reference to the center of the pulley 12 regulates the throw of the arm 31 and the sleeve 26 connected therewith. The connection between the screw 34 and the rod 33, it will be understood, is a loose or pivotal connection.

When using the short or safety type of blade, the same is introduced within the clip holder 24, much in the same manner as the same type of blades are placed within the hand stropping devices now in use. When so disposed, and when the machine is being manipulated manually, the operator grasps the handle 21, as shown in Fig. 7 of the drawings, and turns the crank 22 rapidly or slowly, as desired. The turning of the crank 22 when fast to the shaft 14 rotates the pulleys 12 and 13 carrying the double belts 11, 11 constantly in one direction. The pulley 12 carries the screw 34 about the center of the said pulley, and by reason of the connecting rod 33 connecting the said pulley and sleeve 26, the said sleeve is rocked on the arm 25 carrying alternately to opposite sides of the median line of the belts 11, 11, the holder 24 and blade A mounted therein. It will also be observed that the arm 25 is disposed in angular relation to the travel of the belt, as seen in Fig. 7. The angular disposition of the arm 25 is varied by loosening the nut 30 and setting the arm 25 to the desired position, and then tightening the said nut 30. The connection of the rod 33 with the arm 31 and the pulley 12 is sufficiently loose to provide for a suitable and desired adjustment of these parts without cramping. It is obvious that with the operation of the crank 22 the blade A is alternately forced against the outer and inner belts 11, 11, supporting the same and receiving on the edge of the blade the full tension of the said belts. Also, by reason of the inclined disposition of the arm 25 it will be observed that the blade is constantly

and steadily held in the most favorable position for receiving the most perfect edge. When the stropping has proceeded to the desired extent the machine is arrested and the blade A withdrawn from the clip holder 24.

When the long blade or exposed blade type of razor is stropped, the blade is inserted between the clip holder 24 in the same manner as that above described with reference to the short or safety razor type, but there is provided a further handle holding device or tray 35. The tray 35 is provided with a supporting rod 36. The rod 36 is provided at the lower end with a slide 37. The slide 37 is locked in position on the frame 15 by means of a clamp 38, the said clamp being at will forced against the frame 15 by setting up the screw 39. See particularly Fig. 8 of the drawings for this construction. By means of this construction it will be seen that the slide 37 may be adjusted lengthwise on the frame 15, to suit the disposition of the blade A and the handle B thereof. If desired, means for retaining the handle B in the tray 35 may be provided. Also, for convenience of packing, the tray 35 may be slidably mounted on the rod 36 and secured lengthwise thereon by a set screw 40, as seen in Fig. 7 of the drawings. The operation, as far as stropping is concerned, when using the machine for sharpening razors of the long blade type, is similar to the operation above described as when using the machine to sharpen blades of the short or safety razor type.

When the machine is attached for mechanical manipulation there is provided a stand 41, upon which is suitably mounted a supporting frame 42, between the arms whereof is clamped the frame 15, using for that purpose a wing nut 43. Suitably mounted upon the stand 41 is an electric motor 44, upon the armature shaft of which is mounted a suitable friction pulley 45. The pulley 45 is arranged and provided to rotate on a friction disk 46 to thereby rotate the shaft 14. The shaft 14 is operatively connected with the disk 46 by a shaft 47. The shaft 47 is clamped in fixed relation to the disk 46 by means of a screw nut 48. The shaft 47 is provided with a pivotal extension 49, which is rotatively mounted in a standard 50 suitably arranged and fixedly secured on the stand 41. The shaft 47 may be adjusted vertically by means of a collar 51, which is slidably mounted on the extension 49 of the said shaft, and which is fixedly secured thereto by means of a set screw 52. It is between the collar 51 and the nut 48 that the disk 46 is secured.

When the machine is mounted in connection with the mechanical driving means above described, the operation consists in placing the blade A in position in the clip

holder 24, and turning on the electric current for the motor 44. This having been accomplished, and the motor having gathered headway, the barber is at liberty to attend to any other office in his profession while the razor is being stropped. Further, the stropping is executed more evenly and more quickly than by the hand method at present used. Further, it will be seen that the stropping may be continued to an extent beyond the endurance of the ordinary operator, thereby giving to the blade a finer and more perfect edge than imparted by the usual hand method.

15 Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A razor stropping machine, comprising a plurality of overlaid face-butted endless stropping belts; a plurality of pulleys to support said belts; a frame to support said pulleys; a blade holding device disposed between said belts and supported on said frame; means for adjusting said blade holding device in inclined relation to said belts; an arm laterally extended from said blade holding device; a pitman rod connecting said arm and one of said pulleys to rock the said blade holding device; and a

tray supported on said frame for holding the handle of a folding razor when the blade thereof is held by said blade holding device.

2. In a razor stropping machine a straight bar frame provided at the one end thereof with a holding handle; a plurality of shafts mounted on said frame and extended perpendicularly therefrom; a plurality of pulleys mounted on said shafts in aligned relation; a plurality of overlaid face butted endless stropping belts mounted on said pulleys; a blade holder pivotally mounted in said frame and extended between said belts in an inclined position therein, said blade holder having an extended arm; a pitman pivotally connected with the said pulleys at a point removed from the center thereof and the said arm extended from said blade holder; and means connected with one of said pulleys for rotating the same to drive the said belts and reciprocate the said pitman.

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

ALFRED FORNANDER.

Witnesses:

E. F. MURDOCK,

PHILEP D. ROLLHAUS.