

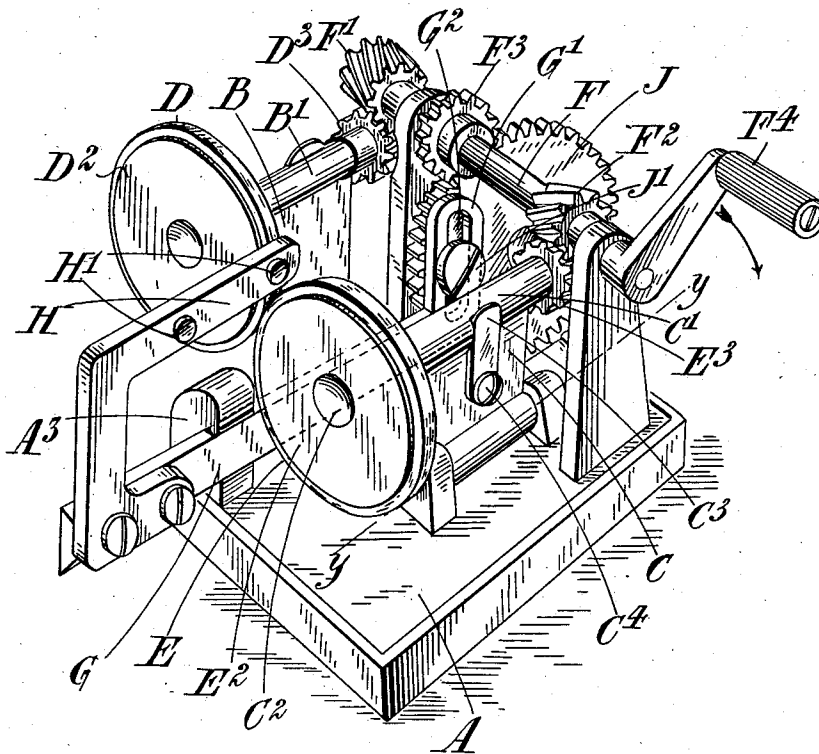
A. J. POSTANS.
STROPPING MACHINE FOR RAZORS.
APPLICATION FILED JAN. 13, 1911.

1,021,795.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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UNITED STATES PATENT OFFICE.

ARTHUR JAMES POSTANS, OF BRENTFORD, ENGLAND.

STROPPING-MACHINE FOR RAZORS.

1,021,795.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed January 13, 1911. Serial No. 602,384.

To all whom it may concern:

Be it known that I, ARTHUR JAMES POSTANS, a subject of the King of England, residing at Brentford, Middlesex, England, have invented certain new and useful Improvements in Stropping-Machines for Razors, of which the following is a specification.

This invention is for improvements in or relating to stropping machines for razors and has particular reference to a machine for stropping the loose blades of safety razors.

In carrying out this invention there is employed with opposed stropping surfaces that travel in a direction transverse to the blade during the operation of the machine, a carrier for the blade that is automatically reciprocated to bring all parts of the edge of the blade into contact with the stropping surfaces.

Preferably the stropping surfaces take the form of opposed disks operating simultaneously upon opposite sides of the blade. As a feature of the invention mechanism is employed whereby the disks or stropping surfaces are automatically moved toward each other when the machine is driven in the direction for stropping and away from each other when the direction of drive is reversed. This is shown as effected by mounting the disks or stropping members on pivoted arms or supports and driving them by gearing so arranged that when the gearing is driving them in one direction it tends to thrust the supports together and when it drives them in the reverse direction it tends to thrust the supports apart.

An important feature of this invention is that it includes constructions adapted to sharpen blades having either straight or curved edges. This result is accomplished by means of relatively movable blade positioning elements or members, one of which is shaped in accordance with the shape or contour of the edge of the blade, so that the edge of the blade, whatever its shape, straight or curved, will be correctly positioned relatively to the stropping members during the stropping operation. More particularly, a sliding blade carrier, shaped to correspond to the shape of the blade edge, is controlled by a guide to thereby control the position of the blade.

In the accompanying drawings which

illustrate a machine embodying this invention:—Figure 1 is a perspective view of the machine viewed from the front of the disks and with the parts in stropping position; Fig. 2 is a perspective view of the machine viewed from the rear of the disks and with the parts in position for removing or introducing the blade; and Fig. 3 illustrates one of the well-known Gillette blades of ribbon material.

Like letters indicate like parts throughout the drawings.

On a base A, two vertical supports B, C, are pivoted about horizontal axes $x\ x$ and $y\ y$ respectively. The upper portions $B^1\ C^1$ of the supports provide bearings for spindles $B^2\ C^2$. The spindle B^2 carries at one end a stropping disk D of leather that is mounted between two metal plates D^1, D^2 . At the other end of the spindle is a skew toothed gear-wheel D^3 .

One end of the spindle C^2 similarly carries a leather stropping disk E mounted between two metal disks E^1, E^2 , and at the other end of the spindle is a skew toothed gear-wheel E^3 .

In perpendicular standards A^1, A^2 , on the base A a shaft F is rotatably mounted. This shaft is disposed at right angles to the spindles B^2, C^2 and carries skew toothed gear-wheels F^1, F^2 that mesh with the wheels $D^3\ E^3$ respectively.

The blade carrier includes an L-shaped blade-supporting arm H and a blade-positioning bar G which carries the arm H. The positioning bar or controlling bar G is mounted to slide in a guide block A^3 (Fig. 1) on the base A. The edges of the positioning bar G are beveled and engage a correspondingly undercut guideway in the guide block A^3 . The overhanging arm H constitutes a support for the razor-blade which may be of the well-known Gillette type shown in Fig. 3 and for this purpose has on it two studs H^1 for engaging the orifices H^2 with which these blades are provided.

That end of the sliding positioning bar G remote from the arm H has an upwardly directed portion G^1 provided with a slot G^2 . This slot engages the shank of a screw J^1 that is carried by a toothed wheel J, which with the screw J^1 constitutes a crank wheel. The wheel J is pivotally carried on a boss A^4 formed on one side of the standard A^1 .

Carried by the shaft F and meshing with the wheel J is a smaller toothed wheel or pinion F³.

The shaft F has at one end of it an operating handle F⁴.

The operation of this machine is as follows:—Presuming the parts are in the position shown in Fig. 2 where the disks D and E are separated, the blade is placed on the carrier by causing the orifices H² to engage with the studs H¹. This can be easily done while the disks are separated as plenty of room is afforded for manipulating the blade. The handle F⁴ is then rotated in the direction of the arrow, Fig. 1, which is the stopping direction and the first movement of the wheels F¹, F² carried by the shaft F causes the pivoted or hinged supports B and C to move toward each other, turning about their axes *x* and *y*. This movement is due to the skew teeth of the gearing, the obliquity of the teeth F¹ being opposed to that of the teeth F² for the purpose of driving the disk D in the opposite direction to the disk E. This obliquity, however, in addition to enabling the teeth to mesh with the opposed wheels D³ and E³ sets up a cam action so that the wheels D³ and E³ receive lateral thrust one toward the other, and as the supports B and C easily swing over, these will be moved before the wheels commence to rotate and thus the disks D and E will be moved toward each other and made to bear with effective stopping pressure against opposite sides of the blade that is to be stopped. To insure that no rotation shall take place before the supports have been swung toward each other, spring tongues B³ and C³ are employed. The tongue B³ is secured by a screw B⁴ to the support B and its free end enters a recess cut in the bearing B¹ and presses against the spindle B². Similarly the spring tongue C³ is secured by a screw C⁴ to the support C and its free end enters a recess cut in the bearing C¹ and presses against the spindle C². It will be seen that the tongues B³, C³ act as friction devices whose friction must be overcome before the spindles B² and C² can be rotated and consequently the supports B and C must be displaced to the limit of their movement before the spindles will commence to rotate. The movement of the supports is arrested by the contact of the disks D and E with the blade when the blade is in position or with one another if the machine is driven without a blade having been inserted. Should the handle F⁴ be rotated in the reverse direction as indicated by the arrow, Fig. 2, it will be seen that the skew gearing will operate in the same manner as before but in the reverse sense, that is to say the supports B and C will be immediately swung back away from each other, the spindles B² and C² meanwhile being sta-

tionary as regards rotation. It is thus impossible to cut the stop as a backward drive immediately stops the rotation of the disks and separates them, though if the backward drive be continued after the supports have reached the limit of their movement away from each other, the disks will be rotated idly in the direction reverse to that for stopping. The outward movement of the support B is limited by a stop B⁵ which takes the form of a headed pin that extends through an orifice in the support and is carried by a stud B⁶ on the base plate A. The outward movement of the support C is limited by the toothed wheel E³ being brought against the standard A². If desired, as indicated by its shoulder shown in broken lines (Fig. 2) the stud B⁶ may also be employed to limit the inward movement of the support B so that the plane occupied by the contacting portions of the disks D and E may always approximately correspond to that occupied by the blade on the carrier H.

It will be understood that no stop in such case would be provided to limit the inward movement of the support C, the latter being thus left free to bring the stopping disk E into proper operative relation with the other stopping disk D, the inward movement of the disk E being limited by the disk D or by the razor blade between these disks, as the case may be.

It is to be noted that the sliding positioning bar G corresponds in form to the edge of the blade, that is for example, in the blade shown (Fig. 3) the edge being straight the sliding bar G is also correspondingly straight, and whatever form the blade edge may have this rule applies, the sliding positioning bar being always correspondingly shaped in reference to the shape or contour of the edge of the razor-blade. In the machine illustrated in the drawings the straight sliding bar G of the blade carrier is reciprocated from the shaft F by means of the pinion F³, gear J and crank J¹ and is guided in the guide block A³ to guide the straight edge of the blade H³ between the stopping disks D, E, according as the sliding bar G is straight and is controlled or guided by the guide blocks A³. Were the carrier bar of a different shape other than straight it would be guided accordingly to correspondingly guide a similarly shaped razor-blade.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a stopping machine for razors the combination of, two stopping member supports movable to and from operative position, stopping members movably mounted one on each support and having their stopping faces opposed to each other, driving means for the stopping members, the driv-

ing means including means whereby driving in one direction moves the supports to bring the stropping members into operative position and driving in the reverse direction
 5 moves the supports to bring the members into non-operative position, and a carrier positioned to hold a razor-blade with its edge between and in contact with both stropping members simultaneously, substantially
 10 as set forth.

2. In a stropping machine for razors the combination of, two supports movable to and from operative position, stropping members movably mounted one on each sup-
 15 port and having their stropping faces opposed to each other, driving means for the stropping members, the driving means including means whereby driving in one direction moves the supports to bring the
 20 stropping members into operative position and driving in the reverse direction moves the supports to bring the members into non-operative position, a movable carrier positioned to hold a razor-blade with its edge
 25 between and in contact with both stropping members simultaneously, a guide for the carrier to cause the carrier to move the blade lengthwise across the stropping members, and means for automatically reciprocating
 30 the carrier on the guide, substantially as set forth.

3. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping members
 35 movably mounted one on each support and having their stropping faces opposed to each other, driving means for the stropping members, the driving means including means whereby driving in one direction moves the
 40 supports to bring the stropping members together and driving in the reverse direction moves such supports to separate the members, and a carrier positioned to hold a razor-blade with its edge between and in
 45 contact with both stropping members simultaneously, substantially as set forth.

4. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping members
 50 movably mounted one on each support and having their stropping faces opposed to each other, driving means for the stropping members, the driving means including means whereby driving in one direction moves the
 55 supports to bring the stropping members together and driving in the reverse direction moves the supports to separate such members, a movable carrier positioned to hold a razor-blade with its edge between and in
 60 contact with both stropping members simultaneously, a guide for the carrier to cause the carrier to move the blade lengthwise across the stropping members, and means for automatically reciprocating the carrier
 65 on the guide, substantially as set forth.

5. In a stropping machine for razors the combination of, two movable supports, stropping disks rotatably mounted one on each support with their edges opposed to each other, a carrier positioned to hold a
 70 razor-blade with its edge between and in contact with the edges of both disks simultaneously, driving means to rotate the stropping disks, the driving means including means whereby driving in one direction
 75 moves the supports to bring the disks toward each other and against the blade and driving in the reverse direction moves the supports to separate the disks from the blade and from each other, substantially as
 80 set forth.

6. In a stropping machine for razors the combination of, two movable supports, stropping disks rotatably mounted one on each support with their edges opposed to each other, a movable carrier positioned to
 85 hold a razor-blade with its edge between and in contact with the edges of both disks simultaneously, driving means to rotate the stropping disks, the driving means including means whereby driving in one direction
 90 moves the supports to bring the disks toward each other and against the blade and driving in the reverse direction moves the supports to separate the disks from the blade
 95 and from each other, a guide for the carrier to cause the carrier to move the blade lengthwise across the stropping members, and means for automatically reciprocating the carrier on the guide, substantially as set
 100 forth.

7. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping disks rotatably mounted one on each support the edge
 105 of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, gear-wheels carried one by each support and having operative connection
 110 with the disk carried by such support each wheel having its axis transverse to the direction of movement of the support, driving wheels carried by a part fixed relatively to the supports and so disposed that by
 115 meshing with the gear wheels on the supports they can rotate the same and simultaneously impart thrust to the supports through the wheels to move them toward or away from each other the direction of move-
 120 ment imparted to each support depending upon the direction of drive imparted to its gear wheel, means for rotating the driving wheels to impart rotation simultaneously in
 125 reverse directions to the gear-wheels carried by the supports, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as de-
 130 scribed.

8. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping disks rotatably mounted one on each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, gear-wheels carried one by each support and having operative connection with the disk carried by such support each wheel having its axis transverse to the direction of movement of the support, driving wheels carried by a part fixed relatively to the supports and so disposed that by meshing with the gear wheels on the supports they can rotate the same and simultaneously impart thrust to the supports through the wheels to move them toward or away from each other the direction of movement imparted to each support depending upon the direction of drive imparted to its gear-wheel, means for rotating the driving wheels to impart rotation simultaneously in reverse directions to the gear-wheels carried by the supports, a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, a guide for the carrier so disposed that in traveling along it the carrier will cause the blade to move in a direction transverse to that of the disks when stropping, and means for automatically reciprocating the carrier on the guide, substantially as set forth.

9. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping disks rotatably mounted one on each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, gear-wheels carried one by each support and having operative connection with the disk carried by such support each wheel having its axis transverse to the direction of movement of the support, driving wheels carried by a part fixed relatively to the supports and having their axes of rotation at right angles to the axes of rotation of the gear-wheels but meshing therewith in such position that they can rotate the gear-wheels and simultaneously impart thrust to the supports through the wheels to move them toward or away from each other, the direction of movement imparted to each support depending upon the direction of drive imparted to its gear-wheel, means for rotating the driving wheels to impart rotation simultaneously in reverse directions to the gear-wheels on the supports, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as set forth.

10. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping disks rotatably mounted one on each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, gear-wheels carried one by each support and having operative connection with the disk carried by such support each wheel having its axis transverse to the direction of movement of the support, driving wheels carried by a part fixed relatively to the supports and having their axes of rotation at right angles to the axes of rotation of the gear-wheels but meshing therewith in such position that they can rotate the gear-wheels and simultaneously impart thrust to the supports through the wheels to move them toward or away from each other, the direction of movement imparted to each support depending upon the direction of drive imparted to its gear-wheel, means for rotating the driving wheels to impart rotation simultaneously in reverse directions to the gear-wheels on the supports, a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, a guide for the carrier so disposed that in traveling along it the carrier will cause the blade to move in a direction transverse to that of the stropping members, and means for automatically reciprocating the carrier on the guide, substantially as set forth.

11. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping disks rotatably mounted one on each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, a right-handed skew-toothed gear-wheel carried by one support and having operative connection with the disk carried by such support the axis of rotation of the wheel being transverse to the direction of movement of the support, a left-handed skew-toothed gear-wheel carried by the other support and having operative connection with the disk carried thereby, the wheel having its axis transverse to the direction of movement of the support, right and left-handed skew-toothed driving wheels carried by a part fixed relatively to the supports and so disposed that by each meshing with its respective gear-wheel on the supports they can rotate the same and simultaneously impart thrust to the supports through the wheels to move them toward or away from each other the direction of movement imparted to the supports depending upon the direction of rotation of the driving wheels, means for imparting rotary move-

ment to both driving wheels simultaneously in the same direction, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as set forth.

12. In a stropping machine for razors the combination of, two supports movable to and from each other, stropping disks rotatably mounted one on each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, gear-wheels carried one by each support and having operative connection with the disk carried by such support each wheel having its axis transverse to the direction of movement of the support, driving wheels carried by a part fixed relatively to the supports and so disposed that by meshing with the gear wheels on the supports they can rotate the same and simultaneously impart thrust to the supports through the wheels to move them toward or away from each other the direction of movement imparted to each support depending upon the direction of drive imparted to its gear-wheel, means for rotating the driving wheels to impart rotation simultaneously in reverse directions to the gear-wheels carried by the supports, a retarding device for one of the rotatable parts carried by one of the supports, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as set forth.

13. In a stropping machine for razors the combination of, two supports pivoted so that their free ends can swing toward each other, stropping disks rotatably mounted one on the free end of each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports swing, gear-wheels carried one on the free end of each support and having operative connection with the disk carried by such support each wheel having its axis transverse to the direction of swing of the support, driving wheels carried by a part fixed relatively to the supports and so disposed that they mesh with that side of the gear-wheels which is remote from the pivots about which the supports swing, means for rotating the driving wheels to impart rotation simultaneously in reverse directions to the gear-wheels carried by the supports, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as set forth.

14. In a stropping machine for razors the combination of, two supports pivoted so that their free ends can swing toward each

other, stropping disks rotatably mounted one on the free end of each support the edge of one disk being toward the edge of the other and the planes of the two disks being disposed parallel to the planes in which the supports move, a right-handed skew-toothed gear-wheel carried at the free end of one support and having operative connection with the disk carried by such support the wheel having its axis transverse to the direction of swing of the support, a left-handed skew-toothed gear-wheel carried at the free end of the other support and having operative connection with the disk carried by such support the wheel having its axis transverse to the direction of swing of the support, skew-toothed driving wheels one right and the other left-handed carried by a part fixed relatively to the supports and so disposed that they mesh with that side of the gear-wheels on the supports that is remote from the pivots of the supports, means for rotating the driving wheels simultaneously in one direction, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as set forth.

15. In a stropping machine for razors the combination of, two supports pivoted so that their free ends can swing to and from each other, spindles rotatably mounted one in the free end of each support their axes of rotation being transverse to the direction of swing of the supports, stropping disks fixed one on each spindle the edge of one disk being toward the edge of the other, gear-wheels fixed one on each spindle, driving wheels carried by a part fixed relatively to the supports and so disposed that by meshing with the gear wheels on the supports they can rotate the same and simultaneously impart thrust to the supports through the wheels to swing them toward or away from each other the direction of movement imparted to each support depending upon the direction of drive imparted to its gear-wheel, means for rotating the driving wheels to impart rotation simultaneously in reverse directions to the gear-wheels carried by the supports, and a carrier positioned to hold a razor-blade with its edge between and in contact with the stropping edges of both disks simultaneously, substantially as set forth.

16. In a stropping machine for razors the combination of, a base, two upright supports pivoted to the base at their lower ends so that their free ends can swing to and from each other, spindles rotatably mounted one in the free end of each support the axis of rotation of the spindles being transverse to the path of swing of the supports, stropping disks mounted fast one on each spindle the edge of one disk being toward

the edge of the other, gear-wheels mounted
fast one on each spindle, a shaft supported
from the base and situated with its axis of
rotation transverse to the axes of the spin-
dles, driving wheels on this shaft so dis-
posed that by meshing with the gear-wheels
on the supports they can rotate the same
and simultaneously impart thrust to the
supports through the wheels to swing them
toward or away from each other the direc-
tion of movement imparted to each support
depending upon the direction of drive im-
parted to its gear wheel, means for rotating
the shaft to impart rotation simultaneously
in reverse directions to the gear-wheels car-
ried by the supports, a third gear-wheel

mounted on the shaft, a toothed crank-wheel
meshing with this third gear-wheel, a mov-
able carrier positioned to hold a razor-blade
with its edge between and in contact with
the stropping edges of both disks simul-
taneously, a guide for the carrier, and a
connection between the carrier and the
crank-wheel to reciprocate the carrier on
the guide, substantially as set forth.

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

ARTHUR JAMES POSTANS.

Witnesses:

A. M. HAYWARD,
HARRY B. BRIDGES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
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