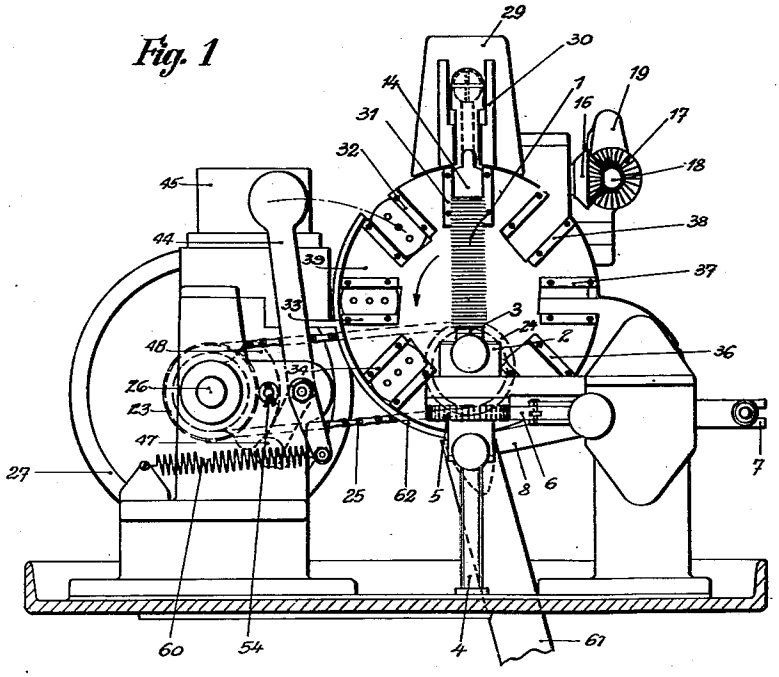
March 20, 1934. M. WLOKA 1,952,006

AUTOMATIC RAZOR BLADE ETCHING MACHINE

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Fig. 1



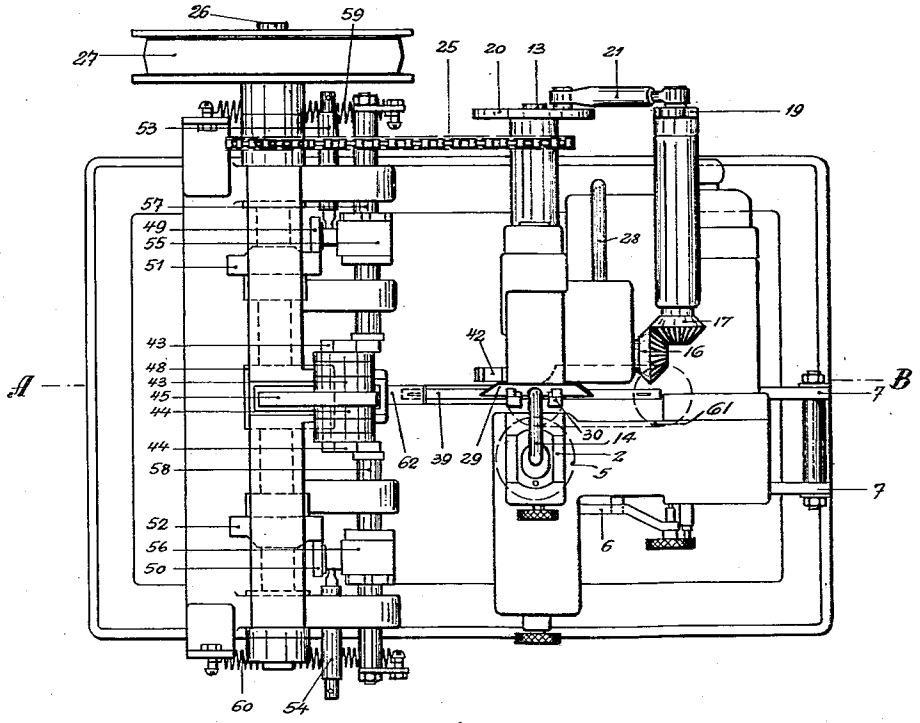


Fig. 2

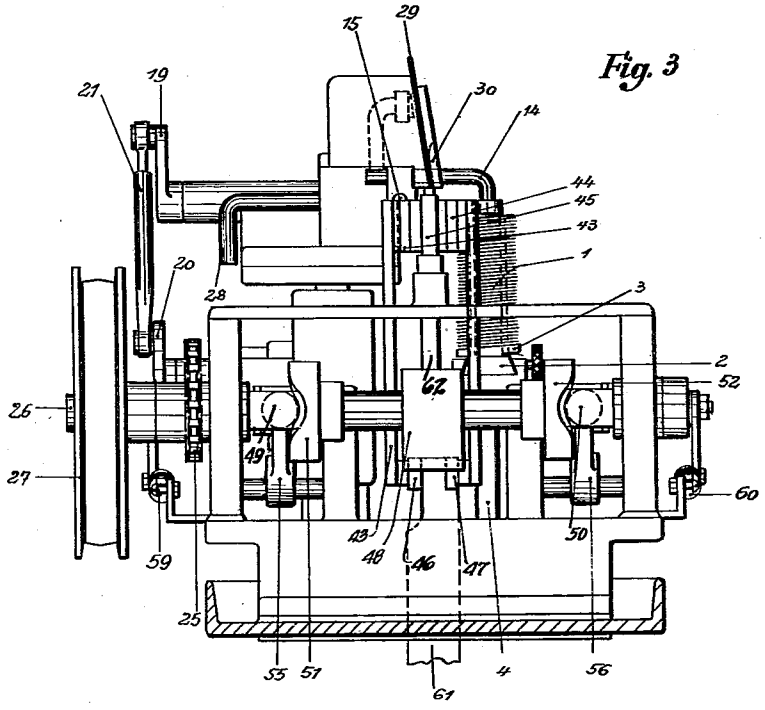
Inventor:
Max Wloka
Max Wloka

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AUTOMATIC RAZOR BLADE ETCHING MACHINE

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Fig. 3



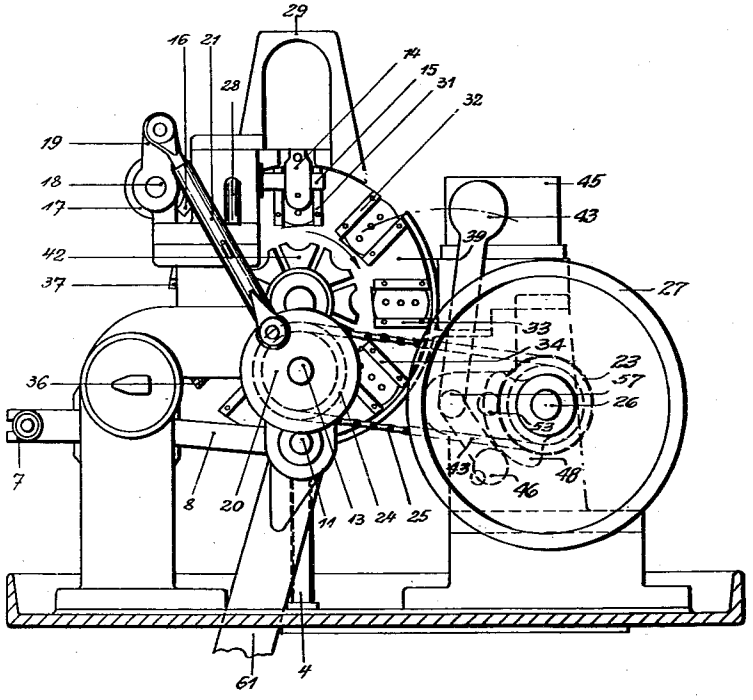


Fig. 5

Inventor:
Max Wloka

March 20, 1934. M. WLOKA 1,952,006

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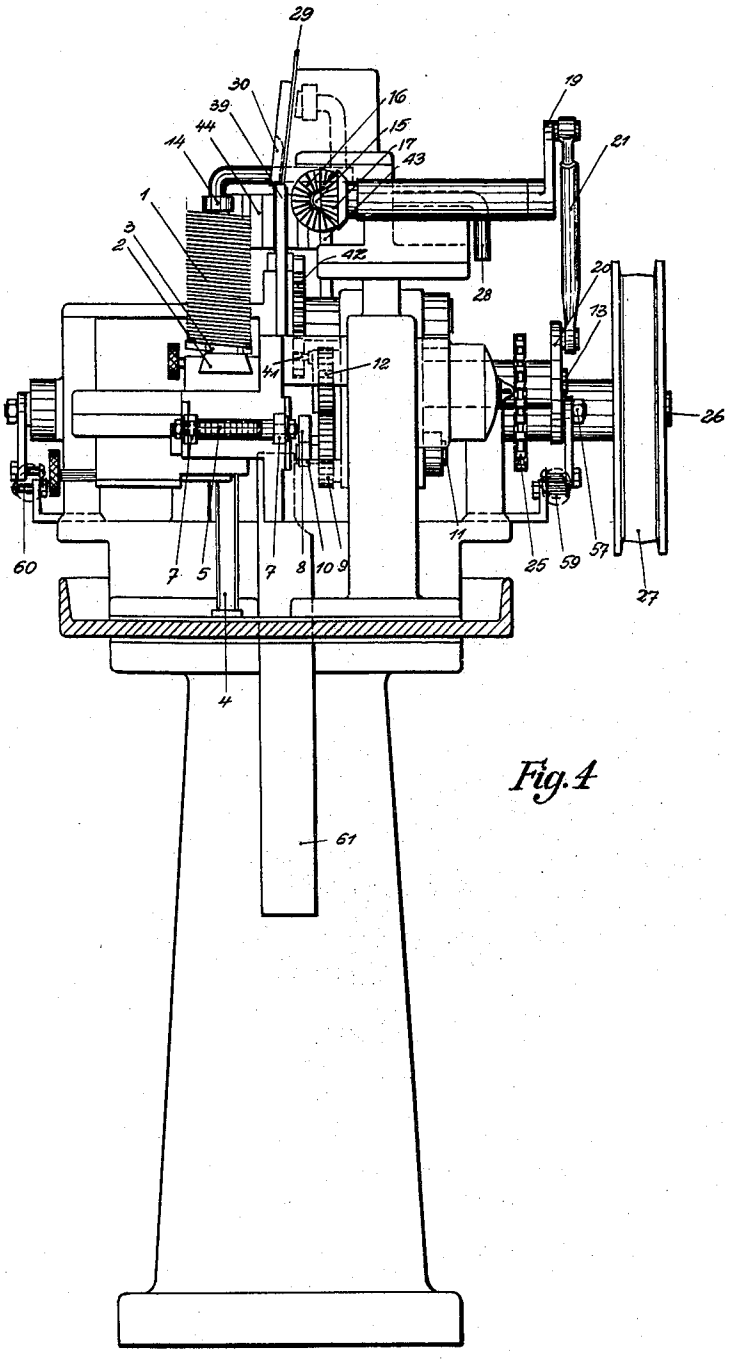


Fig. 4

Inventor:
Max Wloka
Max Wloka

Patented Mar. 20, 1934

1,952,006

UNITED STATES PATENT OFFICE

1,952,006

AUTOMATIC RAZOR BLADE ETCHING MACHINE

Max Wloka, Solingen, Germany

Application July 14, 1932, Serial No. 622,527
In Germany April 19, 1932

5 Claims. (Cl. 101—44)

The present invention relates to a razor blade etching machine of the automatic type, in which the rubber stamps serving for stamping the blade on both sides are actuated by lifting and pressure devices.

In the known machines of this class the etched blades drop out of the machine immediately after being stamped, and it often happens that the etching becomes blurred because it is not given time to dry. Further drawbacks connected with machines of the existing type are due to the employment of a rubber-covered bow or disc for removing the blades from their magazine, and the invention proposes to eliminate all these drawbacks by providing that the blades are taken one by one out of the magazine by a suction device capable of moving up and down, are stripped off during the ascent of the suction device by the stop plate of a slide, and drop from the latter into shaft-like guides on a horizontal disc to which a Maltese cross is fixed which is rotated by means of a crank pin secured to a cogwheel in order to intermittently rotate the disc a certain extent, such as one-eighth of the revolution, so that, for example, the blade after being inserted in one of the shafts is etched in the known manner by the two stamps during the first partial rotation of the disc and drops out of the shaft opening only after the disc has made a certain number of partial revolutions, e. g. three-eighths.

One form of the invention is illustrated in the accompanying drawings, in which Figure 1 is a view of the machine according to the invention and of the suction device and the disc conducting the blades to the stamps; Fig. 2, a top view of the machine; Fig. 3, a side view seen from A; Fig. 4, a side view seen from B; and Fig. 5, a rear view of the machine.

Referring to the drawings, the blades 1 are stamped in the withdrawable magazine 2. The magazine plate 3 has a surface which is inclined towards the inside of the machine and is connected with a screw 4 by means of which it is controlled and which carries a ratchet wheel 5 turned by the ratchet 6. The lever of the ratchet 6 is secured to a double slide 7 which can be reciprocated by a connecting rod 8 articulated with its other end to a crank pin 10 secured to the cogwheel 9. The cogwheel 9 is secured to the shaft 11 and is driven by the gear 12 disposed on a shaft 13 in the machine frame. The blades are taken out of the magazine 2 one by one by a suction device 14 secured to the shaft 15 at the other end of which a bevel wheel 16 is provided which engages a bevel wheel 17 on the shaft 18. To the other end of the shaft 18 a lever 19 is secured which by means of a cam 20 and a rod 21 rotates slightly over 90° at each rotation of the cam 20.

The cam 20 is secured to a shaft 13 driven from the main shaft 26 by means of the two sprockets 23, 24 and the chain 25, the main shaft 26 being driven by the pulley 27 and a motor or connecting gear, not shown. The advancing and returning motion of the shaft 18 and the lever 19 is transmitted to the suction device 14 which is thus moved 90° up and down. The suction device 14 is connected by a piping 28 with a vacuum pump, not shown. At each descent of the suction device one blade is taken out of the magazine 2 and stripped off again, during the ascent of the device, by a plate 29 having an opening through which the suction device 14 may pass to complete its upward motion.

The blade after being stripped off by the plate 29 slides into the chute 30 and then drops into one of the shaft-like guides 31 to 38 which are disposed in the horizontal disc 39. On the other end of the shaft 13 to which the cam 20 is secured the gear wheel 12 is provided in which a crank pin 41 is secured which engages the Maltese cross 42 rigidly connected with the disc 9. The Maltese cross 42 intermittently turns the disc 39 and has eight arms, so that every time a blade drops into the disc shaft under the chute 30 the disc 39 will be turned one-eighth of a revolution in the direction of the arrow. The etching of the blades takes place, as soon as the disc has completed the first eighth of a revolution, in the known manner by means of the two stamps 43, 44 which are moistened by the pad 45 lying between them. The two stamps 43, 44 are provided on their short shanks with the rolls 46, 47 and are moved by the eccentric 48 so as to be placed over the blades in the shafts. After the first eighth of the intermittent motion of the disc 39 has been completed the rolls 49, 50 engage deep cavities in the eccentrics 51, 52, the rolls 49, 50 being positively controlled by springs in the bushes 53, 54. Simultaneously with the rolls 49, 50 move also the forks 55, 56 to which the rolls are secured as well as the stamp levers 43, 44 which with the forks 55, 56 are disposed on the joint shafts 57, 58, and the centric motion carried out by these elements towards one another brings about the stamping of the blades.

After the stamping step the stamp levers 43, 44 are moved back into their initial position by cam 48. The rolls 49, 50 then enter the flat hollows of the eccentrics 51, 52 corresponding to the thickness of the stamping pad whereby the

shafts 57, 58 together with the forks 55, 56 and the stamp levers 43, 44 move, or are caused to move, centrically towards the pad 45 to moisten the stamps. The stamping of the blades takes place, as stated, after one-eighth of the revolution of the disc 39 has been completed. After three more blades have been inserted and stamped during three further partial revolutions amounting to one-eighth each of the complete revolution the blade inserted and stamped first will be in a position vertical to the center of the disc and then drop out of the machine through the shaft 61. To prevent premature dropping out of the blades during the rotation of the disc, a bow 62 has been provided at that point of the circumference of the disc. The rod 21 can be telescoped to permit yielding of the suction device 14 when the latter is placed on the blades in the magazine 2. The two ends of the rod 21 are positively forced apart by a spring arranged in the rod.

I claim:—

1. An automatic razor blade etching machine comprising a frame, a main shaft, means for driving the main shaft, a magazine for the blades, a suction device adapted to take the blades one by one out of the said magazine, means connected with the main shaft and adapted to impart upward and downward motion to the said suction device, a magazine plate inclined towards the inside of the machine, a stop plate for stripping off the blades picked up by the descending suction device during the ascent of the latter and for delivering them to the said inclined plate, a horizontal disc having a plurality of shaftlike guides for receiving the blades sliding off from the said inclined plate, a Maltese cross secured to the said disc and imparting intermittent motion to it, stamps for etching the blades during the first intermittent motion of the said disc, the blades dropping out of the shaftlike guides only after the said disc has carried out a predetermined number of intermittent motions, and means for actuating the said stamps.

2. An automatic razor blade etching machine comprising a frame, a main shaft, means for driving the main shaft, a magazine for the blades, a suction device adapted to take the blades one by one out of the said magazine, a shaft for carrying the said suction device, a bevel gear secured to one end of the said shaft, a second shaft, a second bevel gear secured to the said second shaft and engaging the first bevel gear, a lever secured to one end of the said second shaft, a rod, a cam adapted to drive the said bevel gears by means of the said rod and lever and imparting a predetermined upward and downward motion to the said suction device, a magazine plate inclined towards the inside of the machine, a stop plate for stripping off the blades picked up by the descending suction device during the ascent of the latter and delivering them to the said inclined plate, a horizontal disc having a plurality of shaftlike guides for receiving the blades sliding off from the said inclined plate, a Maltese cross secured to the said disc, means for rotating the said cross and imparting intermittent motion to the said disc, stamps for etching the blades during the first intermittent motion of the said disc, the blades dropping out of the shaftlike guides only after the said disc has carried out a predetermined number of intermittent motions, and means for actuating the said stamps.

3. In a machine according to claim 1 a screw connected with the magazine plate, a ratchet wheel disposed on the said screw, a ratchet for turning the said wheel, a double slide connected with the said ratchet, a connecting rod, a gear wheel, a crank pin articulated to the said connecting rod to reciprocate the said slide, the inclined magazine plate being regulatable by the said screw, ratchet and slide to insure accurate adjustment of the control of the magazine as to height.

4. In a machine according to claim 2 a rod adapted to be moved by a cam and to be telescoped and a spring disposed in the rod for positively forcing the two ends of the rod apart.

5. In a machine according to claim 1 a protecting bow for the disc receiving the blades.

MAX WLOKA.