

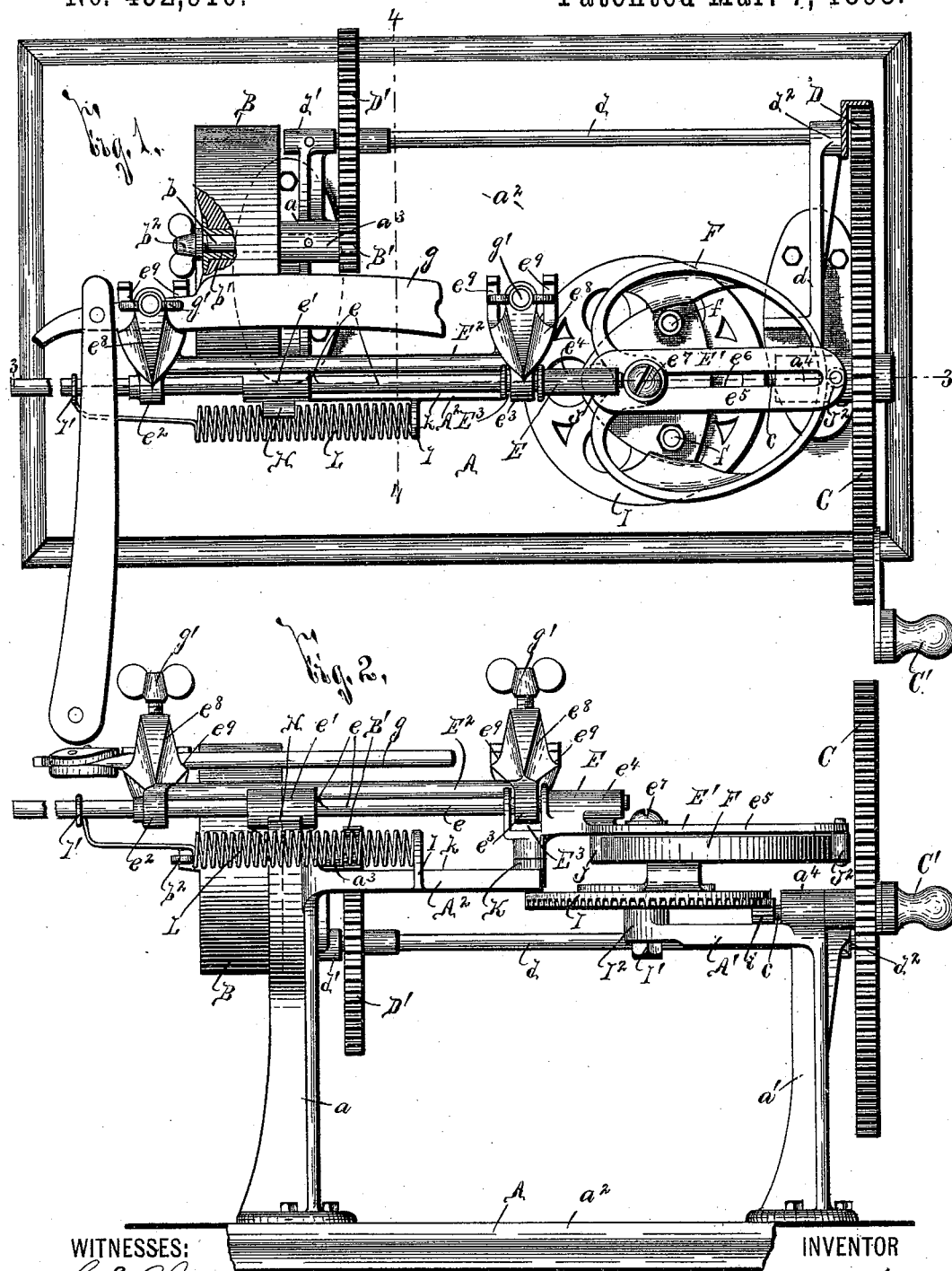
(No Model.)

3 Sheets—Sheet 1.

N. ALLGIEAR.
MACHINE FOR EDGING RAZORS, &c.

No. 492,910.

Patented Mar. 7, 1893.



WITNESSES:

V. E. Chase,
G. A. Wright.

INVENTOR

Nelson Algier
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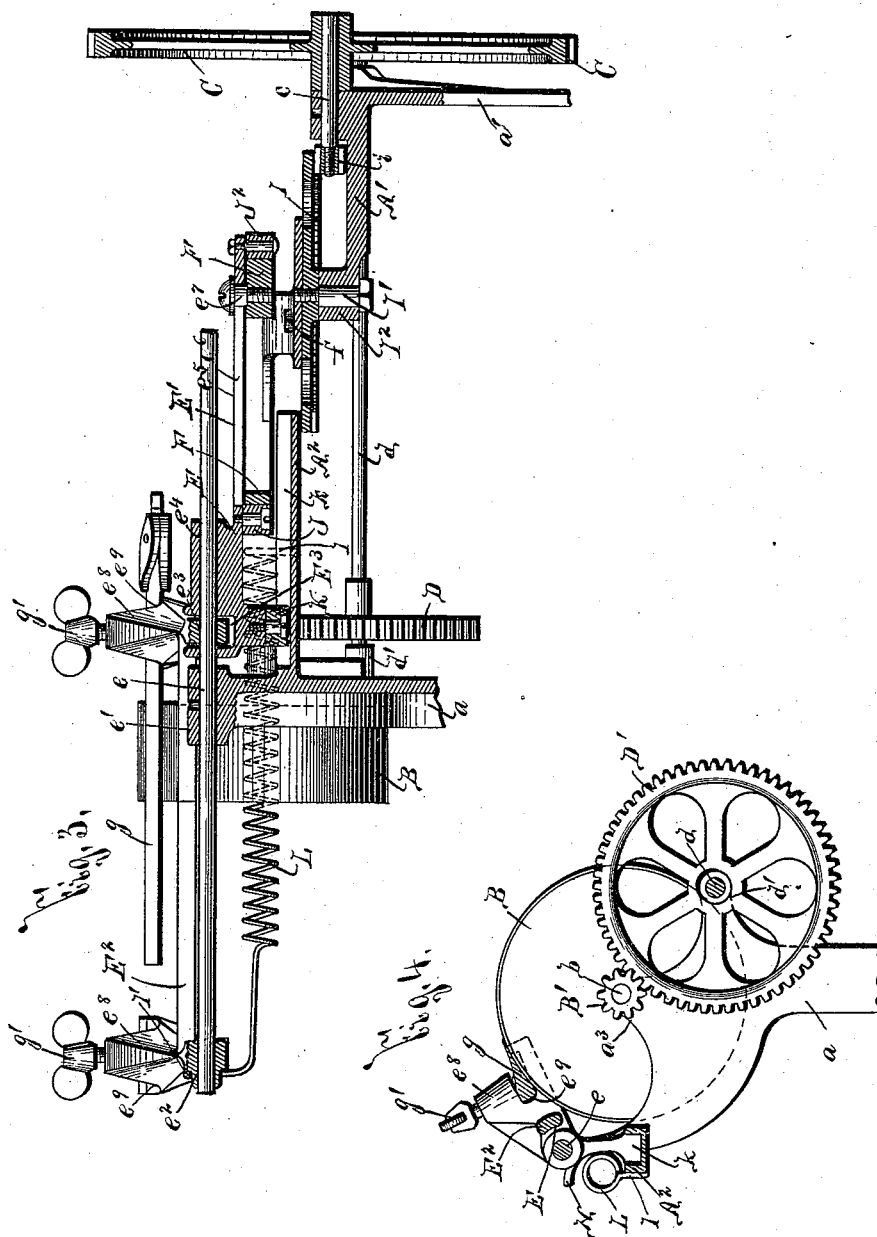
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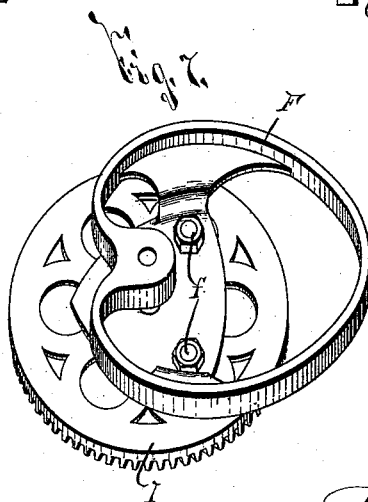
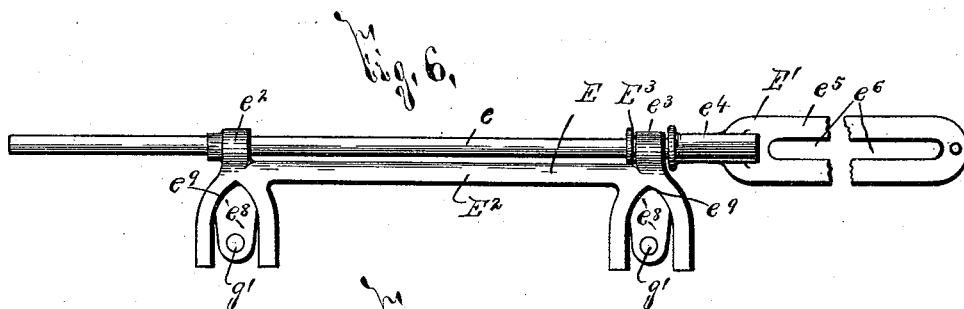
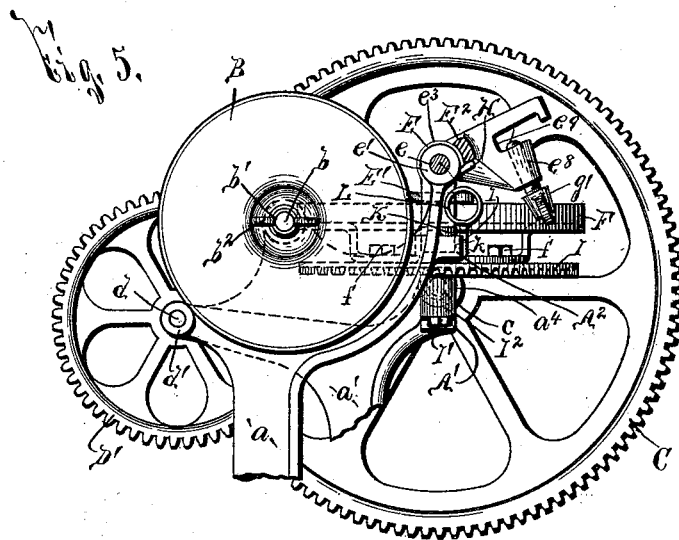
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INVENTOR

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UNITED STATES PATENT OFFICE.

NELSON ALLGIEAR, OF SYRACUSE, NEW YORK.

MACHINE FOR EDGING RAZORS, &c.

SPECIFICATION forming part of Letters Patent No. 492,910, dated March 7, 1893.

Application filed January 18, 1892. Serial No. 418,358. (No model.)

To all whom it may concern:

Be it known that I, NELSON ALLGIEAR, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Machines for Edging Razors and Similar Articles, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in edging machines particularly applicable for razors and similar articles, and has for its object the production of a simple, effective, and practical construction, which is easily operated and is durable and efficient in use: to this end the invention consists, essentially, in a grinding wheel, a carriage movable rectilinearly across the face of the grinding wheel, a hinged carriage section movable toward and away from the grinding wheel, a stop for limiting the movement of the carriage, a clamp for securing the razor to the carriage, a heart shaped cam for moving the carriage, and in the detail construction and arrangement of the parts, all as hereinafter more particularly described and pointed out in the claims.

In describing this invention, reference is had to the accompanying drawings, forming a part of this specification, in which, like letters indicate corresponding parts in all the views.

Figures 1 and 2 are respectively top plan and front elevation of my improved invention, the razor carriage being shown in its extreme inward position in both views. Fig. 3 is a longitudinal sectional view, taken on line —3—3—, Fig. 1. Fig. 4 is a transverse sectional view, taken on line —4—4—, Fig. 1. Fig. 5 is a sectional view similar to Fig. 4 representing the hinged section of the razor carriage as swung backwardly from the grinding wheel. Fig. 6 is a detached view of the razor carriage and its hinged section, and Fig. 7 is an isometric perspective of the revoluble carriage actuating cam and the gear for operating the same.

—A— represents the frame of my machine, which consists preferably of a pair of upright standards —a—a'— mounted on any suitable construction of table —a²— and formed with journal bearings and supports for the various parts of my invention.

The grinding wheel —B— is journaled on a shaft —b— supported in the bearing —a³— of

the upright —a— and provided with a gear —B'—. I preferably use a series of wheels —B—, only one of which is illustrated having their surfaces of varying density or roughness so that the razor edge may be brought to the required keenness in the usual manner; first by a rough surface, then by one somewhat finer, and lastly by a leather face. These wheels are formed with journal openings —b'—, which loosely encircle the outwardly projecting end of the spindle —b—, and are firmly secured thereto by set screws or other suitable clamps —b²—.

—C— represents the main driving gear journaled on a shaft —c— mounted in the bearing —a⁴— of the upright —a'—, a suitable crank —C'— is secured to this gear, and a small pinion —D— mounted on one end of a shaft —d— meshes with the gear —C—. The shaft —d— is journaled in the bearings —d'— and —d²— mounted respectively upon the uprights —a— and —a'—, and at its other end is a gear —D'— which meshes with the gear —B'—, whereby, when the crank —C'— is revolved, the grinding wheel —B— is also revolved. These gears —C—D—D'— and —B'— are so relatively proportioned and arranged that the operator may, with comparative ease, revolve the grinding wheel —B— from fifteen hundred to two thousand revolutions per minute, thus enabling the wheel to act practically and effectively upon the razor.

The carriage —E— consists of the main section —E'— and the hinged section —E²—, both of which are movable rectilinearly along a guide —e— fixed in a bearing —e'— of the upright —a— and having its opposite extremities passed through eyes —e²—e³— and —e⁴— upon the movable and main carriage sections. The main carriage section is formed with the arm —e⁵— provided with a slot —e⁶—, which registers with a pin —e⁷— directly above the axis of a heart shaped cam —F— for reciprocating said carriage and serves an additional guide for the carriage. The hinged carriage section is formed at its opposite extremities with the heads —e⁸—e⁸— provided with the open slots —e⁹— for receiving the razor blade —g— and with set screws or clamps —g'— for firmly securing the razor blade in position as shown at Figs. 1 and 2.

It will be readily understood that the eyes

— e^2 — and — e^3 — of the hinged carriage section are loosely mounted on the guide — e —, which serves as a pivotal pin therefor in order that the said carriage may be swung toward
 5 and away from the face of the grinding wheel, and, when in its backward position, the carriage is stopped from further movement by any suitable stop — H — upon the upright — a —, and, when in its forward position, the
 10 blade is sufficiently in advance of the guide — e — so that the weight of the blade and the heads — e^3 — e^3 — serve to hold the razor blade firmly upon the grinding wheel, although the hinged carriage section may be readily swung
 15 backward as previously described.

In order that the loosely hinged carriage section may be forced backward and forward along the guide its eye — e^3 — is disposed in the opening — E^3 — in the eye — e^4 — upon the
 20 main carriage section.

The actuating cam — F — for forcing the carriage backward and forward is, as previously stated, heart shaped as this contour is particularly applicable for transforming a rotary
 25 to a reciprocating movement. As preferably constructed, however, the cam — F — is actuated by an underlying gear — I — to which it is suitably secured as by bolts — f —, the gear — I — being mounted upon a spindle — I' —
 30 journaled in the bearing — I^2 — upon the laterally extending arm — A' — of the upright — a' —. The gear — I — is driven by a pinion — i — mounted on the shaft — c — of the driving wheel — C — in order that when the crank
 35 — C' — is operated to rotate the grinding wheel — B — the cam — F — may be rotated simultaneously.

In order to transfer motion from the cam — F — to the carriage — E — the main section
 40 of said carriage is provided with the depending anti friction rollers — J — and — J^2 —, which bear upon opposite points of said cam and force the carriage backward and forward as the cam is revolved.

As there is more or less liability of that portion of the carriage interposed between the pin — e' — and the bearing — e' — being sprung by the strain to which the same is subjected in the operation of my machine I provide at
 50 said central portion the depending lug or roller — K —, which is movable in a gear or guide — k — formed in a laterally projecting arm — A^2 — upon the upright — a —. It is evident that the return movement of the carriage is readily effected by the engagement
 55 of the cam — F — with the rear anti friction roller — J^2 —, but as a further means of affecting the return movement of the carriage I provide a spring — L — having one end secured at — l — to the arm — A^2 — and the other
 60 provided with an eye — l' —, which is engaged by the eye — e^2 — of the hinged carriage section as the same is forced backwardly.

The operation of my invention will be readily perceived from the foregoing description
 65 and upon reference to the drawings, and, as

clearly shown and described, the component parts are simple, effective and durable, the razor is moved across the face of the grinding wheel during the revolution of said wheel,
 70 may be readily swung backwardly out of contact with the grinding wheel, may be readily withdrawn when properly finished and replaced by another razor, and, owing to the uniformity of the movement of the rectilin-
 75 ear movement of the razor carriage, the edge of the razor is of uniform thickness. It is evident, however, that the detail construction and arrangement of the parts of my invention may be somewhat varied from that shown
 80 or described without departing from the spirit of my invention; hence I do not herein wish to limit myself to such precise detail construction and arrangement.

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

1. In an edging machine for razors and similar articles, the combination of a revoluble grinding wheel, a carriage movable rectilinearly
 90 across the face of the grinding wheel, and provided with a pair of separated heads for alternately supporting the razor and presenting its opposite sides to the grinding wheel, and clamps movable in said heads for
 95 securing the razor or similar article to the carriage, substantially as and for the purpose set forth.

2. In an edging machine for razors and similar articles, the combination of a revoluble
 100 grinding wheel, a carriage movable across the face of the grinding wheel, clamps for securing the razor or similar article to the carriage, and an endless heart shaped cam for moving the carriage transversely across the face of
 105 the grinding wheel, substantially as and for the purpose described.

3. In an edging machine for razors and similar articles, the combination of a revoluble grinding wheel, a carriage movable across the
 110 face of the grinding wheel, a hinged carriage section movable toward and away from the grinding wheel, and provided with a pair of separated heads for alternately supporting the razor and presenting its opposite sides to
 115 the grinding wheel, and clamps movable in said heads for securing the razor to said hinged carriage section, substantially as and for the purpose specified.

4. In an edging machine for razors and similar articles, the combination of a revoluble
 120 grinding wheel and gearing for driving the grinding wheel; of a carriage movable rectilinearly across the face of the grinding wheel, clamps for securing the razor to the carriage,
 125 a heart shaped cam for moving the carriage rectilinearly, and connecting gearing between said cam and grinding wheel, whereby both operate simultaneously, substantially as and for the purpose specified.

5. In an edging machine for razors and similar articles, the combination of a revoluble
 130

grinding wheel, a carriage movable rectilinearly across the face of the grinding wheel, a hinged carriage section movable toward and away from the grinding wheel, anti friction rollers upon the carriage, and a revoluble cam for engaging said rollers and operating the carriage, substantially as and for the purpose described.

6. In an edging machine for razors and similar articles, the combination of a revoluble grinding wheel, a carriage movable rectilinearly across the face of the grinding wheel, an anti friction roller on the carriage connected, substantially as described, to the carriage, a revoluble cam for engaging said roller and operating the carriage, and a spring for retracting the carriage, substantially as and for the purpose specified.

7. In an edging machine for razors and similar articles, the combination of a revoluble grinding wheel, a carriage movable rectilinearly across the face of the grinding wheel, a guide in proximity to the carriage, a lug connected, substantially as described, to the carriage and a revoluble cam for forcing the carriage backward and forward, substantially as and for the purpose specified.

8. In an edging machine for razors and similar articles, the combination of a revoluble grinding wheel, a carriage movable rectilinearly across the face of the grinding wheel, a guide in proximity to the carriage, a lug connected, substantially as described, to the carriage, a revoluble cam for forcing the carriage backward and forward, and a spring for

retracting said carriage, substantially as described.

9. In an edging machine for razors and similar articles, the combination of a revoluble grinding wheel, a carriage movable rectilinearly across the face of the grinding wheel, a guide in proximity to the carriage, a lug on the carriage movable in said guide, a hinged carriage section movable toward and away from the grinding wheel, a clamp for securing the razor to said carriage, and a revoluble cam for moving the carriage, substantially as and for the purpose set forth.

10. In a machine for edging razors and similar articles, the combination with a frame, a movable grinder journaled on the frame, a carriage movable across the face of the grinder, a hinged carriage section movable toward and away from the grinder, a stop for preventing the backward movement of the grinder, a movable clamp for securing the razor to said carriage, a revoluble cam for moving the carriage, and connected gearing between the movable grinder and cam, substantially as and for the purpose set forth.

Intestimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 12th day of December, 1891.

NELSON ALLGIEAR.

Witnesses:

CLARK H. NORTON,
E. A. WEISBURG.