

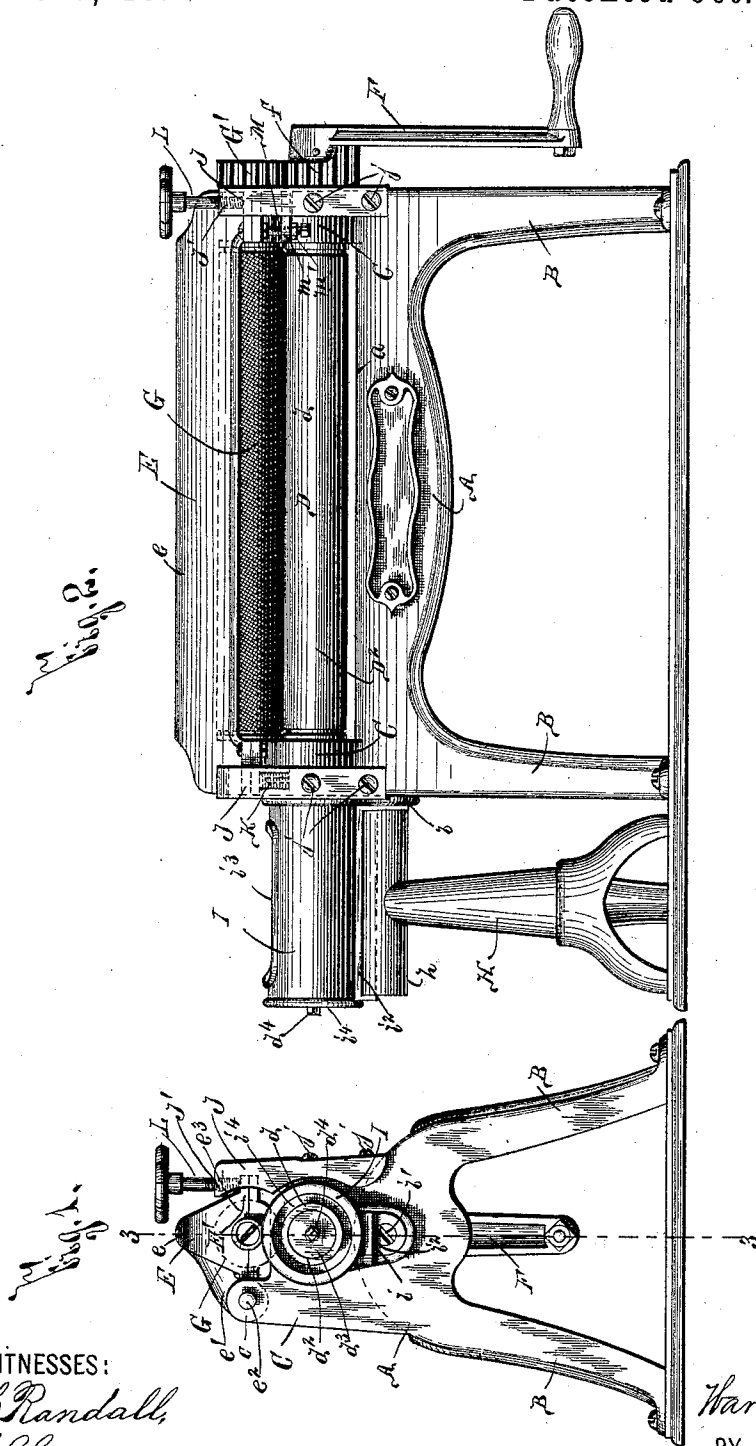
(No Model.)

3 Sheets—Sheet 1.

W. H. BOLES.
PHOTOGRAPHIC BURNISHER.

No. 527,315.

Patented Oct. 9, 1894.



WITNESSES:

W. H. Randall,
H. C. Chase,

INVENTOR

Warren H. Boles

BY

Hey, Wilkinson & Parsons
ATTORNEYS.

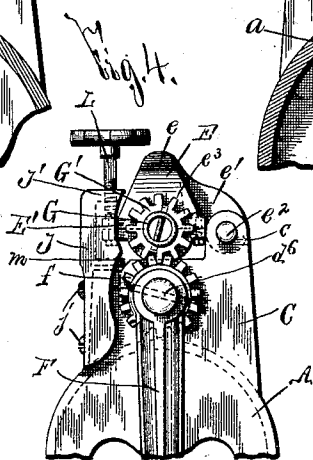
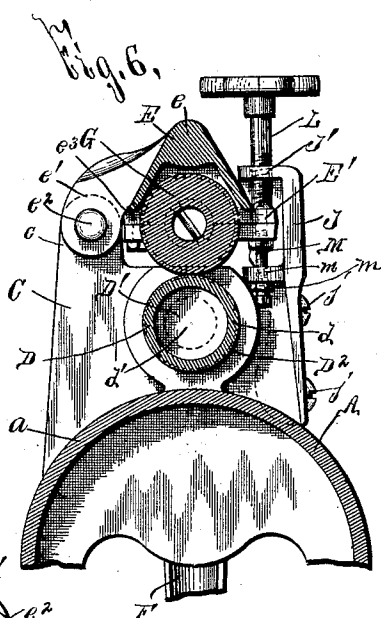
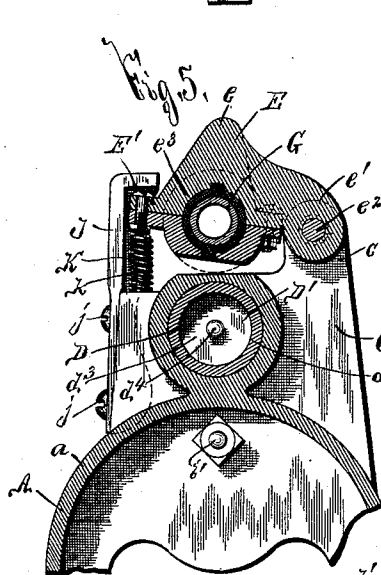
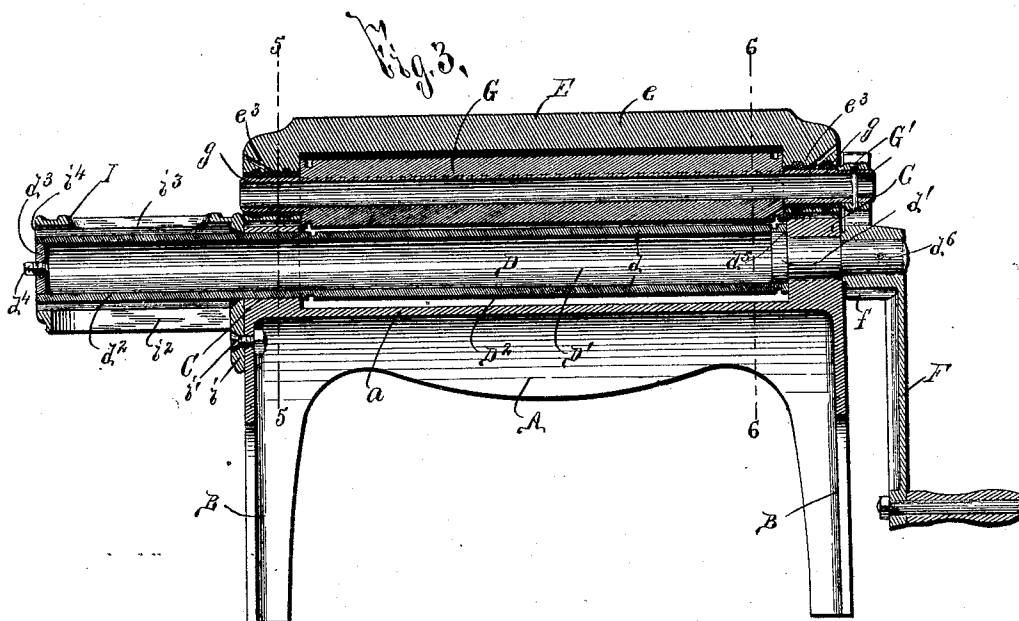
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WITNESSES:

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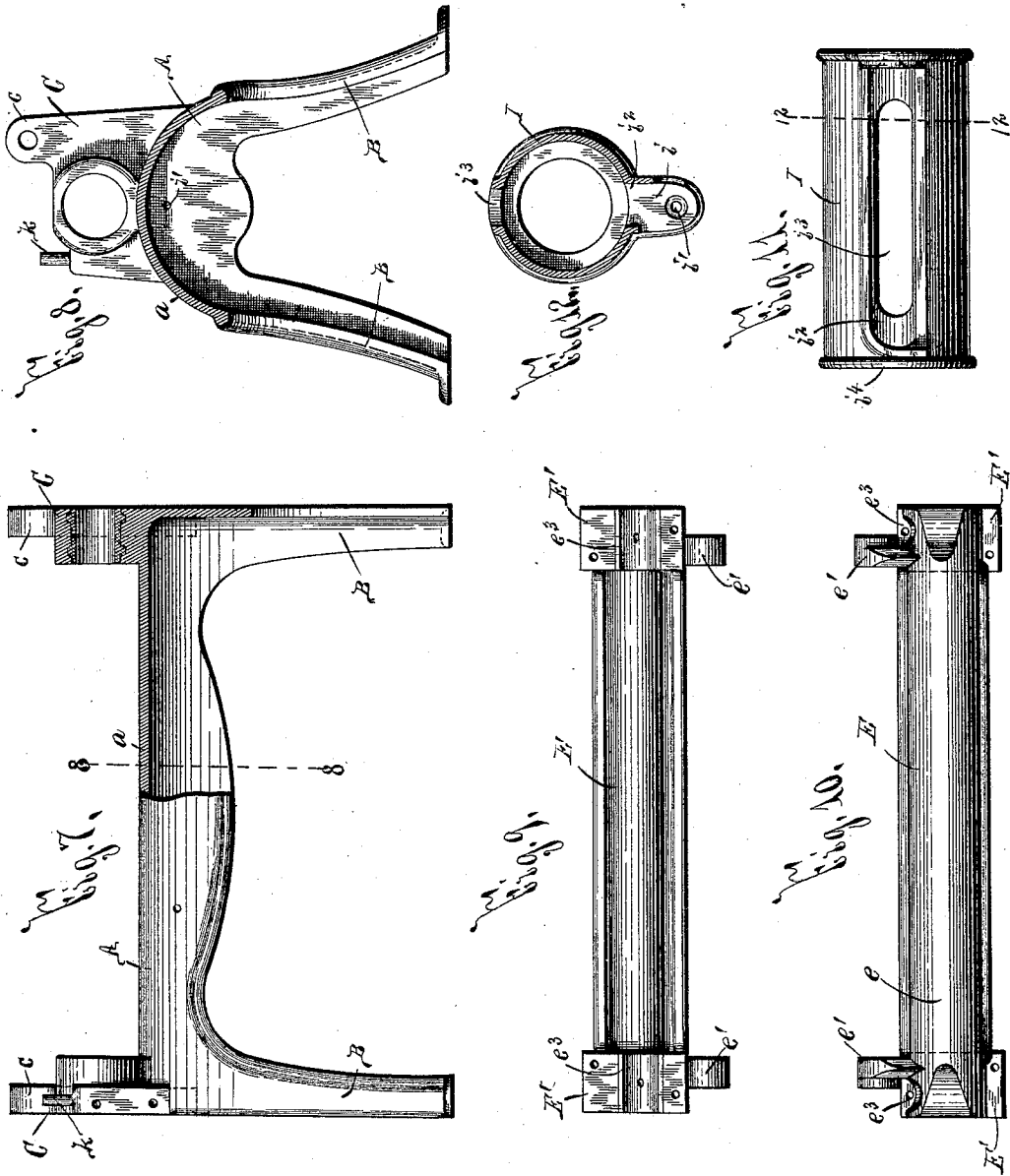
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W. H. BOLES.
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No. 527,315.

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UNITED STATES PATENT OFFICE.

WARREN H. BOLES, OF SYRACUSE, NEW YORK.

PHOTOGRAPHIC BURNISHER.

SPECIFICATION forming part of Letters Patent No. 527,315, dated October 9, 1894.

Application filed July 18, 1892. Serial No. 440,339. (No model.)

To all whom it may concern:

Be it known that I, WARREN H. BOLES, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Photographic Burnishers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in photographic burnishers and has for its object the production of a simple and effective device which is produced at a minimum cost of expense, and operates with a maximum degree of efficiency.

To this end the invention consists, essentially, in the general 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 represent, respectively, end and front elevations of my improved invention, the heater being omitted on Fig. 1. Fig. 3 is a longitudinal vertical sectional view, taken on line —3—3—, Fig. 1. Fig. 4 is an enlarged end view of the upper portion of the burnisher, representing particularly the mechanism for rotating the rollers. Figs. 5 and 6 are sectional views, taken respectively on lines —5—5— and —6—6—, Fig. 3, illustrating the detail construction and arrangement of parts of my burnisher. Fig. 7 is a side elevation, partly in section, of the detached frame. Fig. 8 is a sectional view, taken on line —8—8—, Fig. 7. Figs. 9 and 10 are, respectively, inverted and top plan views of the movable head mounted upon the burnisher frame. Fig. 11 is an inverted plan view of the detached incasing shell upon the projecting end of the polishing roller, and Fig. 12 is a sectional view, taken on line —12—12—, Fig. 11.

A represents the frame of my improved machine, which, although it may be of any desirable form, size, and construction, is shown as consisting of a bar or body *a* formed concavo-convex in cross section, and provided with a convex upper face, legs B B formed integral with the body *a* and upwardly pro-

jecting lugs C C also formed integral with said body.

The polishing roller D is journaled in the lugs C C and a movable bearing or head E carrying the feeding roller G is pivoted thereto.

The polishing roller —D— is preferably composed of a tube —*d*— having one end journaled in one of the frame lugs —C— and provided with a plug —*d'*—, and its other end —*d''*— journaled in the opposite lug —C— and adapted to project beyond its outer face and provided with a plug —*d'''*—.

The plug —*d'*— is formed with an upright shoulder —*d⁵*— adapted to bear against the inner face of the adjacent lug —C— and with a projecting end or spindle —*d⁶*— to which is secured a crank —F— having cast on its hub the gear —*f*—. The plug —*d''*— is formed with a removable section consisting of a set screw —*d⁴*— for permitting the entrance within the roller —D— of a suitable liquid.

As presently described the projecting end of the roller —D— is subjected to the influence of a suitable heater, and the liquid within the roller serves to conduct the heat uniformly to all parts of the roller. I preferably use cotton seed, rape seed or linseed oil within the roller —D— as these oils are particularly efficient conductors of heat, do not produce sweating of the roller, and as they boil or vaporize only at a high temperature as, above 640° Fahrenheit, they do not produce excessive pressure within the roller, when the same is heated to the required degree of temperature as, 250° Fahrenheit. This particular construction of roller —D— is very economical and simple, since the tube is formed or rolled at a minimum expense and the plugs —*d'*— and —*d''*— are readily welded or otherwise secured thereto.

—H— represents any suitable heater, not necessary to herein illustrate or describe, it being understood that any desirable construction thereof may be utilized to heat the projecting end —*d''*— of the polishing roller —D—. Incasing said projecting end —*d''*— of the roller —D— is a shell —I— formed with a flange —*i*— secured at —*i'*— to the outer face of the left hand side of the frame —A—.

Formed in the lower wall of the shell —I—

is the inlet opening— i^2 —with which the top of the heater is registered for throwing a heated current within said shell, which entirely surrounds the projecting end— d^2 —
 5 and then passes from the shell—I—either through an opening— i^3 —at its top or an opening— i^4 —in its outer end.

It will be understood that the upper end— h —of the heater closely fits the entrance
 10 opening— i^2 —of the shell—I—in order to obviate the entrance of cold air, and that the outlet openings— i^3 —and— i^4 —of said shell are made sufficiently large to effect the desired discharge of the heat and enable the
 15 roller to become quickly heated.

The movable bearing or head—E—of my machine is also preferably of special construction, being formed with an outer or upper rib or bar— e —of suitable form and size to effect
 20 the desired rigidity and with downwardly diverging flanges. Projecting rearwardly and downwardly from said head are lugs— e' — e' —hinged at— e^2 — e^2 —to ears— c — c —projecting from the lugs—C—C—.

The feed roller—G—is arranged directly above the polishing surface D^2 of the roller D and its upper face projects between the diverging flanges of the bearing or head E. The opposite extremities— g — g —of the
 25 roller G are journaled in the depending ears— e^3 — e^3 —of the head—E—. For the purpose of facilitating its operation the periphery of this roller is suitably knurled.

The end— g —of the roller—G—, in proximity to the gear— f —projects beyond the ear— e^3 —carrying the same and rigidly secured thereto is a similar gear— G' —, whereby, when the crank—F—is turned, the
 30 feed roller—G—and the polishing roller—D—are rotated in reverse directions.

—J—J—represent upwardly projecting arms secured to the lugs—C—C—by suitable screws— j — j —and provided with inwardly projecting lugs, and— E' — E' —represent ears projecting forwardly toward the
 35 ears—J—J—from the opposite extremities of the head—E—.

Interposed between the left hand ear— E' —and the adjacent face of the lug—C—at the
 40 rear of the adjacent ear—J—is a spring—K—of suitable form mounted on a spindle— k —carried by the lug—C—. This spring constantly forces the head—E—upward and separates the feed roller—G—from the polishing roller—D—.

—L—is an adjusting screw adjustably mounted in a rearwardly projecting arm—J'—of the right hand ear—J—with its lower end bearing against the adjacent ear— E' —of the head—E—, whereby, when the
 45 screw is forced downwardly, the head—E—is rocked downwardly and the feed roller—G—approximated toward the polishing roller—D—. As the screw—L—is moved upwardly the spring—K—forces said ear— E' —firmly against the lower end of said
 50

screw, and thus separates the rollers—G—and—D—. It will thus be understood that the spring—K—and the screw—L—form an adjuster for approximating and separating
 55 the feed roller—G—and the polishing roller—D—.

In order to prevent too close approximation of the rollers—G—and—D—which would tend to impair the polishing surface
 60 — D^2 —of the roller—D—, I provide a suitable stop—M—, which preferably consists of a screw movable in a projecting ear— m —formed upon the right hand lug—C—. The upper end of this screw encounters the lower
 65 face of the right hand ear— E' —before the contact of the adjacent faces of said rollers—G—and—D—, and movable on the lower end of said screw stop—M—is an adjusting nut— m' —for raising and lowering said
 70 screw stop.

The operation of my invention will be readily perceived from the foregoing description and upon reference to the accompanying drawings, and it will be particularly noted
 75 that its parts are simple, economically manufactured, readily assembled, and durable in use, and that by the use of oil in the inner cavity of a polishing roller, a very beneficial and desirable burnisher is produced which is
 80 quickly heated to a high temperature and entirely obviates all sweating of the roller, as is the case when the heat is applied from the outer periphery inward.

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

1. The herein described frame for photographic burnishers, the same comprising a bar or body a formed concavo-convex in cross
 90 section and provided with a convex upper face, and legs B B and arms C C formed integral with the bar or body a , in combination with burnisher rollers supported by said arms C C, substantially as and for the purpose
 95 specified.

2. In a photographic burnisher, the combination of a frame provided with journal bearings, a revoluble hollow burnisher roller journaled in one of said bearings and having its
 100 opposite ends projecting beyond the same, a spindle journaled in the other bearing and provided with an enlarged annular shoulder fixed within the adjacent end of the roller and abutting against the inner face of said
 105 other bearing, and means, substantially as described, secured to the outer end of said spindle for rotating the roller, substantially as and for the purpose specified.

3. In a photographic burnisher, the combination with a frame and a burnisher roller journaled therein; of a feed roller and a supporting bearing or head for the feed roller consisting of a horizontal bar arranged above the feed roller, ears depending from the op-
 110 posite ends of said bar and provided with journal bearings for receiving the feed roller,

and rearwardly projecting lugs pivoted to the frame, substantially as and for the purpose specified.

4. In a photographic burnisher, the combination with a frame provided with a stop and a burnisher roller journaled therein; of a feed roller, a supporting bearing or head for the feed roller consisting of a horizontal bar, provided with diverging flanges extending downwardly on opposite sides of the upper face of the feeding rollers, ears depending from said bar and provided with journal bearings for receiving the feed roller, rearwardly projecting lugs provided upon said bearing or head and pivoted to the frame, and a forwardly projecting ear provided upon the bearing or head for engaging the stop of the frame, substantially as and for the purpose set forth.

5. In a photographic burnisher, the combination with a frame, an upwardly projecting arm provided upon the frame and formed with a projecting lug and a burnisher roller journaled in the frame; of a feed roller, a supporting bearing or head for the feed roller consisting of a horizontal bar arranged above the feed roller, ears depending from the opposite ends of said bar and provided with journal bearings for receiving the feed roller, rearwardly projecting lugs pivoted to the frame, and a forwardly projecting ear arranged beneath the projecting lug of the arm upon the frame, and an adjusting screw mounted in said projecting lug of the arm

upon the frame and engaging the forwardly projecting ear of said bearing or head for moving the feed roll toward and away from the burnisher roll, substantially as described.

6. In a photographic burnisher, the combination with a frame, upwardly projecting arms at its opposite extremities each formed with a projecting lug, and a burnishing roller journaled in the frame; of a feed roller, a supporting bearing or head for the feed roller consisting of a horizontal bar arranged above the feed roller, ears depending from the opposite ends of said bar and provided with journal bearings for receiving the feed roller, rearwardly projecting lugs pivoted to the frame, and forwardly projecting ears arranged beneath the lugs of the arms of the frame, a spring interposed between one of the said lugs and the adjacent ear of said bearing or head, and an adjusting screw movable through the other ear and having one extremity bearing against the other lug for adjusting the feed roller toward the burnishing roller, substantially as and for the purpose set forth.

In testimony 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 27th day of June, 1892.

WARREN H. BOLES.

Witnesses:

CLARK H. NORTON,
L. M. BAXTER.