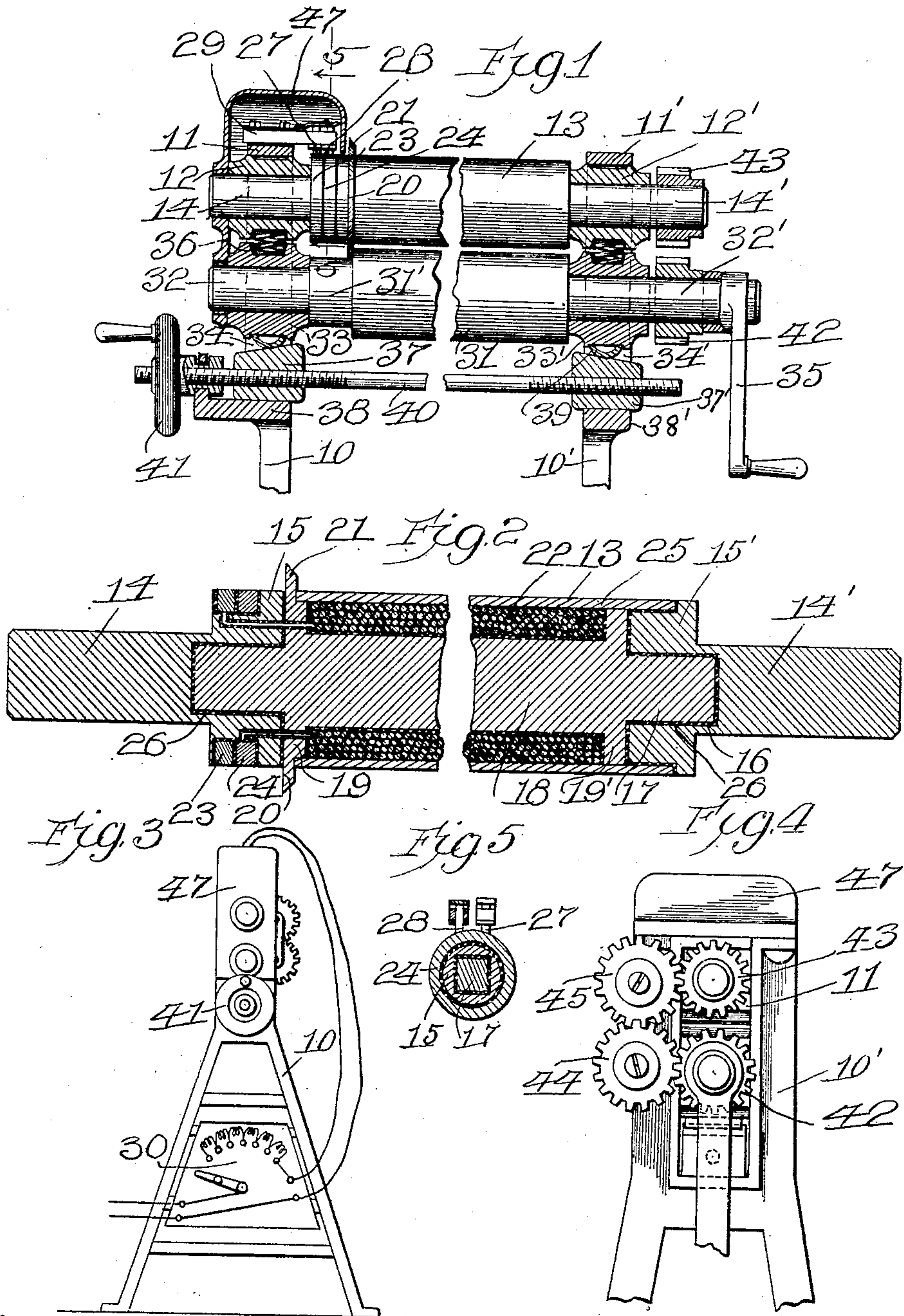


W. G. DALTON.
BURNISHING MACHINE.
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974,032.

Patented Oct. 25, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM G. DALTON, OF LAKE FOREST, ILLINOIS.

BURNISHING-MACHINE.

974,032.

Specification of Letters Patent.

Patented Oct. 25, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM G. DALTON, a citizen of the United States, residing at Lake Forest, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Burnishing-Machines, of which the following is a specification.

My invention relates to improvements in burnishing machines and has for its object to provide a machine for burnishing photographs and the like, wherein the burnishing roll may constantly be kept clean, may be heated to any desired regulated degree, and may be arranged above its opposing feed or pressure roll so that the paper may be fed through the rolls with the side to be burnished upward.

Another object of my invention is to provide an electrical burnisher of simple and efficient construction wherein the electrical parts are adequately protected.

In the drawings, wherein I have shown an embodiment of my invention, Figure 1 is a central vertical section; Fig. 2 is a longitudinal section of the burnishing roll proper; Fig. 3 is an end elevation of the machine; Fig. 4 is an enlargement of the gearing at the opposite end of the machine from Fig. 3; and Fig. 5 is an enlarged detail of the specific brush-and-ring structure.

In the drawings, 10 and 10' indicate in general standards having yoke-shaped upper ends, each providing a strap at its extremity, as at 11 and 11', respectively. Against said straps bear upwardly squared bushings, 12 and 12', in which are journaled the reduced ends or gudgeons of the burnishing roll, generally indicated at 13. The burnishing roll, as best shown in Fig. 2, is preferably constructed to provide two end gudgeons, 14 and 14', having at their inner ends, respectively, heads, 15 and 15', said heads being recessed, as at 16, to receive squared end studs, 17, a spool, 18, having heads, 19 and 19'. The spool head 19 is preferably extended radially or flanged, as at 20, beyond the diameter of the head 15 of the proximate gudgeon, and has its outer flange-surface beveled to afford a sharp edge at its outer side, as indicated at 21. The spool is wound with a heating coil, as at 22, having its ends connected with two parallel-insulated rings 23 and 24, insulatedly mounted upon the gudgeon head 15. A cylindrical shell, 25, covers the coil

and, in the specific construction shown, bears at its ends upon the heads 19 and 19' of the spool and the head 15' of one end gudgeon. Suitable bodies, 26, of insulation may be placed between the gudgeons and the spool, and around the coil 22 and the rings, 23 and 24, the object being to insulate the gudgeons completely from the spool and shell. The brushes, 27 and 28, bear respectively upon the rings 23 and 24, and are mounted in insulated arrangement in a brush block, 29, suitably arranged on the bridge 11, said brushes being connected by appropriate wires to a current controller, 30, suitably mounted upon the frame and fed from any desired source of electrical supply to the coil and that the heating coil supplies its heat, thus regulated to the shell 25 which constitutes the burnishing surface of the upper roll 13.

A lower roll, 31, is arranged at an adjustable distance from the under side of the roll, 13, a suitable construction to this end being shown in the drawings, wherein the lower roll 31 is provided with spindles, 32 and 32', bearing in bushings, 33 and 33', sliding in the yokes of the standards, 10—10'. The lower roll 31 is reduced in diameter, as at 31', to accommodate the tapered flange 21 of the upper roll, and one of its spindles is provided with an operating handle, 35.

In order that the lower roll may be vertically adjustable to vary its pressure-imposing relation to the printing roll, 13, I interpose between the upper and lower bushings, 12 and 33, and 12' and 33', at each side of the machine, a coiled spring, 36, and below the bushings, 33 and 33', I arrange wedge blocks, 37 and 37', sliding upon shoulders, 38 and 38', on the frame members, and with their slanting upper surfaces bearing against spring washers, 39, said wedge blocks, 37 and 37', being screw threaded and engaged by left and right threads, respectively, of an adjusting rod, 40, suitably mounted in the frame for rotation by a hand wheel, 41.

Motion, given to the driving spindle 32' by rotation of handle, 35, is communicated to the gudgeon, 14', of the burnishing roll, by a train of gears, as best shown in Fig. 4, the spur gears, 42 and 43, being respectively mounted upon spindles 32' and gudgeon 14' for movement therewith, and idlers, 44—45 interengaging and respectively engaging in the gears 42 and 43, suitably mounted on

the frame, so that the gearing relation may be undisturbed by the slight relative movements between the rolls.

For the protection of the operator, and of the electrical connections of the burnishing roll, I provide a housing, 47, suitably attached to the frame, and overlying the brushes, 27 and 28, and block, 29, and the collecting rings, the inner face of said housing being cut away for the reception of the roll and extending close to the sharp edge of flange 20 of the burnishing roll. This housing protects the operator of the machine from possibility of contact with the charged electrical brushes and rings, and also assists in protecting the electric contacting parts from water and dirt.

In the operation of the machine, the photograph to be burnished is placed face upward in the paper-pass between the rolls. Obviously, the handle may be rotated to feed the paper through the paper-pass between the rolls, the lower roll acting as a feeding and pressure element, and the upper roll acting as a burnishing member, and by its shell, 25, imparting the finish to the paper. As is well known, the paper is usually wet when fed to the machine, and the beveled flange 21 acts as an obstacle to prevent the moisture squeezed out of the paper from finding its way over to the electrical distribution rings and brushes. I find that the beveling of the flange makes the latter particularly efficacious, as any water standing upon the flange runs back toward the rolls and the sharpness of the edges of the flange makes the delivery of drops of moisture from the bottom of the flange particularly easy, and its creeping over the edge difficult.

It will be observed that the machine provides a burnishing appliance in which the feeding action is such as not to smut or soil the burnishing element, so that perfect cleanliness in the operation may easily be attained, that the heat may be regulated to a nicety, that the electrical appliances of the roll are simply and adequately protected, and that the entire machine is simple, economical, and easy of manipulation, enabling the operator to feed the sheet through the

machine face upward, thereby enabling him more closely to watch the effect of the work.

What I claim and desire to secure by Letters Patent is:

1. In a burnishing machine, an interiorly heated roll comprising an interior core having flanges at each end, said core provided with bearings at each end from which it is electrically insulated, an electric coil surrounding said core between said flanges, a surface shell inclosing said coil and directly engaging said flanges and means for rotating said roll.

2. In a burnishing machine, a burnishing roll provided with an internal electrical heating coil, insulated rings carried by said heating roll, connected with the terminals of the coil, a flange interposed between the burnishing surface of said roll, and said rings; brushes for supplying current to said rings, and a pressure roll, and means for driving said rolls.

3. In a burnishing machine, a pressure roll, a burnishing roll mounted above said pressure roll comprising a hollow burnishing shell, and an electrical coil within said shell, rings connected with the terminals of said coil beyond the burnishing shell, a beveled flange between the shell and rings, a frame supporting said burnishing and pressure rolls, distributing brushes for the rings mounted on said frame, and means for driving the rolls.

4. In a burnishing machine, a pressure roll, a burnishing roll mounted above said pressure roll comprising a core, a coil thereover, a hollow shell, and a beveled flange at one end of the roll, rings connected with the terminals of said shell outside of said flange, distributing brushes for the rings, means for supporting the brushes, and a housing surrounding the rings, brushes, and supporting means, extending close to the outer surface of the flange of the burnishing roll.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

WILLIAM G. DALTON.

In the presence of—

JOSEPH E. HANSON,
CHARLES L. HARDER, Jr.