No. 767,653. PATENTED AUG. 16, 1904.

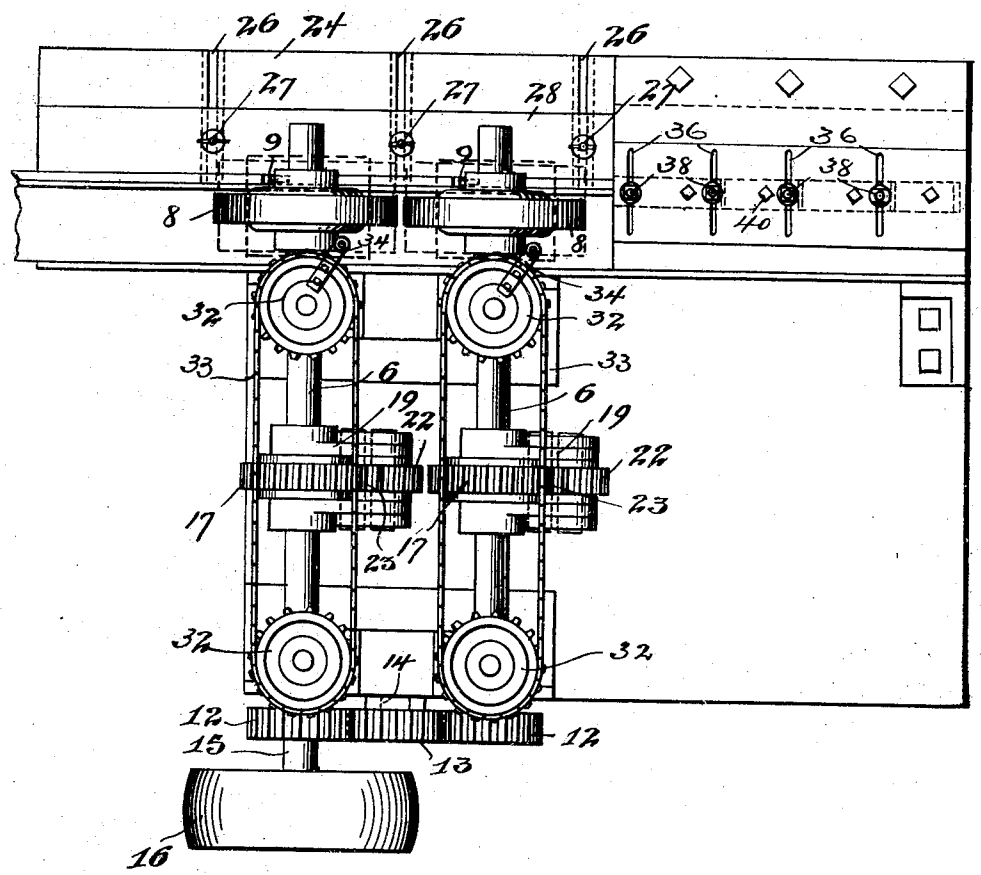
E. McDONALD.

BURNISHING MACHINE.

APPLICATION FILED OCT. 5, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

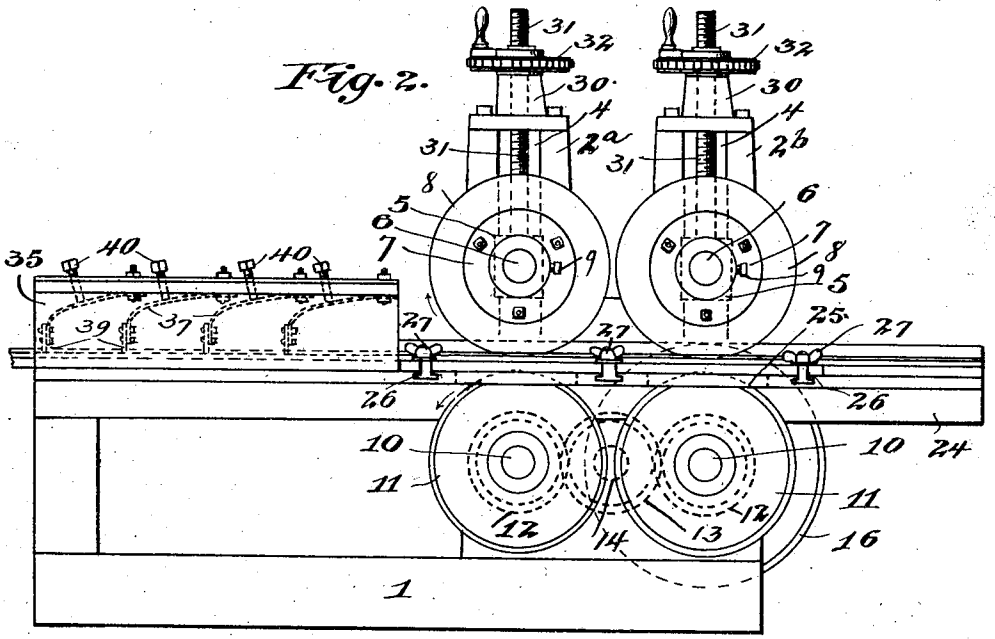
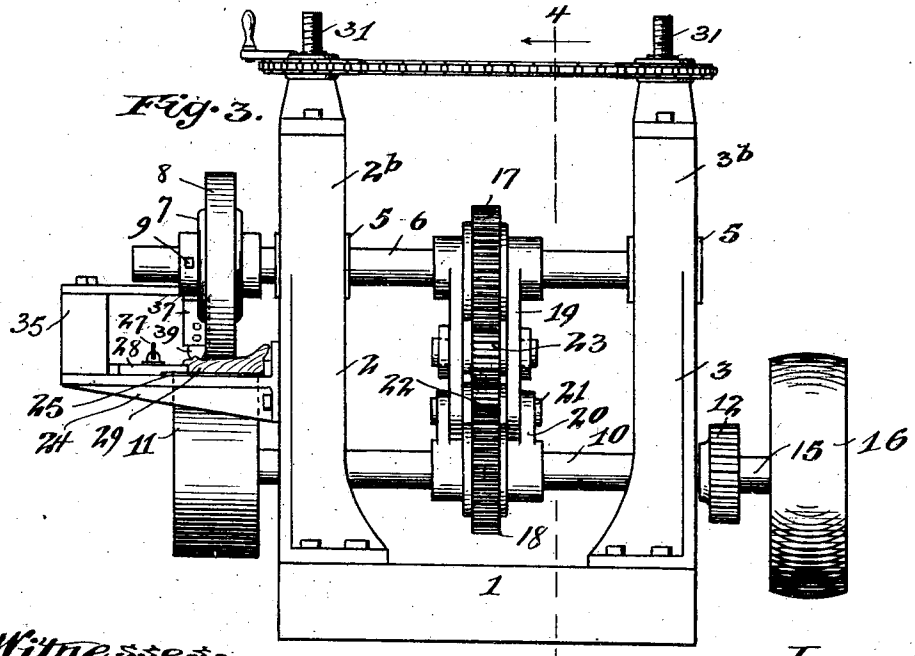


Fig. 3.



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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4.

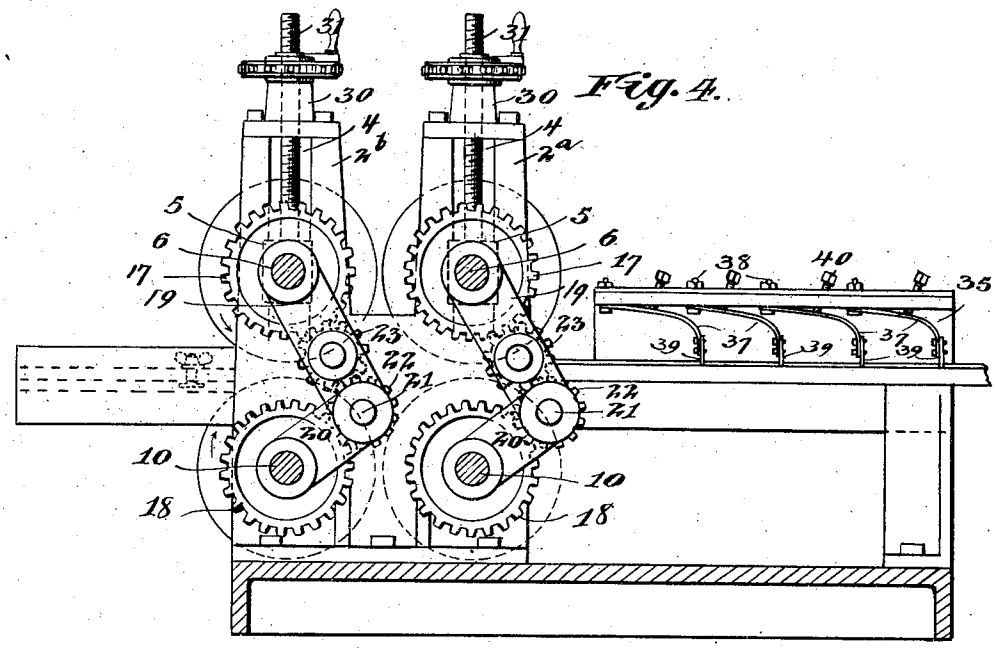


Fig. 8.

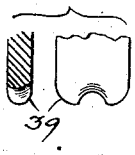


Fig. 5.

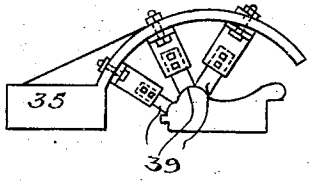


Fig. 6.

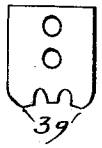
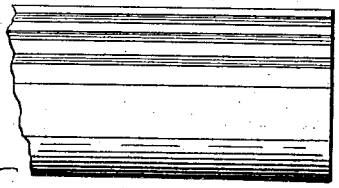


Fig. 7.



Witnesses,
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No. 767,653. Patented August 16, 1904.

UNITED STATES PATENT OFFICE.

EDWARD McDONALD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE A. H. VILAS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BURNISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 767,653, dated August 16, 1904.

Application filed October 5, 1903. Serial No. 175,813. (No model.)

To all whom it may concern:

Be it known that I, EDWARD McDONALD, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Burnishing-Machines, of which the following is a specification.

This invention relates to improvements in burnishing-machines, and refers more specifically to a machine adapted for burnishing bronzed or gold or silver leaf coated molding.

Among the salient objects of the invention are to provide an organized mechanism by means of which such burnishing as has heretofore been done manually can be performed by a machine, to provide a machine in which the molding is by means of feed-rollers carried past one or more burnishing devices arranged to act upon the parts to be burnished in such manner that a single operation produces a completely finished or burnished article, to provide in an organized mechanism of the character referred to means for treating moldings of various shapes by one and the same machine, to so construct and arrange the burnishing devices that steel plates or tools will accomplish the burnishing in a very perfect manner, thus dispensing with the more expensive agate and analogous burnishing devices heretofore deemed necessary, to provide in such a machine means for yieldingly and adjustably supporting the burnishing-tools so that they will adjust themselves to inequalities of the molding and may be readjusted to compensate for wear and to treat various shapes, to provide in a machine of this character means for rapidly and conveniently adjusting the feed-rollers without disarranging the driving connections, to provide guide-supports for directing the molding through the machine which are capable of being conveniently and rapidly adjusted to fit various forms and sizes of molding, and to provide improvements in the details of construction and arrangement contributing to the production of a machine of the character referred to of simple, cheap, and durable construction and capable of effective use.

To the above ends the invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

The invention will be more readily understood from the following description, reference being had to the accompanying drawings, forming a part of the description, in which—

Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is an end view. Fig. 4 is a sectional view taken on line 4 4, Fig. 3, looking in the direction of the arrows. Fig. 5 is a detail view showing modified form of tool-holder. Fig. 6 is a detail view showing one form of tool. Fig. 7 is a fragmentary view showing a piece of molding burnished with a tool shown in Fig. 6, producing a striped effect; and Fig. 8 shows fragmentary sectional and face views of one form of tool.

Similar numerals refer to similar parts in all figures.

Referring to the drawings, 1 designates a base, which may be of any desired construction, having mounted thereon the two wall-like or standard members 2 and 3, oppositely disposed with relation to each other and each terminating at its upper end in two upright members 2^a 2^b and 3^a 3^b, each of which latter members has therein a slot-like opening 4, within which is mounted to reciprocate a box-like bearing 5.

6 6 designate two shafts extending between the standard members 2 and 3 and rotatably mounted within said box-like bearings, the ends of said shafts projecting through the front standard 2 and having rigidly though adjustably mounted thereon wheels 7 7, each provided upon their peripheries with rubber tires 8 8. Said wheels are made rigid and adjustable upon said shafts by means of set-screws 9 9.

In the lower part of said standards 2 and 3 in suitable bearings are rotatably mounted two other shafts 10 10, extending parallel with each other and with the shafts 6 6 and vertically beneath the latter. The shafts 10 10 project through the standards 2 and 3 at both ends, each having mounted upon its front end a roll 11, provided with a comparatively wide

face (clearly shown in Fig. 3) and adapted to rotate adjacent the wheels 7 7. Upon the opposite or rear end of each of said shafts 10 10 is rigidly mounted a gear 12, and interposed between said gears 12 12 is a third gear 13, rotatably mounted upon a short shaft 14, secured to the main frame or standard 3, said gear 13 being adapted to mesh with the gears 12 12 on each side of it. Upon an extension 15 of one of the shafts 10, Figs. 1 and 3, is rigidly mounted a driving-pulley 16, which may be of any desired construction, or power may be applied in any other manner desired. It will be understood that the rotation of the pulley 16 rotates the shafts 10 10 in the same direction by means of the gears 12 and 13, as well as the rolls 11 11 upon the opposite ends of said shafts.

17 17 designate two gears rigidly mounted upon the shafts 6 6 intermediate their ends and between the main frame members 2 and 3, and 18 18 designate two corresponding gears similarly mounted upon the shafts 10 10 and directly beneath the gears 17 17.

19 19 and 20 20 designate two sets of toggle-links pivotally connected at their remote ends with the shafts 6 6 and 10 10 on each side of the gears 17 17 and 18 18 and connected at their inner ends by means of the axles 21 21, upon which and between the arms of the toggle-links are mounted to mesh with the gears 18 18 the gears 22 22. Between the arms of the toggle-links 19 19 and intermediate their ends upon suitable axles are mounted gears 23 23, adapted to mesh with the gears 22 22 and with the gears 17 17. The gears 18 18 are thus operatively connected with the gears 17 17 by means of the intermediate gears 22 22 and 23 23, mounted upon the toggle-links 19 19 and 20 20 in planet relation, so that the rotation of the shafts 10 10 and the rolls 11 11 in one direction will rotate the shafts 6 6, with its wheels 7 7, in the opposite direction, the purpose of which is hereinafter stated.

Mounted upon the front of the main frame or standard 2 is a shelf or feed-table 24, said table being located between the wheels 7 7 and the rolls 11 11, the upper peripheries of the latter projecting slightly through an opening 25 in said table.

26 designates a series of transverse slots arranged in said table adapted to receive the thumb or adjustment bolts 27, which pass through a guide member 28, adjustably mounted upon said table to engage and guide a strip of molding 29, hereinafter referred to, said guide member 28 being adjustable transversely in the slots 26 to accommodate different widths of molding.

Upon the top of the upright members 2^a 2^b and 3^a 3^b are mounted top plates 30 30, through which are adapted to reciprocate the screw-threaded bolts 31 31, which are connected at their lower ends in any suitable manner with the box-like bearings 5 5. Upon the upper or screw end of the bolts 31 31 are mounted sprocket members 32 32, having threaded engagement therewith, whereby the turning of said sprocket members upon said bolts operates to raise or lower the latter, depending upon the direction in which they are turned, and thereby raising or lowering the box-like bearings, together with the shafts 6 6, mounted therein. By reason of the toggle-link gearing between the shafts 10 10 and 6 6 the driving connection therebetween is not interfered with as the shafts 6 6 are raised or lowered. It will be seen that the raising and lowering of the shafts 6 6 operates to increase or decrease the space between the peripheries of the rubber tires 8 8 upon the wheels 7 7 and the rolls 11 11, thus providing an adjustment for various thicknesses of moldings.

In order that the shafts 6 6 may be quickly and uniformly raised at each end, the sprockets are connected by means of the sprocket-chains 33 33, and one of said sprockets in each pair is provided with a handle 34, whereby the operation of one simultaneously operates the other, and the shafts 6 6, together with the wheels 7 7 thereon, are readily and uniformly raised for the purpose hereinbefore stated.

Describing now the burnishing mechanism, 35 designates an overhanging frame or support which may be of any desirable construction—as, for example, that shown in Fig. 5. This support is secured to the feed-table 24 in any suitable manner, preferably detachably. Upon the under side of the overhanging wall thereof is mounted a series of springs 37, substantially in L-shape construction, the shorter arm projecting downwardly. Said springs are adjustably mounted at one end in the transverse slots 36 by means of the bolts 38 and can be so adjusted transversely that they will project into the same path or adjoining paths when a broad surface is to be engaged by the burnishing-tools 39. These tools may be made in various forms to accommodate various forms of molding, as seen in Fig. 6, which is adapted to produce a striped effect, as shown in Fig. 7.

The tools may be made of any suitable material; but as one of the features of the present invention, these tools are made of plates of hard metal, preferably of steel, and as the angle of engagement between the end of the burnishing-tool varies slightly during the movement of the molding thereunder by reason of the yielding support for the tool the ends of the tools are made round and smooth, so as to give a sort of sled-runner-like effect to the tool at the point of contact, thus avoiding any sharp corners or shoulders which would cut or scratch the surface being burnished. The outline of the tools will vary, of course, to suit the different styles of molding, and one form may be seen in Fig. 8, which is adapted to burnish a bead-like portion of a molding, such as that shown in Fig. 3, with the tool in operation. The tension of the springs 37, which carry the

tools 39, may be regulated by the screws 40, as indicated in Figs. 2 and 4.

The use and operation of the above-described machine may be stated as follows: The guide member 28 having been properly adjusted to receive the width of molding to be burnished, the wheels 7 7 properly adjusted, so that the space between the tires 8 8 and the face of the rolls 11 11 is adapted to the thickness of the molding to be passed therebetween, power is applied to the pulley 16, whereupon the wheels 7 7 and the rolls 11 11 are revolved toward each other. The molding is laid upon the table between the back of the table and the guide 28 and fed lengthwise between the protruding peripheries of the rolls 11 11 and the rubber tires 8 8, which frictionally engage the molding and carry it along upon the table until it comes in contact with the burnishing-tools 39, supported upon the ends of the L-shaped springs 37. By reference to Fig. 3 it will be seen that the tool-engaging end is semicircular in form and engages the bead portion of the molding 29 as it is carried along by the mechanism above described. Ordinarily two tools following each other will sufficiently burnish the surface, and one might possibly do it; but by reason of the construction of the tool-holder any number may be placed in the same path to engage the same surface of the molding as it is carried along, thereby insuring a better and more satisfactory job. In burnishing strips of considerable width the tools will preferably be arranged to slightly overlap each other as to their paths. The tools will of course be variously formed to fit beads, hollows, ogees, and plain surfaces.

While I have herein shown and described a practical embodiment of my invention, yet I do not wish to be understood as limiting myself in any sense to the specific construction shown herein. On the contrary, the mechanism may be modified without departing from the spirit of the invention, and I do not, therefore, confine myself to this construction except to the extent that it is to be made the subject of specific claims.

I claim as my invention—

1. In a burnishing-machine, the combination with mechanism for supporting and feeding along a strip of molding or the like in a definite and direct path, of a support arranged adjacent to the path of the molding, a burnishing-tool consisting of a flat blade having a thin knife-like but blunt edge arranged in a plane transverse to the direction of the movement of the molding and means resiliently supporting and connecting said tool-blade with said support, said means arranged to permit yielding movement of the acting edge of the tool in a direction in alinement with the direction of movement of the molding but holding it rigidly against lateral movement.

2. In a burnishing-machine, the combination with mechanism for supporting and feeding along a strip of molding or the like in a definite and direct path, of a support arranged adjacent to the path of the molding, a burnishing-tool consisting of a relatively thin blade of sheet material having a blunt knife-edge accurately conformed as to its acting portions to the configuration of the molding to be acted upon, and arranged to extend transverse to the direction of movement of the molding, and means resiliently supporting said tool-blade with said support, said means arranged to permit yielding movement of the acting edge of the tool in a direction in alinement with the direction of movement of the molding but holding it rigidly against lateral movement.

3. In a burnishing-machine, the combination with mechanism for feeding along a strip of molding or the like in a definite and direct path, of a support arranged to overhang the path of the molding, a strap-metal spring mounted upon said support, means for adjusting the tension of said spring, and a burnishing-tool mounted upon said spring substantially perpendicular to the surface of the molding and comprising a flat, relatively thin blade having a blunt edge accurately conformed as to its acting portions to the configuration of the molding acted upon and arranged in a plane transverse to the direction of movement of the molding.

4. In a burnishing-machine, the combination with feed-rollers for feeding along a strip of molding or the like, of a support arranged to overhang the feed-table, a plurality of spring-supports mounted upon said support over the path of the molding, means for adjusting said springs laterally, and a burnishing-tool mounted upon each spring-support, comprising a blade mounted substantially perpendicular to the surface of said molding and having a blunt acting edge conformed to the molding to be acted upon and arranged in a plane transverse to the direction of movement of said molding, substantially as described.

5. In a burnishing-machine, the combination with feed-rollers for feeding along a strip of molding or the like in a definite and direct path, of a support arranged to overhang the feed-table, a plurality of strap-metal supporting-springs mounted upon said support and adjustable laterally upon said overhanging support, means for adjusting the tension of said supporting-springs, and a tool mounted upon the end of each said spring and comprising a blade-like member arranged substantially perpendicular to the surface of said molding and transversely to the movement thereof and having its engaging edge conformed to the configuration of said molding, substantially as described.

6. In a burnishing-machine, the combination with mechanism for feeding along, in a definite and direct path, a piece of molding or

the like, of a support overhanging said path, a plurality of supporting-springs of strap metal adjustably mounted upon said overhanging support and successively in the rear of each other, whereby they may be arranged in adjacent or overlapping longitudinal alinement, and a tool mounted upon the end of each supporting-spring and provided with an engaging face conforming to the configuration of the molding being burnished.

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