

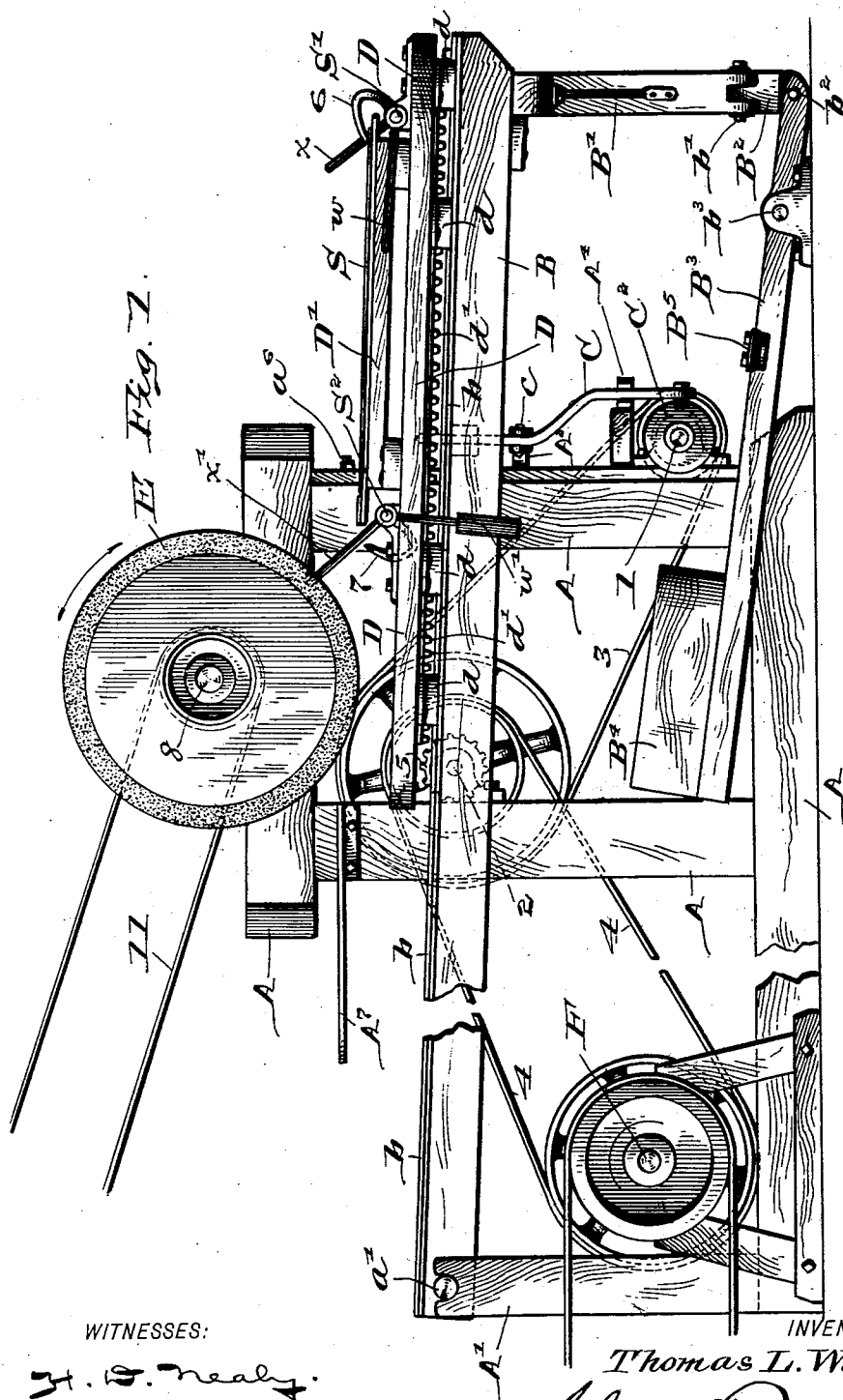
(No Model.)

2 Sheets—Sheet 1.

T. L. WALLACE.
METAL POLISHING MACHINE.

No. 564,668.

Patented July 28, 1896.



WITNESSES:

34. 18. nearly.
Jalwalsh.

INVENTOR

Thomas L. Wallace.

BY
Chester Bradford.
ATTORNEY.

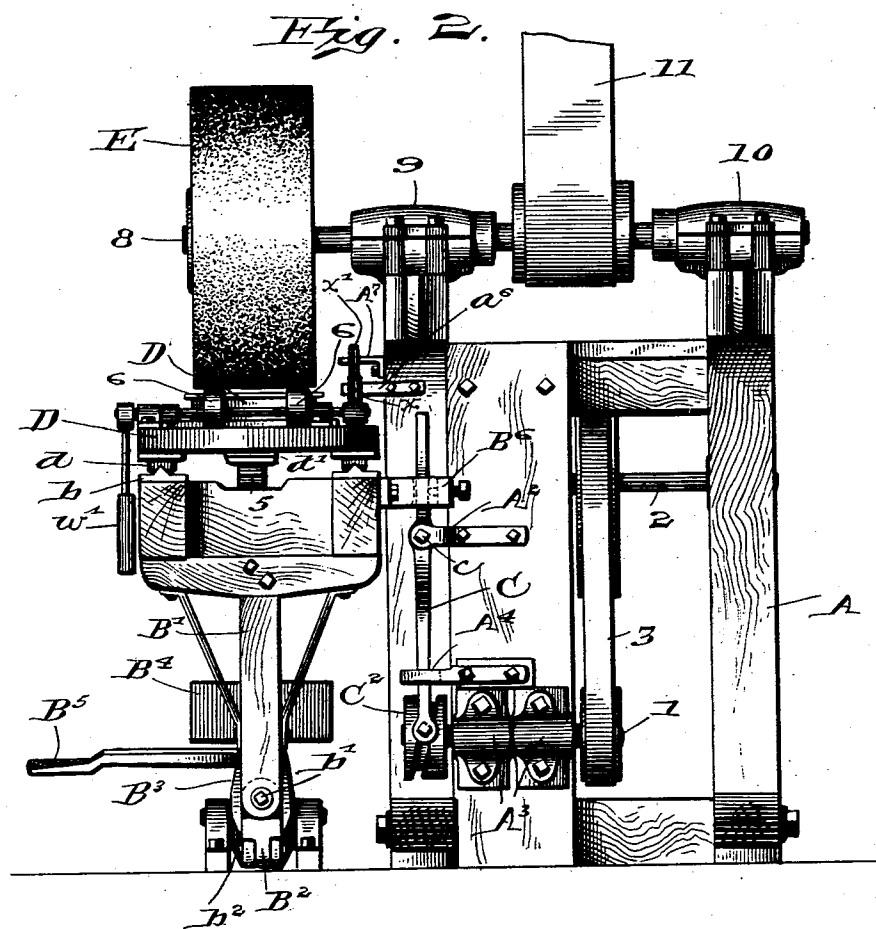
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WITNESSES:

H. B. Neely.
J. A. Walsh.

INVENTOR

Thomas L. Wallace,

Chester Bradford,
BY
ATTORNEY.

UNITED STATES PATENT OFFICE.

THOMAS L. WALLACE, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE
E. C. ATKINS & COMPANY, OF SAME PLACE.

METAL-POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 564,668, dated July 28, 1896.

Application filed February 24, 1896. Serial No. 580,379. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. WALLACE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Metal-Polishing Machines, of which the following is a specification.

The object of this invention is to produce a machine by which a wavy ornamental finish may be given to saws or similar metal plates in the process of polishing them.

A machine embodying said invention will be first fully described, and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters and figures of reference indicate similar parts, Figure 1 is a side elevation of a machine embodying said invention, a portion of the framework being broken out; and Fig. 2, an end elevation thereof.

In said drawings, the portions marked A represent the rigid or stationary framework; B, a pivoted and vibrating framework; C, a lever for operating it; D, a reciprocally-moving table; E, the polishing-wheel; and F, the main driving-shaft.

The frame A is of any suitable construction and carries the bearings for the other parts.

The frame B is composed, essentially, of two long timbers, with suitable cross-bars, and is pivoted at the rear end by means of the pivot a' on the standard A' of the frame A. At the other end it has a leg B', which is rigidly secured and braced thereto, as best shown in Fig. 2, and extends downwardly and is connected by means of a pivot b' to a short link B², which in turn is connected to the lever B³ by means of a pivot b^2 . Said lever is mounted on a pivot b^3 , and at its rear end carries a weight or weight-box B⁴, and has also, preferably, a treadle B⁵ attached thereto, by means of which the operator may apply additional weight or pressure. The pivot b' , as will be readily understood, permits the frame as a whole at this end to have a practically free sidewise movement, while the pivots b^2 and a' permit a vertical movement, all without straining the joints of any part of the frame-

work, and the work is thus held yieldingly to the polishing-wheel.

The lever C is mounted on a pivot c carried by a bracket A² on the frame A, and its upper end extends through a bearing in an arm B⁶ on the frame B, while its lower end extends down alongside a grooved cam-wheel C² on the shaft 1, which is mounted in bearings A³ on the frame A. Said lever is provided with a suitable point which extends into the groove of the cam-wheel, as shown, and is guided and held to place by a bracket A⁴ through which it passes. The shaft 1 is driven from a shaft 2 by a belt 3 running over suitable pulleys on said shafts, as shown, and said shaft 2 is driven from the main shaft F by means of a belt 4 running over suitable pulleys, as also shown. When the machine is in motion the operation is that the lever C is given a vibrating movement by the cam-wheel C², and imparts a corresponding vibrating movement to the frame B.

The reciprocally-moving table D has bearings d which rest on ways b on the frame B. It is provided with a rack d' , which engages with a pinion 5 on the shaft 2, and is thus driven back and forth reciprocally over the frame B. The reverse movement is secured by ordinary shifting belts and loose and tight pulleys on the primary driving shaft. (Not shown.) This reciprocally-moving table preferably has a raised bed D', on which the saw S (or other plate) to be treated is mounted. Clamps 6 and 7 are provided at the two ends of this saw-bed by which the saw may be held in place thereon. The clamp 6 thus holds the saw while it is being started in below the polishing-wheel, but obviously must be thrown out of engagement before the saw passes entirely through under said polishing-wheel, and the clamp 7 is moved into engagement with the saw-plate after it has passed below said polishing-wheel and hold it during the action of said wheel upon the end of the saw adjacent to the clamp 6 while said clamp 6 is out of engagement. The clamp 6 during the period of its engagement is moved and held into operative position by the handle-arm w on its shaft S'. An arm x is secured on the other end of said shaft and projects upwardly, as shown. A bracket

a^6 on the frame A projects out into the path of this arm x , and when said arm reaches said bracket in the course of its movement is forced back thereby, and the clamp 6 thus thrown
 5 back off the saw and out of the way, so that the table and saw are free to continue their travel through under the polishing-wheel. The clamp 7 is normally held out of engagement by the weight w' carried by an arm on
 10 the clamp-shaft S^2 . At the other end of its said shaft it has an arm x' which comes in contact with a flange or plate A^7 on the frame A, by which, as soon as the carrying-table reaches the proper point, the clamp is thrown into en-
 15 gagement with the saw and there held during the remainder of the movement of the table, the plate A^7 being of sufficient length to secure this. On its return movement, when it reaches the end of the plate, the weight w'
 20 operates immediately to disengage the clamp and throw it back into the position shown in the drawings. By these means the clamps 6 and 7 are automatically thrown into and out of operation at the proper points as the table
 25 travels back and forth, securing the saw firmly onto the table at all times, but each being thrown out of the way of the polishing-wheel when the proper point is reached. As will be observed, one clamp is thrown into
 30 operative position just before the other is thrown out, so that the saw, while being operated upon, is always held by a clamp.

The wheel E is a polishing-wheel of any desired form or construction, and is mounted on
 35 a shaft 8 carried by bearings 9 and 10 secured on the upper portion of the frame A. It is driven by a belt 11 running from some suitable driving-shaft. (Not shown.)

The operation of my machine is as follows:
 40 The saw S is placed on the bed D' , and secured there by the clamp 6. It is then started under the polishing-wheel E, and is held in close contact therewith by the action of the weight B^4 operating through the lever B^3 and
 45 downwardly-projecting leg B' , aided, if necessary, by the weight of the operator applied to the treadle B^5 . The whole structure which carries the saw is given a slight sidewise vibrating movement by means of the cam-wheel
 50 C^2 , lever C, and arm B^6 , as has already been explained. The result is that the surface of the saw is given a wavy polish, which is highly ornamental, and this is done automatically without any additional labor more than is re-
 55 quired in ordinary plain polishing.

This machine may be duplicated by placing another polishing-wheel on the other end of the shaft 8 and a corresponding frame B and other mechanism on the other side of the
 60 frame A, and when this is done two oper-

atives standing at the opposite ends of the machine can operate both parts of it. Obviously, however, this is a mere duplication of what is shown, and is entirely within the scope of my invention.

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

1. In a polishing-machine, the combination, of the polishing-wheel, the reciprocating carrying-table, driving mechanism, a vibrating table or frame on which said carrying-table is mounted, said frame being supported and carried on pivots, one of its ends being pivoted to a weighted lever by which it may be moved up and down, substantially as set forth.

2. In a polishing-machine, the combination, of the polishing-wheel, the carrying-table mounted to reciprocate on its supporting-frame, said frame supported on pivots at both ends, one end being connected to an operating-lever by both a longitudinal and a transverse pivot, whereby said end is adapted to be vibrated sidewise and moved up and down, substantially as set forth.

3. The combination, in a polishing-machine, of a frame B, a pivot a' whereby said frame is carried at one end, a weighted lever B^3 , and an interposed link having the two pivots b' and b^2 , substantially as shown and described.

4. The combination, in a metal-polishing machine, of the reciprocally-moving carrying-table, a clamp 7 pivoted on one end of said table, an arm x' extending out from the clamp-shaft, and a contact-plate A^7 on the framework, whereby the clamp is thrown into engagement with the plate on the table, and a weight w' carried by another arm on the clamp-shaft, whereby said clamp is thrown out of engagement as it escapes from said flange or plate, substantially as set forth.

5. The combination, in a metal-polishing machine, of the reciprocally-moving carrying-table, the clamp 6 mounted on one end of said table, a handle-arm w on the clamp-shaft whereby said clamp is moved into engagement, a second arm on said clamp-shaft, and a bracket a^6 on the frame A whereby said clamp is thrown out of engagement as the table approaches the polishing-wheel, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 18th day of February, A. D. 1896.

THOS. L. WALLACE. [L. s.]

Witnesses:

CHESTER BRADFORD,
 JAMES A. WALSH.