

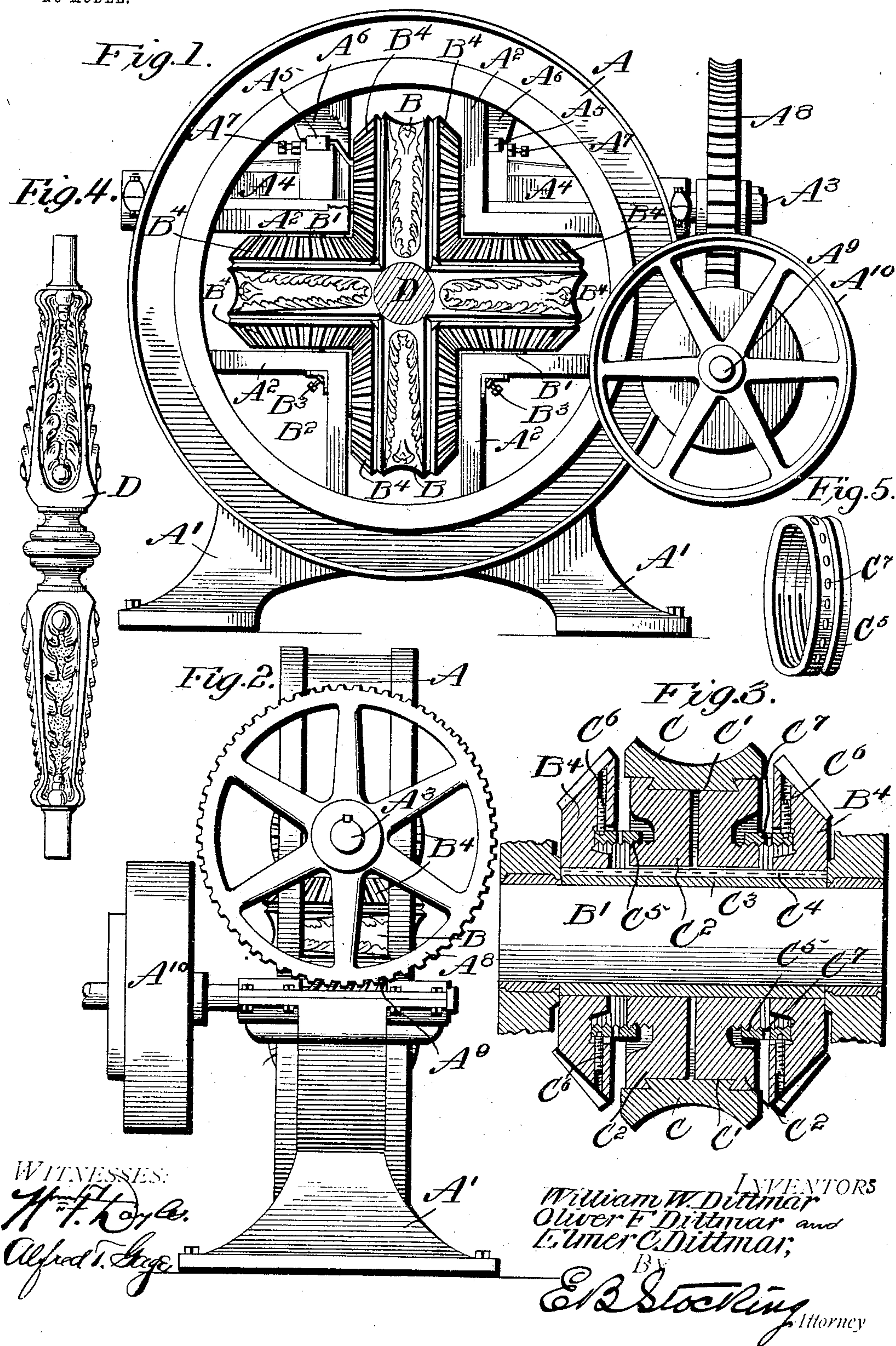
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APPARATUS FOR ORNAMENTING WOOD.

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NO MODEL.



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APPARATUS FOR ORNAMENTING WOOD.

SPECIFICATION forming part of Letters Patent No. 773,855, dated November 1, 1904.

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To all whom it may concern:

Be it known that we, WILLIAM W. DITTMAR, OLIVER F. DITTMAR, and ELMER C. DITTMAR, citizens of the United States, residing at Williamsport, in the county of Lycoming, State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Ornamenting Wood, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an apparatus for ornamenting wood, and particularly to a construction adapted to ornament simultaneously the entire surface of an article by compression thereof toward the radial center of the article.

The invention has for an object to provide dies or similar means for compressing the entire periphery of the article at equidistant points both radially and tangentially to the center of the work, said means of tangential pressure extending parallel to the radial pressure and intersecting each other at such an angle as to produce a resultant radial pressure toward the center, thus producing the effect of a radial compression upon the entire surface, and thereby preventing the splitting of the material of the article at the sides thereof and also permitting the production of a design of equal depth upon all the periphery thereof.

A further object of the invention is to provide an improved frame for supporting the dies at an angle to each other whereby they may be geared directly together for the purpose of producing a simultaneous movement thereof in the same direction to feed the article between the dies while the ornamenting operation is being performed.

Another object of the invention is to provide an improved construction of chuck for supporting and clamping the die in position which will allow for a ready adjustment necessary in the use of dies of different sizes and can be operated by a suitable wrench without disturbing any of the other elements of the machine.

Other and further objects and advantages of the invention will be hereinafter set forth

and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is a front elevation with parts broken away; Fig. 2, a side view thereof; Fig. 3, an enlarged central section through one of the dies and its operating-gears to illustrate the chuck construction; Fig. 4, an elevation of the work performed by the machine, and Fig. 5 a detail perspective of the chuck-ring.

Like letters of reference refer to like parts in the several figures of the drawings.

The frame of the machine may be of any desired construction suitable for the purpose; but as illustrating a desirable form thereof we have shown the frame as comprising a ring or annulus A, provided with supporting-stands A' at its base and with inwardly-projecting angular brackets A², which may be formed integral with the frame or suitably secured thereto to provide bearings for the die-rollers B, the journals B' of which are mounted in these brackets. For the purpose of driving the die-rollers a shaft A³ is provided and extends transversely of the machine, having bearing-boxes A⁴ at opposite sides thereof, the upper roller B being mounted upon said shaft. The upper portion of the bearing-box A⁴ may be removable and held in position by means of a wedge A⁵, which exerts the necessary pressure thereon and adjusts the relation of the dies toward each other, said wedge being adapted to contact with a fixed projection A⁶ from the ring and to be secured in position by a set-screw A⁷. The shaft A³ may be driven from any suitable connections, for instance, by means of a worm-wheel A⁸ engaging a worm-shaft A⁹, having at its outer free end a driving-pulley A¹⁰ of usual construction.

Any desired number of the die-rollers B may be provided and disposed at equal distances apart, so as to cover substantially the entire periphery of the article to be ornamented, there being shown herein four of such rollers disposed in pairs opposite to each other. The journals of the die-rollers in the lower brackets A² may be held in suitable relation to each other by means of an angle-iron B²,

mounted at the angle of the bracket and adjustably secured by means of a set-screw B³. These rollers are each provided upon their shafts with bevel-gears B⁴ at the opposite sides thereof, said gears meshing with similar gears upon the adjacent rollers disposed at an angle thereto. When the upper roller B is rotated, the gears at the opposite sides thereof mesh with the gears upon the upper face of the side rollers, thus driving those rollers simultaneously in the same direction as the upper roller, while the bevel-gears upon the under face of the side rollers mesh with corresponding gears upon the lower roller, thus carrying all of the rollers and the dies thereon in the same direction to feed the work during the ornamenting action.

For the purpose of supporting the die-blocks C, which may be of any desired construction, size, or configuration necessary for the work to be performed, a novel construction of chuck is illustrated in Fig. 3, the dies being there shown as provided with a concaved ornamented face and with a dovetailed base C', adapted to be engaged by a corresponding recess upon the opposite slidable chucks C², which are mounted upon a sleeve C³, provided with a longitudinally-extending key C⁴, which permits a reciprocation of the chuck members, while insuring their rotation with the sleeve. At the opposite side of these chuck members the beveled gears B⁴ are mounted upon the sleeve and key, so as to rotate these parts when driven. For the purpose of adjusting the chuck members an interiorly-threaded ring C⁵ is secured to each of the gears and rotatable thereon—for instance, by means of set-screws C⁶, passing through apertures in the gears and entering a circumferential groove in the ring C⁵, Fig. 5. The ring is also provided with a series of wrench-holes C⁷ to permit the application thereto of a spanner-wrench interposed between the gear and chuck, whereby the rings may be rotated for the purpose of adjusting the chucks toward and from each other, and thereby clamping or releasing the dies C, carried by the chucks. As shown in Fig. 1, the material D to be ornamented is introduced between the dies at their point of intersection, so that the ornamenting-surfaces cover substantially the entire periphery of the work and produce thereon a radial pressure toward the center thereof and a pressure tangential to the center upon lines parallel and radial, such tangential lines intersecting each other to produce a resultant radial pressure toward the center, as if the entire periphery of the work were compressed radially.

In the operation of the machine the material D is introduced between the rotating dies and is fed by them while being ornamented by the compression hereinbefore described, so that all of the periphery of the material D is simultaneously engaged by the dies, and

owing to the resultant radial compression toward the center thereof any splitting of the wood or material is prevented, while each of the dies resists the pressure of its opposite member and by their joint action produce an ornamentation of equal depth upon all the periphery during a single operation of the machine.

The construction of frame here disclosed provides a rigid, simple, and efficient means for mounting the assemblage of dies illustrated, while the construction of chuck permits these dies to be removed and replaced without difficulty by the simple use of a wrench and without disconnecting any of the driving parts of the apparatus. It also permits the use of large gears by which a direct meshing between the die-rollers is secured, thus effecting the necessary simultaneous operation of each of the dies and requiring the minimum of power to effect the same.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described our invention and set forth its merits, what we claim, and desire to secure by Letters Patent, is—

1. In an ornamenting apparatus, a plurality of dies disposed at equidistant points to embrace substantially equal portions of practically the entire periphery of an article, and means for rotating said dies simultaneously in the same direction to effect a radial and tangential pressure toward the center of the work, the tangential lines of pressure from one die intersecting those from another to produce a resultant radial compression toward the center of an article.

2. In an ornamenting-machine, more than two dies disposed to embrace substantially equal portions of practically the entire periphery of the work to produce a compression thereof radially and tangentially to the center of the work, the tangential pressure from one die intersecting that from its associates to produce a resultant radial pressure toward the center, and means for simultaneously rotating said dies in the same direction.

3. In an ornamenting-machine, two sets of opposing dies disposed opposite to each other and having substantially equal opposing surfaces disposed equidistantly to engage the periphery of the work, and means for simultaneously rotating each of these dies in the same direction.

4. In an ornamenting-machine, two sets of opposing dies disposed at a right angle to each other and having substantially equal opposing surfaces disposed equidistantly to engage the periphery of the work, gears carried by each of the dies and meshing with an adjacent die, a driving-shaft for operating one of said dies, and an annular frame and angular brackets extending within the same toward the center

for supporting said dies in vertical and horizontal planes.

5. In an ornamenting-machine, two sets of dies disposed oppositely to each other, gears carried by each of the dies and meshing with an adjacent die, a driving-shaft for operating one of said dies, an annular frame and angular brackets extending within the same toward the center for supporting said dies in vertical and horizontal planes, sliding chucks carried by a rotatable member connected to said gears, and means for adjusting said chucks toward and from each other.

6. In an ornamenting-machine, a driving member, independent chuck members slidably mounted thereon to rotate therewith, and independent adjusting means for each chuck member rotatably mounted upon a part carried by said driving member in its rotation.

7. In an ornamenting-machine, a driving member having a key thereon, opposite chuck members independently slidable upon said key and provided with an exteriorly-threaded hub, and independent adjusting-rings at the opposite sides of said chuck rotatably mounted and each provided with interior threads to engage one of the chuck members.

8. In an ornamenting-machine, a driving member having a key thereon, opposite chuck members slidably mounted upon said key and provided with an exteriorly-threaded hub, driving-gears carried by the rotatable member at opposite sides of the chuck, interiorly-threaded rings rotatably carried upon each of said gears and provided with wrench-holes therein, and a threaded inner face upon said rings to engage said chucks.

9. In an ornamenting-machine, a driving member having a key thereon, opposite chuck members slidably mounted upon said key and provided with an exteriorly-threaded hub, driving-gears carried by the rotatable member at opposite sides of the chuck, interiorly-threaded rings rotatably carried upon each of

said gears and provided with wrench-holes therein, a threaded inner face upon said rings to engage said chucks, and a screw mounted in an aperture in said gears and having its point disposed within a circumferential groove carried by said ring.

10. In an ornamenting-machine, a plurality of opposing die-rollers having segmental die-faces disposed at equidistant points to embrace substantially equal portions of practically the entire periphery of the work, and means for simultaneously rotating said rollers to effect a radial and tangential compression toward the center of the work, said tangential compression extending for equal spaces upon both sides of the radial line of pressure from an associated roller to produce a resultant radial compression toward the center of the work.

11. In an ornamenting-machine, means constructed and arranged to embrace substantially equal portions of practically the entire periphery of an article to be ornamented and to compress the same upon radial and tangential lines toward its center, said tangential lines of compression intersecting each other to produce a resultant radial compression.

12. In an ornamenting-machine, means constructed and arranged to embrace substantially equal portions of practically the entire periphery of an article to be ornamented and to compress the same upon radial and tangential lines toward its center, said tangential lines of compression intersecting each other to produce a resultant radial compression, and means for feeding the article during the compressing operation.

In testimony whereof we affix our signatures in presence of two witnesses.

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