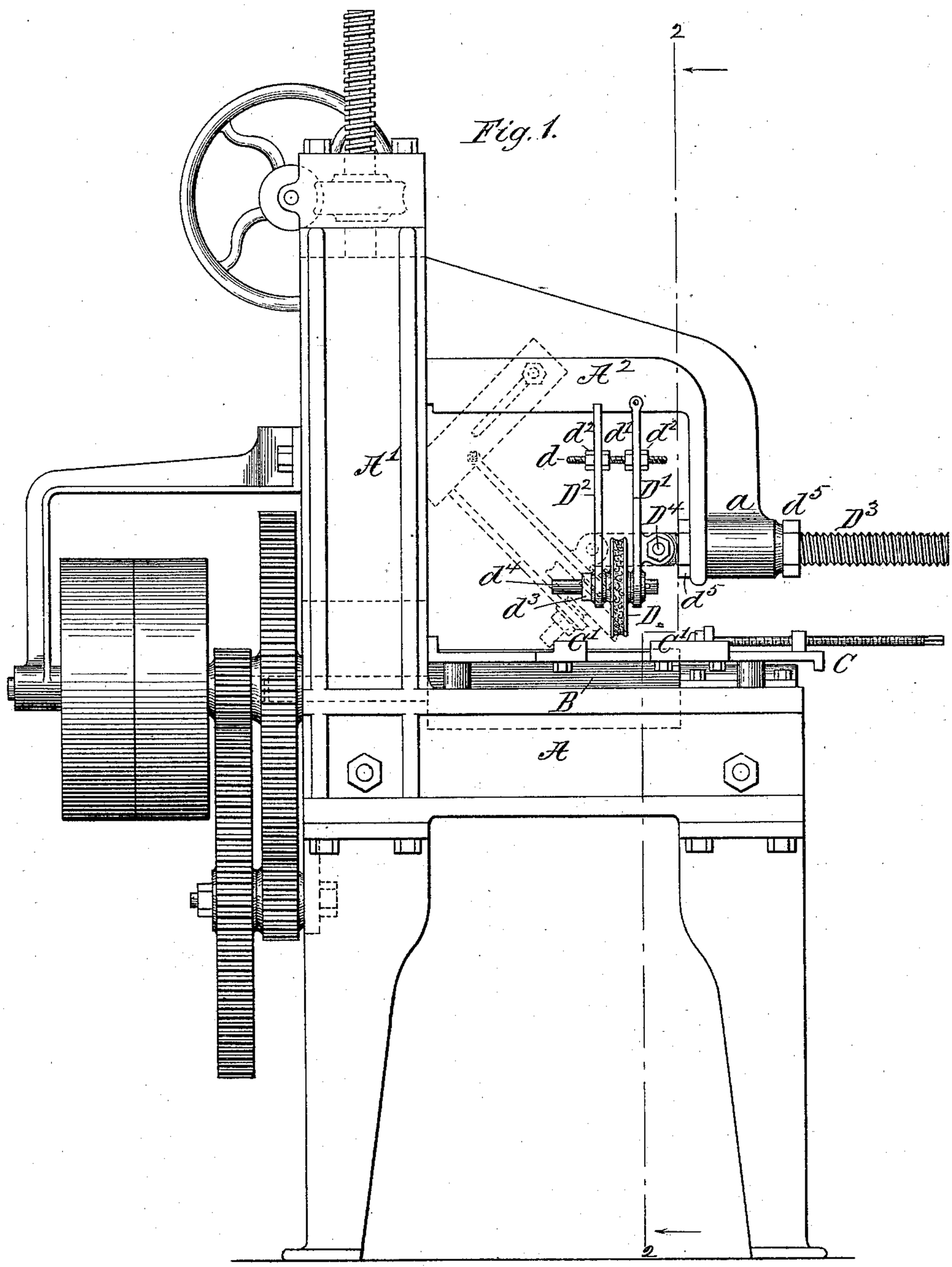
(No Model.) 4 Sheets—Sheet 1.

S. L. DAVIS.

WOOD DECORATING MACHINE.

No. 545,059. Patented Aug. 27, 1895.

Fig. 1.



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WOOD DECORATING MACHINE.

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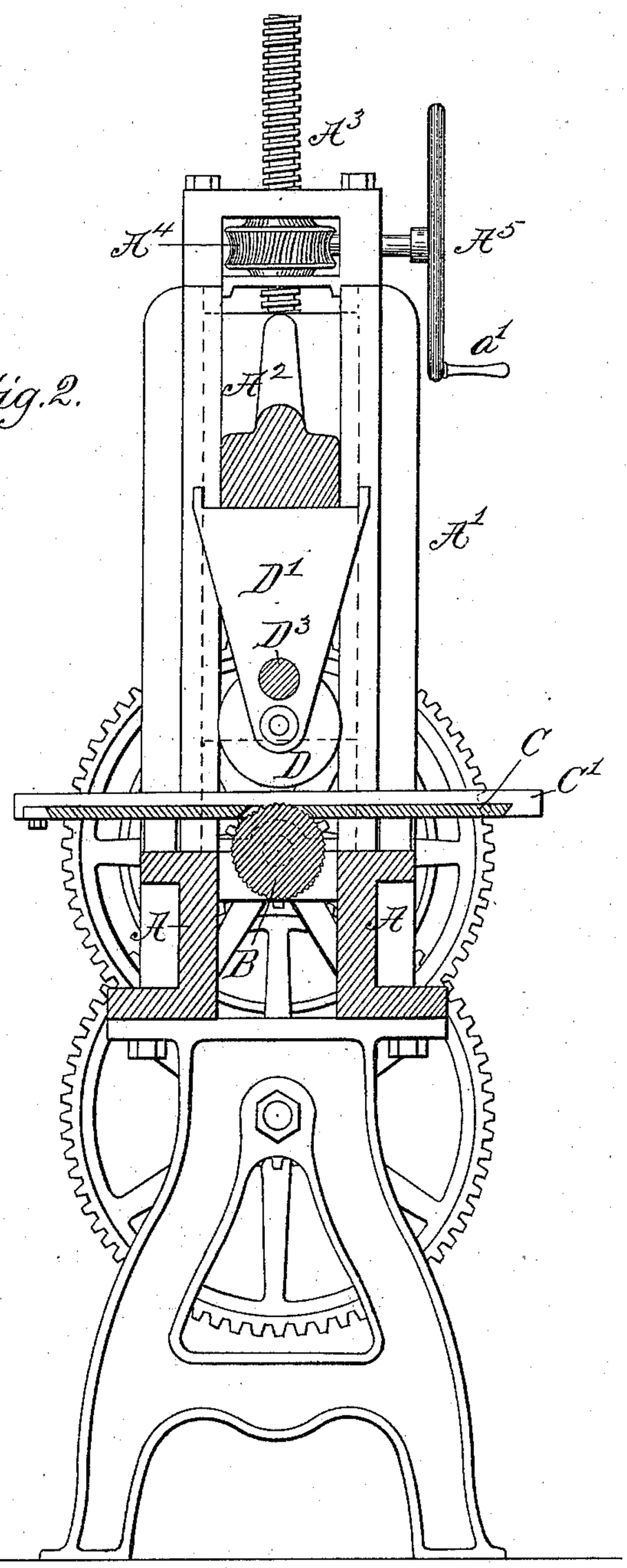
Fig. 2.



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WOOD DECORATING MACHINE.

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Fig. 3.

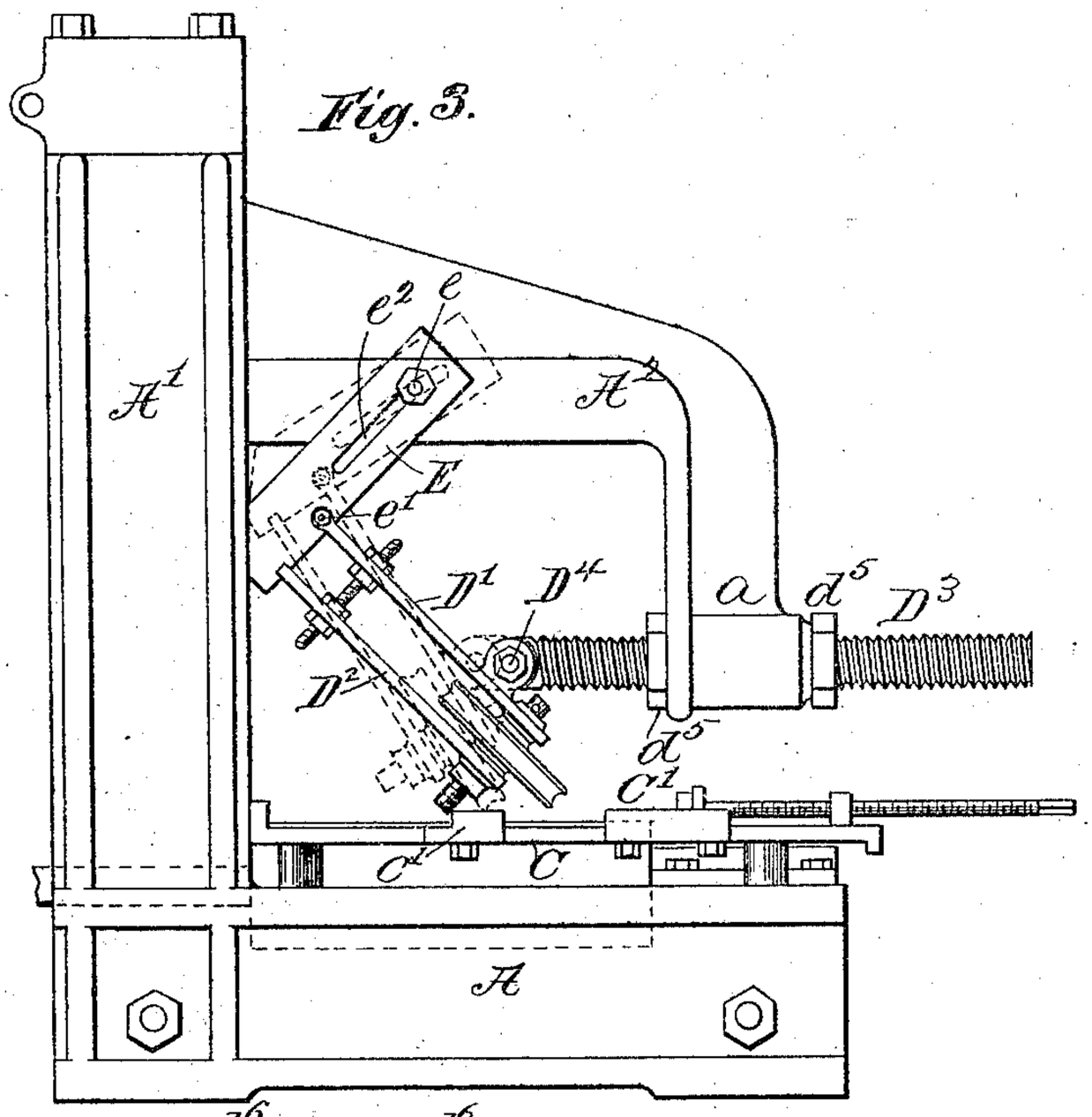

Fig. 4.

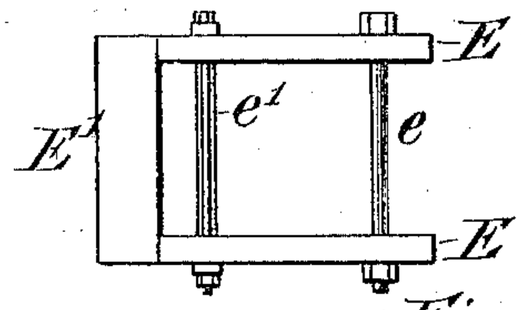

Fig. 5.

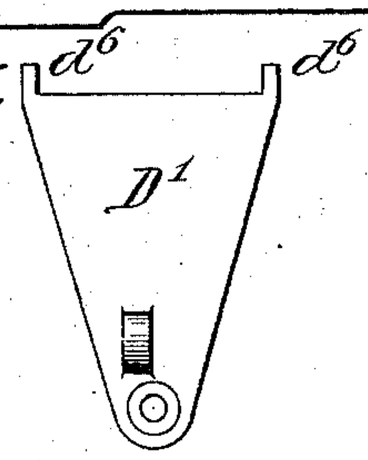

Fig. 6.

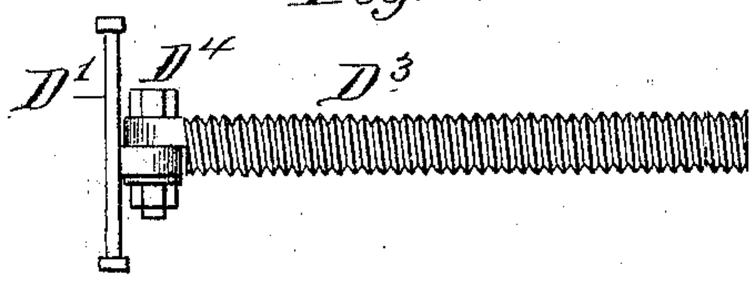

Fig. 7.

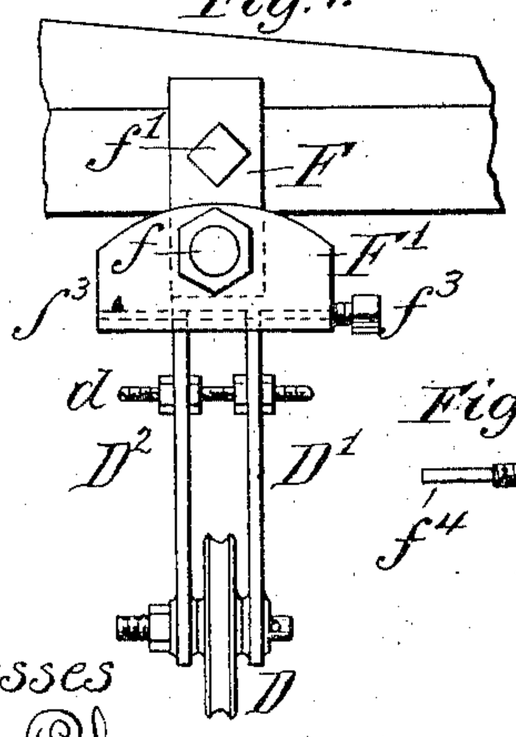

Fig. 7a.

Fig. 8.

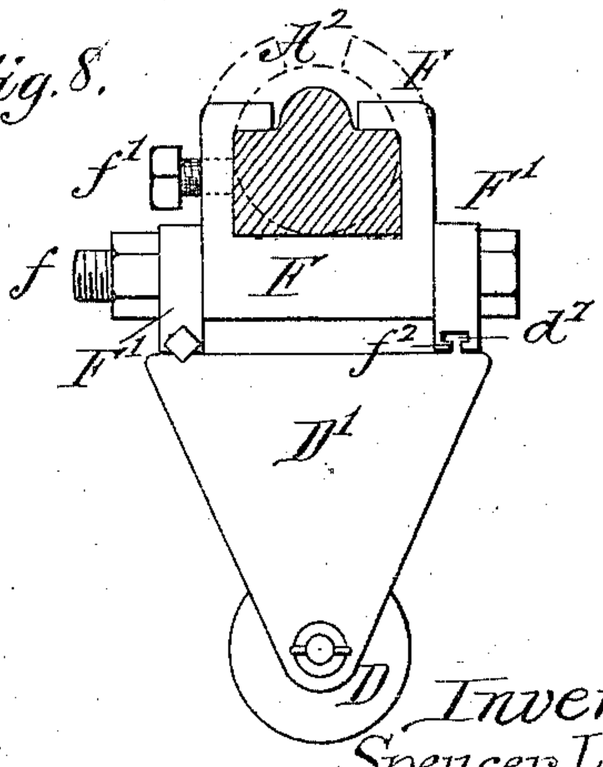

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Fig. 9.

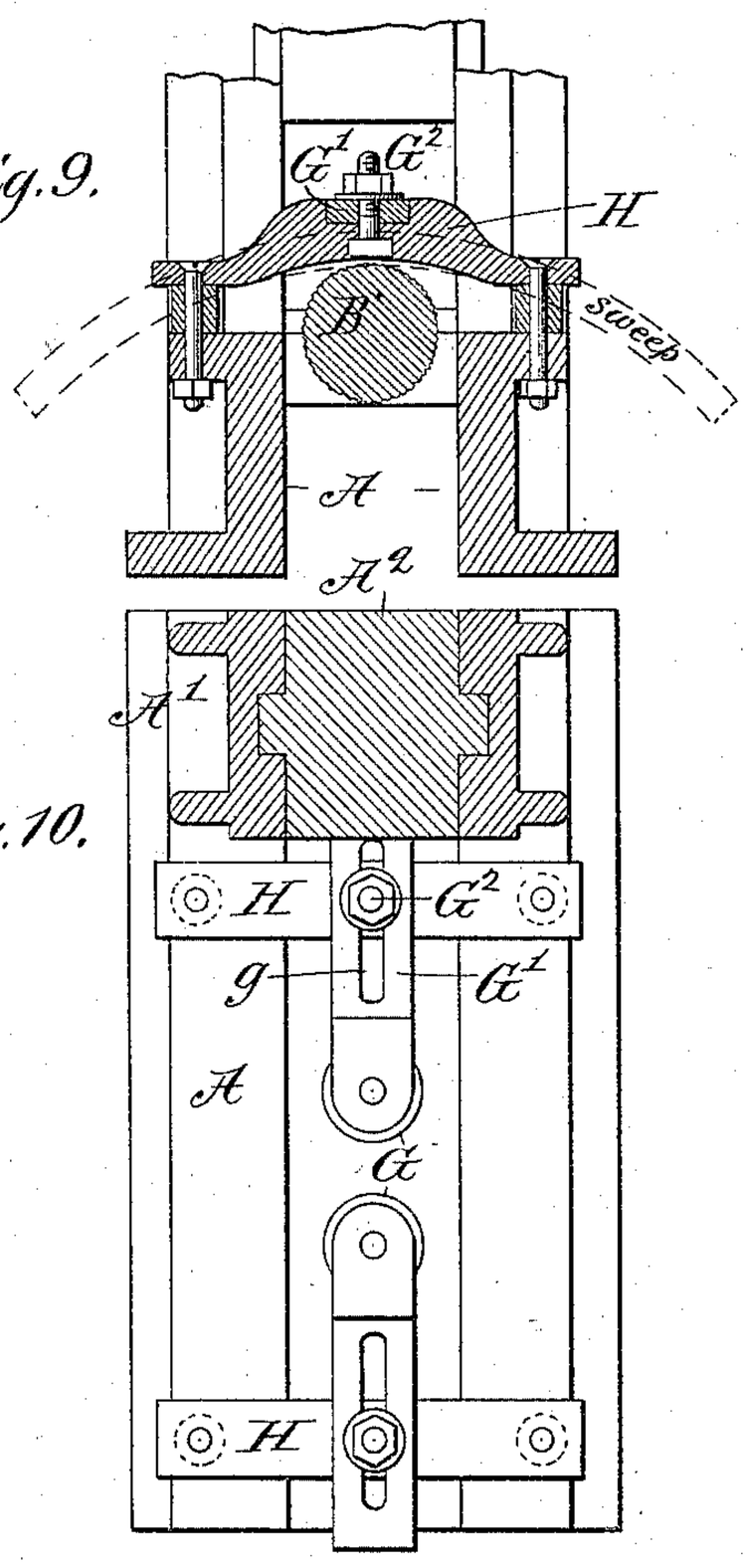
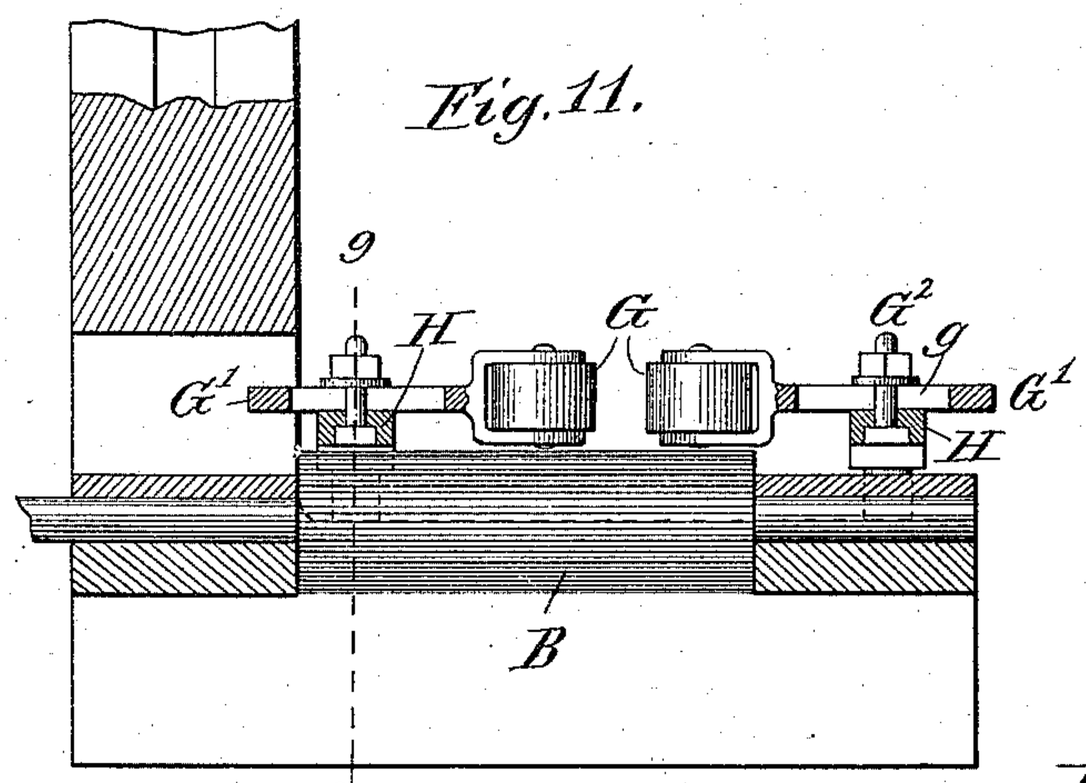


Fig. 10.

Fig. 11.



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UNITED STATES PATENT OFFICE.

SPENCER L. DAVIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AMERICAN WOOD DECORATING MACHINE COMPANY, OF NEW YORK, N. Y.

WOOD-DECORATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,059, dated August 27, 1895.

Application filed March 28, 1893. Serial No. 467,954. (No model.)

To all whom it may concern:

Be it known that I, SPENCER L. DAVIS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wood-Decorating Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its primary object to provide a new and improved construction in devices for the support of the roller-dies of wood-decorating machines at an angle to the bed or bed-roller, and includes in its scope improved means by which the die-roll may be set at various angles, and by which dies of various widths may be accurately and securely held in the die-holder.

To these ends the invention consists in the several matters and combinations hereinafter set forth, and pointed out in the appended claims.

In the accompanying drawings, which illustrate particular forms of my invention, Figure 1 is an end elevation of a machine containing my improvements. Fig. 2 is a transverse vertical section in the indirect line 2 2 of Fig. 1. Fig. 3 is an end view of the bed and upright portion of the machine, illustrating the roller die-holder in various positions of adjustment. Figs. 4, 5, and 6 are detached details of the machine, as shown in Figs. 1, 2, and 3. Fig. 7 is an elevation of a die-holder or die-holding bracket of modified form. Fig. 7ª is a detached view, in side elevation, of one of the adjusting-screws for the pivot-bars and its block. Fig. 8 is a side elevation of said die-holder of Fig. 7 and of the arm of the machine-frame upon which it is mounted, the latter being shown in section. Fig. 9 is a vertical section in the line 9 9 of Fig. 11, showing the form of lateral guides for the stuff being decorated, adapted to be employed when the table for straight stuff is removed and in the ornamentation of the outer surface of a "sweep." Fig. 10 is a horizontal section of the upright and a top view of the bed-roller and roller-guides for sweep work. Fig. 11 is a vertical section through the frame in the axis of the bed-roller, showing the bed-roller and roller-guides for sweep work in side elevation.

A represents a horizontal frame for the support of the shaft of the bed-roller, and A′ an upright proceeding from the frame A for the support of the vertically-adjustable overhanging arm A^2, which has a depending outer extremity *a*.

B is the bed-roller, mounted beneath the arm A^2 in the usual way, upon a shaft which is slowly rotated, either by the gearing shown and usually employed or by other gearing suitable for the purpose. Said bed-roller B has its upper surface elevated above the upper surface of the frame A, and a removable table C is employed for the support and guidance of straight stuff to be operated upon, said table having attached thereto the usual adjustable guide-bars C′ C′, against one or both of which the stuff laterally bears in its movement through the machine.

D represents a decorating-roller or roller-die by which a desired impression is made in the wood surface as the latter passes through the machine upon the bed-roller and beneath said roller-die. Roller-dies for use in the same machine are of various widths, according to the width of the required decoration, and the support for the roller-die here shown is correspondingly adjustable. As illustrated herein, said support consists primarily of the two arms D′ D^2, seen in edge view in Figs. 1, 3, and 7, in top view in Fig. 6, and in side view in Figs. 2, 5, and 8. These supporting-arms D′ D^2 are shown in the form of plates which embrace the hub of the roller-die D between their ends, and sustain the shaft on which said die rotates. In the operation of sustaining the roller-die with its axis parallel to that of the bed-roller B, these arms D′ D^2 bear at their upper ends against the under horizontal surface of the arm A^2. An adjustable cross-bolt *d*, with appropriate clamp-nuts *d′* d^2 arranged to bear respectively on the inner and outer surfaces of the arms D′ D^2, holds said arms parallel and at a suitable distance apart to properly confine

the hub of the roller-die. In this it may be aided by a nut d^3 on one end of the headed shaft d^4 upon which said roller-die is mounted. These roller-die supporting-arms D′ D² are sustained and adjusted laterally to the proper position in the machine by means of a screw D³ passing through the lower depending end *a* of the arm A², and provided with set-nuts d^5 on the opposite sides of said arm.

One branch of my invention has especial reference to the adaptation of the roller-die to be set and sustained in an inclined position and to its further adaptation to a variation of its inclination, in order that an inclined surface of a wood strip may be operated upon without the use of a shoe constructed to bring said surface to a horizontal. For this purpose the roller-die support has adjustable connection or bearing engagement with the inner end of the horizontal adjusting-screw D³—as, for example, indicated in Figs. 1 and 3—and means are provided, supplemental to the arm A², to immediately take the thrust or upward pressure transmitted to the frame from the roller-die. Such supplemental means, as shown in dotted lines in Fig. 1, in full and dotted lines in Fig. 3, and in the detached Fig. 4, consist in the two bars E E, arranged with their straight lower edges in an inclined position, and in bearing contact with the upper ends or edges of the arms D′ D². To hold the bars E E in a given inclined position, their more elevated ends are bolted to the arm A² by a preferably through-bolt *e*, and their opposite and lower ends may bear against the frame. Said bars E E may be desirably connected together to secure exactly corresponding inclination of both by a cross-bar E′ joining their lower ends, as shown in the detached Fig. 4. The arm D′ is fastened to the bars E E by means of a bolt *e*′, which passes through said bars and through ears d^6, formed on the upper angles of said arm D′ and extending upwardly outside said bars E E to receive said bolt. To bring the arms D′ D² and the roller-die to an inclination in which they stand at right angles to the under edges of the bars E E, said arms are rotated on the pivot D⁴ by which they are connected with the adjusting-screw D³, and desirably a set-nut on said pivot is tightened to assist in holding them at this inclination.

By providing the bars E E with slots e^2 for the passage of the bolt *e* a variable inclination may be given to said bars to suit a desired inclination of the roller-die. A series of bolt-holes may be employed in the arm A² and a series of bolt-holes may be provided in the bars E E, instead of slots e^2. A proper inclination of the roller-die having been secured to meet the inclined surface of a molding or panel to be impressed, the bed-guides C′ C′, or the outer one thereof, will be adjusted to laterally hold the stuff in place while being impressed, the under surface of the stuff resting meantime flatly upon the corrugated bed-roller B. The inclination of the roller-die, therefore, obviates the necessity of placing the molding-strip in a shoe to give the strip a desired inclination to meet the face of the roller-die in its vertical position. Other forms of essentially similar devices for supporting the roller-die in an inclined position are shown in Figs. 7 and 8, wherein a slide F is fitted to the horizontal arm A² of the frame, and the die-supporting arms D′ D² are connected at their upper ends with bars F′ F′, which are pivoted on an axis *f* to said slide F. In this construction the arm A² may be either rectangular, T-shaped, or cylindric, as indicated in Fig. 8 by full or dotted lines, and the slide F may be held at a given position thereon by a set-screw *f*′ or by any other device adapted for the purpose. For the connection of the arms D′ D² with the pivoted bars F′ said bars may be provided in their lower edges with longitudinal T-shaped grooves f^2 and the arms D′ D² with corresponding T-shaped projections d^7. Said arms D′ D², whatever their distance apart, should be so adjusted in the bars F′ that the pivot *f* will be in the plane of the roller-die, in order that the thrust may come directly against said pivot, and thus obviate a tendency to a change of the inclination of the roller-die under the pressure imposed upon it when the machine is at work. To hold the arms D′ D² in such or a similar adjustment, set-screws f^3 may be threaded into the T grooves, and detachable pieces of metal f^4, (shown in the detail, Fig. 7ª,) of suitable lengths, may be employed within the T grooves between the set-screws and the T projections on the arms. Other means for the same purpose may obviously be employed.

It is a characteristic of both forms of devices here shown for the support of the roller-die in an inclined position that they are adapted to be also employed to sustain the die in a vertical position. In the construction shown in Figs. 1, 2, and 3, for example, the bars E E may be removed or disused and the same arms D′ D² arranged to bear directly against the under surface of the arm A², and in the construction shown in Figs. 7 and 8 the bars F′ may be swung to the vertical or to any desired inclined position on the pivot *f*. The nut f^5 on said bolt *f* may be made to clamp the bars F′ firmly to the slide F, so as to retain them at any desired inclination, or other means may be employed for this purpose.

It will be understood that the arm A² is vertically adjustable on the upright A′ in the usual manner and by the usual means of a screw A³, having a worm-nut A⁴ operated by a worm-shaft A⁵, provided with a crank *a*′, this adjustment of said arm A² being to bring the surface of the roller-die into suitable proximation with the surface of the bed-roller to accommodate a given thickness of molding-stuff to be impressed.

Another branch of the invention has refer-

ence to the adaptation of the machine to operate upon the outer surfaces of "sweeps" or curved pieces of wood, and my improvements relating to this feature are mainly shown in Figs. 9, 10 and 11.

The table C shown in Figs. 1, 2, and 3 is removable, as stated, and being taken off the machine the bed-roller B projects above the main frame A. A sweep may therefore rest upon the bed-roller with its convex surface upward, as shown by dotted lines in Fig. 9. To guide the sweep properly guide-rollers G are adjustably supported over the roller-bed B by some suitable means. As such means, they are here shown as being mounted in the forked ends of arms G′, which extend lengthwise over the axis of the bed-roller, and are adjustably fastened to fixed cross-bars H H, which are bolted at their ends to the main frame A, as more plainly illustrated in Figs. 9 and 10. As one form of construction by which the guide-rollers G G may be adjusted toward and from each other, their supporting-bars G′ are shown as being flat, and providing each with a slot *g*, through which passes a clamp-bolt G^2 that engages the subjacent bridge H. Other familiar forms of devices or means for such adjustment of these guide-rollers may obviously be employed instead of those shown without departure from the invention, and, generally, various changes and modifications in the construction of the devices shown in the drawings may be made within the scope of the appended claims.

It is to be understood that while my invention is here illustrated in connection with a particular type or form of wood-decorating machines, it may be employed in connection with other forms of such machines, and particularly that any transverse part arranged over the bed-roller and affording direct or indirect attachment for a roller-die support will answer to the arm A^2 of the present description and claims.

I claim as my invention—

1. In a wood decorating machine, the combination with the arm A^2 having the depending portion *a*, of a roller die support adapted to be set in an inclined position and sustained at its upper end from said arm, and an adjusting device, as D^3, applied to the part *a* and arranged to bear laterally against the lower end of said support.

2. In a wood decorating machine the frame of which is provided with an arm overhanging the bed, the combination with said arm, of roller die supporting arms and a connecting part uniting the upper ends of the die-supporting arms with the overhanging arms, said connecting part being pivoted to the overhanging arm and bodily movable lengthwise of the latter, substantially as set forth.

3. A wood decorating machine comprising a standard, an overhanging arm supported by said standard, an adjusting screw working horizontally through the outer end of said arm, and supports for a decorating roller connected to the overhanging arm and also connected laterally to the adjusting screw, substantially as set forth.

4. A wood decorating machine comprising a standard, an overhanging arm vertically adjustable on said standard, an adjusting screw working horizontally through the outer end of said arm, and supports for a decorating roller pivoted laterally upon said adjusting screw and also having pivotal and laterally adjustable connection with said arm, substantially as set forth.

5. In combination with the arm A^2 of a wood decorating machine, a roller die support consisting essentially of two arms which embrace the hub of the die and are adjustable toward and from each other, and two other arms rigidly connected with the first mentioned arms which embrace the arm A^2 and are adjustably secured thereto, whereby said die support is adjustably connected with the arm A^2 of the machine and the die may be variously inclined.

6. In combination with the arm A^2 and the die support of a wood decorating machine, an adjustable device connecting the die support with the arm, and an adjusting screw connected with the arm and arranged to engage the upper inclined side of the die support in its various inclinations whereby the pressure on the die is met from two or more directions.

7. The combination with the horizontal arm A^2 of a wood decorating machine, a slide fitted to said arm, bars pivoted to said slide, and a die support attached to the bars, means being provided whereby the bars may be held at a required inclination.

8. In combination with the arm A^2, the slide F, the pivoted bars F′ provided with grooves at their lower margins, the die supporting arms D′ D^2 having projections fitted to said grooves, and means for holding said arms D′ D^2 at a required position with respect to the arms F′, means for holding the slide F in a required position on the arm A^2, and means for holding the arms F′ at a required inclination on the pivot, substantially as described.

9. In a wood decorating machine, the combination with the bed frame of a machine having a removable work-supporting table, of a bed roller projecting above said frame and auxiliary guide arms having curved engaging surfaces adapted to be adjustably secured so as to extend toward each other and engage the material operated upon at points opposite each other and above the bed roller, when the table is removed, substantially as described.

10. In a wood decorating machine, the combination with the bed frame of a machine having a removable work-supporting table,

of a bed roller projecting above said frame, and auxiliary guide arms provided with guide rollers and adapted to be secured so as to extend toward each other and engage the material at points opposite each other and above the bed roller, when the table is removed, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

SPENCER L. DAVIS.

Witnesses:
M. E. DAYTON,
C. CLARENCE POOLE.