

Dec. 6, 1938.

O. D. KING

2,138,865

DECORATING APPARATUS

Filed June 24, 1937

5 Sheets-Sheet 1

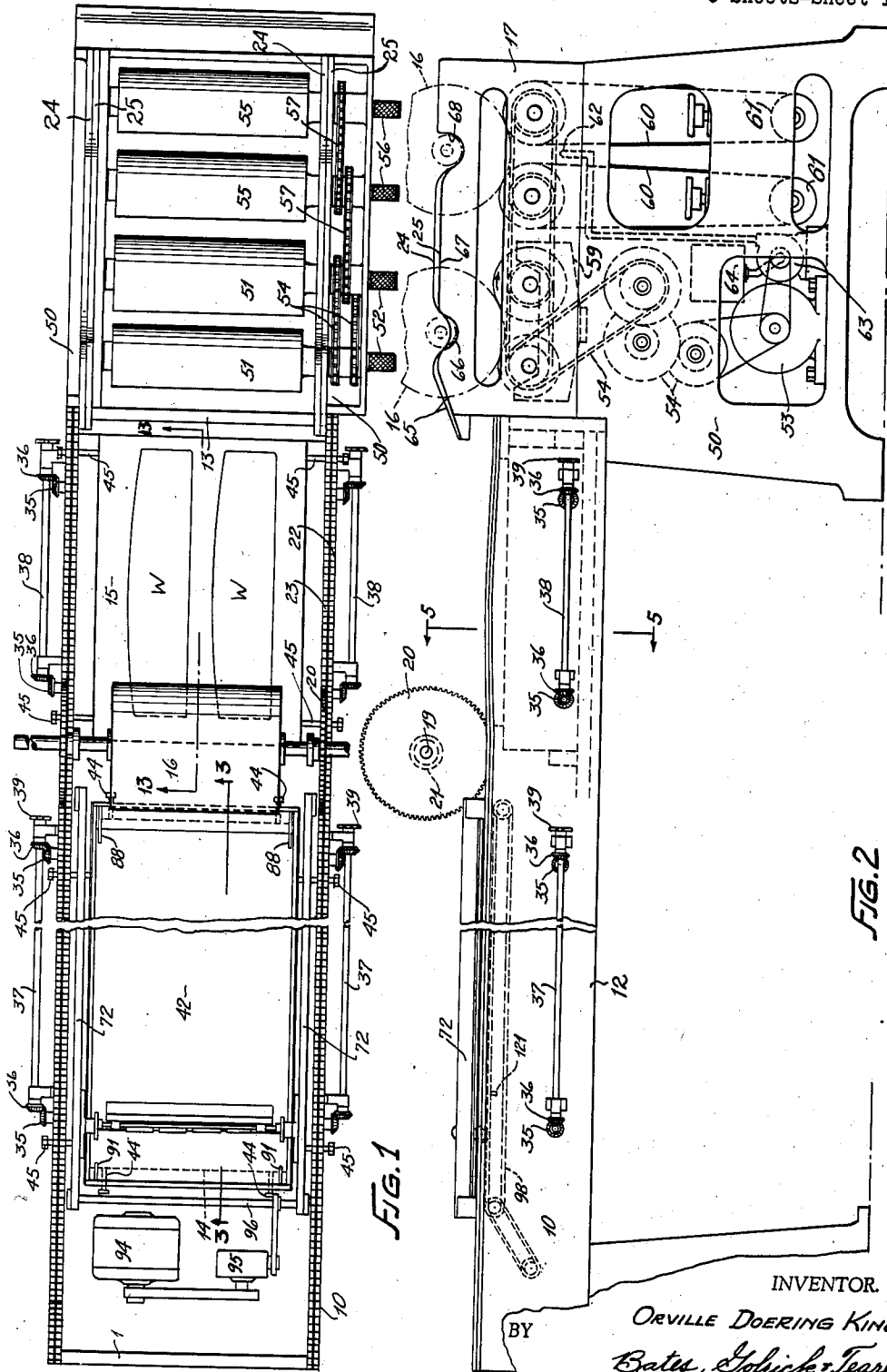


FIG. 1

FIG. 2

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5 Sheets-Sheet 2

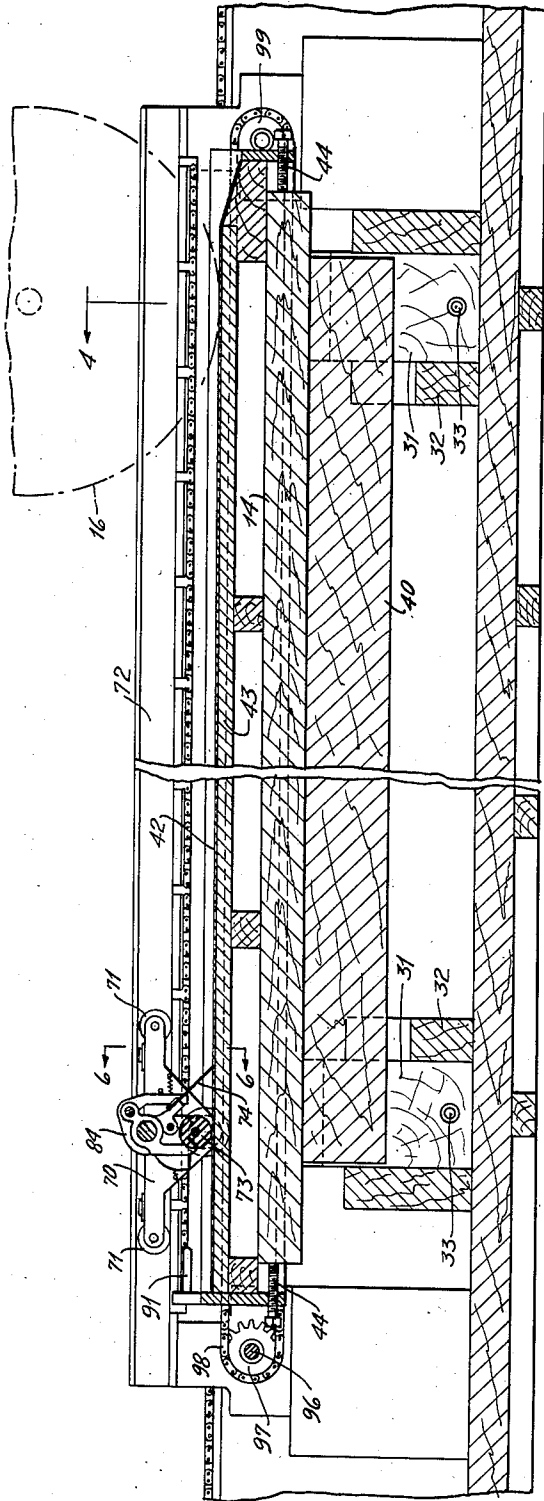


FIG. 3

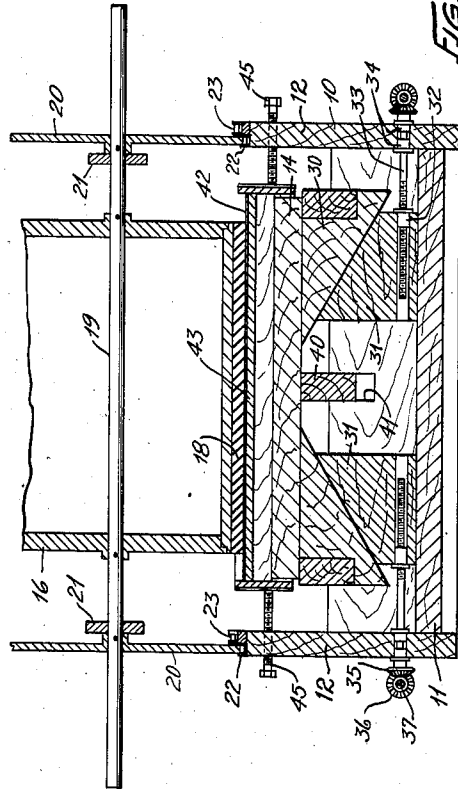


FIG. 4

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5 Sheets-Sheet 3

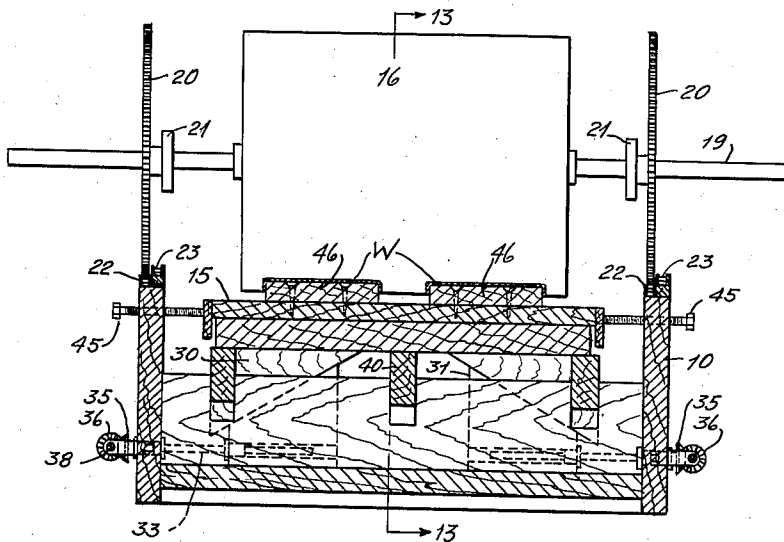


FIG. 5

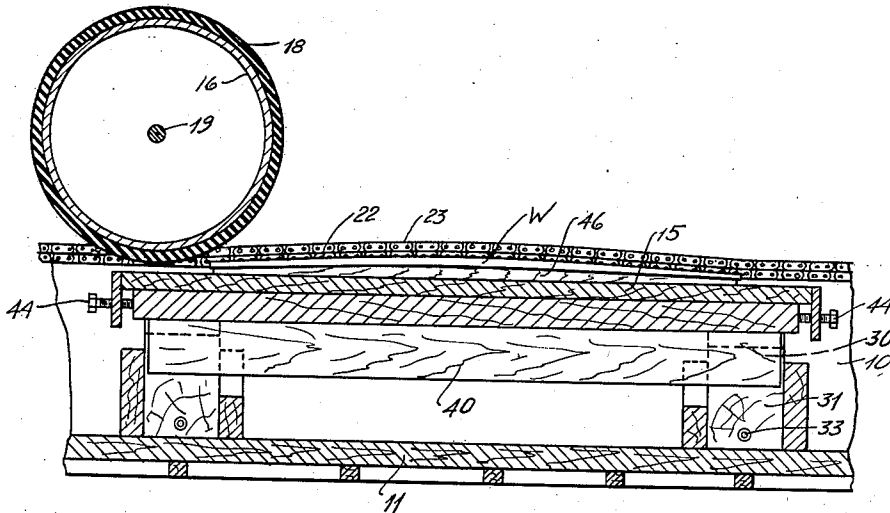


FIG. 13

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5 Sheets-Sheet 4

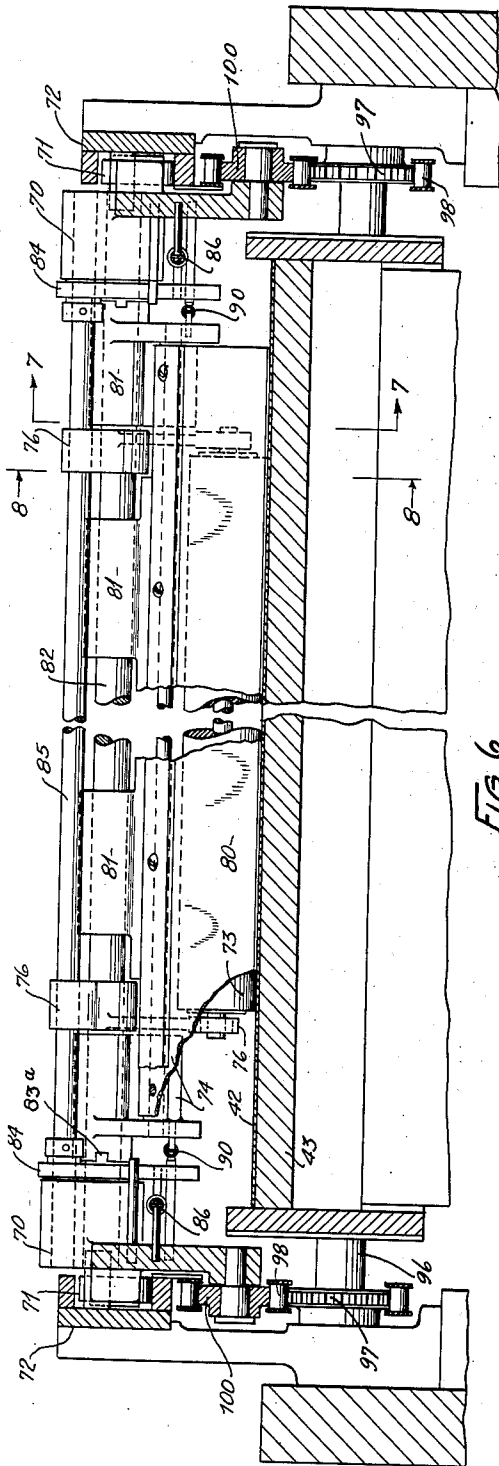


FIG. 6

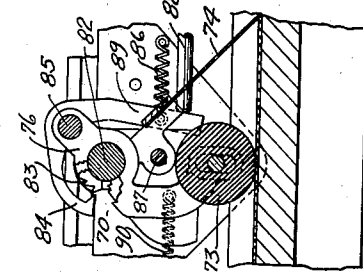


FIG. 8

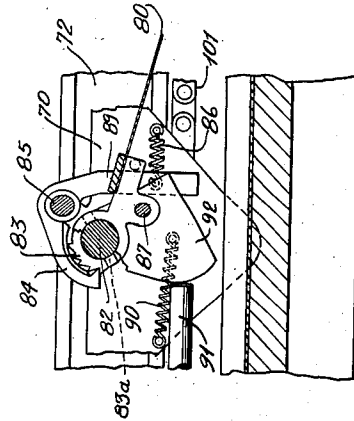


FIG. 9

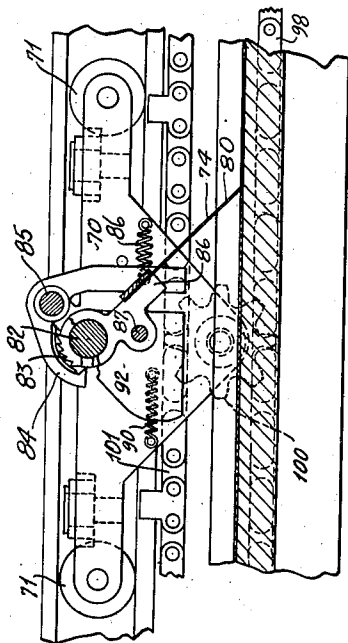


FIG. 7

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5 Sheets-Sheet 5

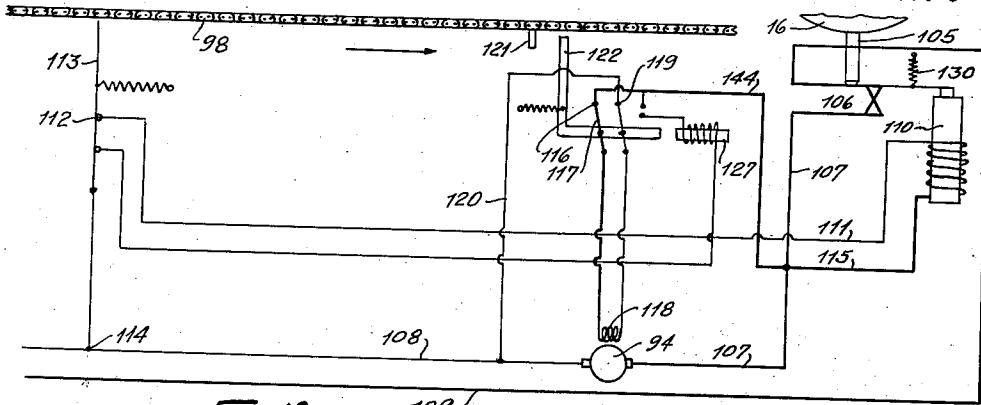


FIG. 10

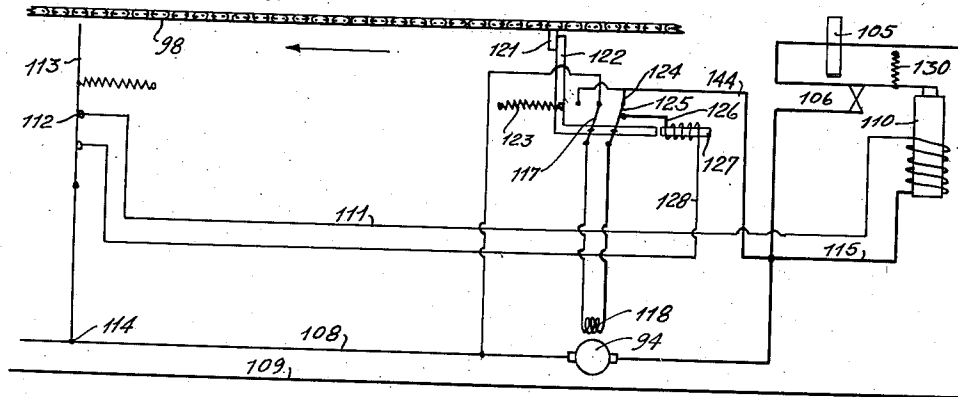


FIG. 11

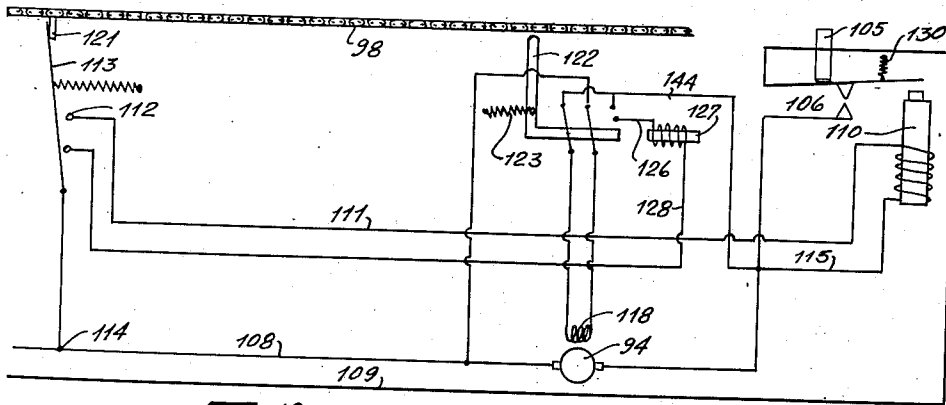


FIG. 12

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# UNITED STATES PATENT OFFICE

2,138,865

## DECORATING APPARATUS

Orville Doering King, Dayton, Ohio, assignor to  
Oxford Varnish Corporation, Detroit, Mich., a  
corporation of Michigan

Application June 24, 1937, Serial No. 150,059

8 Claims. (Cl. 101—252)

This invention relates to a decorating apparatus, and especially to a device for insuring the registration of a design, such as an imitation wood grain, on an article or articles to be decorated.

5 This, therefore, is the general object of this invention. The present invention is an improvement of that shown in my copending application for Letters Patent, Serial No. 74,850, filed April 17th, 1936.

10 A more specific object of this invention is to provide a device for supporting an inked pattern, and one or more workpieces in definite relation, one to the other, together with a guide for a transfer roll, to enable a design taken from the  
15 pattern to be applied to the workpieces in accurate registration therewith consequent upon the rolling of the transfer roll across the pattern and workpieces consecutively, even though the surface to be decorated deviates from a common plane.

20 A further object of this invention is to provide a registering device, which will not only support a pattern and one or more workpieces in definite relation to each other, but which will also support  
25 a transfer roll for rolling action, first across the pattern and then across the workpiece, together with a pattern inking and scraping mechanism arranged to act automatically without interfering with the manual operation of the transfer  
30 roll.

Another object of the present invention is the provision of a manually operable graining device, which will withstand hard usage, and which, at the same time, may be manufactured at comparatively low cost, and wherein color may be applied to a pattern by a power operated mechanism and transferred from the pattern to an article or articles to be decorated by a continuous movement of a manually operable transfer roll  
35 in such a manner that accurate registration of the design will be made on the work, and wherein the contact pressure between the offset printing roll and the pattern, as well as the contact pressure between the roll and the workpieces, may be  
40 adjusted, to the end that impressions made on the workpieces will be true and clear in detail.

A further object of this invention is to provide a graining or like device having an offset printing roll and a pattern, a workholder and a roll cleaner, with a guiding mechanism to guide the offset  
45 roll across the pattern and in operative engagement with the work and the roll cleaner, in the order named and then in a reverse direction and out of operative engagement with the work and  
50 pattern to a starting position.

A still further object of the present invention is the provision of a graining mechanism having a travelling offset roll with a power-operated pattern inking mechanism under the control of the  
5 roll.

Another object of the present invention is to provide a work support for positioning surfaces to be decorated, which depart from a common plane, by a transfer printing roll, and which support is provided with a guide to guide the roll  
10 to cause its surface to follow the surface of the workpiece while the roll is being rolled thereacross, and in such a manner as to prevent distortion of the design and to apply a transfer to the design in accurate registration therewith, so  
15 that inlays and the like may be accurately reproduced on articles, the surfaces of which deviate from a common plane. The relationship between the guide rails or rack and the surface to be decorated is an important feature of the present  
20 invention, inasmuch as it aids materially in the registration of the design on articles, the surface of which depart from a common plane.

Other objects of the present invention will become more apparent from the following description, reference being had to a preferred embodiment of the invention illustrated in the accompanying drawings. The essential and novel features of the invention will be set forth more fully in the claims.  
25

Referring now to the drawings, I have illustrated in Fig. 1 a plan view of a graining mechanism embodying a preferred form of my invention; Fig. 2 is a side elevation of the mechanism illustrated in Fig. 1; Fig. 3 is a fragmentary, longitudinal vertical section of the device illustrated in Fig. 1, the plane of the section being indicated by the line 3—3 on Fig. 1; Figs. 4 and 5 are substantially vertical, transverse sections, the planes of the sections being illustrated by the lines 4—4  
35 and 5—5 on Figs. 2 and 3, respectively; Fig. 6 is a transverse sectional detail, taken substantially along the lines 6—6 of Fig. 3; Figs. 7 and 8 are sectional details, the planes of the sections being indicated by the correspondingly numbered lines  
40 on Fig. 6; Fig. 9 is a sectional detail, similar to Fig. 7, but illustrating certain of the parts in different positions; Figs. 10 to 12 inclusive are electrical diagrams, illustrating the electric circuits which control the pattern, inking and scraping  
45 mechanism; Fig. 13 is a fragmentary, longitudinal section, as indicated by the lines 13—13 on Fig. 5.

In general, my improved graining device comprises an elongated base, provided with the usual supporting legs. The opposite sides of the base  
55

are each provided with a pair of guide rails or toothed racks. These racks coact respectively with gears secured to a transfer roller, only one rack of each pair being used at the same time, as will hereinafter be more fully described. Guide rails may be used in place of the racks or in addition thereto, and the roll provided with suitable discs to coact therewith.

At one end and between the racks the base carries a table which supports a pattern adapted to be inked in the usual manner, and adjacent this table, in an end-to-end relation thereto is a second table which supports the workpiece or workpieces to be decorated. The gear and rack connection between the transfer roll and the base insures an accurate registration of the pattern or design on the work, when the transfer roll is rolled across the pattern and work in the order named.

Adjacent the work table is a transfer roll cleaning mechanism, similar to that shown in Patent No. 2,027,407, issued to my assignee, Oxford Varnish Corporation, January 14th, 1936. This present roll cleaner, however, is provided, at each side of its cleaning rolls, with a pair of guide rails, which coact with a pair of discs carried by the transfer roll and serve to guide the transfer roll across the cleaning mechanism, bringing it into contact with the cleaning rolls thereof, and then back across the cleaning mechanism while retaining the transfer roll out of contact with such cleaning mechanism.

The pattern table is provided with an inking and scraping mechanism which is controlled by the movement of the transfer roll and acts to spread a coating of ink over the pattern and then remove or scrape the excess ink from the pattern.

The arrangement of the various mechanisms is such that as the transfer roll is manually rolled across the pattern, the gears carried by the roll meshing with one set of toothed racks, the roll removes the inked design from the pattern. Continued movement of the offset or transfer roll across the work then transfers the design to the work, the toothed racks insuring accurate registration of the pattern on the work. During such transfer of the pattern to the work, a cam disc, carried by the roll, acts through suitable electric circuits to energize an electric motor and cause the pattern inking and scraping mechanism to re-ink the pattern and remove the surplus ink therefrom.

Continued movement of the transfer roll causes it to engage one set of guides of the roll cleaning mechanism and be guided first into cooperative relation with a cleaning mechanism and then with a drying mechanism where the roll is shifted axially into a position to coact with the second set of guides carried by the cleaning mechanism. These last-named guides serve to guide the roll on its return movement across and out of contact with the cleaning mechanism and onto the graining table and into cooperation with the second set of racks carried thereby. This set of racks guide the transfer roll across the work and pattern tables, while maintaining it out of contact with both the work and the pattern. After the roll has been moved to its original starting position, it is moved axially into cooperation with the first-mentioned set of racks and is ready to begin a second cycle of operation. During the period in which the roll is being cleansed and returned to its starting position, the decorated workpieces are removed and undecorated pieces substituted therefor.

Both the work table and the pattern table are supported for independent vertical adjustment relative to the base, to enable workpieces of various thicknesses to be decorated, but still more particularly to enable the pressure between the transfer roll and the pattern, as well as the pressure to the transfer roll and the work to be adjusted. The pattern table is likewise transversely and longitudinally adjustable to permit accurate registration of the pattern with the work.

Referring to the drawings, and especially to Figs. 1 to 4, the pattern and workholder support comprises an open box-like structure 10, having a flat bottom wall 11, together with side and end walls 12 and 13, respectively. This structure is supported by suitable supporting legs.

The base 10 supports a pattern table 14, a work table 15, and an offset or transfer printing roll 16, the latter being adapted to be rolled across first the pattern table, then the work table, and then the cleaner in one continuous movement, to transfer a design from an inked pattern carried by the pattern table to a workpiece or a plurality of workpieces carried by the work table and subsequently remove any ink remaining on the offset roll.

The offset or transfer roll 16 is provided with a gum or similar transfer surface 18, and is secured to a shaft 19. Rigidly secured to the shaft 19, at either end of the transfer cylinder, are gears 20 and discs or rollers 21. The gears 20 are arranged to selectively engage pairs of toothed racks 22 or 23, which are secured to the upper surfaces of the side walls 12 of the base 10. The external diameter of the gears is substantially the same as the diameter of the transfer cylinder. Thus, a true rolling action of the roll across the pattern and work supported by the base is insured. The rollers 21 selectively coact with guide rails 24 or 25, carried by the cleaning mechanism 17, as will be hereinafter more fully described. The ends of the shaft 19 project beyond the sides of the roll 16 and may be provided with suitable sleeves or handles, not shown, but which may be rotatably mounted on the shaft to facilitate the manual rolling of the transfer roll across the various units, and without interruption.

The pattern and the work supporting tables are both mounted in the base, so that they may be raised and lowered relative to the transfer roll 16. Each table rests on a plurality of pairs of wedge-like supporting members. As shown in Figs. 4 and 5, one member of each pair of wedge members, as, for instance, the member 30, is secured to its respective table 14 or 15, while the other member 31 thereof is mounted for transverse sliding movement in the base 10 between transverse guides 32 which are of sufficient height to coact with the upper wedge members 30 and restrain the respective table against longitudinal movement.

Lateral movement of the tables is prevented by longitudinally extending ribs 40 secured to respective tables and slidably mounted for vertical movement in ways 41 formed in the guides 32. This construction is such that consequent upon the movement of the wedge members 31, their respective tables will be raised or lowered, as desired, thus the pressure between the offset roll and either table may be readily adjusted.

The movable wedge members 31 which support each table, are connected for simultaneous adjustment. The wedges of one table are adjustable, independent of the wedges of the other table. As indicated in Fig. 4, I have secured to

each wedge member 31 a threaded sleeve 32. These sleeves are engaged by respective screws 33, which are rotatably mounted in respective side walls of the base. Axial movement of the screws, relative to the base, is prevented by collars 34 carried by the screws and coaxing with the base. Hence, consequent upon the rotation of a screw, its wedge will move transversely of the base, thus raising or lowering its table.

Each screw 33 is provided with a bevelled gear 35, which meshes with a corresponding bevel gear 36, carried, either by shaft 37 or 38. These shafts are journaled in bearings, carried by the base. The shafts 37 carry only gears which operate the wedge members 31 disposed beneath the pattern table 14, while the shafts 38 carry gears which operate the wedge members 31 disposed beneath the work-supporting table 15. The shafts 37 and 38 are each preferably provided with a hand wheel 39, so that they may be turned to enable comparatively fine vertical adjustment of the tables and, consequently of the resulting pressure between the roll 40 and the pattern and work, respectively.

In the drawings, I have indicated a pattern at 42. Generally, the pattern comprises a copper plate having a design formed thereon by a photo engraving process. Such plate may be secured, as is indicated in the drawings, to a plate-mounting member 43, constructed substantially in accordance with Patent No. 1,786,002, issued to my assignee, Oxford Varnish Corporation, December 23rd, 1930. Reference to such patent may be had for a more complete description of this plate mounting. Suffice it here to say that the mounting member 43 is somewhat longer and wider than its supporting table 14, so that it may be adjusted in a horizontal plane to permit an extremely accurate registration between the design and the workpiece. This is especially advantageous when it is desired to apply the design to workpieces to which other designs previously have been applied, as, for instance, in imitation inlay work.

The pattern or plate mounting 43 is adjusted longitudinally by set screws 44, carried by the ends of the mounting 43 adjacent the four corners thereof, and all of which abut the ends of the table 14. The pattern is adjusted transversely by adjusting screws 45 carried by the side walls of the base 10 and which abut the sides of the mounting 43, as shown in Fig. 4.

When a plurality of workpieces are decorated at one time, the pattern either may comprise a plurality of small pattern members or one pattern, having a plurality of designs etched in predetermined positions thereon.

The work, as heretofore mentioned, is supported by the work table 15. Workpieces W are laid by the operator on the table 15, which may be marked so as to enable the operator to properly locate the work. However, the work table may be provided with work positioning fixtures, to enable rapid and accurate positioning of the work. In Fig. 5 I have indicated such fixtures as raised blocks 46, on which flanged workpieces W are positioned. These fixtures may take various forms to accommodate various workpieces and may be secured to the work table 15 in any well-known manner.

In the drawings and especially Fig. 13, it will be noted that the rack 22 is substantially parallel with the curved surface of the workpiece W to be decorated.

I have found that such arrangement of the

work and guide permits extremely accurate registration of the design and control of the printing pressure and results in a minimum amount of distortion of the design.

The roll cleaning mechanism, heretofore mentioned, is supported by a pair of upstanding frame members 50, spaced apart by suitable transverse frame members, and secured to the base 10 in any suitable manner. At the upper end of the frame members are a pair of cleaning rollers 51, which are spaced apart from each other and arranged to support the printing roll 16, as indicated in Fig. 2.

The rollers 51 are drivingly secured to respective shafts 52, which are journaled in the frame members 50, and are provided with a fabric covering. These rollers rotate with their lower areas submerged in an ink solvent which is carried in a pan 59 mounted on the frame members 50. The roller shafts 52 are driven at the same axial speed and in the same direction of revolution, by a motor 53, which is drivingly connected to the rollers by suitable drive chains and gearing 54. One of the rollers 51 is slightly larger in diameter than the other. Hence, each roller tends to drive the transfer roll 16 at a different rate of speed, with the result that the transfer roll slips on each of the supporting or cleaning rollers, thereby creating a scrubbing action.

After the roll 16 has been cleansed by the scrubbing action of the rollers 51, a slight amount of solvent diluted ink or pigment may remain on the transfer roll. This is due to the fact that as the cleansing action progresses, some of the ink or pigment which is removed from the transfer roll is dissolved or suspended in the solvent solution, and will therefore be reconveyed to the rollers 51 and to the transfer roll 16 supported thereby.

To remove any film of pigment that might remain on the transfer roll 16, such roll is advanced to a second pair of spaced rollers 55. The rollers 55 are supported on driving shafts 56, carried by the frame members 50, and are driven in the same direction by drive chains 57, which interconnect them with the roller shafts 52, heretofore described.

The rollers 55 coact with the transfer roll supported thereby in a manner similar to that heretofore described in connection with the rollers 51. The rollers 55 are provided with a drying fabric in the form of elongated looped belts 60. The belts 60 are looped around respective rollers 55, and extend downwardly adjacent the base of the frame, where they are looped about idler rollers 61. One belt 60 is kept moist with fresh or unpigmented solvent. Such solvent is applied through a suitable jet 62, to which the solvent is fed by a pump 63, which, in turn, is supplied with solvent from a container or reservoir 64. This maintains one of the belts 60 moist and enables such belt to act on the transfer roll 16 with a moist wiping action, while the other or unmoistened belt 60 wipes the transfer roll dry, thereby completely removing all trace of pigment and solvent therefrom.

The frame members 50 of the cleaning mechanism extend above the cleaning and drying rollers and support on upper surfaces the two guideways 24 and 25, heretofore mentioned. As the transfer roll 16 is progressed across the work positioned on the work table, (toward the right, Fig. 2), the left-hand end of the lowermost guideways, namely, the guideways 25, engage the discs 21 of the transfer roll shaft 19. These



guideways incline upwardly, as indicated at 65. Thus, as the transfer roll 16 is moved forwardly, toward the right in Figs. 1 and 2, it raises and then drops into recessed portions 66 of the guideways, thus bringing the transfer roll into contact with the two cleaning rollers 51. The transfer roll is permitted to rest in this position until cleansed, and is then rolled along the guideways 25 toward the right. The guideways serve to cam the roll 16 out of engagement with the right-hand cleansing roll 51, which preferably rotates in the direction of the arrow, as indicated in Fig. 2, to assist the progress of the offset roll.

From the cleaning rolls, the transfer roll 16 is rolled along the raised portions 67 of the guideways 25 to a set of guideway depressions 68, which permit the transfer roll to drop into contact with the drying rolls 55. The drying rolls 55 may be sloped slightly from a horizontal plane, so as to move the offset roll axially, to align the discs 21 with the right-hand guideways 24. The latter guideways are arranged to retain the transfer roll 16 out of contact with the cleaning rolls, as it is rolled in a reverse direction toward the base 10. These guideways guide the transfer roll until the gears 20 of such roll engage the guide racks 23 of the base 10.

The racks 23, as will be noted from Figs. 4 and 5, are slightly above the racks 22 and therefore support the roll transfer during its movement toward the left, in such a manner that the roll remains out of contact with both the work or workholders and the pattern. When the roll has been returned to its normal or starting position, it is shifted axially to bring the gears 20 into engagement with the racks 22, whereupon the transfer roll is ready to commence another cycle of operation.

The inking distributing mechanism will now be described. This mechanism is mounted on a carriage 70, supported above the pattern by rollers 71, which coast with guideways 72 carried by the frame 10. The frame 10 supports an ink distributing roller 73 and a scraper 74. A supply of ink is manually placed before the roller and the distributor moved toward the right (Fig. 3), with the scraper raised clear of the pattern plate, thus applying a coat of ink to the pattern. When the distributor has reached the extreme right-hand end of the pattern, the scraper 74 is brought into contact therewith and the distributor is returned to its left-hand position, removing all excess color or ink, and scraping it rearwardly, thus preparing the plate for the transfer of the design therefrom to the pattern roll.

The ink distributing mechanism is best illustrated in Figs. 6 to 9, inclusive. As there shown, it will be noted that the ink roller 73 is supported in vertically extending slots formed in supporting members 75 carried by the shafts 82 and 85, which are mounted in the frame members 70. The roll rests on the plate at all times. If desired, this roller may be raised out of contact with the pattern, after the distributor has inked the pattern and returned when the pattern has been scraped. For this purpose I may employ a mechanism similar to that about to be described in connection with the scraper.

When the inking mechanism is moving toward the right, to apply a coat of ink to the pattern, the scraper is in the position shown in Fig. 9. The scraper comprises a thin, metallic blade 80, and is secured to supporting members 81, which are mounted on a shaft 82, and are coupled together by a bar 87. Pivotaly mounted on the

shaft 82 and drivingly connected to a support 81 by a tongue and slot connection 83a is a ratchet wheel 83. When the inking mechanism is moving toward the right, Figs. 1 and 2, the parts are in the position shown in Fig. 9, and a pawl 84, pivoted as at 85, engages the ratchet, retaining the scraper on its uppermost or raised position. A spring 86 is interposed between the pawl 84 and one of the frame members 70, and maintains the pawl in engagement with the ratchet.

When the distributor reaches the extreme right-hand end of the pattern 42, a pin or cam 88, carried by the plate support, engages a depending arm 89 of the pawl, rocking the pawl about its pivot, releasing the ratchet wheel, whereupon a spring 90 draws the scraper blade into contact with the pattern. The scraper is now moved toward the left, Figs. 1 and 2, to remove the excess ink therefrom.

When the distributor reaches the extreme left-hand end of its stroke, a second pin 91, (shown in Fig. 9), engages an abutment 92, which is drivingly connected to the ratchet wheel 83. The pin rocks the ratchet about its pivot 82 into the position indicated in Fig. 9, whereupon the pawl 84 retains the ratchet and likewise the scraper in their raised positions until such time as the pawl engages the pin 88 heretofore described.

The distributor is propelled by an electric motor 94, which is connected by a suitable driving mechanism 95, with a sprocket shaft 96, carried by the frame 10. This sprocket shaft carries a pair of sprockets 97, around each of which is looped a chain 98. The other end of these chains 98 are looped around respective sprockets 99, which are suitably supported at the opposite end of the printing plate. The upper reach of the chains 98 are shown in Fig. 7, and are engaged by the sprockets 100, which are rotatably mounted on respective frame members 70 of the ink distributor. The upper reach of each sprocket engages a stationary chain or rack 101, carried by the guides 72 which support the distributor. Thus, as the chain 98 is progressed, the inking mechanism is driven in either direction desired.

As heretofore mentioned, the ink distributor is controlled by the offset roll 16. This control is best illustrated in the electrical diagrams of Figs. 10 and 11. While the offset roll is transferring a design to the work, it engages a plunger 105, carried by the base 10. This plunger closes a pair of switch members 106, one of which is connected by a line 107, with the motor 94, heretofore described, and which motor is connected by a line 108, through one pole of a source of electric power, the other pole of which is connected by a line 109, with the other switch member 106. Thus, when the switch 106 is closed, the current is supplied to the armature of the motor.

After the switch 106 is closed, it is maintained closed by a solenoid 110, the coil of which is connected by a line 111, with a switch point 112 of a normally closed switch member 113. The switch member 113 is connected to the power line 108, as at 114. The solenoid is also connected by a line 115, with the line 107. Thus, the switch 106 will remain closed as long as the switch 113 remains closed. Also, connected with the line 107 by a line 114 is one switch point 116 of a reversing switch 117, which, when the scraper is first energized, is in a position indicated in Fig. 10, in which position the switch point 116 is connected with one pole of the field 118 of the motor 94. The other pole of the motor field is connected through the switch 117, with a contact 119 of the

reversing switch, which contact in turn is connected by a line 120 of the power line 108. Under these conditions the motor 94 rotates in a direction to progress the inking mechanism in the direction of the arrow of Fig. 10, that is, in a direction to apply ink to the pattern.

When the inking distribution mechanism has reached the right-hand end of its stroke with reference to Figs. 1 and 2, a lug 121 carried by one of the driving chains 78 engages an arm 122 which controls the reversing switch 117, moving such arm against the action of a spring 123 to the position indicated in Fig. 11. In this position the flow of current through the field 118 of the motor is reversed, thus reversing its direction of rotation. The reversing of the switch moves the switch arm 125 thereof into contact with one pole 126 of a solenoid 127, the other pole of which is connected by a line 128 with the switch member 113, heretofore described, as being connected to the power line 108, as at 114. Thus, the solenoid 127 is energized to maintain the reversing switch in the position shown in Fig. 11 against the action of the spring 123, until such time as the switch 113 is opened. The circuits are now set to cause the motor to rotate in a direction to progress the ink-distributing mechanism in the direction of the arrow shown in Fig. 11, that is, to a direction to scrape or remove the excess color from the pattern.

When the inking mechanism reaches the extreme left-hand side of the printing plate, the pin 121, heretofore described, as carried by one of the chains 98, engages and opens the switch 113, heretofore described, thus breaking the circuits to the solenoids 110 and 127. The spring 123 thereupon returns the switch 117 to the position shown in Figs. 10 and 12, conditioning the motor to progress the distributing mechanism to distribute the ink to the printing plate, that is, to the right in Figs. 1 and 2. While the opening of the circuit to the solenoid 100 permits the spring 130 to open the switch 106, thereby breaking the motor circuit, whereupon the ink-distributing mechanism remains inactive until such time as the transfer roller 16 again engages the switch-operating member 105. The operating member 105 is so positioned in the base 10 that it will be operated by the transfer roll 16, only when the transfer roll progresses from the right (Figs. 1 and 2), that is, from the pattern to the work, and will not be actuated when the transfer roll progresses in the opposite direction. This is due to the fact that the transfer roll is shifted axially relative to the base before it is returned from the cleaning mechanism to its starting position.

I claim:

1. In a decorating mechanism, a pattern, a support adapted to support a workpiece having a surface deviating longitudinally from a common plane, a printing roll, a guide adapted to guide and support said roll while it is rolled across the work, said guide deviating from a common plane substantially the same as the work.

2. In a decorating mechanism, a pattern, a work support and a roll-cleaning mechanism mounted in an end-to-end relationship relative to each other, a transfer roll, means to guide the transfer roll across and in active engagement with the pattern and the work and subsequently to guide said roll into active rolling engagement with the cleaning mechanism, and means to guide the pattern roll from the cleaning mechanism to its starting point while maintaining such roll out

of active engagement with the work and the pattern.

3. In a decorating mechanism, a pattern, a work support and a roll-cleaning mechanism, a pattern roll, means to guide the pattern roll into active rolling contact toward and across the pattern and the work, and then into active engagement with said cleaning mechanism, and means to guide the pattern roll from the cleaning mechanism to its starting point while maintaining such roll out of engagement with the work and pattern, and means to shift the pattern from one guiding means to the other.

4. In a work decorating mechanism, a pattern, a work support and a roll cleaning mechanism, mounted in a substantially horizontal plane in an end-to-end relationship relative to each other and in the order named, a pattern roll, means to guide the pattern roll first into engagement with the pattern and then with the work and then with the cleaning mechanism, and means to guide the pattern roll from the cleaning mechanism to its starting point while maintaining it out of active engagement with the work in pattern, and means to shift the pattern from one guiding means to the other while it is being cleansed.

5. A work decorating mechanism, a pattern, a work support, and a roll cleaning mechanism and a roll dryer mounted in end-to-end relation in the order named, a transfer roll adapted to be rolled across the pattern to transfer the design carried thereby to the work mounted on the work support, means to guide the pattern roll across and in operating engagement with said pattern, and the roll cleaning mechanism and the roll dryer in the order named, and means to guide the pattern roll across and out of contact with the cleaning mechanism, the work and the pattern in the reverse order from that originally named.

6. In a work decorating mechanism, a pattern, a work support, a roll cleaning mechanism, all mounted in substantially horizontal plane, said roll cleaning mechanism comprising a pair of rolls adapted to simultaneously coact with and support the transfer roll, means to rotate said rolls, said rolls being sloped slightly from a horizontal plane, whereby the transfer roll will be automatically shifted axially while being cleansed.

7. In a decorating mechanism, a pattern, a work support and a roll cleaning mechanism mounted in an end-to-end relationship, a pattern roll, means to guide the pattern roll first into active engagement with the pattern and then in active and rolling engagement with the work, and subsequently into contact with the cleaning mechanism, means to guide the pattern from the cleansing mechanism to starting position, while maintaining it out of active engagement with the work and pattern, said cleansing mechanism comprising a pair of rolls adapted to simultaneously coact with and support the transfer roll, means to rotate said rolls and wherein said rolls are sloped slightly from a horizontal plane, whereby the transfer roll will be automatically shifted axially from one guide to another.

8. In a decorating mechanism, a pattern, a work support and a work cleaning mechanism mounted in end-to-end relationship, a pattern roll, means to guide the pattern roll first into active engagement with the pattern and subsequently into active engagement with the work, and then into cooperation with said cleaning

mechanism, a second guide adapted to guide the pattern roll to its starting position, while maintaining it out of contact with the work and the pattern, an ink distributing mechanism movable across the pattern and distributing ink thereto, and means controlled by the transfer roll to render the ink distributing mechanism active

during the interval of time in which the transfer roll is passing over the work end and in contact with the cleansing mechanism, and means acting automatically consequent upon the movement of the distributor to return the distributor to its starting position.

ORVILLE DOERING KING.