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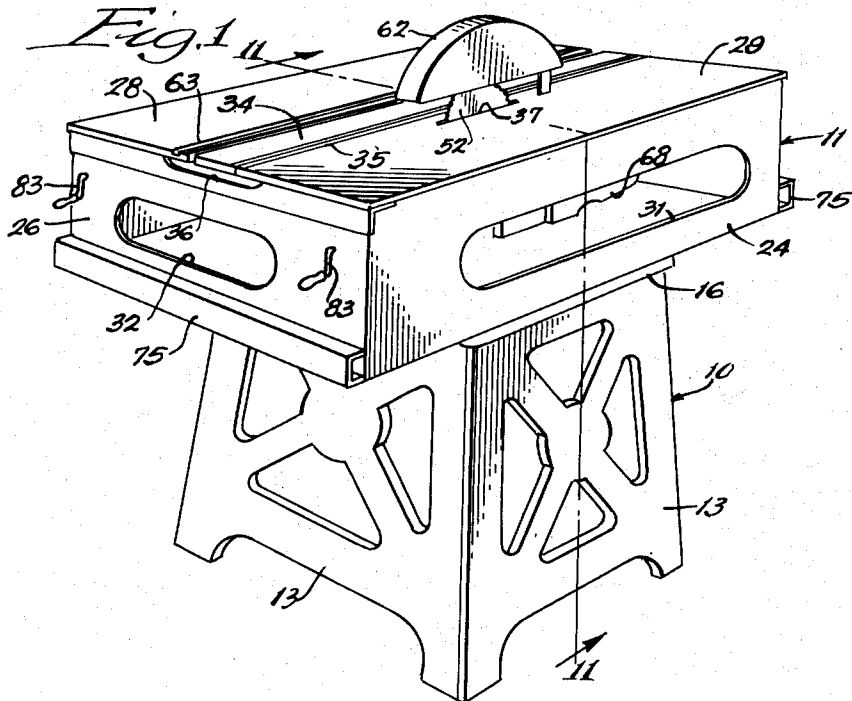
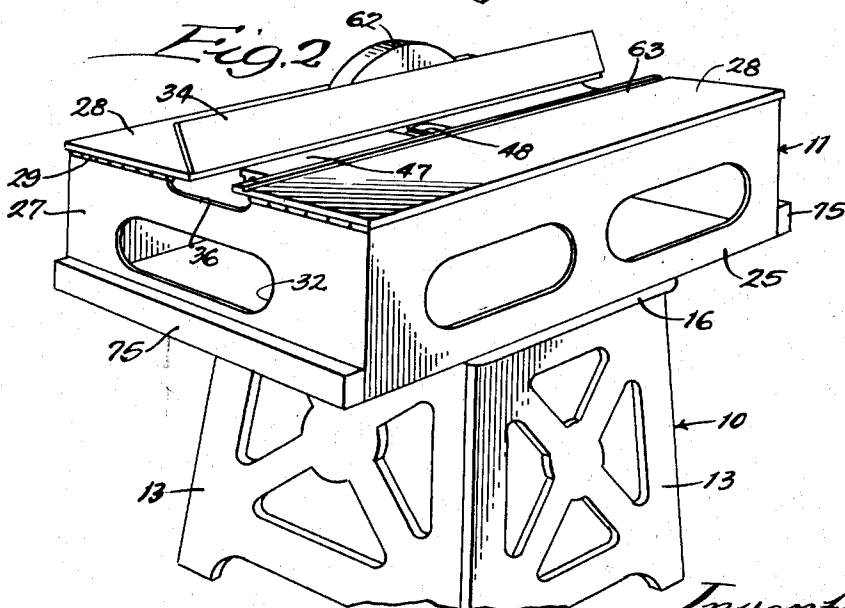
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2,656,861

ROTATABLE TOP COMBINATION WOODWORKING MACHINE

Filed Oct. 30, 1948

7 Sheets-Sheet 1



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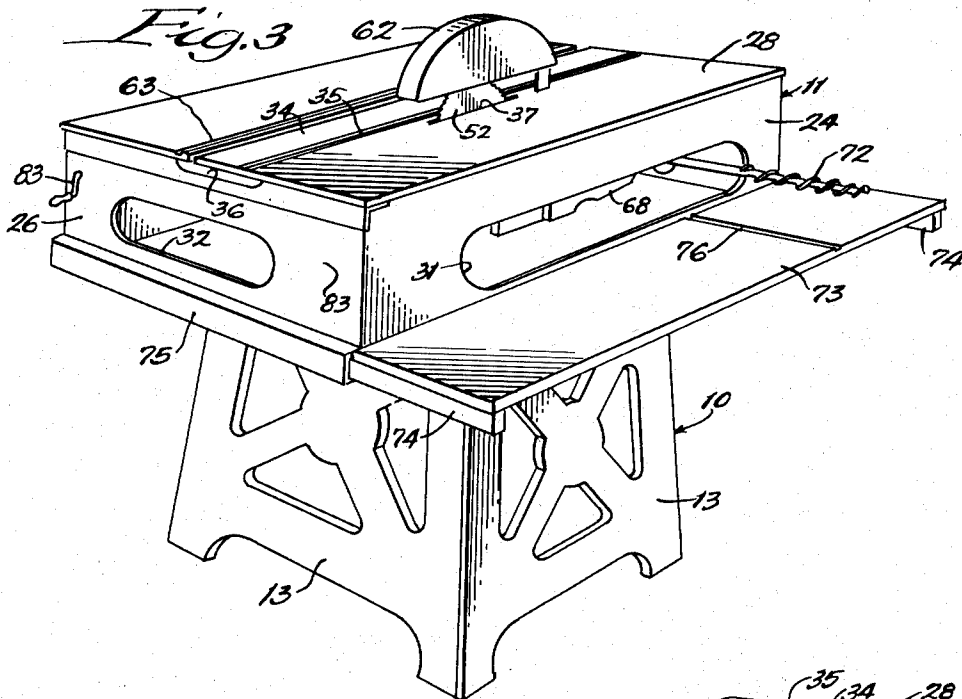
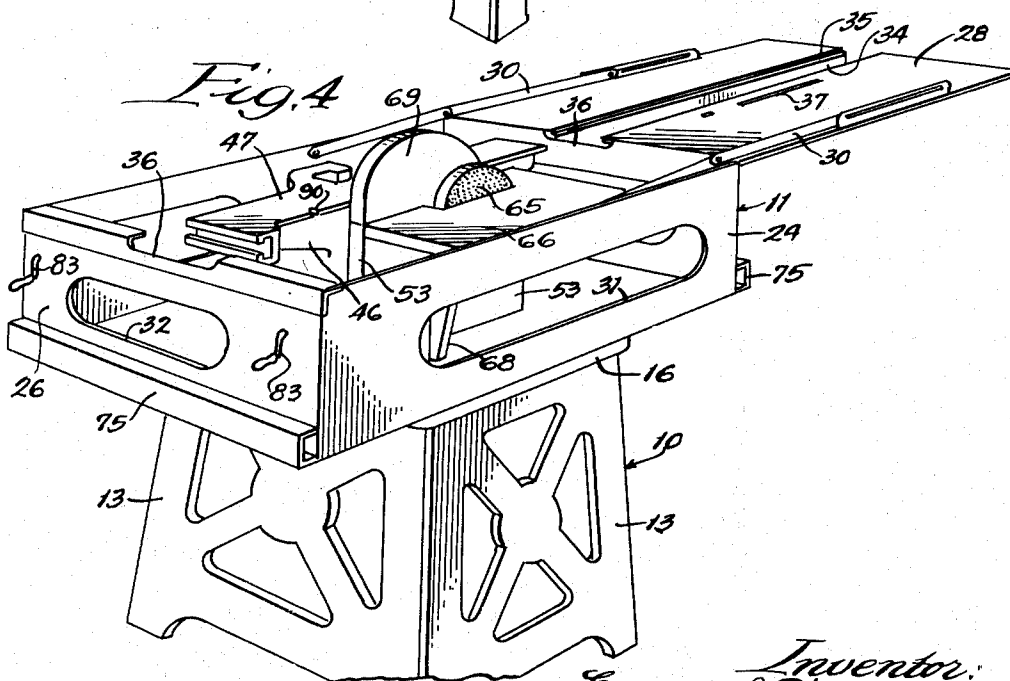
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ROTATABLE TOP COMBINATION WOODWORKING MACHINE

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7 Sheets-Sheet 2



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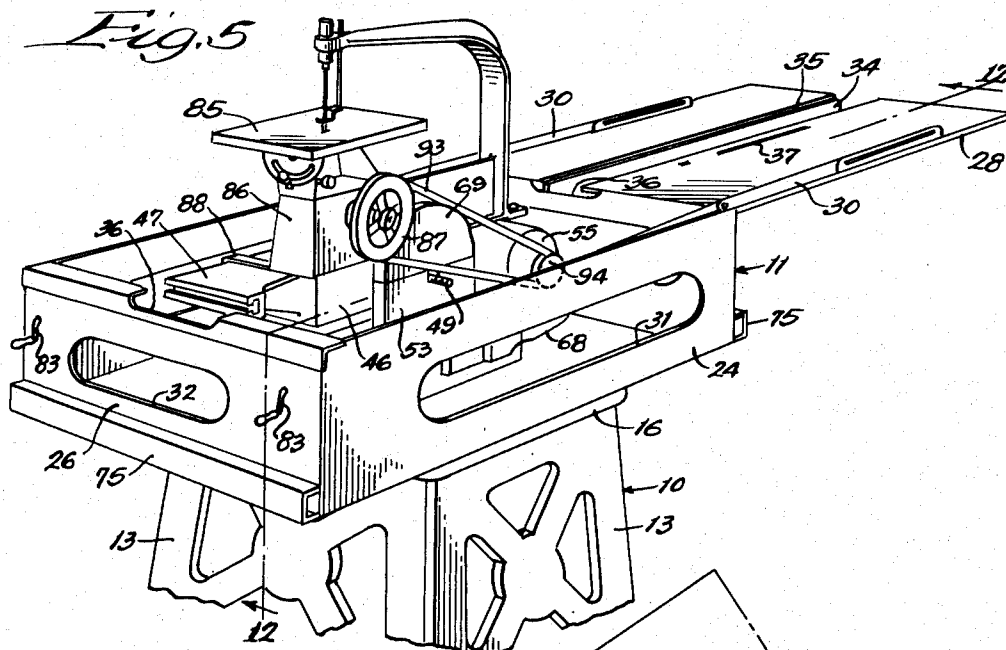
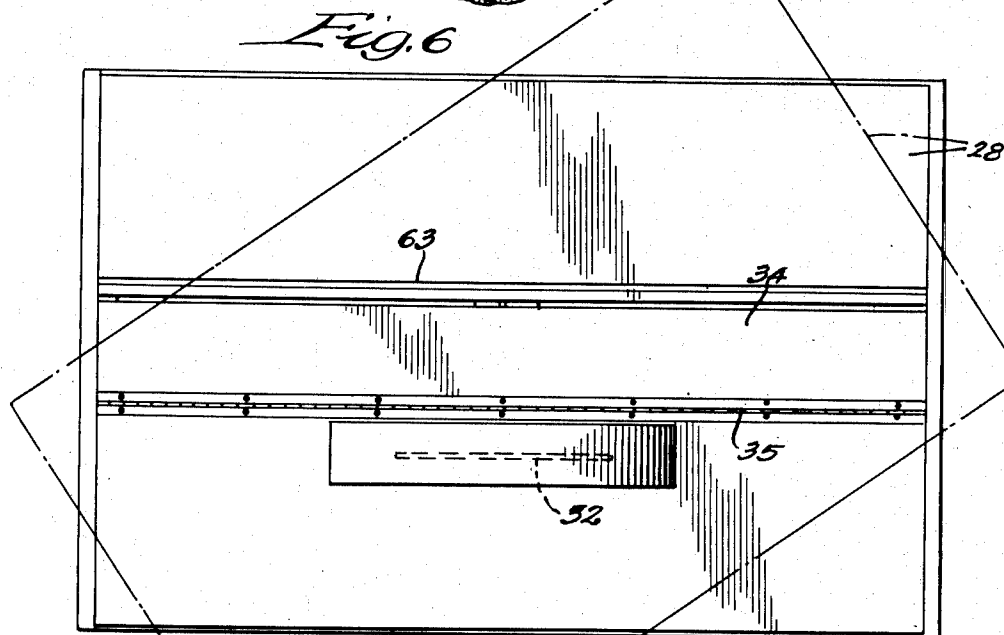
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ROTATABLE TOP COMBINATION WOODWORKING MACHINE

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7 Sheets-Sheet 3



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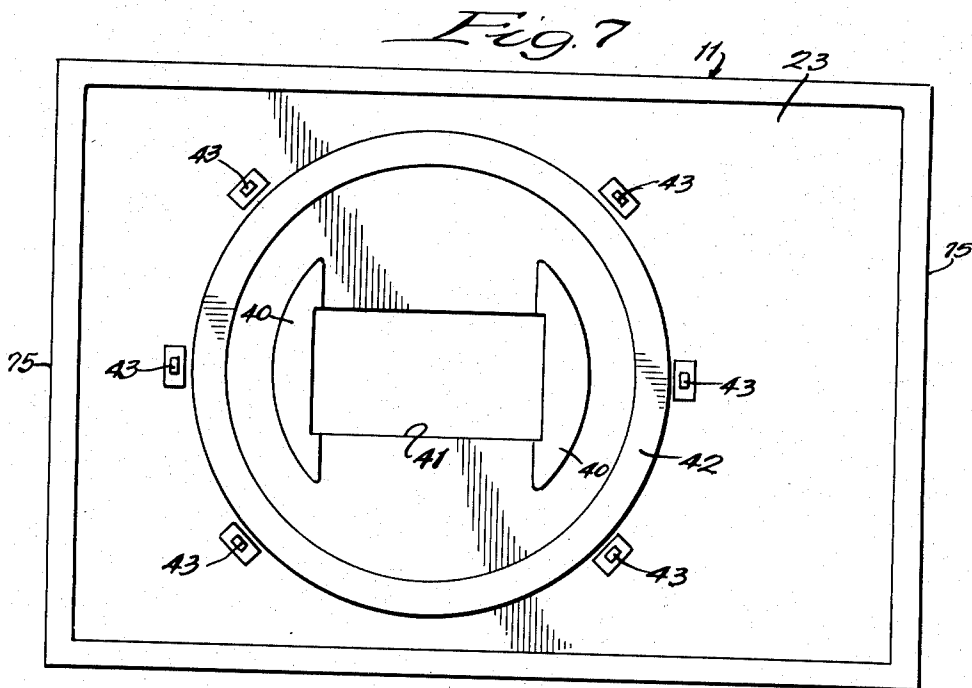
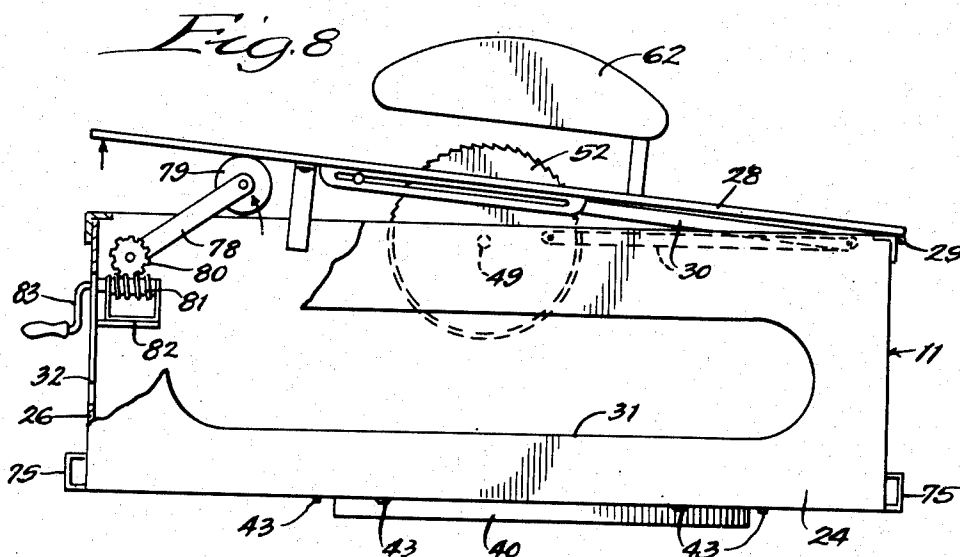
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ROTATABLE TOP COMBINATION WOODWORKING MACHINE

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7 Sheets-Sheet 4



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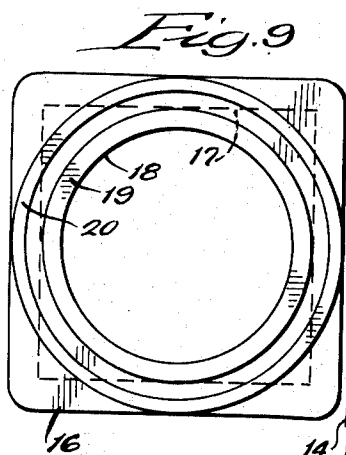
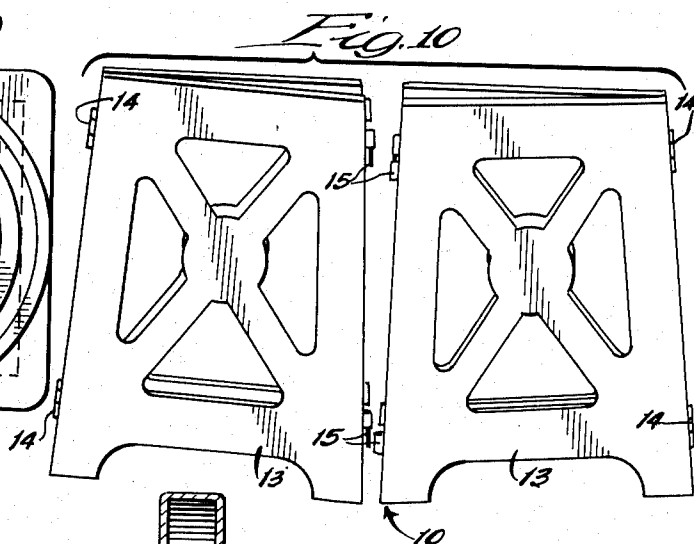
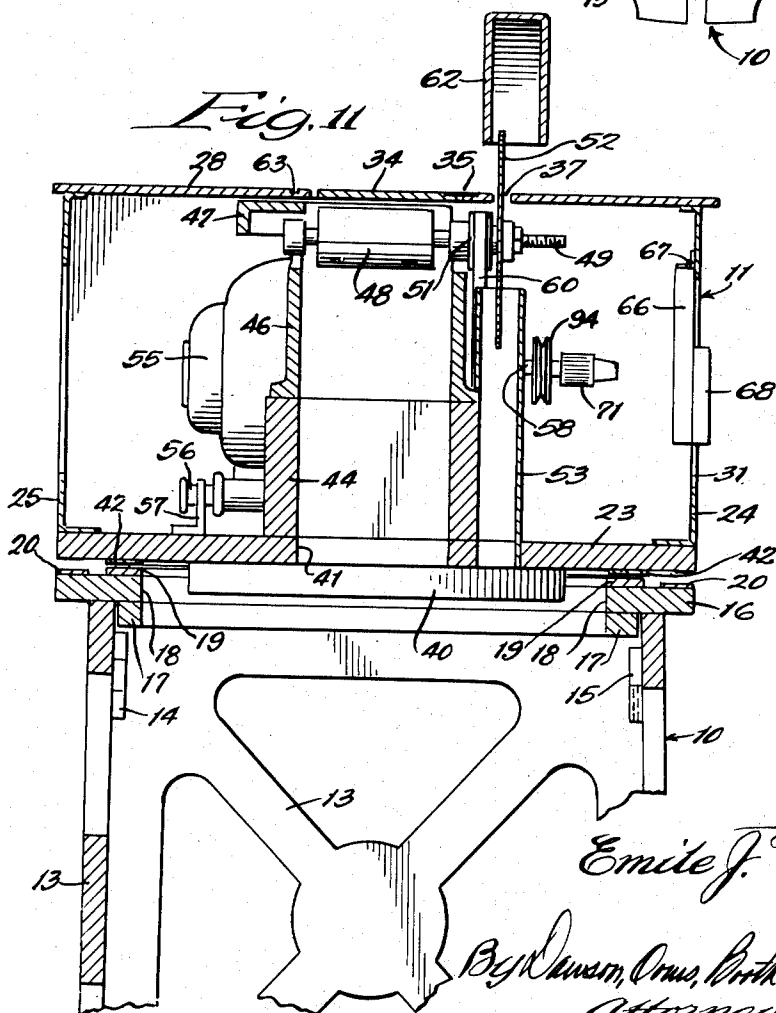
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ROTATABLE TOP COMBINATION WOODWORKING MACHINE

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7 Sheets-Sheet 5



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ROTATABLE TOP COMBINATION WOODWORKING MACHINE

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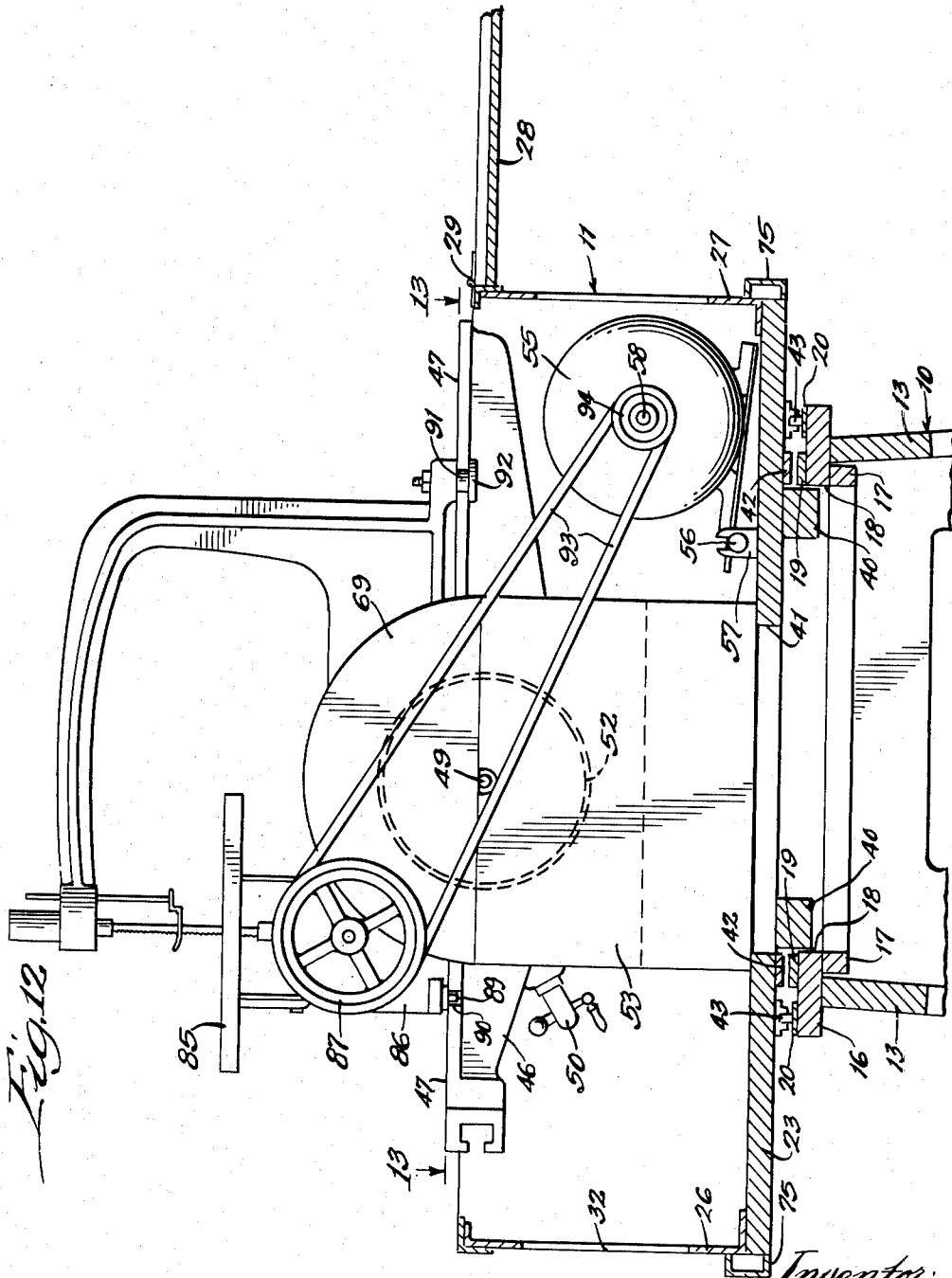


Fig. 12

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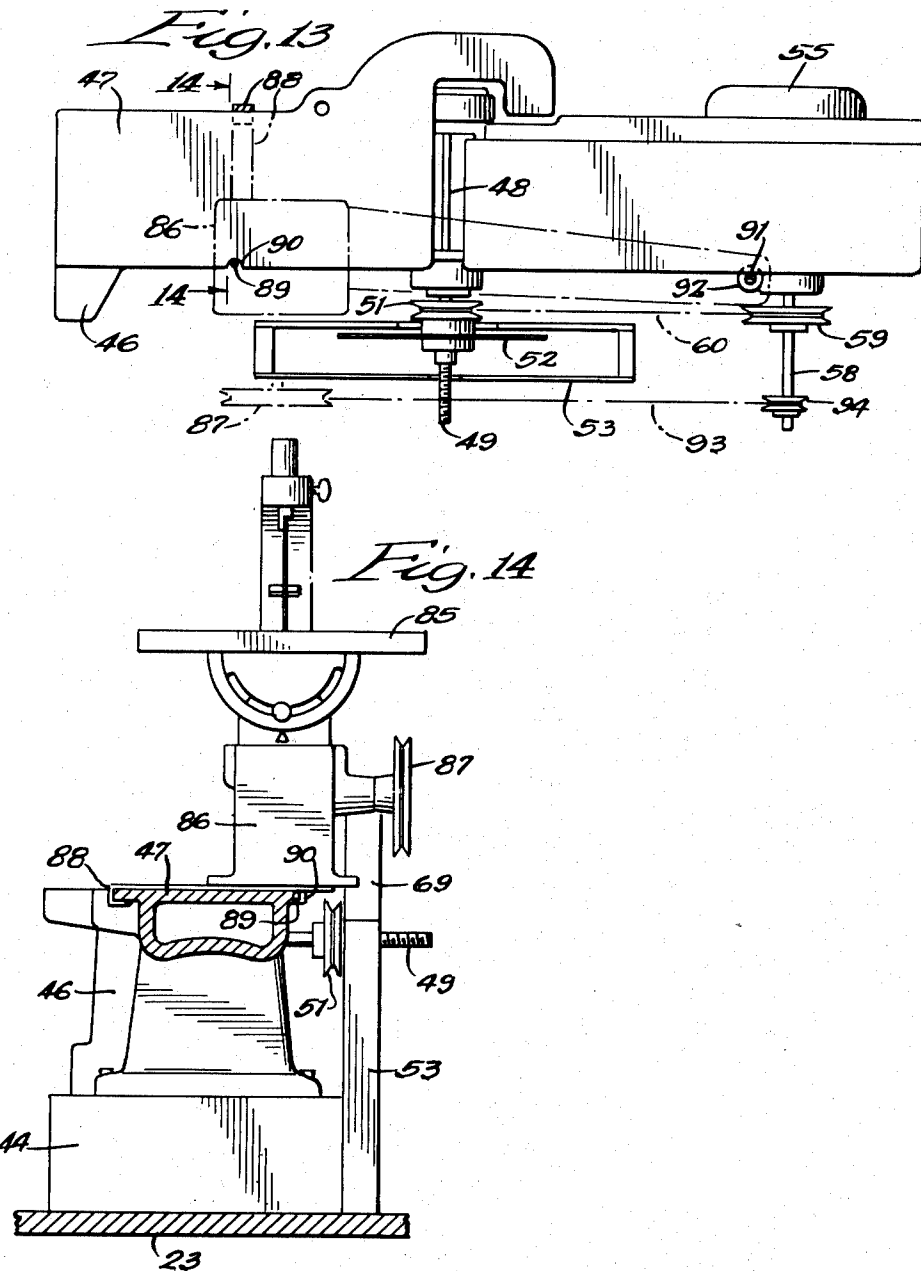
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ROTATABLE TOP COMBINATION WOODWORKING MACHINE

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7 Sheets-Sheet 7



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UNITED STATES PATENT OFFICE

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ROTATABLE TOP COMBINATION
WOODWORKING MACHINE

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6 Claims. (Cl. 144-1)

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This invention is directed to woodworking machines.

The principal object of this invention is to provide an improved woodworking machine wherein a number of woodworking operations may be readily and conveniently performed on the same machine, wherein straight sawing, scroll sawing, planing, sanding and drilling or boring may be readily performed, wherein the machine may be readily adjusted and manipulated for the desired operations, wherein the machine may be readily and quickly assembled and disassembled for easy transportation, and wherein the machine may be utilized in a small space and yet handle large work.

The woodworking machine of this invention preferably includes a supporting standard and a frame carried thereby. The frame is preferably a box-like frame provided with a hinged table surface having a hinged leaf and an adjacent slot. A planer is mounted in the frame below the hinged leaf and is accessible for planing upon opening the leaf or the table surface. A circular saw is driven from the planer shaft and extends through the slot in the table surface and is accessible for sawing from the top of the table surface. Thus, in sawing and planing the work may be readily sawed with the hinged leaf forming part of the table surface and then the leaf may be opened to provide ready planing of the work. The hinged table surface may be adjusted with respect to the saw to regulate the depth of the saw cut. The planer and saw may be driven through a belt by an electric motor also mounted in the frame. The table surface may be provided with a suitable adjustable saw guide for guiding the work along the circular saw. The saw guide may be adjusted toward and away from the circular saw and may also be tilted with respect thereto. The table surface is also provided with a slot for carrying an adjustable T-guide for cross cut sawing on all angles. The side of the frame is provided with an access opening to provide access to the planer for adjusting the same.

The drive shaft of the planer may receive a sanding wheel within the frame and in this respect the frame is provided interiorly with a work supporting surface adjacent the sanding wheel. Thus, when the table surface is opened, sanding may be readily accomplished. The shaft of the electric motor may be provided with a drill chuck for receiving a drill or like tool and the side of the frame is provided with an opening through which the drill may extend. The frame is exteriorly provided with a work surface adjacent the opening to support the work during

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drilling or boring. The work surface may be provided with a slot for receiving an adjustable T-guide for guiding the drilling operation.

When the table surface is opened, a jig saw may be placed upon the planer and means are provided for quickly securing the jig saw in place and for driving the same from the electric motor.

The frame is preferably mounted for rotation on the supporting standard so that the frame and jig saw may be rotated with respect to the supporting standard during scroll sawing. Also, the frame may be rotated with respect to the supporting standard to position the same for straight sawing or planing. Thus, the woodworking machine of this invention may be placed adjacent a wall in relatively small quarters and still permit straight sawing, scroll sawing and planing of large pieces.

The woodworking machine of this invention may be readily assembled and disassembled for transportation and yet is rigid and rugged in construction to handle heavy work. It is readily usable by carpenters and cabinet makers and can be easily transported from job to job.

Further objects of this invention reside in the details of construction of the woodworking machine and the cooperative relationship between the component parts thereof.

Other objects and advantages of this invention will become apparent to those skilled in the art upon reference to the accompanying specification, claims and drawings in which:

Figure 1 is a perspective view of the woodworking machine showing the same in condition for sawing;

Figure 2 is a view similar to Fig. 1, but looking from the opposite side and showing the machine in condition for planing;

Figure 3 is a perspective view similar to Fig. 1, but showing the machine in condition for sawing or drilling or boring;

Figure 4 is a perspective view similar to Fig. 1, but showing the machine in condition for sanding;

Figure 5 is a perspective view similar to Fig. 1, but showing the machine equipped with a jig saw for scroll sawing;

Figure 6 is a top plan view of the machine of Fig. 1 and illustrating in broken lines the horizontal pivotal movement of the frame on the supporting standard;

Figure 7 is a bottom view of the frame;

Figure 8 is a side elevational view of the frame and illustrating the manner in which the table surface thereof may be adjusted;

Figure 9 is a plan view of the top section of the supporting frame;

Figure 10 is a perspective view of the side sections of the supporting frame;

Figure 11 is a vertical sectional view through the machine taken substantially along the line 11—11 of Fig. 1;

Figure 12 is a vertical sectional view of the machine taken substantially along the line 12—12 of Fig. 5;

Figure 13 is a horizontal sectional view taken substantially along the line 13—13 of Fig. 12; and

Figure 14 is a vertical sectional view taken substantially along the line 14—14 of Figure 13.

The woodworking machine of this invention is generally illustrated in Figs. 1 to 5 and includes a supporting standard generally designated at 10 and a frame generally designated at 11 horizontally pivotally mounted on the supporting standard. The frame of the machine carries a circular saw 52 and a planer 47 for sawing and planing as indicated in Figs. 1 and 2, a chuck for supporting a drill 72 for boring or drilling as indicated in Fig. 3, a sanding wheel 65 for sanding purposes as indicated in Fig. 4, and a jig saw 35 for scroll sawing as indicated in Fig. 5.

As illustrated in Figs. 1 to 5 and 9 to 12 the supporting standard 10 includes four side sections 13, two pairs of side sections being hinged together at 14 and each pair being provided with releasable hinges 15 for securing the two pairs together. Thus, the side sections may be disassembled and folded together for convenient transportation and may be assembled by means of the releasable hinges 15 to form a rigid supporting frame. The supporting frame is also provided with a top section 16 having square flanges 17 adapted to fit within the side sections 13. In this way the top section 16 is securely held in place on the side sections 13 and operates to hold the side sections 13 in square relation. There is thus provided an extremely rigid supporting standard which at the same time may be readily disassembled for transportation purposes.

The top section 16 is provided with a circular opening 18, with an annular shoulder 19 and with an annular track 20, all of which cooperate with the frame for horizontally pivotally mounting the same on the supporting standard. The opening 18 also permits sawdust to pass therethrough and be collected within the supporting standard 10.

The frame 11 is preferably a box-like structure including a bottom wall 23, side walls 24 and 25, and end walls 26 and 27. It, also, includes a top wall or table surface 28 hinged at one end to the end wall 27 by means of a hinge 29. The table surface may be closed for certain purposes as illustrated in Figs. 1 to 3 or opened for other purposes as illustrated in Figs. 4 and 5, and also the table surface may be maintained, if desired, in a vertical position, this all being accomplished by means of the hinge brackets 30. The side wall 24 and the end wall 26 may be provided with suitable access openings 31 and 32 respectively, and if desired, the other end wall and side wall may, also, be provided with access openings.

The table surface 28 is provided with a leaf 34 extending longitudinally thereof and hinged thereto by means of a recessed hinge 35. The leaf 34 may be closed as illustrated in Fig. 1 for sawing purposes and in this event the leaf 34 acts as a part of the table surface. It may be opened as illustrated in Fig. 2 for planing

purposes and to provide the proper clearance for the plane the end walls 26 and 27 are preferably recessed at 36 underneath the leaf 34. The table surface 28 is also provided with a slot 37 adjacent the leaf 34 for accommodating the circular saw 52.

The bottom surface of the bottom wall 23 is provided with a pair of arcuate projections 40 as illustrated in more detail in Figs. 7, 11 and 12. These projections 40 are adapted to extend into the opening 18 of the top section of the supporting standard for the purpose of maintaining the frame 11 centrally located on the supporting standard 10. The bottom wall 23 is also provided with an opening 41 to permit the passage of sawdust and shavings therethrough into the supporting standard 10. The bottom wall 23 is also provided with a flange 42 lying adjacent the flange 19, and also, with rollers 43 for engaging the track 20. The rollers 43, therefore, rotatably support the frame 11 on the supporting standard 10 and the rotation is guided by the arcuate projections 40 cooperating with the opening 18. The flanges 19 and 42 operate as a seal for preventing sawdust and shavings from accumulating on the track 20 and impeding the rotation of the frame on the supporting standard. The upper surface of the bottom wall 23 of the frame is provided with a central box-like frame 44 for supporting a planer 46 underneath the leaf 34. The planer 46 is of conventional construction and is suitably secured to the frame 44. It includes a work surface 47 and is provided with a rotary cutter 48 driven by a drive shaft 49. The planer 46 may be suitably adjusted by an adjusting handle 50 accessible through the access opening 32 in the end wall 26 for adjusting the depth of the cut of the planer. The drive shaft 49 is provided with a pulley 51 whereby the same is driven. The drive shaft also carries a circular saw 52 which extends through the slot 37 in the table surface 28. A hopper 53 is provided below the circular saw 52 and opens into the opening 41 for directing sawdust into the supporting standard 10, and likewise shavings from the planer are directed through the box-like frame 44 into the supporting standard 10.

An electric motor 55 is mounted through a trunnion 56 and brackets 57 to the bottom wall 23 of the frame. The motor shaft 58 carries a pulley 59 which is connected by a belt 60 to the pulley 51 carried by the drive shaft of the planer.

The weight of the motor 55 acting about its trunnion 56 operates to maintain the belt 60 tight upon the pulleys. Upon operation of the motor 55 the planer and circular saw are operated.

A suitable protecting guard 62 for the circular saw 52 may be carried by the table surface 28. Likewise the table surface 28 may be provided with a suitable adjustable saw guide for guiding material past the saw. The saw guide may be adjusted toward and away from the circular saw and may also be tilted with respect to the circular saw. The table surface 28 may be provided with a slot 63 for carrying an adjustable T-guide for guiding the work during cross-cut sawing.

The table surface 28 may be adjustably pivoted about its hinge 29 for adjusting the depth of the cut by the saw 52 and the mechanism for so adjusting the table surface is illustrated in more detail in Fig. 8. Here, a pair of arms 78 carry rollers 79 for engaging the underside of the table surface 28. The arms 78 are rotated by worm wheels 80 engaged by worms 81 driven by cranks

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83 extending through the end wall 26. By manipulating the cranks 83 the table surface 28 may be adjusted about its hinge 25 with respect to the circular saw 52 regulating the depth of the cut by the saw.

When it is desired to utilize the machine for sanding all that is necessary is to open the table surface 28 as illustrated in Fig. 4 and apply a sanding wheel 65 to the drive shaft 49 of the planer 46. To support the work adjacent the sanding wheel 65 there is provided a work surface 66 which is hinged to the side wall 24 by means of hinges 67. Normally the work surface 66 is against the side wall as illustrated in Fig. 11 but may be swung up adjacent the sanding wheel 65 as illustrated in Fig. 4. A bracket 68 hinged to the work surface 66 may be extended as illustrated in Fig. 4 for holding the work surface 66 adjacent the sanding wheel 65. When the work surface 66 is collapsed against the side wall as illustrated in Fig. 11, the bracket 68 may be also collapsed against the work surface 66. Thus, sanding operations may be readily and conveniently performed by the machine. During sanding the circular saw may be covered with a suitable guard 69.

The end of the motor shaft 58 may be provided with a suitable chuck 71 for a suitable drill or boring tool 72 which extends outwardly through the access opening 31 as illustrated in Fig. 3. To support the work being bored or drilled there is provided a work surface in the form of a shelf 73 having bars 74 which extend into channels 75 formed on the end walls 26 and 27. Thus, when it is desired to perform a boring or drilling operation all that is necessary is to insert the appropriate tool in the chuck 71 and support the work surface 72 in the channels 75. The work surface 72 may be provided with a slot 76 for carrying an adjustable T-guide for guiding the work during drilling or boring. When the boring or drilling operations are completed the tool 72 may be removed, and also, the supporting surface 73 may be removed.

In order to perform scroll sawing a jig saw 85 may be quickly and easily applied to the machine as is illustrated in Figs. 5 and 12 to 14. The jig saw 85 may be a conventional jig saw having a base 86 and a pulley 87 for driving the same. The jig saw 85 is preferably mounted on the work surface 47 of the planer 46. In this connection the base 86 is provided with a hook 88 adapted to hook over the work surface 87 of the planer 46 and a projection 89 adapted to fit in a recess 90 of the work surface 47 of the planer 46. The base 86 is also provided with another projection 91 adapted to engage the edge of the work surface 47 of the planer 46 which projection 91 is provided with a shoulder 92 to engage under the work surface 47. To mount the jig saw on the planer all that is necessary is to hook the hook 88 over the planer, insert the projection 89 in the recess 90 and engage the planer with the projection 91. A belt 93 is adapted to connect the pulley 87 with a pulley 94 carried by the motor shaft 58 and the weight of the motor 55 acting about its trunnion 56 and through the belt 93 operates to maintain the jig saw 85 securely on the planer 46. When the jig saw 85 is in use, preferably the belt 60 to the planer is taken from the pulley 59 so that the circular saw 52 and planer 48 are rendered inoperative.

In view of the foregoing I have provided a woodworking machine which is capable of straight sawing, planing, sanding, boring and

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scroll sawing with a minimum amount of adjustment and manipulation to perform the various woodworking functions. The woodworking machine may be readily assembled and disassembled so that it may be conveniently transported from job to job. By reason of the swinging or pivotal connection between the frame and the supporting standard the woodworking machine may be located adjacent a wall in relatively small quarters and still handle large pieces of work.

While for purposes of illustration, one form of this invention has been disclosed, other forms thereof may become apparent to those skilled in the art upon reference to this disclosure, and therefore, this invention is to be limited only by the scope of the appended claims.

I claim as my invention:

1. In a woodworking machine, the combination of, a supporting standard comprising side sections having means for releasably securing the same together and a top section having projections received within the side sections for releasably securing the top section to the side sections, said top section of said supporting standard having a circular opening in the top thereof and an annular track on the top thereof around the opening therein, a box-like frame having on its bottom projections extending into the opening and rollers engaging the track for releasably pivotally mounting the entire box-like frame on and above the top section of the supporting standard for rotation in a horizontal plane, and a woodworking tool and driving means therefor carried by and within the box-like frame.

2. In a woodworking machine, the combination of, a supporting standard, a box-like frame carried by the supporting standard and including a table surface having a hinged leaf extending throughout its length and an adjacent parallel slot, a planer including a guide surface, shaft and cutter mounted in the frame below and in alignment with the hinged leaf and accessible for planing upon opening the leaf, and a circular saw of larger diameter than the planer cutter carried by the planer shaft and extending through the slot and accessible for sawing from the top of the table surface.

3. In a woodworking machine, the combination of, a supporting standard, a box-like frame carried by the supporting standard and including a table surface having a hinged leaf extending throughout its length and an adjacent parallel slot, a planer including a guide surface, shaft and cutter mounted in the frame below and in alignment with the hinged leaf and accessible for planing upon opening of the leaf, a circular saw of larger diameter than the planer cutter carried by the planer shaft and extending through the slot and accessible for sawing from the top of the table surface, said table surface being hinged at one end to the frame, and means for tilting the table surface about its hinge with respect to the circular saw to regulate the depth of the saw cut.

4. In a woodworking machine, the combination of, a supporting standard, a box-like frame including a table surface having a hinged leaf extending throughout its length and an adjacent parallel slot, means for horizontally pivotally mounting the frame on the supporting standard, a planer including a guide surface, shaft and cutter mounted in the frame below and in alignment with the hinged leaf and accessible for planing upon opening the leaf, and a circular

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saw of larger diameter than the planer cutter carried by the planer shaft and extending through the slot and accessible for sawing from the top of the table surface.

5. In a woodworking machine, the combination of, a supporting standard, a box-like frame carried by the supporting standard and including a hinged table surface having a hinged leaf extending throughout its length and an adjacent parallel slot, an electric motor mounted in the frame and provided with a shaft having a pulley, a planer including a guide surface, a cutter and a drive shaft having a pulley mounted in the frame below and in alignment with the hinged leaf and accessible for planing upon opening the leaf or opening the table surface, a belt connecting the pulleys to drive the drive shaft of the planer, and a circular saw of larger diameter than the planer cutter carried by the planer drive shaft and extending through the slot and accessible for sawing upon closing the table surface.

6. In a woodworking machine, the combination of, a supporting standard having a circular opening in the top thereof and an annular track on the top thereof around the opening therein, a frame having on its bottom projections extending into the opening and rollers engaging the track for pivotally mounting the frame on and

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above the supporting standard for rotation in a horizontal plane, said frame being box-like and including a table surface having a hinged leaf extending throughout its length and an adjacent parallel slot, a planer including a guide surface, shaft and cutter mounted in the frame below and in alignment with the hinged leaf and accessible for planing upon opening the leaf, and a circular saw of larger diameter than the planer cutter carried by the planer shaft and extending through the slot and accessible for sawing from the top of the table surface.

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