Nov. 16, 1937. T. L. HEDGPETH 2,099,519

WOODWORKING TOOL

Filed March 5, 1936 4 Sheets-Sheet 1

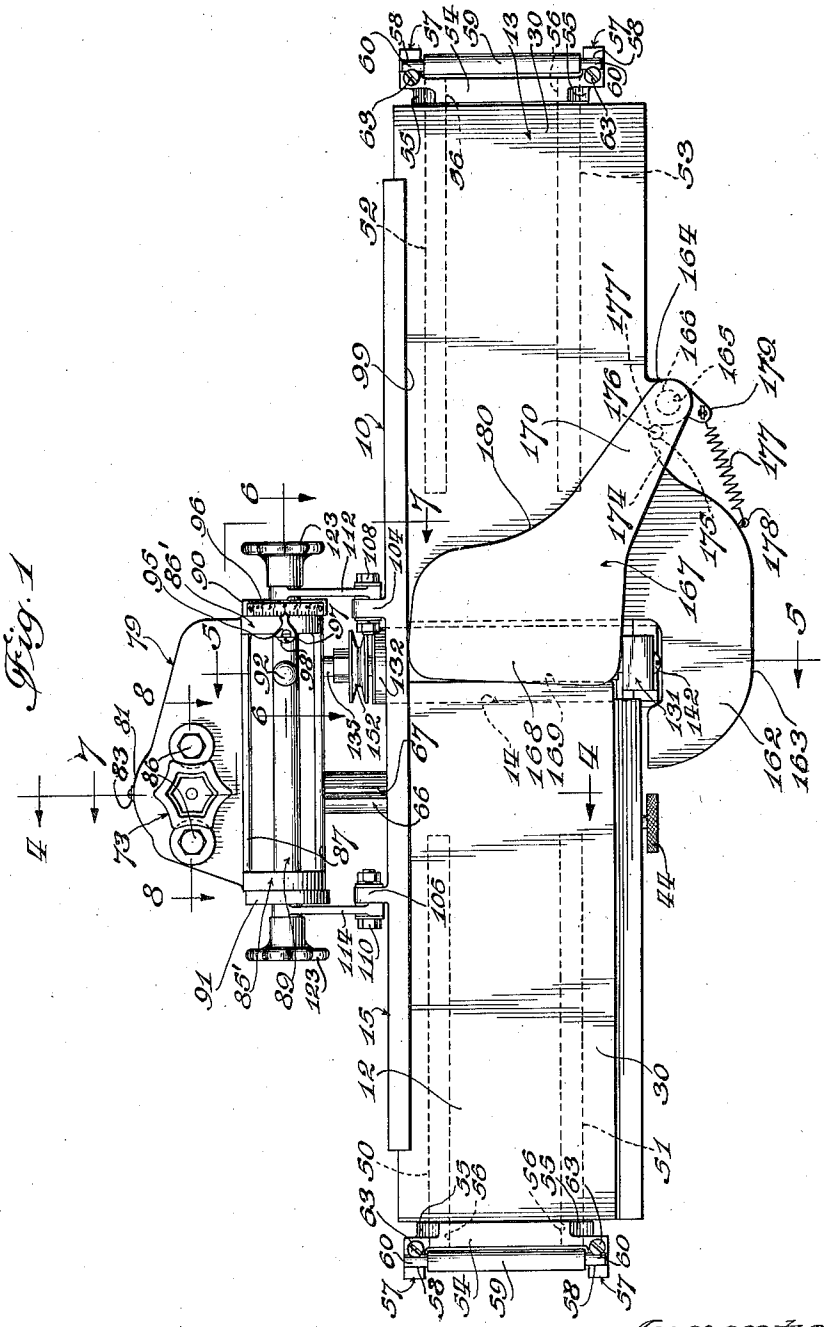


Fig. 1

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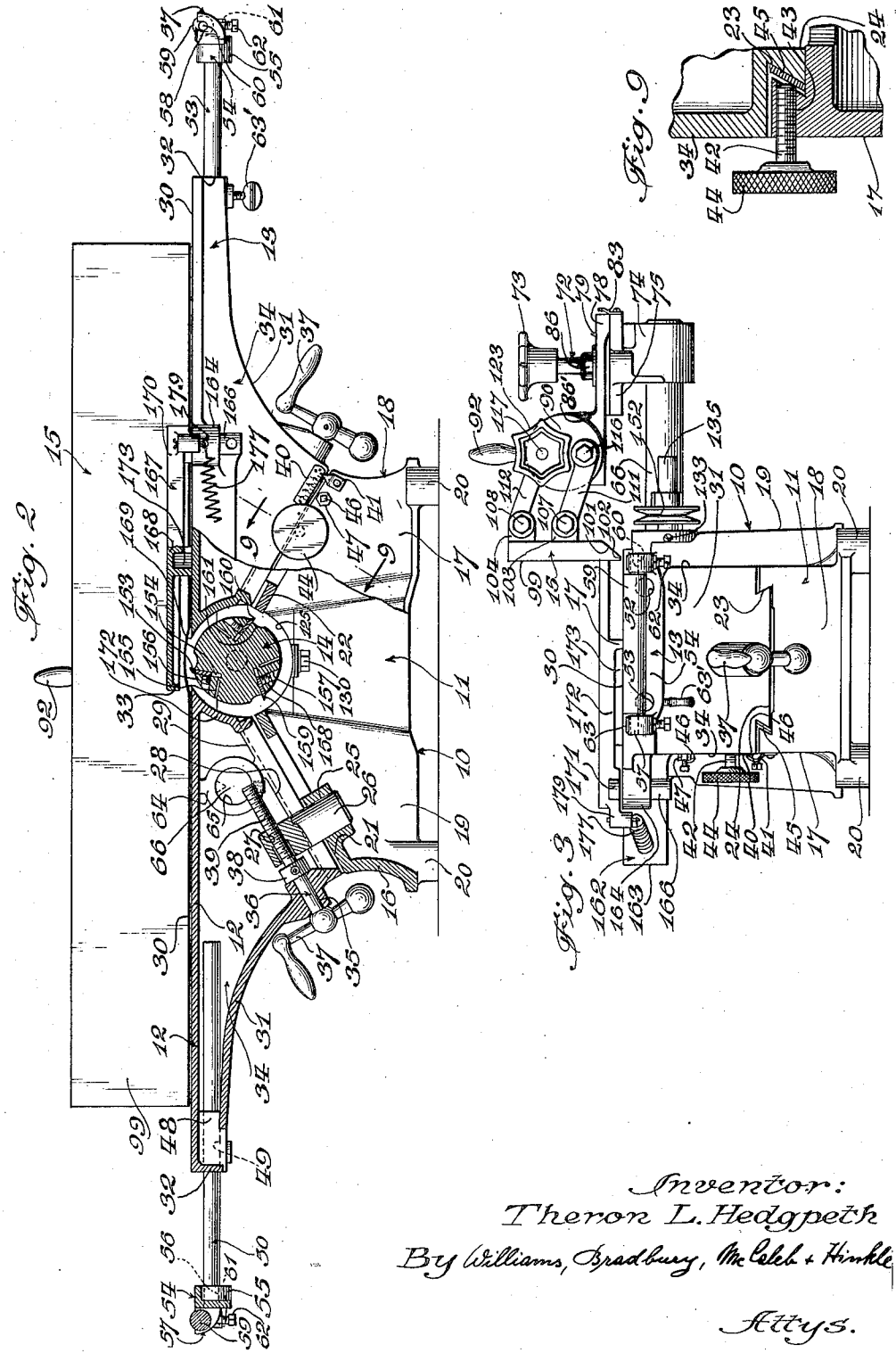


Fig. 2

Fig. 9

Fig. 3

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WOODWORKING TOOL

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Fig. 4

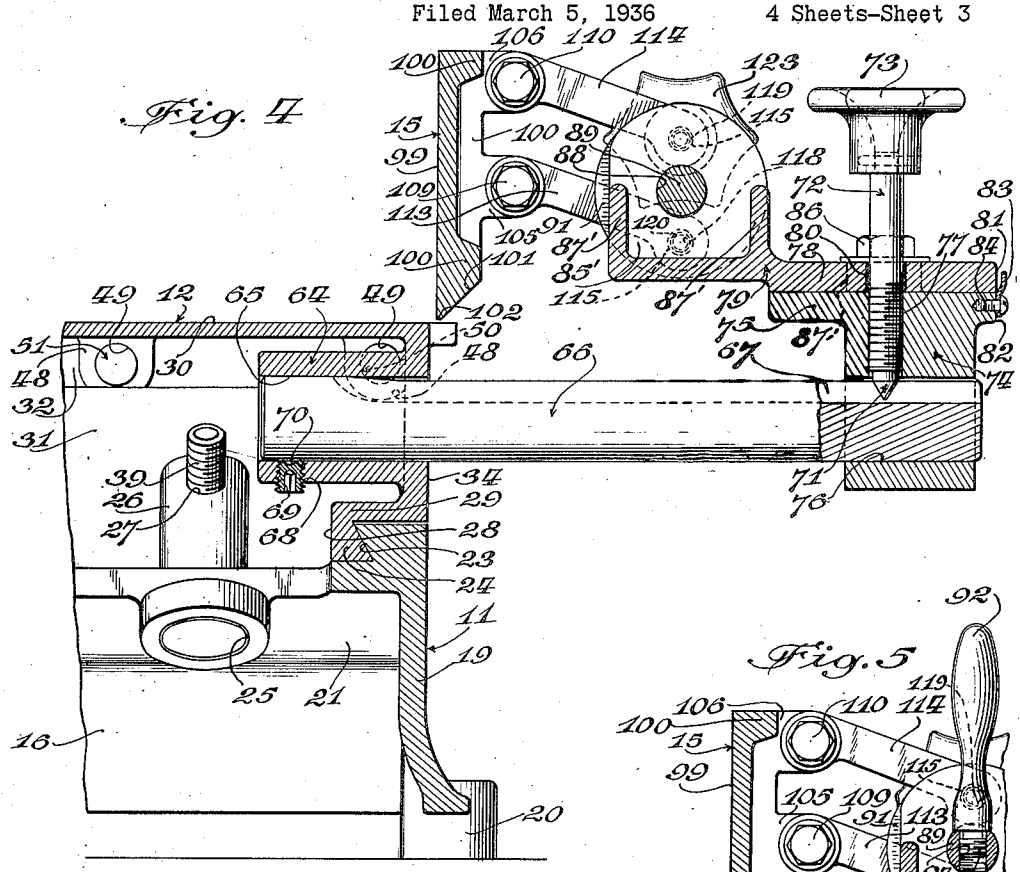
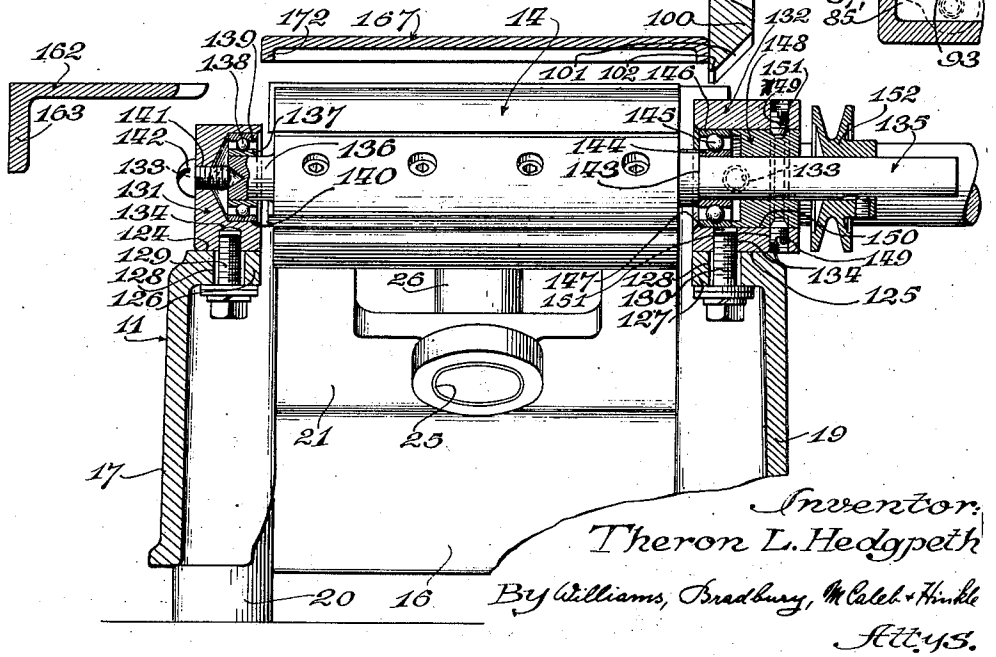


Fig. 5



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Fig. 6

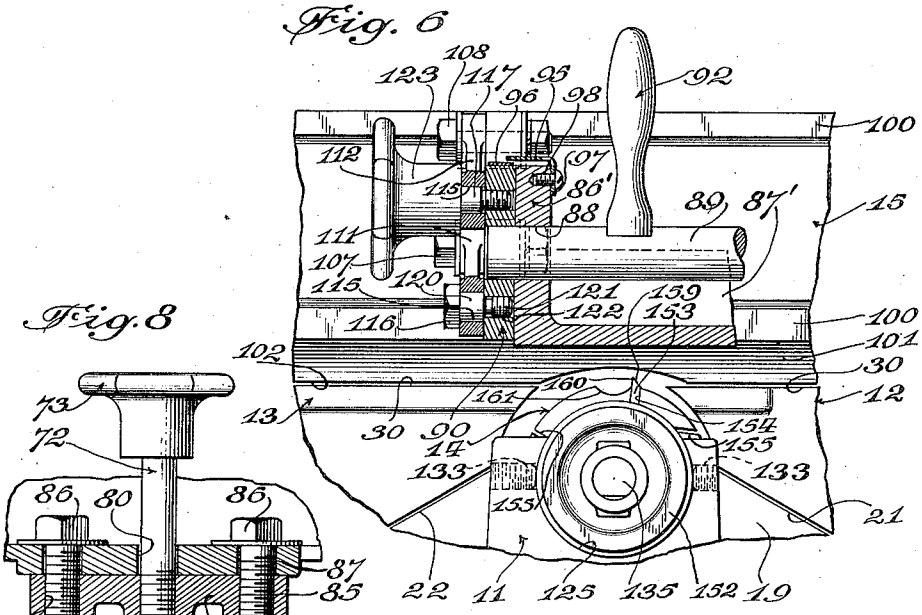
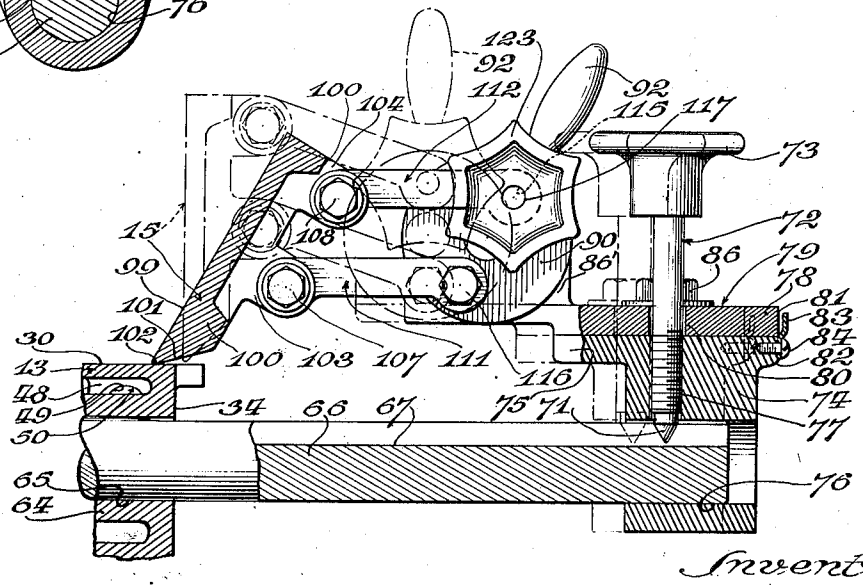


Fig. 8

Fig. 7



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2,099,519

UNITED STATES PATENT OFFICE

2,099,519

WOODWORKING TOOL

Theron L. Hedgpeth, Oak Park, Ill., assignor to Duro Metal Products Company, Chicago, Ill., a corporation of Illinois

Application March 5, 1936, Serial No. 67,221

6 Claims. (Cl. 144—129)

The present invention relates to wood working tools, and is particularly concerned with jointers.

One of the objects of the invention is the provision of an improved jointer structure which combines the features of solidity, smoothness and accuracy in the adjustment and operation of its parts.

Another object is the provision of an improved jointer having an improved extension arrangement whereby the jointer is adapted to handle longer pieces of lumber and to prevent the bending of the relatively long and slender work pieces upon the table.

Another object is the provision of an improved guide or fence for jointers and an improved mode of support for the fence whereby it may be firmly and rigidly held in any of a plurality of angular positions and at different distances from the cutter.

Another object is the provision of an improved adjustable table structure by means of which the two parts of the table of the jointer may be raised or lowered to various predetermined elevations to determine the depth of cut in the work piece.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings, in which similar characters of reference indicate similar parts throughout the several views.

Referring to the four sheets of drawings accompanying this specification,

Fig. 1 is a top plan view of a jointer constructed according to the present invention;

Fig. 2 is a front elevational view in partial section, showing the details of structure of the table and cutter;

Fig. 3 is a side elevation taken from the right end of Fig. 1;

Fig. 4 is a vertical sectional view taken on the plane of the line 4—4 of Fig. 1, showing the details of support of the guide or fence;

Fig. 5 is a vertical sectional view taken on the plane of the line 5—5 of Fig. 1, looking in the direction of the arrows, showing the details of structure of the cutter shaft support and the angular adjusting means for the guide;

Fig. 6 is a fragmentary sectional view taken on the plane of the line 6—6 of Fig. 1, looking in the direction of the arrows, showing the details of structure of the connection between the supporting links for the guide or fence and the clamping means for securing it in any predetermined angular position;

Fig. 7 is another sectional view, taken on the plane of the line 7—7 of Fig. 1, showing the relation of the various supporting elements of the guide or fence;

Fig. 8 is another fragmentary sectional view, taken on the plane of the line 8—8 of Fig. 1, looking in the direction of the arrows, showing the details of structure of the clamping means for securing the guide at any predetermined distance from the cutter;

Fig. 9 is a sectional view, taken on the plane of the line 9—9 of Fig. 2, showing the details of structure of the clamping arrangement.

Referring to Figs. 1 to 3, the jointer, which is indicated in its entirety by the numeral 10, preferably consists of a supporting base 11 and a pair of movable table sections 12, 13, a cutting tool 14, and a guide or fence 15. The base 11 comprises a cast metal member which is substantially box-like in form, having an open bottom, and comprising the four side walls 16, 17, 18, 19 joined together.

These side walls are preferably provided with the integral feet 20 located at each corner and having bolt apertures for the reception of bolts or lag screws which secure the jointer to a foundation or supporting bench or table. The top of the base member 11 is provided with the sloping walls 21, 22 which support the table sections 12 and 13 for sliding movement in such manner that these table sections approach or recede from the cutter 14 and are adapted to be placed at various predetermined elevations.

For this purpose each top wall 21, 22 may be formed with the dove-tailed groove 23 for the reception of the downwardly projecting dove-tailed guide formation 24, which is located on the lower side of each table section.

These grooves and dove-tailed formations 23, 24 slidably engage each other, and since they extend diagonally upward toward the cutter from the end walls 16 and 18, the table sections are adapted to move up and down as the dove-tailed formation slides in its groove.

Each upper wall 21, 22 is preferably formed with a portion of increased thickness, having the transversely and diagonally upwardly extending bore 25 for reception of the stub shaft 26, having a threaded bore 27. This stub shaft passes through a slot 28 in the lower wall 29 of each table section and does not, therefore, interfere with the sliding action of the table section.

Each table section is preferably formed with an upper flat surface 30, a lower horizontally extending wall 31 which curves downwardly to

meet the diagonal bottom wall 29, a flat end wall section 32, and a curved end wall section 33. The side wall portions 34 complete the hollow table sections, all of these parts preferably being integral and formed with cast metal.

The curved wall 31 may be provided with a portion of increased thickness about a bore 35 which extends with its axis substantially parallel to the direction of the dove-tailed groove and formation 23 and 24. This bore receives a shaft 36, having a crank 37 at its outer end and having a thrust collar 38 just inside the wall 31.

The threaded end 39 of shaft 36 is threaded into the bore 27 in stub shaft 26, and by rotating the shaft 36 with crank 37 the table section 12 may be caused to progress in either direction slidably with respect to the base 11 so as to raise or lower the table section.

The right table section is preferably provided with scale 40, which may comprise a small metal plate having printed thereon scale divisions to indicate the depth of cut and suitable indicia such as 0, ⅛, ¼, ⅜, ½.

The base 11 is also preferably provided with a small sheet metal pointer 41 secured thereto by a screw bolt and having its point disposed above the scale 40. Since the scale 40 is disposed diagonally with respect to a vertical line, it indicates the vertical adjustment of this table section 13 on a larger scale and permits a more accurate adjustment than any vertical scale.

Referring to Figs. 3 and 9, each table section is preferably provided with means for clamping the table section in predetermined position with respect to the base, which may comprise a screw member 42, which is threaded into a bore 43 in the front wall 17 of the base, and is provided with a knurled head 44. The end of the screw bolt 42 is adapted to engage a flat metal strip 45, which is located between the wall of the groove 23 and the dove-tailed formation 24, suitable clearance being provided.

The metal strip 45 is held in place by a plurality of set screws 46, which have their rounded ends engaging in rounded sockets in the strip 45, the screws being so adjusted in their bores in the front wall 17 that they hold the strip 45 in its position without clamping the dove-tailed formation 24. The clamping screw 42, however, is adapted to force the strip 45 against the dove-tailed formation 24, clamping this formation against the opposite side of groove 23 and securing the table section in any predetermined position.

Lock nuts 47 on set screws 46 hold these set screws in adjusted position. Each table section preferably has its end wall 32 provided with laterally projecting lugs 48, which have horizontally extending bores 49. The two lugs 48 at each end of the table have their bores 49 parallel to each other, and are adapted to slidably receive the extension shafts 50—53. The table extensions each comprise a pair of shafts 50, 51, or 52, 53, the shafts being slidably engaged in the bores 49 and having their outer ends secured together by a transverse extension frame member 54.

This transverse extension frame member comprises a cast metal member which is formed with a pair of laterally projecting lugs 55 suitably located to receive the ends of the shafts. The ends of the shafts are secured in bores 56 in these lugs by being threaded into these bores or in other convenient fastening means, and the transverse frame member is provided with a pair of laterally projecting bearing flanges 57.

Each bearing flange has a bearing groove 58 extending into it from the top, and a transverse roller 59 has its axially projecting trunnions 60 in the bearing grooves 58. The roller 59 is substantially cylindrical and is so adjusted that it has its upper surface tangent to the plane of the table section to which it is secured; that is, in the plane of the table top. In order to adjust this position of the roller 59 accurately the bearing brackets 57 are preferably provided with vertically extending bores 61 for receiving the set screws 62.

The bores 61 communicate with the grooves 58 so that the set screws 62 may project into the grooves 58 and engage the lower edge of the trunnions 60. The trunnions may have their actual bearing support on the ends of the set screws 61, so that the rollers 59 may be adjusted so that they have their uppermost surface exactly in the plane of the table top section to which they are attached. Thus these roller extensions are adapted to project beyond the ends 32 of the table sections and to support a work piece at a considerable distance from the tool or cutter 14. This is of particular importance where relatively slender stock is being worked, as the stock might otherwise sag at each end by bending upward at the middle.

When the roller extensions are not being used, they may be pushed in close to the ends of the table sections, and they may be secured in any desired position by means of a clamping screw bolt 63', which is located in a threaded bore in the lug 48 and adapted to engage one of the shafts 50 or 51, 52 or 53.

Referring to Fig. 1, the trunnions 60 of the rollers 59 may be held in the grooves 58 by the heads of screw bolts 63, which are threaded into the threaded bores located so closely to the grooves 58 that the beveled lower surfaces of the heads of bolts 63 overhang the trunnions 60.

The adjustment of these screw bolts also permits the trunnions to be raised and lowered, since these screw bolts may be withdrawn as the set screws 62 are threaded into the bearing brackets.

One of the table sections, such as the section 12, may be provided in one of its walls, such as the rear wall, with an integral tubular formation 64 (Fig. 4), having an axially extending bore 65, which has its axis located parallel to the plane of the table and parallel to the axis of the cutter. This bore may fixedly support a stub shaft 66, which is preferably provided with a groove 67, formed with two flat intersecting plane surfaces so as to be substantially triangular in section.

The shaft 66 may be secured in bore 65 with its groove uppermost, by means of a set screw member 68, which has a non-circular socket 69 for engaging a wrench, and which is provided with a cup-shaped end 70 adapted to grip the shaft 66 and hold it securely.

The groove 67 is adapted to engage the complementary frusto-conical end 71 of a hand screw 72, having a knob 73. This hand screw is carried by a fence supporting collar 74, comprising a cast metal member formed with an upper attaching flange 75 and with a lower body portion having a bore 76 for slidably receiving the shaft 66.

A threaded bore 77 extends through the body 74 from the top and receives the threaded hand screw 72. The body 74 is adapted to support the attaching flange 78 of a fence supporting

fixture 79. The attaching flange 78 is provided with a centrally located aperture 80 for passing the hand screw 72 and for rotatably mounting this fixture 79 on the hand screw. Both the attaching flange 78 and the body 74 of the collar may be provided with the curved peripheries 81 and 82, and the latter may support a pointer 83 which is secured thereto by a screw bolt 84.

The peripheral surface 81 is located at a predetermined radius from the center of hand screw 72 so that when the fixture 79 is rotated on this screw 72 the surface 81 moves adjacent the pointer 83. Surface 81 may be provided with a single mark for the purpose of indicating the position of the fixture when the fence is at right angles to the axis of a cutting tool, or it may be provided with any desired angular indicia to indicate this and/or other positions.

The collar body 74 has its attaching flange 75 provided with threaded bores 85 for the securing bolts 86. These bolts may be provided with washers and pass through elongated slots 87 in the attaching flanges 78, the slots permitting movement of the fixture 79 with respect to the attaching bolts 86 when the bolts are loosened.

As a general rule, the bolts 86 may be driven home to secure the fixture 79 in such position that the fence extends parallel to the edges of the table sections or at right angles to the axis of the cutting tool.

The fence supporting fixture 79 has a forwardly extending body portion carried by attaching flange 78 and provided with a pair of upwardly extending bearing portions 85', 86'. These bearing portions may be joined by the upwardly extending reinforcing ribs 87', and they are provided with aligned bores 88 for receiving the shaft 89. The shaft 89 is rotatably supported in bores 88, and is provided at each end with thrust collars 90, 91, each thrust collar being secured on the shaft by an appropriate set screw.

The shaft also carries a radially projecting handle 92, which is provided with a reduced threaded end 93 that is threaded home in a threaded bore 94 in the shaft. The bearing portion 86' preferably has a curved upper surface formed at the same radius from the center of shaft 89 as thrust collar 90 so that the bearing portion 86' may support a pointer 95 adjacent a scale 96 carried by thrust collar 90.

The scale 96 is preferably provided with angular indicia and scale divisions, the indicia beginning at zero in the middle of the scale and extending in both directions from the middle, such as 0, 15, 30, and 45 degrees. The pointer 95 may consist of a small sheet metal pointer formed with an attaching flange 97 at right angles to the pointer and secured by a screw bolt 98 to the bearing portion 86'.

The pointer 95 may be turned slightly on the screw bolt 98 to effect an adjustment of the proper position for the end of the pointer, after which it may be clamped in place by the screw bolt 98.

The fence or guide 15 preferably comprises a cast metal member of substantially rectangular shape in elevation, provided with a flat machined forward surface 99 for engaging the work piece. It may have rearwardly projecting reinforcing ribs 100 at its border and extending from the bottom to the top at various points throughout its length, particularly at points directly opposite the thrust collars 90 and 91.

The fence 15 is preferably provided with a rear beveled surface 101 at its lower edge, thereby giving it a relatively sharp lower edge 102, so that the fence may be arranged close to the table sections and at any desired angle, without any interference between parts of the fence and the table.

At the reinforcing ribs 100, which are opposite thrust collars 90, 91, it is preferably provided with rearwardly projecting bearing lugs 103—106. Each bearing lug is provided with a transverse bore extending parallel to the length of the fence and adapted to receive the pivot bolts 107—110. Each pivot bolt 107—110 is preferably provided with spring washers so that the nuts on the bolts may resiliently clamp the flanges 103—106 and assist in holding the fence in predetermined position, after it has been adjusted.

The pivot bolts 107—110 pass through the ends of a plurality of links 111—114. The opposite end of each link is provided with an aperture 115 for receiving the pivot bolts 116—119. The pivot bolts 116 and 118 may consist of bolts having an enlarged trunnion portion 120 and a reduced threaded portion 121, so that they may be threaded home in threaded bores 122 in the thrust collars 90, 91. The pivot bolts 117 and 119 may be identical in shape and construction, except that the head is replaced by an enlarged knob 123, which may be grasped by the hand for the purpose of screwing the bolt in tightly and clamping the upper links 112, 114 against the thrust collars to secure the fence in predetermined position.

The thrust collars, fence and links 111, 114 form two parallelogram linkages, one at each end of the shaft 89, and by this means the fence or guide 15 may be supported above the table sections in any of a plurality of predetermined positions, as shown in Fig. 7.

In order to effect an adjustment of this fence, it is only necessary to grasp the handle 92, after loosening the clamping bolts 117, 119 by means of knobs 123, and the pivotal movement of shaft 89 causes a corresponding angular movement of the fence 15. When the fence is at the desired position, as indicated by the pointer 95, the knobs 123 are used to drive the bolts 117, 119 home and clamp the linkages in that position. The base 11 has its front wall 17 and rear wall 19 provided with bearing supporting formations comprising the partially cylindrical sockets or bores 124, 125. Each of these sockets or bores is formed in the base during the casting operation, and each one is formed by an inwardly extending flange 126, 127, which has a vertically extending bore 128 for receiving the screw bolts 129, 130.

The side walls of the sockets 124, 125 are also formed with transverse threaded bores on each side of the bearing supporting members 131, 132 for receiving set screws 133, which also assist in clamping the bearing supporting members 131, 132 in place in the bores 124, 125. The screw bolts 129, 130 pass through the bores 128, and are threaded into threaded bores 134 in the bearing supporting members to secure these bearing supporting members in the sockets.

The cutter 14 is fixedly mounted upon the shaft 135 for rotation about a horizontal axis, and preferably comprises an integral enlargement of the shaft 135. Thus the cutter unit has a reduced extension 136 at the left end (Fig. 5), which serves as a trunnion for that end of the cutter, and which is rotatably mounted by means of a ball bearing assembly comprising the inner race 137, balls 138, and outer race 139.

The outer race 139 is a frictional fit in a cylindrical bore 140 formed in the bearing supporting member 131.

The bearing supporting member 131 comprises a substantially cylindrical metal member having the bore 140 in one side for receiving the ball bearing race 139. It is secured in place by the bolt 129 and by set screws on each side which pass through the walls of the flanges 126. It may also have a threaded bore 141 communicating with the bore 140 and closed by a screw plug 142 to provide access to the bearing for oiling.

The reduced end 136 of the shaft may also have a slight taper, if desired, for securing the race 137 in place. The shaft 135 is preferably provided with a slight enlargement adjacent the body of the cutter 14, forming the annular shoulder 143, which engages the edge of inner race 144. This shaft end is rotatably mounted in a ball bearing assembly comprising the inner race 144, balls 145, and outer race 146.

The outer race 146 may be mounted in a cylindrical socket 147 in the bearing member 148. Bearing member 148 may be secured in the bearing supporting member 132 by a pair of set screws 149 which engage in an annular groove in the bearing member 148. The bearing supporting member 132 comprises a sleeve having the cylindrical bore 150 for receiving the bearing member 148, and having the threaded bores 151 for the set screws 149.

The shaft 135 is preferably provided with a suitable pulley 152 for driving the cutter. The body of the cutter 14 comprises a substantially cylindrical member which is formed with a plurality of grooves for the reception and to permit the clamping of the cutter blades 153.

The grooves 154 are of sufficient size to receive the cutter blades, and they extend at a slight angle to a radial line and are equally spaced about the periphery of the cutter body. These grooves extend longitudinally of the cylindrical body and are located in a plane which is parallel to the axis of the body and shaft. The body is also preferably provided with relatively narrow slots or grooves 155, one of such slots being provided for each blade slot 154.

The slots 155 extend transversely to the blade slots 154, preferably at substantially right angles, and extend almost to the slots 154, leaving a relatively narrow neck of material connecting the clamping portion 156 with the main body of the cutter. This gives the clamping portion 156 resilient characteristics, and it is provided in each case with a plurality of transverse bores 157 for receiving set screws 158 that clamp the blade in place.

Each blade 153 comprises a flat piece of suitable tool steel which has a cutting edge produced by means of a bevel 159 on the rear side of the blade. The blades are all so disposed in the cutter body 14 that their cutting edges 160 are parallel to the axis of the body and shaft and at the same radial distance from such axis. Any number of cutter blades may be used, and in the present embodiment three cutter blades have been equally spaced about the periphery of the cutter body 14.

The body is also preferably provided with a shallow partially cylindrical groove 161, extending longitudinally of the cylindrical body in front of each blade 153 for directing shavings which come from the cutter blade edge 160. This curved surface tends to cause the shavings to curl away from the blade, and helps to effect a removal of the shavings from the vicinity of the blade.

The table section 13 differs from the table section 12 also in the fact that it is preferably provided with an integral guard extension 162. This guard extension comprises a continuation of the top of the table, which is bordered by a depending border flange 163 for reinforcement. It projects forwardly from the table section 13, and then extends longitudinally past the end of the shaft 136 into a position adjacent the end of table section 12. The table section 13 is also provided with a laterally projecting lug 164 having a vertically extending bore 165 for receiving a stub shaft 166 that carries a movable guard 167.

The movable guard 167 comprises a cast metal member of sufficient length and width so that its main body 168 covers the cutter opening 169 which exists between the table sections 12 and 13. It is provided with a diagonally and vertically extending arm 170 extending over and above the bore 165, and has a vertically extending bore 171 within which the shaft 166 is secured. Shaft 166 thus serves to mount the guard 167 for rotation in the bore 165.

The guard 167 is also preferably provided with a depending border flange 172 for reinforcement purposes, and with a depending slide flange 173, which is located at such a radius to the shaft 166 that it can never strike the cutter 14. It slidably engages the top of table section 13.

The guard 167 also has inwardly extending lug formation 174 provided with a bore 175 for receiving a pin 176 fixedly secured therein and serving as a stop for engaging the grooved stop surface 177' formed in the edge of the table section 13. A helical spring 177 has one end hooked in a cotter pin 178 which is secured in a bore in the guard extension wall 163, and the spring has its opposite end secured in a cotter pin located in a bore in a laterally projecting lug 179 carried by guard 167.

Spring 177 thus urges the guard 167 into the position of Fig. 1, from which it may be moved by hand or by any work piece which engages the beveled work-engaging surface or wall 180 on the arm 170. The angle of this wall 180 is such, with respect to the direction of passage of work longitudinally of the tables, that a piece of lumber engaging the wall 180 cams the guard 167 downward in Fig. 1; that is, laterally with respect to the top of the table. As soon as the work has passed, the guard 167 moves back into the position of Fig. 1, covering the cutter and preventing injury.

The stop pin 176 is intended to prevent the guard 167 from hitting the fence 15 at this time, since the blows so struck by the guard might otherwise change the adjustment of the fence. If desired, the depending border flange of the table section 13 may be provided with a set screw adjustably engaging the pin 176 so as to set the final position of the guard 167 in accordance with the placing of the fence 15 to prevent contact between the guard and fence at every adjustment of the fence.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention, what I

claim as new and desire to secure by Letters Patent of the United States, is:

1. In a wood working tool, the combination with a table section movably mounted on said base, a cutter carried by said base, said table having bores located in parts of said table extending parallel to the table top, a pair of rods, each rod being mounted in a bore in said table section, the two adjacent ends of said rods being joined by a transverse frame member located outside said table whereby said transverse frame member may be located at a point spaced from said table and supported from said table by said rods to provide an extension of said table, said transverse frame member having a pair of bearings and a roller having its trunnions located in said bearings to support the work, said roller being secured in place in said bearings by the over-hanging heads of threaded members threaded into said transverse frame member.

2. In a wood planer, the combination of a support with a suitable cutter mounted for rotation about a horizontal axis, a work table comprising a pair of movable table members adapted to be elevated or lowered with respect to the cutter, to determine the depth of cut, said table members having substantially horizontal upper work surfaces, and an extension for each of said work table members, said extensions being slidably mounted on said members and extending in opposite directions therefrom and having a supporting roller on each extension, the upper surface of which is adapted to be adjusted to the plane of work surfaces of said table members, for the purpose of supporting a long board at widely spaced points, to prevent its bowing upward on the table above the cutter, due to the weight of the projecting ends of the board, said table members being provided with parallel cylindrical bores, and said extension comprising a transverse metal frame member supporting a pair of cylindrical rods in parallel relation for sliding movement in said bores, said transverse frame member having bearing lugs provided with vertically elongated grooves, said roller having trunnions in said grooves, and adjustable threaded means mounted in the base of said grooves, to determine the elevation of each roller with respect to its table member.

3. In a wood planer, the combination of a support with a suitable cutter mounted for rotation about a horizontal axis, a work table comprising a pair of movable table members adapted to be elevated or lowered with respect to the cutter, to determine the depth of cut, said table members having substantially horizontal upper work surfaces, and an extension for each of said work table members, said extensions being slidably mounted on said members and extending in opposite directions therefrom and having a supporting roller on each extension, the upper surface of which is adapted to be adjusted to the plane of work surfaces of said table members, for the purpose of supporting a long board at widely spaced points, to prevent its bowing upward on the table above the cutter, due to the weight of the projecting ends of the board, said table members being provided with parallel cylindrical bores, and said extension comprising a transverse metal frame member supporting a pair of cylindrical rods in parallel relation for sliding movement in said bores, said transverse frame member having bearing lugs provided with vertically elongated grooves, said roller having trunnions in said grooves, and adjustable threaded means mounted in the base of said grooves, to determine the elevation of each roller with respect to its table member, said trunnions being secured in said grooves by a threaded member threaded into said bearing lugs adjacent said grooves, and having its head over-hanging said trunnions in said grooves.

4. In a table extension, the combination of a support provided with a pair of parallel cylindrical bores, a pair of cylindrical rods adapted to be slidably mounted in said bores, said cylindrical rods having their outer ends fixedly mounted in a transverse frame member, with the rods in parallel position, said transverse frame member having bearing lugs provided with upwardly open grooves, a roller having trunnions of reduced size at each end, mounted for rotation in said grooves, and means for securing said trunnions in said grooves, comprising threaded members having their shanks threaded into threaded bores in each of said bearing lugs, and having their heads over-lying said trunnions, to prevent withdrawal of the trunnions from the bearing grooves.

5. In a table extension, the combination of a support provided with a pair of parallel cylindrical bores, a pair of cylindrical rods adapted to be slidably mounted in said bores, said cylindrical rods having their outer ends fixedly mounted in a transverse frame member, with the rods in parallel position, said transverse frame member having bearing lugs provided with upwardly open grooves, a roller having trunnions of reduced size at each end, mounted for rotation in said grooves, and means for securing said trunnions in said grooves, comprising threaded members having their shanks threaded into threaded bores in each of said bearing lugs, and having their heads overlying said trunnions, to prevent withdrawal of the trunnions from the bearing grooves, each of said bearing grooves communicating with a threaded bore at its base, and a threaded member in each of said bores engaging and supporting a trunnion, whereby the upper surface of the roller may be brought into the plane of a work surface carried by said supporting member.

6. In a wood planer, the combination of a support with a suitable cutter mounted for rotation about a horizontal axis, a work table comprising a pair of movable table members adapted to be elevated or lowered with respect to the cutter, to determine the depth of cut, said table members having substantially horizontal upper work surfaces, and an extension for each of said work table members, said extensions being slidably mounted on said members and extending in opposite directions therefrom and having a supporting roller on each extension, the upper surface of which is adapted to be adjusted to the plane of work surfaces of said table members, for the purpose of supporting a long board at widely spaced points, to prevent its bowing upward on the table above the cutter, due to the weight of the projecting ends of the board, said extensions being provided with bearing grooves, and said rollers having trunnions at each end of each roller, and adjustable threaded means in said bearing grooves whereby each end of each roller may be separately adjusted to bring the rollers into parallel relation with the table top.

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