Jan. 19, 1954 C. A. JOHNSON 2,666,461

HEEL BLOCK SAWING MACHINE

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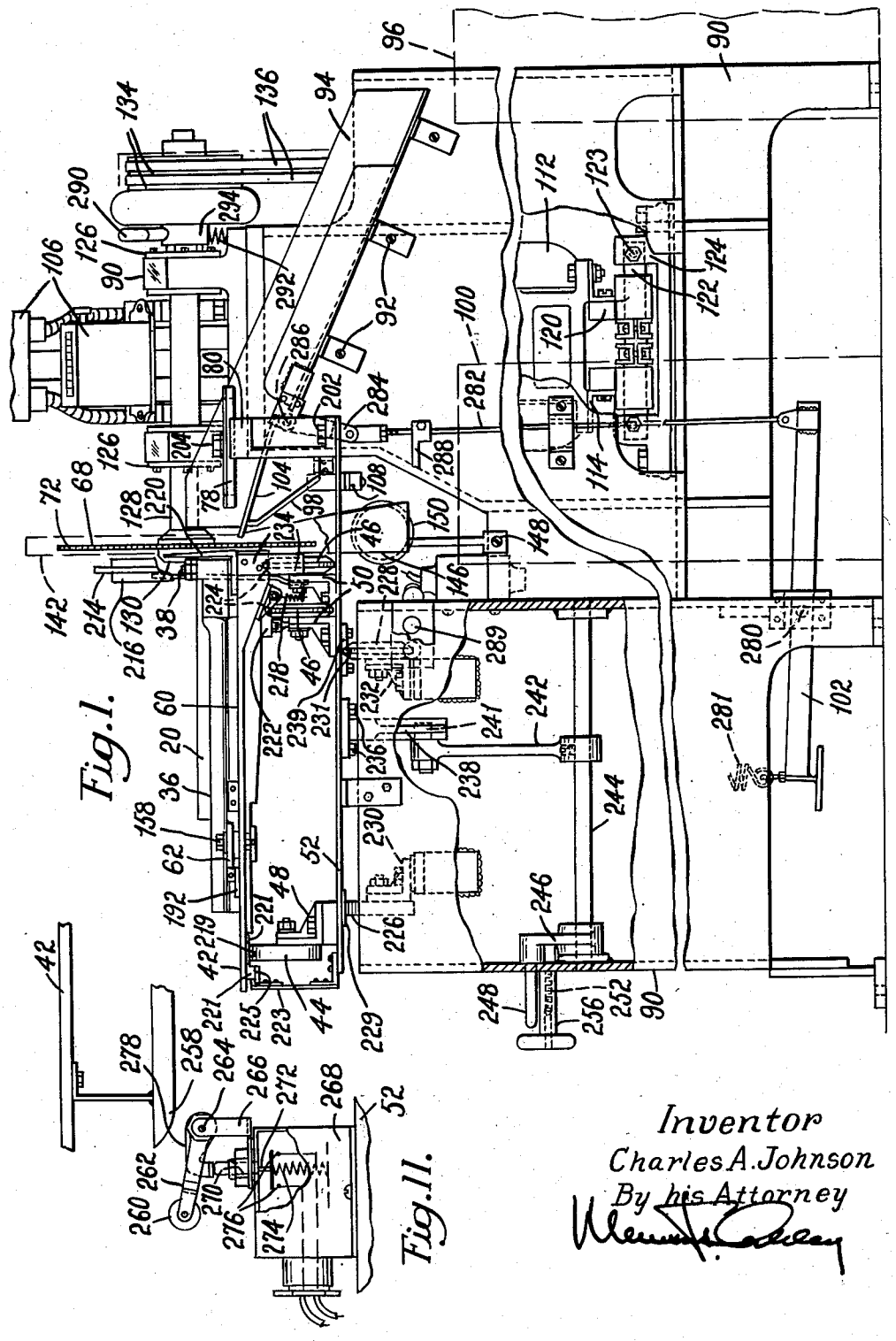


Fig. 1.

Fig. 11.

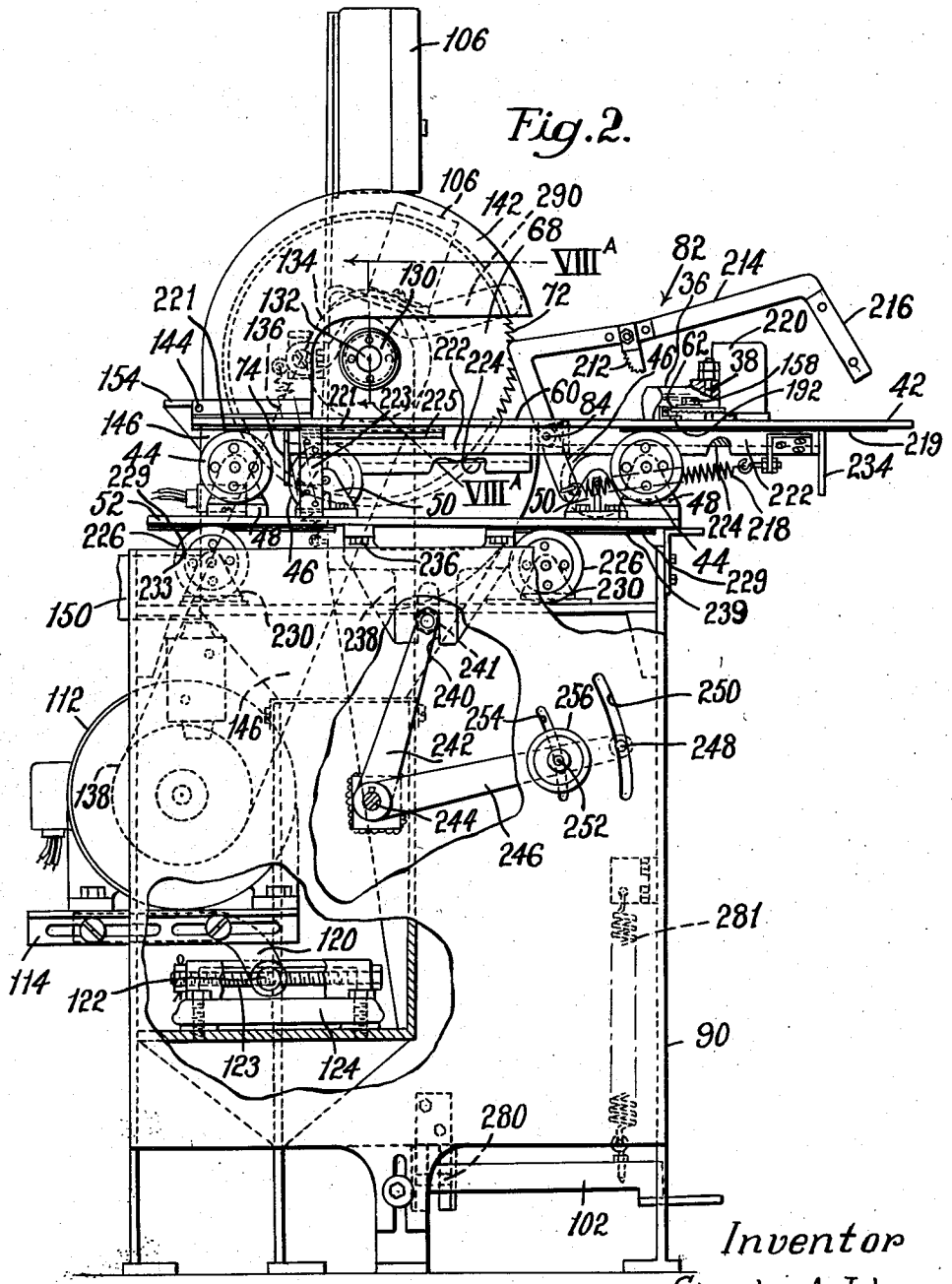
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Fig. 2.



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Fig. 3.

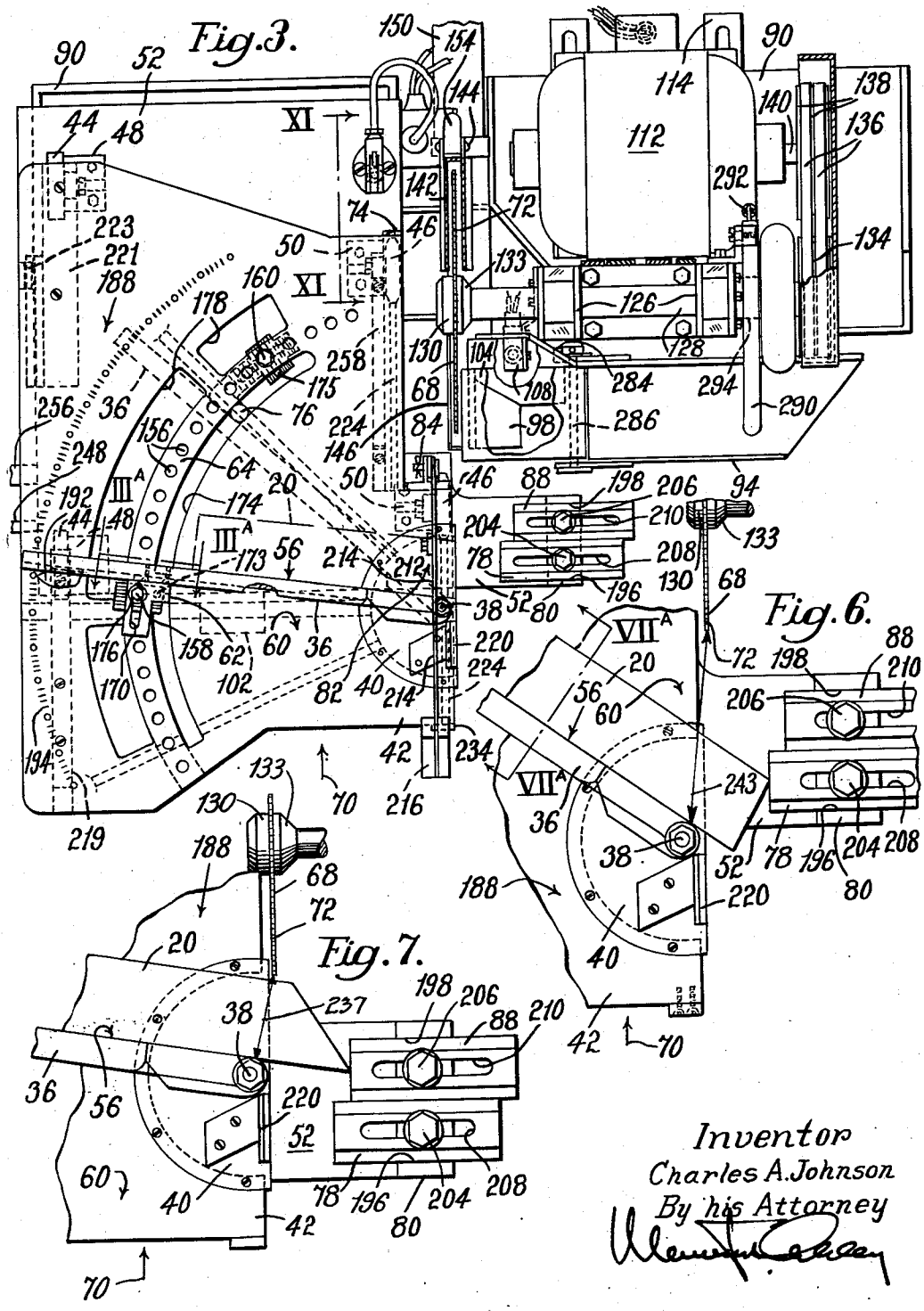


Fig. 6.

Fig. 7.

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Fig. 4.

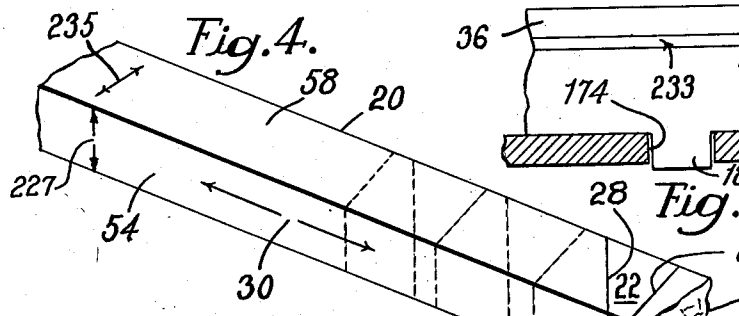
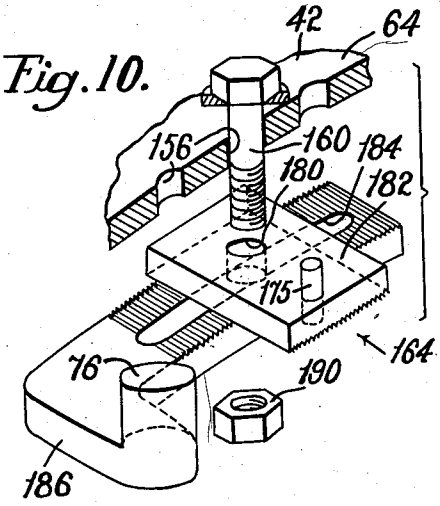


Fig. 3.A

Fig. 10.



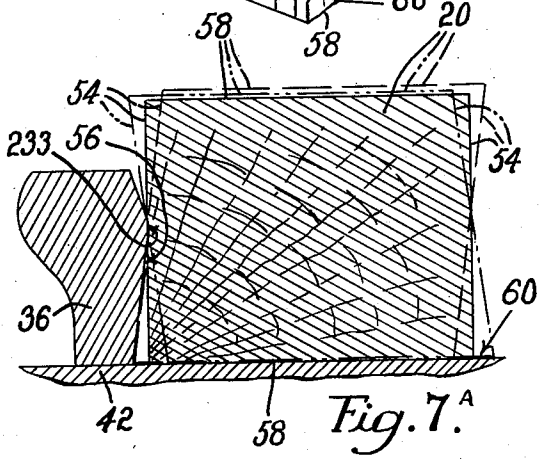


Fig. 7.A

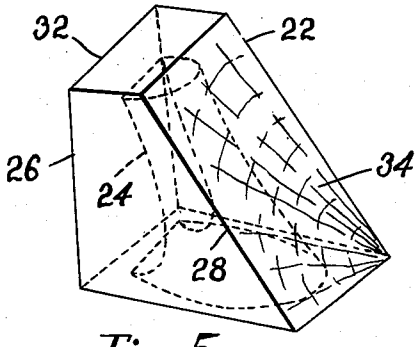
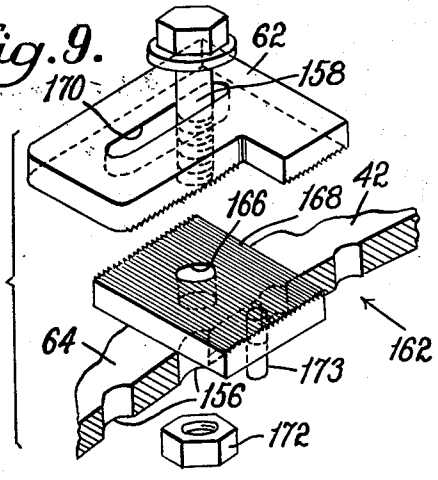


Fig. 5.

Fig. 9.



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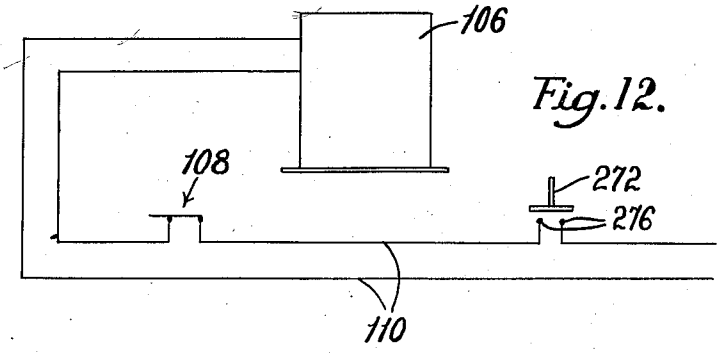


Fig. 12.

Fig. 8.

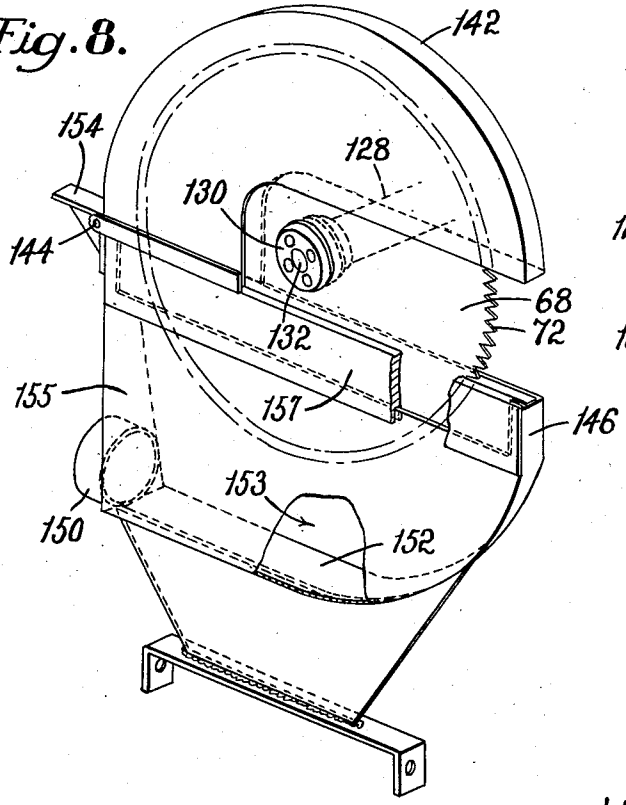
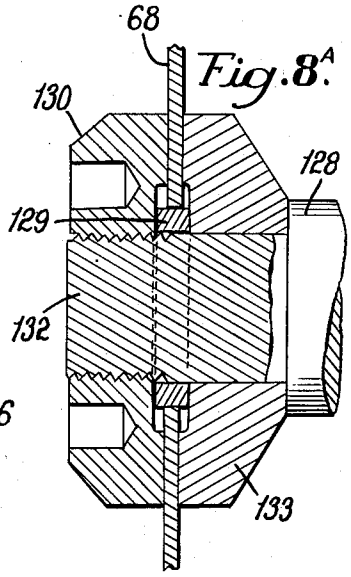


Fig. 8A.



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UNITED STATES PATENT OFFICE

2,666,461

HEEL BLOCK SAWING MACHINE

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Application January 3, 1949, Serial No. 68,841

6 Claims. (Cl. 143—52)

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This invention relates to machines for sawing wood heel blocks or blanks and is illustrated as embodied in an improved machine of the type disclosed in United States Letters Patent No. 1,888,272, granted November 22, 1932, on an application filed in the name of Ralph F. Knight.

The present invention consists in the novel features hereinafter described, reference being had to the accompanying drawings illustrating one embodiment of the invention selected for purposes of illustration, said invention being fully disclosed in the following description and claims.

In the drawings,

Figs. 1, 2 and 3 are front, side and plan views, partly broken away and partly in section, of the illustrative heel block sawing machine;

Fig. 3A is a section on line IIIA—IIIA of Fig 3;

Fig. 4 is an angular view of a wood stick or heel strip a portion of which has been sawed by the use of the above machine to form wood heel blanks or blocks;

Fig. 5 is a perspective view of one of the wood heel blocks sawed from the stick illustrated in Fig. 4, a wood heel which is subsequently turned from the block being shown in dotted lines;

Figs. 6 and 7 are plan views showing during two different stages of the heel block sawing operation mechanism for supporting and positioning in the machine the stick from which the wood heel blocks are sawed;

Fig. 7A is a section on line VIIA—VIIA of Fig. 6;

Fig. 8 is a detail view showing a circular saw of the illustrative machine and a housing therefor;

Fig. 8A is a section on line VIIIA—VIIIA of Fig. 2 showing in detail a mounting for the saw;

Figs. 9 and 10 are detail views showing in perspective stops which are mounted upon a stick carrier of the machine and are adapted to position a stick engaging arm in different operative positions upon the carrier;

Fig. 11 is a view on line XI—XI of Fig. 3 showing portions of mechanism for controlling a counter which records the number of wood heel blocks formed by the machine; and

Fig. 12 shows wiring for controlling said counter.

The invention will be described with reference to sawing from a stick or heel strip 20 (Figs. 4, 6, 7 and 7A) wood heel blanks or blocks 22 (Figs. 4 and 5) from which heels 24 (Fig. 5) are formed, said stick being sawed alternately along lines 26, 28 disposed at different angles to a lengthwise dimension 30 (Fig. 4) of the stick to form breast and rear faces 32, 34 (Fig. 5) respectively of the blocks which are of the proper size and shape

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to have heels turned from them with a minimum of wastage of wood.

The stick 20 to be sawed is rested against or "backed by" a holder or arm 36 which is pivoted upon a pin 38 secured to a steel circular insert 40 (Figs. 3, 6 and 7) screwed to and forming part of a slidable stick supporting carrier 42 mounted for forward and rearward movement upon rollers 44, 46 (Figs. 1, 2 and 3) rotatably mounted on bearings supported by lugs 48, 50 secured to a table 52 which will be hereinafter described in detail. The stick 20 which is substantially rectangular or rhomboidal in cross section is usually placed manually upon the carrier 42 with one of its faces 54 (Figs. 4 and 7A) resting against a face 56 (Figs. 6, 7 and 7A) of the arm 36 and one of its faces 58 resting against a flat upper surface 60 of the carrier when said arm is in its full-line position shown in Figs. 3 and 7 in engagement with a front stop or abutment 62 (Figs. 1, 2, 3 and 9) secured, as will be hereinafter explained, to an arcuate rib portion 64 (Figs. 3, 9 and 10) of the carrier 42, the leading untrimmed and somewhat irregularly shaped end 66 (Fig. 4) of the stick extending to the right, as viewed in Figs. 3 and 7, of the general plane of a circular saw 68.

When the manually actuated carrier 42 is moved rearward, that is in a direction indicated by arrow 70 (Figs. 3, 6 and 7), past a toothed cutting edge 72 of the saw 68, the stick 20 is sawed along the line 26 (Figs. 4 and 5) to form the breast face 32 (Fig. 5) of the heel block 22. The carrier 42 is next moved forward to its starting position on the table 52, a depending abutment or stop 74 (Figs. 2 and 3) of the carrier at such time being in close proximity to, or in engagement with, the rear roller 46 of the table 52 which roller may be referred to as a stop. The carrier arm 36 is then swung clockwise as viewed from above with relation to the carrier 42 to its dash-line position (Fig. 3) or to its full-line position (Fig. 6) against a rear stop or abutment 76 (Figs. 3 and 10) secured by means which will be hereinafter described to the arcuate rib 64 of the carrier, the leading end of the stick 20, as best shown in Fig. 6, thereafter being forced against a gage 78 (Figs. 1, 3, 6 and 7) adjustably secured to a bracket 80 secured to a projection of the table 52. After clamping the stick 20 thus positioned against the carrier 42 and its arm 36 by the use of a holddown clamp 82 (Figs. 2 and 3) fulcrumed upon a pin 84 mounted upon the carrier 42, the carrier is again moved rearward on the rollers 44, 46 to move the stick 20 past the toothed cutting edge 72 of the saw 68 with the result that

the stick 20 is severed along the line 28 (Figs. 4 and 5) to form the rear face 34 of the blank 22. The carrier 42 is then again moved forward to its starting position upon the table 52 and the carrier arm 36 is swung forward to its full-line position (Figs. 3 and 7) upon the carrier 42 against the front stop or abutment 62. After the right end (Fig. 7) of the stick 20 has been forced against a gage 38 (Figs. 3, 6 and 7) adjustably secured to the bracket 39 and the stick has been clamped against the arm 36 and its carrier 42, the carrier 42 is again manually moved rearward to cause the stick to be severed along the line 26 (Figs. 4 and 5). The stick 20 is thereafter trimmed alternately along the lines 28, 26 until it is used up, waste material at the trailing end of the stick being disposed of manually by the operator.

The machine comprises a main frame 90 (Figs. 1, 2 and 3) which is secured to the floor and upon which the saw 68 and its operating means are supported. Secured by screws 92 (Fig. 1) to the main frame 90 at one side of the saw 68 is a trough 94 (Figs. 1 and 3) for receiving the blocks 22 cut from the stick 20 and for guiding them into a position over a container or collector 96 (Fig. 1) into which they are dropped. As will be explained later, pieces of waste material trimmed from the sticks 20 drop into a trough 98 (Figs. 1 and 3) and then into a container or collector 100 (Fig. 1), access to said trough 98 being effected by raising, in response to depression of a treadle 102, a plate or lid 104 which normally forms the upper end portion of the bottom of the trough 94. The lid 104 when in its closed position prevents access of material cut from the stick 20 to the trough 98 and when in its open or active position prevents access of said material to the trough 94 and permits such material to drop into the trough 98.

In order to keep a record of the number of blocks 22 sawed by the machine a counter 106 (Figs. 1, 2 and 12), which is operative in response to rearward movement of the carrier 42 and is hereinafter described, is secured to the main frame 90. When the treadle 102 is depressed, and accordingly the lid 104 is raised, a switch 108 (Figs. 1, 3 and 12) in a counter circuit 110 (Fig. 12) is opened to render the counter 106 ineffective in response to rearward movement of the carrier 42, thereby insuring against including in the count waste pieces sawed from the stick 20.

Power for driving the saw 68 is provided by an electric motor 112 (Figs. 1, 2 and 3) having secured to it slotted angle plates 114 to which are adjustably secured levers 120 pivoted upon a bearing rod 122. Threaded into opposite end portions of the bearing rod 122 are screws 123 which are mounted for rotation in a bracket 124 bolted to the main frame 90. Mounted in bearings 126 (Figs. 1 and 3) secured to the main frame 90 is a shaft 128 (Figs. 1, 3, 3 and 8A) having a partially threaded shank 132 onto which a collar 133 (Figs. 3 and 8A) is shrunk. The saw 68 is clamped against the collar 133 by a nut 139 threaded onto said shank 132, the collar and the nut being recessed to provide an annular space for receiving a ring 129 (Fig. 8A) which is supported by the shank 132 and upon which the saw is mounted. A double pulley 134 (Figs. 1, 2 and 3) is secured to the right end of the shaft 128, as viewed from the front of the machine, and is driven through belts 136 by a double pulley 138 (Figs. 2 and 3) secured to a drive shaft 140 (Fig. 3) of the motor 112. The weight of the motor 112 and its angle plates 114 is partially supported by the belts 136, thereby insuring that the belts are at all times in taut driving relation with the pulleys 134, 138.

In order to protect the operator from injury there is provided a saw hood or guard 142 (Figs. 1, 2, 3 and 8) which is hinged at its rear end upon a pin 144 carried by a sawdust collector or housing 146 secured by screws 148 (Fig. 1) to the main frame 90. Entering the rear end of the housing 146 is a pipe 150 which is connected to a suction pipe (not shown), and through which sawdust in the housing is sucked for disposal.

In order to facilitate changing the saw 68 the housing 146 has a saw-receiving chamber 152 (Fig. 8), a wall 153 of which extends downward and away from an opposite vertically disposed wall 155 which is arranged adjacent to the threaded shank 132 and has a removable upper end portion 157. After swinging the hood 142 back into engagement with a ledge 154 of the housing 146 and removing the nut 139 and the upper end portion 157 of the wall 155, the saw 68 may be moved to the left (Fig. 3) off the ring 129 and swung toward the wall 153 of the housing sufficiently to enable the saw to be moved from the end of the threaded shank 132 and slid upward past the end of said shank out of the machine. In installing a saw 68 in the machine said saw is slid past the outer end of the threaded shank 132 into the chamber 152 along the wall 153 and is then swung to a position at right angles to the axis of rotation of the shaft 128 and slid onto the ring 129. The nut 132 is then threaded onto the shank 132 to clamp the saw 68 in its operative position against the collar 133 and the upper end portion 157 of the wall 155 and the hood 142 are then arranged in their operating position shown in Fig. 8.

The arcuate rib 64 of the carrier 42 has formed in it a plurality of holes 156 (Figs. 3, 9 and 10) for selectively receiving bolts 158 (Figs. 3 and 9), 160 (Figs. 3 and 10) of front and rear stop units 162 (Fig. 9), 164 (Fig. 10) which comprise the stops or abutments 62, 76, respectively. The front stop unit 162 comprises the bolt 158 which extends downward through an elongated slot 170 in the abutment 62 and through a recess 166 in a block 168 and through one of the holes 156, the assembly being held in position on the carrier by a nut 172 threaded onto the bolt 158. Opposing faces of the abutment 62 and the block 168 are serrated.

The rear stop unit 164 (Fig. 10) comprises the bolt 160 which passes downward through one of the holes 156, through a bore 180 in a block 182 and an elongated slot 184 in a plate 186 having formed integral with it the abutment 76 which fits in an arcuate slot 174 (Figs. 3 and 3A) of the carrier 42 and is arranged below the upper surface 60 of the carrier 42. In order to engage the abutment 76 which is positioned below the upper surface 60 of the carrier 42, the carrier arm 36 has a depending portion 187 (Fig. 3A) which rides in the slot 174. The blocks 168, 182 are provided with pins 173 (Figs. 3 and 9), 175 (Figs. 3 and 10) which when the front and rear stop units 162, 164 are assembled on the carrier 42 engage an edge of the arcuate slot 174. Opposing surfaces of the block 182 and the plate 186 are serrated, the unit 164 being clamped in its selected position to the carrier by a nut 190.

At the side of the arcuate ribbed portion 64 opposite the arcuate slot 174 is a wide noncontinuous arcuate slot 178 (Fig. 3) which, together with the slot 174, facilitates access to the parts

for the purpose of adjustment of the front and rear stop units 162, 164 into different clamped positions upon the carrier 42. In order to assist the operator to follow block making instructions, the carrier arm 36 is provided with a pointer 192 (Figs. 2 and 3) which may be moved into register with any one of a plurality of graduations upon an arcuate scale 194 (Fig. 3).

When the carrier 42 is in its forward or rest position shown in Figs. 1, 2 and 3 with its depending abutment 74 in engagement with or in close proximity to the rear roller 46 and the carrier arm 36 is in its forward position upon the carrier and in engagement with the abutment 62, the right end (Fig. 7) of the stick 20 is moved into engagement with the gage 88 preparatory to forcing the clamp 82 against the stick and moving the carrier 42 rearward past the toothed cutting edge 72 of the saw 68 to trim said stick along line 26. When the carrier 42 is in its forward, or rest position, and the carrier arm 36 is in its rearward position shown in Fig. 6 against the abutment 76 preparatory to sawing the stick 20 along the line 26, the right end of the stick is in engagement with the gage 78. The gages 78 and 88 fit in rectilinear grooves 196, 198 formed in the bracket 80 which is secured by screws 202 (Fig. 1) to the table 52. Screws 204, 206 which extend through elongated slots 208, 210 in the gages 78, 88 and are threaded into the bracket 80 are utilized to secure the gages in different adjusted positions in the grooves 196, 198. The gages 78, 88 may be described as being constructed and arranged to locate the stick 20 lengthwise upon the carrier 42.

The holddown clamp 82, which comprises a toothed work-engaging portion 212 (Fig. 2) secured to an arm 214 (Figs. 1, 2 and 3) is pivoted upon the pin 84 secured to the carrier 42, and is positioned just to the left of the plane of the circular saw 68 as viewed from the front of the machine. The forward end of the arm 214 has a handle 216 which is normally held in its raised position shown best in Fig. 2 by a spring 218 and which is gripped and moved clockwise by the right hand of the operator to force the clamp 82 against the stick 20. The operator retains his hold on the handle 216 to move the carrier 42 in which the stick 20 has been positioned and clamped, rearward to cut off the heel block. The operator usually grasps the stick 20 with his left hand just to the left of the toothed work-engaging portion 212 of the clamp 82 as viewed from the front of the machine and in order to insure that the operator's thumb cannot be moved against the saw 68 during rearward movement of the carrier 42, said carrier has secured to it an upstanding shield or plate 220. The plate 220 is secured to the carrier 42 just forward of the axis of pivotal movement of the arm 36 upon said carrier and is disposed in parallel relation to the plane of the saw 68.

The bottom of the carrier 42 is provided with depending flanges 222 (Figs. 1 and 2) having formed in them rectilinear grooves 224 which extend parallel to the plane of the saw 68 and are constructed and arranged to receive the rollers 46 which are carried by the table 52 and are rotatable about axes parallel to the axis of rotation of the saw. The rollers 44 carried by the table 52 are engaged by flat steel plates 219 (Figs. 1, 2 and 3) and 221 secured to and forming part of the carrier 42. In order to assist in controlling the carrier 42 a bracket 223 is screwed to the table 52 and has at its upper end an overhanging lip the bottom of which is engaged by a flange 225 (Fig. 1) formed integral with the plate 221. The table 52 which may be referred to as a support is mounted upon rollers 226 (Figs. 1 and 2), 228 (Fig. 1) which are rotatably mounted upon bearing lugs 230, 232 bolted to the main frame 90. The rollers 226 have cylindrical peripheries which engage flat plates 229 (Figs. 1 and 2) secured to the table and the rollers 228 (Fig. 1 have V-shaped peripheries which run in notches 231 formed in plates 239 bolted to the table, said notches being disposed at right angles to the axis of rotation of the saw 68.

It will be noted (Fig. 2) that the table 52 slopes downward and forward to insure that the carrier 42 when released by the operator shall move by the action of gravity to its forward or idle position in which the depending abutment 74 (Figs. 2 and 3) of the carrier engages the rear roller 46. Rearward movement of the carrier 42 is limited by the engagement of a depending abutment or stop 234 of the carrier with the front roller 46. During a plurality of stick sawing cycles of the machine the carrier 42 is seldom moved forward or rearward sufficiently to cause the abutments 74, 234 to engage the rear and front rollers 46, said abutments serving merely as limit stops for the carrier.

The sticks or heel strips 20 are usually rectangular in cross section but because of warping are sometimes rhomboidal in cross section as illustrated in dash and in dash-and-dot lines (Fig. 7A). Moreover, the stick 20 instead of being straight is sometimes twisted. In order that sticks 20 such as above referred to may be effectively clamped to the flat surface 60 of the carrier 42 and to the arm 36 which may be considered as part of the carrier, it is desirable that substantially the entire face 56 of the stick shall engage the surface 60 of the carrier and that the face 54 of the stick shall engage the face 56 of the arm at a considerable distance from said surface 60. In order to accommodate sticks which have different cross sections and/or are slightly twisted the stick engaging face 56 of the arm 36, instead of being flat and disposed at a right angle to the stick supporting surface 60 of the carrier arm 36, has a salient portion 233 which is spaced a considerable distance, equal approximately to one-half of the thickness 227 (Fig. 4) of an average stick 20 operated upon, from the surface 60 and is substantially parallel to said surface. The face 56 may be described as being undercut.

In order to operate the machine at its maximum capacity it is desirable, in forming blocks 22 from which heels 24 of different styles and/or sizes are to be turned, to vary the starting positions of the carrier 42 in accordance with the size or diameter of the saw 68 and a heightwise dimension 235 (Fig. 4) of the stick 20, said starting positions being such that the sticks 20 can be quickly and effectively presented to the saw 68 with a minimum of lost motion. Accordingly, the table 52 which carries the gages 78, 88 and the stop 46, may be secured in different forward and rearward positions upon the rollers 226, 228 to provide a minimum gap 237 (Fig. 7) between the saw 68 and the right-hand end of the stick engaging face 56 of the arm 36. In setting up the machine for a saw 68 of a given diameter and a stick 20 of a given size, the operator adjusts the table 52 and, accordingly, the gages 78, 88 and the stop 46, longitudinally to the proper position with relation to the saw 68 to provide the mini-

mum gap 237. The stop 46 at that time is so positioned that when the carrier 42 has been moved forward from its position shown in Fig. 7 to its position shown in Fig. 6 the abutment 74 of the carrier is in engagement with the stop. By moving the table 52 and, accordingly, the gages 78, 80 and the stop 46 into different adjusted positions parallel to the plane of rotation of the cutting edges of the saw 68, a desired maximum gap 243 (Fig. 6), which is determined by the engagement of the abutment 74 of the carrier 42 with the stop, is maintained between the saw and the pivoted end of the arm 36 at its loading position shown in Fig. 6 and a gap of a constant width is maintained between the saw and the gage 80.

Secured to the bottom of the table 52 by screws 236 (Figs. 1 and 2) is a depending bracket 238 having a vertical slot 240 (Fig. 2) in which engages a roll 241 carried by the upper end of an arm 242 pinned to the central portion of a shaft 244 rotatable in bearings of the main frame. Keyed to the shaft 244, at its left end as viewed from the front of the machine, is an arm 246 having secured to it a laterally extending pin 248 arranged in an arcuate slot 250 (Fig. 2) in the main frame 90. Also extending from the arm 246 is a screw 252 which extends through an arcuate slot 254 in the main frame 90 and has threaded onto it a hand nut 256 which may be clamped against the main frame to hold said arm in position, or which may be temporarily released to swing the arm and accordingly move the table 52 into the desired forward or rearward position, after which the nut 256 is again turned onto the screw 252 to bind the arm in its adjusted position to the main frame.

In order to operate, except as hereinafter explained, the counter 106 every time that the carrier 42 is moved rearward to saw the stick 20 along lines 26 or 28, the carrier 42 has secured to it a cam 258 (Fig. 11). During rearward movement of the carrier 42 the cam 258 engages a roll 260 rotatably mounted upon an arm 262 which is pivoted upon a pin 264 mounted upon a bracket 266 secured to a switch housing 268 screwed to the table 52. Slidingly mounted in a bore 270 of the housing 268 is a plunger 272 (Figs. 11 and 12) having a bridging bar normally held by a spring 274 in a raised position away from terminals 276 in the circuit 110. The arm 262 carries a yieldable lug 278 just beneath which is positioned the plunger 272, the construction and arrangement being such that each time the arm 262 is depressed it forces the bridging bar of the plunger 272 into engagement with the terminals 276 and closes the circuit 110, thereby actuating the counter 106, which may be one of various commercial types, for example, one such as is disclosed in United States Letters Patent No. 2,354,768, granted August 1, 1944, on an application filed in the name of Philip E. Nokes.

In order that the operator may prevent the counter 106 from recording movement of the carrier 42 when waste material is being trimmed from the stick 20 the circuit 110 is provided with the above-mentioned switch 108 (Figs. 1, 3 and 12) which is normally closed but is opened in response to depression of the treadle 102 and accordingly upward movement of the plate or lid 104. The treadle 102 is pivoted upon a pin 280 (Figs. 1 and 2) secured to the main frame 90 and is constantly urged upward by a spring 281, said treadle being operatively connected through a link 282 (Fig. 1) to an arm 284 (Figs. 1 and 3) secured to a fulcrum pin 286 which is rotatable in the main frame 90 and to which is secured the plate or lid 104. Secured to the link 282 is a lug 288 (Fig. 1) which, during depression of the treadle 102 and accordingly upward movement of the link 282, swings against a plunger of the switch 108 to open said switch and thus break the circuit 110. When the operator is sawing material which is to be dropped into the waste container 100 (Fig. 1), and accordingly is not to be registered by the counter 106 he depresses the treadle 102, with the result that the plate 104 is lifted, permitting waste material trimmed from the stick 20 to drop down the trough 98 and into the container 100, and also causing the switch 108 to be opened to break the circuit 110.

In order to expedite the stopping of the saw 68 after a stop button 289 (Fig. 1) controlling the electric motor 112 has been depressed, there is provided a lever 290 which is pivoted upon the main frame and is normally held in a raised position by a spring 292 and may be manually forced against a friction drum 294 secured to the shaft 128.

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 heel block sawing machine, a saw having a toothed cutting edge arranged in a plane, means for operating the saw, a carrier which is movable in a path arranged parallel to said plane and has a flat surface constructed and arranged to be engaged by one face of a stick, and an arm which is adjustably mounted upon the carrier and has a face constructed and arranged to be engaged by another face of the stick disposed at an angle to said one face to position the stick on said surface at a predetermined angle to the plane of the cutting edge of the saw, said face of the arm extending above said flat surface of the carrier and having a salient portion which is arranged generally parallel to said surface and is spaced a distance equal to approximately one-half the thickness of an average stick from said surface.

2. In a heel block sawing machine, a circular saw having teeth rotatable in a plane, a frame, rollers mounted upon said frame, a table mounted upon said rollers for initial adjustment in a predetermined path parallel to said plane, rollers mounted upon said table, a carrier reciprocable upon the rollers of the table in a predetermined path parallel to said plane, a pair of stops adjustably secured to the carrier, an arm pivotally mounted upon the carrier for movement over a surface of the carrier into two positions determined by the stops to locate a stick upon said surface in two angular positions with relation to said plane, a pair of gages which are adjustably secured to the table and are constructed and arranged to locate the stick lengthwise upon said surface of the carrier and in engagement with the arm, a manually operated clamp constructed and arranged to hold the stick in its proper position upon the carrier, said carrier when moved in said second-named path being adapted to move the positioned and clamped stick past the saw to trim a heel block from said stick, and means for moving the table into different adjusted positions along the first-named path to vary a gap formed between the saw and the arm thereby facilitating presentation of sticks of different sizes to the machine and sticks of the same size to saws of different sizes used in said machine.

3. In a heel block sawing machine, a saw having a toothed cutting edge, a carrier constructed and arranged to position a stick, a clamp for securing a positioned stick to the carrier, said carrier being movable in a predetermined path past the cutting edge of the saw to cut heel blocks from the stick, a trough for guiding heel blocks successively cut from the stick to a collector, means comprising a member movable to an active position across the trough for permitting waste material trimmed from the stick to be guided to a second collector, counting mechanism which is actuated by the carrier during the block cutting movement, mechanism comprising a treadle which is operatively connected to said member and is constructed and arranged to cause said member to move to said active position when the treadle is depressed, and means operatively connected to the treadle for rendering said counting mechanism inactive upon depression of said treadle.

4. In a heel block sawing machine, a rotatable drive shaft which is mounted for rotation about an axis and has a shank, a portion of which is threaded, a collar secured to said shank, a ring positioned upon said shank, a circular saw which is positioned upon said ring and has a toothed cutting edge arranged in a plane disposed at right angles to the axis of rotation of the saw, a nut, said nut and collar being recessed to receive the ring, said nut being adapted to force the saw against said collar and to cooperate with the collar to secure the saw for rotation with the drive shaft, means for moving a stick arranged at a predetermined angle to the axis of rotation of the saw in a path disposed at right angles to said axis to cut heel blocks from the stick, a housing for the saw, said housing comprising a dust collector one side of which is arranged adjacent to an end of the threaded shank of the shaft and is partially removable and the other side of which diverges from the first-named side as it extends away from said shaft, said housing also comprising a hood which is pivoted upon said dust collector, the construction and arrangement of said housing being such that the hood can be swung back upon the dust collector and that the saw, after the nut has been removed from the shank and the saw has been slid off the ring, can be swung toward the diverging side of the dust collector and moved off said shank and then past the end of the shank out of the dust collector.

5. In a heel block sawing machine having a frame, a circular saw on the frame having teeth rotatable in a plane, a table supported for movement on the frame, a stop mounted upon the table, a pair of gages adjustably secured to the table, a carrier having a flat upper surface for supporting a stick and having an abutment movable into engagement with the stop for determining a forward limit of movement of the carrier, a pair of members adjustably secured to the carrier, an arm which is pivotally mounted upon the carrier and is movable over said surface of the carrier into two angularly adjusted positions respectively determined by the said members, said arm cooperating with said surface of the carrier and with said gages respectively to position said stick in two predetermined positions upon the carrier during successive operations of the machine, said carrier being movable upon the table in a path generally parallel to said plane to move the stick past the saw to cut during said successive operations of the machine blocks from the stick, and means for moving the table and accordingly said gages and said stop into different adjusted positions on the frame lengthwise of said path depending upon the diameter of the saw and/or the dimensions of the stick in order to maintain a substantially predetermined maximum gap, determined by the engagement of said abutment with said stop, between the saw and the arm and also to maintain a constant relation lengthwise of said path between the gages and said arm when the carrier is at the forward limit of its travel.

6. In a heel block sawing machine, a circular saw having teeth rotatable in a plane, a table, a pair of gages adjustably secured to and a pair of rollers which are mounted upon the table and one of which serves as a stop, a carrier having an abutment and having a flat upper surface for supporting a stick, a pair of members adjustably secured to the carrier, an arm which is pivotally mounted upon the carrier and is movable over said surface into two different angularly adjusted positions determined by said members and which during two successive operations of the machine cooperates with said flat surface of the carrier and with said gages respectively to position said stick in two different predetermined loading positions upon the carrier, a manually operated clamp which is mounted upon the carrier and is constructed to force the stick at its loading positions against the surface of the carrier and against said arm, a spring for constantly urging the clamp away from the carrier, said carrier being movable upon said rollers in paths parallel to said plane to move in two successive operations the stick past the saw to cut blocks from said stick, and means for initially moving the table and accordingly the gages and the rollers into different adjusted positions lengthwise of said path of movement of the carrier in order to maintain for saws of different diameters a desired maximum gap, which is determined by the engagement of the abutment of the carrier with said stop on the table, between the saw and said arm at one of its loading positions and to maintain for saws of different diameters the same relation in said plane between said gap and said gages.

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