No. 791,992. PATENTED JUNE 6, 1905.

J. C. ROCKWELL.

MACHINE FOR SAWING WOODEN PINS.

APPLICATION FILED JUNE 4, 1904.

2 SHEETS—SHEET 1.

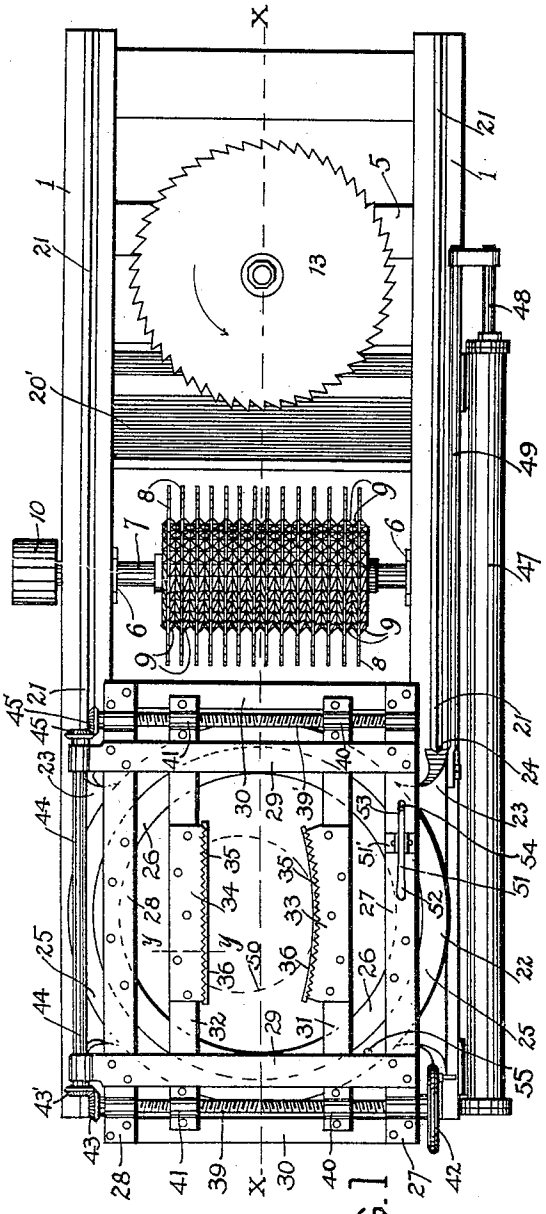


FIG. 1

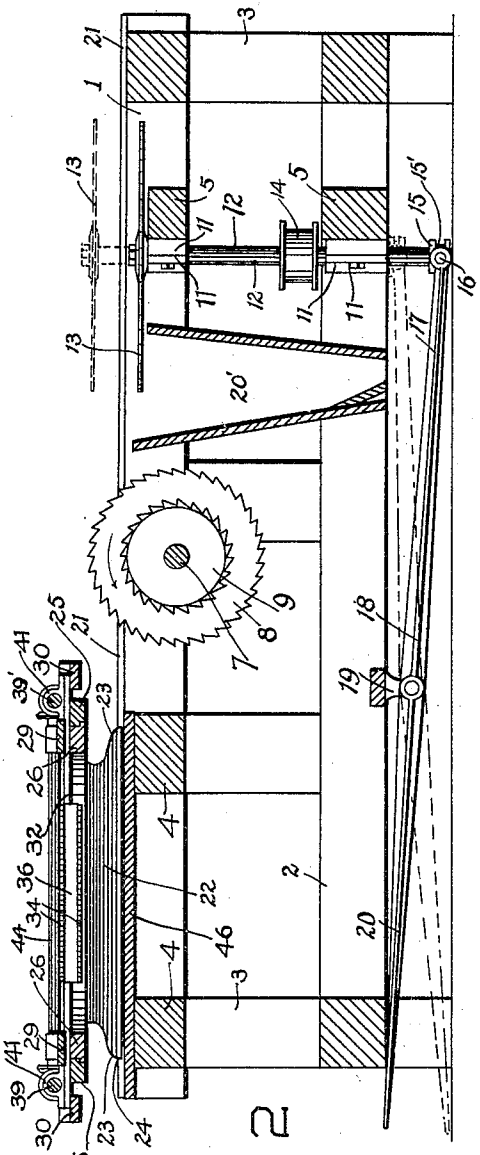


FIG. 2

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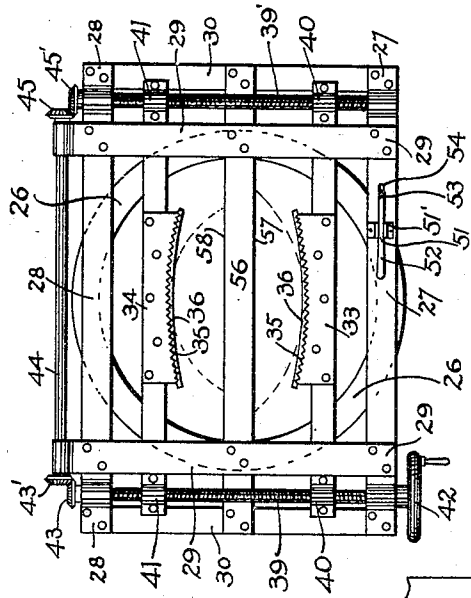


FIG. 7

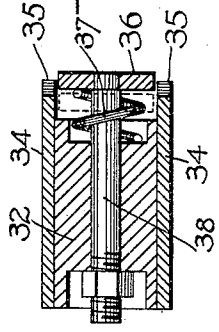


FIG. 3

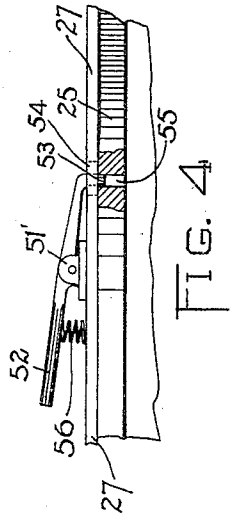


FIG. 4

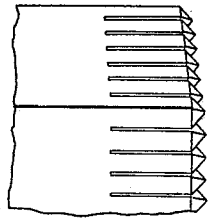


FIG. 6

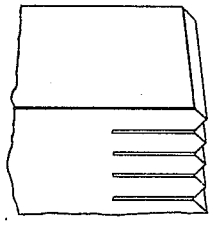


FIG. 5

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UNITED STATES PATENT OFFICE.

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MACHINE FOR SAWING WOODEN PINS.

SPECIFICATION forming part of Letters Patent No. 791,992, dated June 6, 1905.

Application filed June 4, 1904. Serial No. 211,156.

To all whom it may concern:

Be it known that I, JOHN C. ROCKWELL, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented new and useful Improvements in Machines for Sawing Wooden Pins, of which the following is a specification.

My invention relates to improvements in machines for sawing and pointing wooden pins in which a reciprocating carriage guides the bolt to be sawed into a gang-saw and a cut-off saw in a predetermined order; and the object of my invention is to provide a revoluble clamping device for the carriage, by means of which the bolt may be turned in the carriage, fed to the saws, and the successive cuts accurately made to complete and cut off from the end of the bolt one series of pins without unclamping the bolt which is in the carriage.

My invention is fully illustrated in the drawings which accompany and form a part of this specification, in which—

Figure 1 is a top view of the machine with the carriage at the beginning of the stroke. Fig. 2 is a vertical section on line *x x*, Fig. 1. Fig. 3 is a vertical section, enlarged, on line *y y*, Fig. 1, through the jaws 34, showing the construction of clamping-jaws and ejectors. Fig. 4 is a detailed view, partly sectional, of the lever 51 for locking the clamping-frame to the turn-table. Fig. 5 is an isometrical view of a bolt, showing the first cut made by the gang-saw. Fig. 6 is the same view showing the second cut of the gang-saw made at right angles to the first cut. Fig. 7 is a top view of the clamping-frame, showing an alternative arrangement of the clamping-jaws.

Similar numerals refer to similar parts through the several views.

The frame of the machine is made up of the top bars 1, bottom bars 2, legs 3, and cross-bars 4 4 and 5 5.

Journaled in boxes 6 6, secured to top bars 1, is a shaft 7, upon which are mounted the gang-saws 8 and 9. The saws 8 and 9 are of such relative diameters as to suit the length of the pin to be sawed. The teeth of saws 9 are beveled from the point to the base on the sides which face each other. On one end of shaft 7 is mounted the driving-pulley 10 for driving the shaft in the direction of the arrow in Fig. 2.

To the cross-bars 5 5 are secured the vertical boxes 11 11, in which the vertical shaft 12 is journaled. At the upper end of the shaft 12 the circular cut-off saw is mounted. 14 is a drive-pulley for driving shaft 12 in the direction of the arrow in Fig. 1. To the bottom of the shaft 12 is secured the collar 15, having the annular groove 15′. Sliding in the groove 15′ are the ends of the pins 16, mounted in the lateral arms of the forked end 17 of lever 18, which is pivoted to the hanger 19. By stepping upon the end 20 of this lever a limited vertical lift may be given to the vertical shaft 12. 20′ is a hopper for collecting the pins after they are cut off the bolt by the saw 13.

Secured to the top of the upper bars 1 1 of the frame are the slides 21 21 for the guiding of the carriage 22 over the saws. The carriage-frame 22 consists of the side pieces 23 23, having the slide-grooves 24 24 cut in the bottom to register with the slides 21 21, and the top terminates in a circular ring 25, which serves as a turn-table for the circular frame 26. To the circular frame 26 are secured the parallel bars 27 and 28, near to the lateral upper ends of which are secured at right angles the cross-bars 29 29, and to the under lateral ends are secured the bars 30 and 30. The bars 29 and 30 form the guide-bars between which the clamping-bars 31 and 32 slide. To each bar 31 and 32 are secured a pair of jaws 33 and 34, having on their clamping edge the saw-teeth 35.

Between each pair of jaws is an ejector-bar 36, energized by the springs 37, which forces the bolt of wood free from the teeth. The throw of the ejector-bar is regulated by the bolt 38.

39 39′ are shafts provided with a right and left thread and are journaled in the ends of bars 27 28 and pass through and actuate the threaded nuts 40 and 41, secured to the outer ends of the clamping-bars 31 and 32.

42 is a hand-wheel secured to one end of

the threaded shaft 39 to revolve same. Shafts 39 and 39′ are geared to each other through the miter-gears 43 and 43′, shaft 44, and miter-gears 45 and 45′, so as to move the clamping-jaws in unison in opening and closing same.

After each return movement of the carriage 22 the clamping-frame 26 must be unlocked from the carriage 22 and revolved one quarter-turn and again locked to the carriage 22. This is done by the locking-lever 51, which is pivoted in the lugs 51′, secured to the bar 27 of the frame 26. One end of the lever 51 terminates in the handle 52, and the other end terminates in a point 53. The point 53 is guided by a slot 54 through the bar 27 and is held by the spring 56 in one of the holes 55, which are placed forty-five degrees apart in the ring 25 of the carriage 22, thereby locking the frame 26 to the carriage 22.

46 is a table secured to the frame-pieces 1 and 1 at a level with the bottom beveled saws 9, upon which the bolts are laid previously to clamping in the carriage, the table acting as a gage for the proper length of the pins.

For drawing the carriage 22 over the saws and back again I prefer to use the ordinary steam-feed, as shown in Fig. 1, in which 47 is the cylinder, bolted to the frame-pieces 1.

48 is the piston-rod, connected at the outer end to the rod 49, which is in turn bolted to the carriage 22. It is obvious that any other suitable means may be used equally as well.

The operation is as follows: Power is applied to the belts to drive pulleys 10 and 14 from any suitable counter-shaft. The clamping-carriage 22 being in the position shown in Fig. 1, a bolt of wood is dropped endwise upon the table 46. The clamping-bars 31 and 32 are now drawn together by actuating the threaded rods 39 and 39′ by means of hand-wheel 42, causing the teeth of the jaws 33 and 34 to sink into and hold the bolt 50, as shown in dotted lines in Fig. 1. Steam from any source is now fed to the cylinder 47 of the steam-feed, and the carriage 22, holding the bolts 50, is drawn across the gang-saws and returned to the position as shown in Fig. 1. The end of the bolt is now cut as shown in Fig. 5. The operator now releases the lever 51 and revolves the clamping-frame in the turn-table 25 of the carriage 22 one-quarter turn, dropping the point 53 into one of the holes 55, thereby locking the frame 26 to the carriage 22. Steam is again fed to the cylinder 47, and the carriage is again moved across the saws and back, making a cut at right angles to the first cut. At the same time the operator steps upon the end 20 of the lever 18, thereby raising the cut-off saw 13 into the position shown by dotted line in Fig. 2. The bolt after passing by the gang-saws 8 and 9 will have the pins sawed and pointed, as shown in Fig. 6, and will now be completed by being cut off from the bolt the proper length by the cut-off saw 13 and the finished pins are dropped into the hopper 20′, from which they may be taken away by a carrier or any suitable means. The carriage now having returned to its first position (shown in Fig. 1) and the cut-off saw 13 allowed to drop to its first position, the operator next releases the clamps and the bolt drops to the table 46 and the operation is repeated.

Fig. 7 shows an alternative arrangement of the clamping-bars, in which a stationary central bar 56 is placed between the movable bars 31 and 32. The object of this bar is to bring the flat sides of the slabs to be sawed in line with one of the saws 8, so that there will be no waste of material, the sides 57 and 58 of bar 56 being in line with one of the saws 8 of the gang-saws.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pin-sawing machine, a frame provided with a shaft upon which a gang of slitting-saws are mounted, another shaft journaled at right angles to said gang-saw shaft upon which a cut-off saw is mounted, substantially as described, in combination with a reciprocating carriage having a central opening provided with an annular guide around said opening, an annular frame adapted to revolve on said guide and having parallel guide-bars and movable clamping-bars sliding between said guide-bars adapted to secure a block of wood to said carriage so as to extend below same and be in range of said gang and cut-off saws substantially as shown and described.

2. In a pin-sawing machine, the combination with a reciprocating carriage and a turn-table provided with a central opening, of a pair of parallel guide-bars and movable clamping-bars sliding between said guide-bars for the purpose of clamping and holding a block of wood in the said carriage so that the one end of same will project below the under side of said carriage substantially as shown.

3. In a pin-sawing machine, the combination with a reciprocating carriage having a central opening and an annular guide around said opening, of an annular frame adapted to revolve on said annular guide and provided with parallel guide-bars and movable clamping-bars sliding between said guide-bars adapted to clamp a block of wood and hold it in such a position that one end of same will extend through the openings of the carriage and frame and project below the level of same substantially as shown and for the purpose specified.

4. In a pin-sawing machine, the combina-

tion with a suitable frame having a gang-saw and cut-off saw arranged substantially as shown, a reciprocating carriage with a turn-table provided with clamping-jaws adapted to secure a block of wood in said carriage so as to extend below same substantially as shown and described, of a table mounted in said frame forward of the said saws and under the said carriage for the purpose of holding the block in position during the operation of opening and closing the clamping-jaws so as to regulate the length of the block extending below the said carriage substantially as shown.

5. In a pin-sawing machine, the combination of a reciprocating carriage having a circular central opening and an annular rib around said opening, with an annular frame having parallel guide-bars and movable clamping-bars sliding between said guide-bars, substantially as set forth.

6. In a pin-sawing machine, the combination with a rotary frame, of parallel guides, reciprocating clamping-bars adapted to slide between said guides, a pair of serrated jaws secured to each of said clamping-bars, an ejector-bar between each pair of said jaws and a spring for energizing said ejector-bar, as specified and for the purpose set forth.

7. In a pin-sawing machine, the combination with a revoluble frame having parallel guides and reciprocating clamping-bars adapted to slide in said guides, of a pair of serrated jaws secured to each of said clamping-bars and an ejector-bar movably mounted between each pair of said jaws, substantially as shown and for the purpose specified.

8. The combination with the clamping-bars 31 and 32 of a pair of serrated jaws rigidly secured to said bars, an ejector-bar movably mounted between said jaws and springs for energizing same substantially as shown and for the purpose set forth.

9. In a pin-sawing machine, the combination with an annular frame adapted to rotate having parallel guides and movable clamping-bars adapted to slide between said guides, of a stationary bar secured to said annular frame parallel to and centrally between said movable clamping-bars for the purpose specified.

JOHN C. ROCKWELL.

Witnesses:
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LOUIS BECKBISSINGER.