F. D. SLONAKER.

PORTABLE CHAIN MORTISING MACHINE.

APPLICATION FILED OCT. 21, 1914.

1,170,120. Patented Feb. 1, 1916.

Fig. 1.

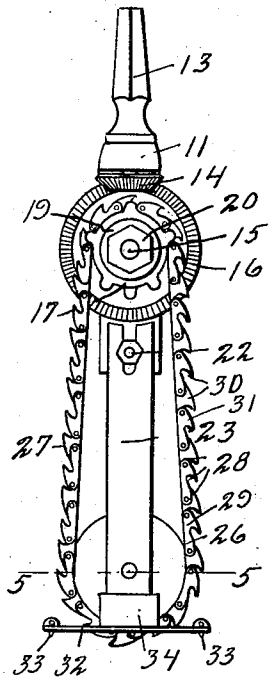


Fig. 2.

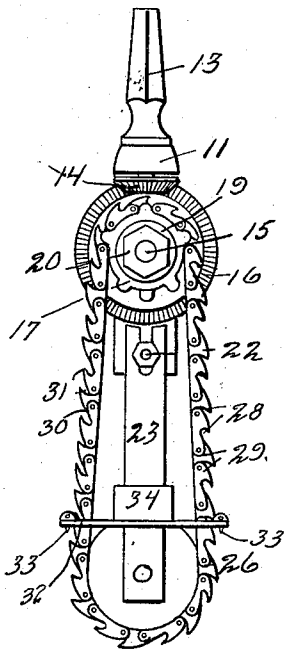


Fig. 3.

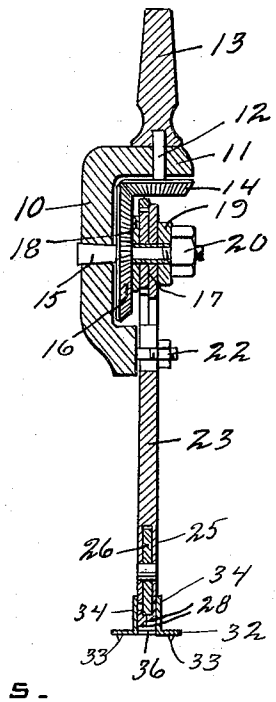


Fig. 4.

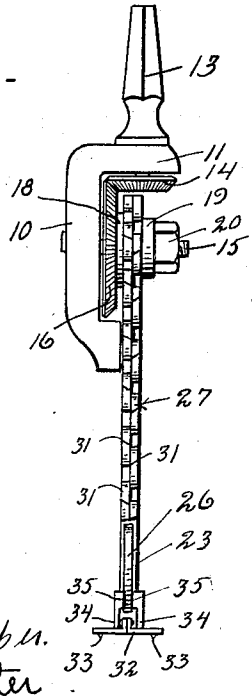


Fig. 5.

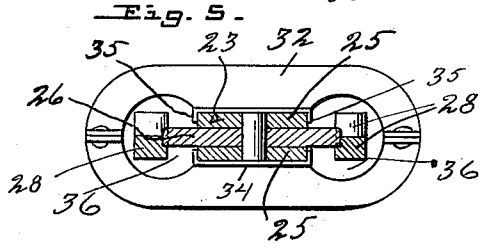
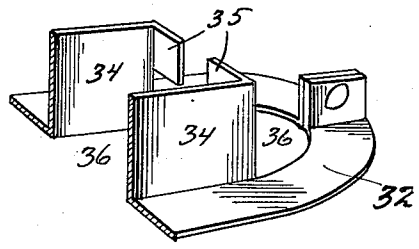


Fig. 6.



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PORTABLE CHAIN MORTISING-MACHINE.

1,170,120. Specification of Letters Patent. Patented Feb. 1, 1916.

Application filed October 21, 1914. Serial No. 867,844.

To all whom it may concern:

Be it known that I, FRANK D. SLONAKER, a citizen of the United States, residing at Pennsburg, in the county of Montgomery, State of Pennsylvania, have invented certain new and useful Improvements in Portable Chain Mortising-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to tools, particularly to tools for boring through wood, and has for its object the provision of a device adapted to be operated by an ordinary brace and whereby a square hole may be bored.

An important object is the provision of a device of this character provided with means whereby holes of different sizes may be bored.

Another object is the provision of a boring tool of this character provided with a guide whereby displacement during the boring operation is prevented.

A further object is the provision of a tool of this character which will be comparatively simple and inexpensive in manufacture, efficient and durable in service, easy to operate and a general improvement of the art.

With these and other objects and advantages in view, the invention consists in the novel construction and arrangement of parts to be hereinafter more fully described and claimed and illustrated in the accompanying drawing, in which—

Figure 1 is a front elevation of my device in its initial position, Fig. 2 is a similar view showing the device as having bored a hole partly through a beam and showing the guide plate in section, Fig. 3 is a longitudinal sectional view through my device, Fig. 4 is a side elevation thereof, Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 1, and Fig. 6 is a sectional perspective view of the guide plate.

Referring more particularly to the drawing the numeral 10 designates the main supporting frame of my device which comprises a horizontal portion 11. A shaft 12 extends through the portion 11 and is provided upon its outer end with a squared shank 13 engageable within the chuck of a brace. A beveled pinion 14 is secured upon the lower end of the shaft 12 and is disposed against the lower side of the portion 11. A stub shaft 15 extends through the vertical portion of the frame 10 and carries thereon a gear 16 meshing with the pinion 14. A sprocket 17 is secured upon the shaft 15 and is secured in place by washers 18 and 19, the outer washer 19 being engaged by a nut 20 disposed upon the threaded end of the shaft 15.

Adjustably secured upon the lower portion 21 of the frame 10, by means of a bolt 22, is a frame bar 23 slotted at its upper end as shown at 24 for engagement with the bolt 22. The lower end of the bar 23 is bifurcated as shown at 25 and journally receives a roller 26 freely revoluble therein.

The cutting element of the device comprises a chain 27 formed of a plurality of similar links 28 connected with each other as shown at 29, the links being in staggered relation to each other. Each link is cut away as shown at 30 to provide a cutting edge 31 which is preferably inclined, the inclination of each successive link being opposite.

The guide member of the device comprises a plate 32 which may be formed in two sections secured together, in any suitable manner. Tines 33 extend from the bottom side of the plate 32 for engagement with the wood to be bored to prevent displacement of the plate. Formed on each section of the plate 32 is an upstanding extension 34 contacting with the side of the bar 23, and flanges 35 are formed on the extension 34 to embrace the edges of the bar 23, the lower edges of the flanges 35 being spaced above the plate 32 as shown. The chain 27 is trained about the sprocket 17 and the wheel 26, the teeth of the sprocket engaging between adjacent ends of successive links. The links of the chain are each grooved upon the rear side for engagement with the wheel 26 so that the chain cannot slip off the wheel.

The operation of the device is as follows: The device being in the position shown in Fig. 1 with the plate 32 secured in place upon the wood to be bored and held from displacement by the tines 33, the chain 27 where it passes over the lower portion of the wheel 26 will be disposed within the cutaway portion 36 of the plate 32 and will be disposed below the flanges 35. Rotation of the brace within which the device is held will cause rotation of the pinion 14, the gear

16 and consequently the sprocket 17, movement of which will cause the chain to travel downwardly, whereupon the cutting edges 31 will bite into the wood and cut it away. It is of course necessary that as the device is operated downward pressure should be exerted upon it so that the wood will be continuously cut away. As the wood is cut, the entire device will be moved downwardly through the guide plate 32. The length of the hole cut is dependent upon the size of the sprocket 17 and the wheel 26 and its width is dependent upon the thickness of the chain. By using chains of different widths and using washers 18 and 19 of different thicknesses to position the chain in proper alinement with the wheel 26, holes of any desired width may be bored.

From the foregoing description and a study of the drawing it will be seen that I have thus provided a simple, novel and efficient boring tool which may be used in a brace and by means of which a square hole may be bored of any suitable size.

It will be readily understood that I reserve the right to make various changes in the form, construction and arrangement of parts without departing from the spirit of the invention or limiting the scope of the subjoined claim.

Having thus described my invention, I claim:

A guide for chain mortising machines comprising a pair of arcuate plates having their ends connected, upstanding extensions carried by the confronting edges of the plates for slidably engaging the sides of the chain bar of the machine, said extensions having inwardly directed flanges, the inner edges being spaced to provide a passage for the chain of the machine when the chain bar is engaged by the extensions and flanges.

In testimony whereof, I affix my signature, in the presence of two witnesses.

FRANK D. SLONAKER.

Witnesses:

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MRS. WM. LAUDENSCHLAGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."