June 14, 1938. L. N. MILLER 2,120,897

SAW

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Fig. 1.

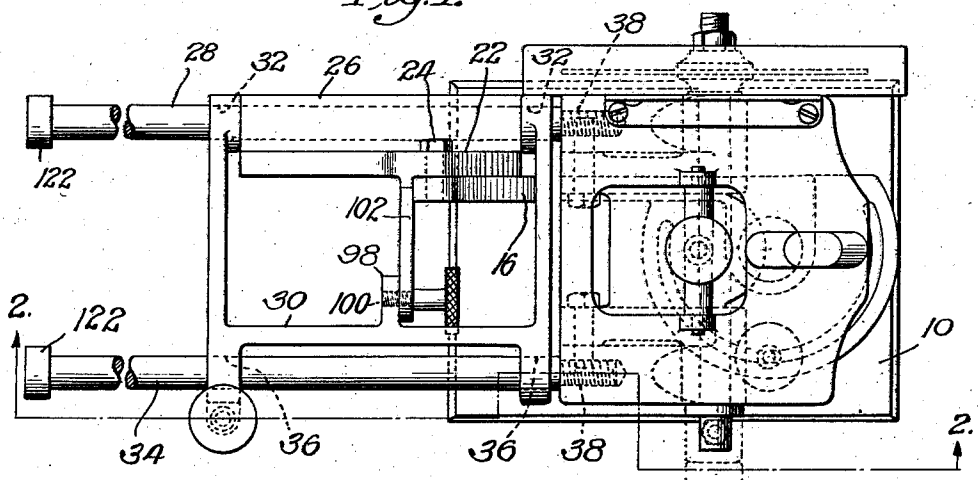


Fig. 2.

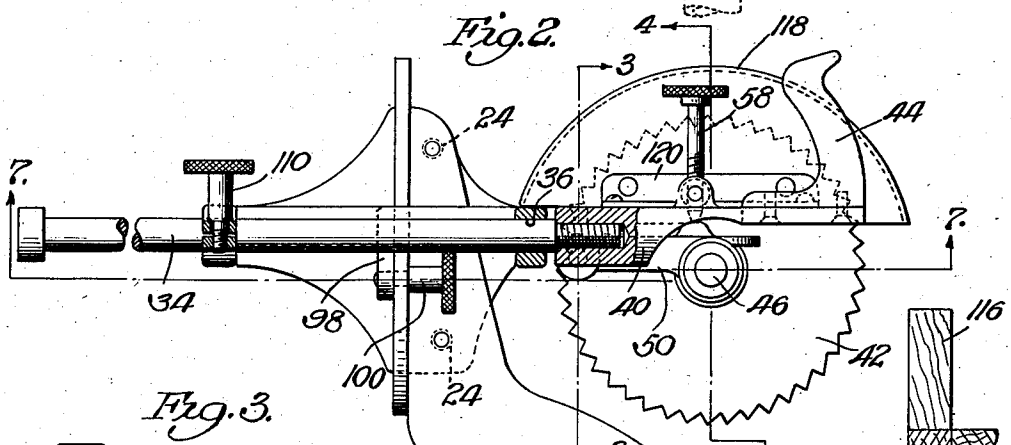
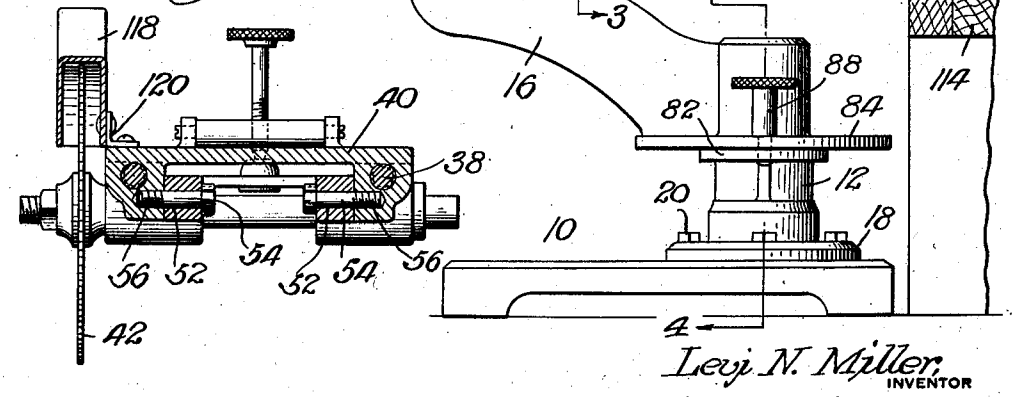


Fig. 3.



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Fig. 4.

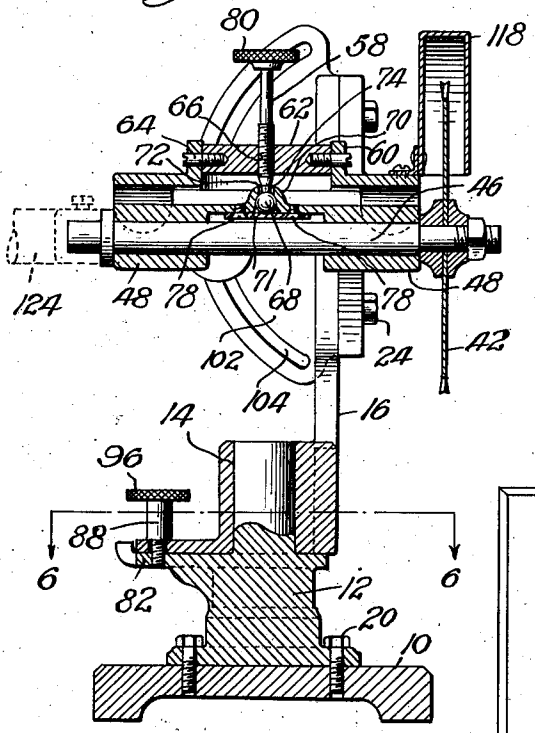


Fig. 5.

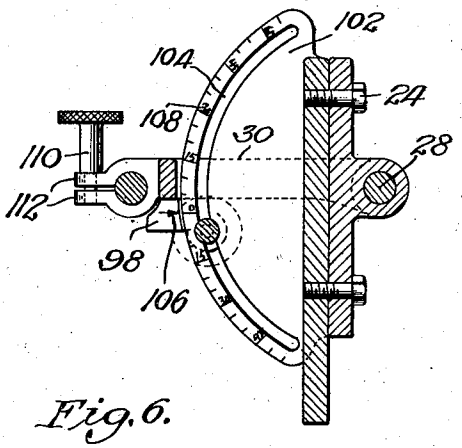


Fig. 6.

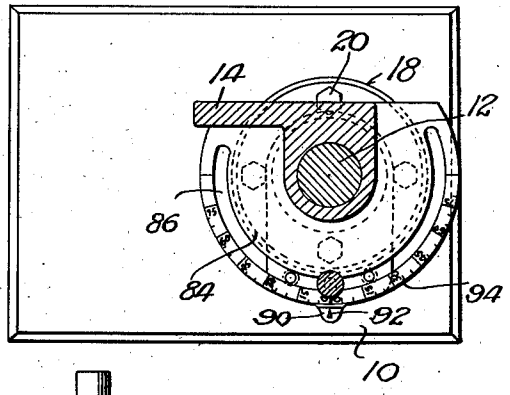
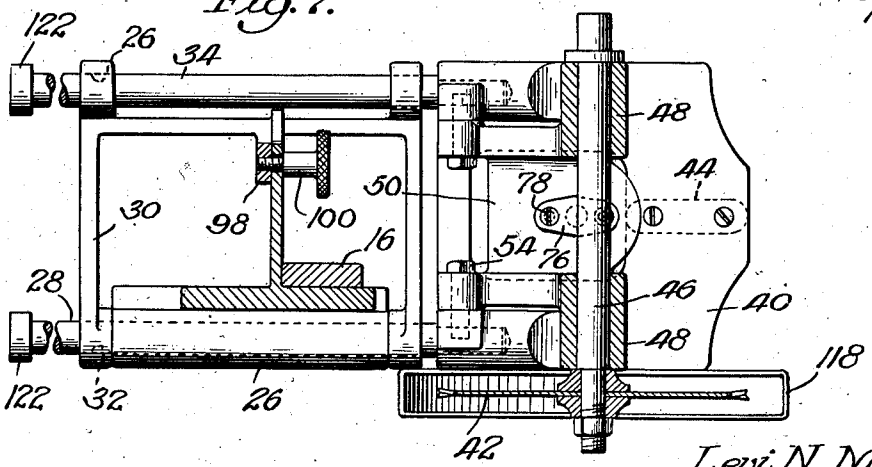


Fig. 7.



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UNITED STATES PATENT OFFICE

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SAW

Levi N. Miller, Elkhart, Ind.

Application September 30, 1936, Serial No. 103,423

2 Claims. (Cl. 143—6)

My invention relates to circular saws, and has among its objects and advantages the provision of improved means for moving the saw to and fro at preselected angles including means for adjusting the saw in a vertical direction.

In the accompanying drawings:

Fig. 1 is a top plan view of the saw;

Fig. 2 is a view taken along the line 2—2 of Fig. 1;

Fig. 3 is a sectional view along the line 3—3 of Fig. 2;

Fig. 4 is a sectional view along the line 4—4 of Fig. 2;

Fig. 5 is a sectional detail view;

Fig. 6 is a sectional view along the line 6—6 of Fig. 4; and

Fig. 7 is a sectional view along the line 7—7 of Fig. 2.

In the embodiment selected to illustrate my invention, I make use of a base 10 including a post 12 having a shaft 14 upon which a bracket 16 is adjustably mounted. The flange 18 of the post 12 is secured to the base 10 by bolts 20 (see Fig. 4). To the upper end of the bracket 16 I connect a support 22 by bolts 24. This support includes a tubular member 26 which loosely supports a shaft 28. A frame 30 is bored at 32 for loosely receiving the shaft 28 while a similar shaft 34 is loosely supported within openings 36.

I provide the shafts 28 and 34 with threaded shanks 38 which have threaded relation with a head 40 which supports the saw 42. The head 40 and the shafts 28 and 34 are connected as a unit so that the saw 42 may be moved to and fro because of the slidable mounting of the shafts. The head 40 is provided with a handle 44 which facilitates shifting.

I mount the saw 42 upon a shaft 46 rotatably mounted within bearings 48 carried by a casting 50. This casting is provided with bores 52 for freely receiving bolts 54 having threaded relation at 56 with the head 40. The casting 50 may be adjusted about the bolts 54 as an axis. I provide a screw 58 for adjusting the saw 40 vertically through the medium of the casting 50. In Fig. 4, the head 40 includes two ears 60 having a shaft 62 rotatably positioned therebetween. Screws 64 pass loosely through the ears 60 and have threaded relation with the shaft 62 for mounting purposes. A transverse bore 66 is provided in the shaft 62 which has threaded relation with the screw 58. The lower end of the screw is provided with a ball 68 retained within the cone 70 formed integrally with the casting 50. I provide the screw 66 with a neck 72 which passes through a larger opening 74 in the apex of the cone. The plate 76 holds the ball 68 in assembled relation with the cone and is attached to the casting 50 by screws 78. The head 80 of the screw 58 is attached to the screw after assembly with the cone 70.

Precise adjustment of the saw 42 is attained through the medium of the screw 58. Adjustment of the saw 42 to cut at various angles in vertical planes is attained by rotating the bracket 16 about the shaft 14. The upper end of the post 12 includes a flange 82, while the lower end of the bracket 16 includes a relative flange 84 having a curved slot 86 arranged in concentric relation with the vertical axis of the shaft 14. A screw 88 fixedly connects the two flanges in various adjusted positions of the bracket 16. In Figs. 4 and 6, the flange 82 is provided with an extension 90 having a line 92 arranged in reading relation with graduations 94 upon the upper surface of the flange 84. The graduations 94 indicate angular adjustments of the saw in vertical planes. The screw 88 has threaded relation with the flange 82 only, and includes a knob 96 facilitating adjustment.

In addition to adjustment for different angles in vertical planes, the saw may be adjusted to various angles with respect to the horizontal. The frame 30 includes a flange 98 which has threaded relation with a screw 100 associated with a flange 102 carried by the support 22. The flange 102 is provided with a curved slot 104 arranged in concentric relation with the axis of the shaft 28. The flange 98 is provided with a line 106 cooperating with graduations 108 upon the flange 102 to determine the angular adjustment of the saw with respect to the horizontal. Adjustment of the saw in this connection is attained by moving the frame 30 about the shaft 28 as an axis, and the screw 100 securely fastens the flange 102 to the flange 98.

The shafts 28 and 34 may be restrained from longitudinal shifting by a screw 110 cooperating with the flange 112 (see Fig. 5). In Fig. 2, I indicate the saw as being arranged in operative relation with a work table 114. The work to be cut is positioned upon a table 114 in the rear of the straight edge 116, which may be of wood. The straight edge may be provided with slots at predetermined angles, or the straight edge may be cut by the saw.

I position a safety guard 118 over a portion of the saw. This guard is mounted on a bracket 120 fastened to the head 40. The shafts 28 and 34 include flanges 122 which prevent the shafts from

being pulled out of assembled relation with the frame 30. One end of the shaft 46 may be connected with a flexible coupling 124 for driving purposes (see Fig. 4).

Without further elaboration, the foregoing will so fully explain my invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A device of the type described comprising a base including a standard, a frame including openings, a bracket connected with the standard and having an opening aligning with some of the openings in the frame, a shaft slidably mounted in said aligned openings and constituting a pivot for the frame, a rod slidably mounted in the other openings of the frame, a head fixedly connected with said shaft and said rod, a circular saw, a support for the circular saw, said support being mounted underneath the head and pivotally connected therewith, and means carried by the head and projecting through an opening in the same and connected with said support for moving the same about its axis.

2. A device of the type described comprising a base including an upright standard, a bracket carried by the upper end of said standard, a head, a frame pivotally connected at one side with said bracket, the pivotal connection comprising a shaft having one end fixedly connected with said head and slidably related to the bracket and the frame, a second shaft fixedly connected with said head and slidably related to the frame, a power driven saw, a support for the saw, said support being mounted underneath the head and pivotally connected therewith, and means carried by the head and projecting through an opening in the same and connected with said support for moving the same about its axis, said standard being adjustably connected with the base for pivotal action about a vertical axis.

LEVI N. MILLER.