J. METZGER.

PORTABLE TOOL.

APPLICATION FILED JULY 8, 1914.

1,253,705. **Patented Jan. 15, 1918.**

Fig 1

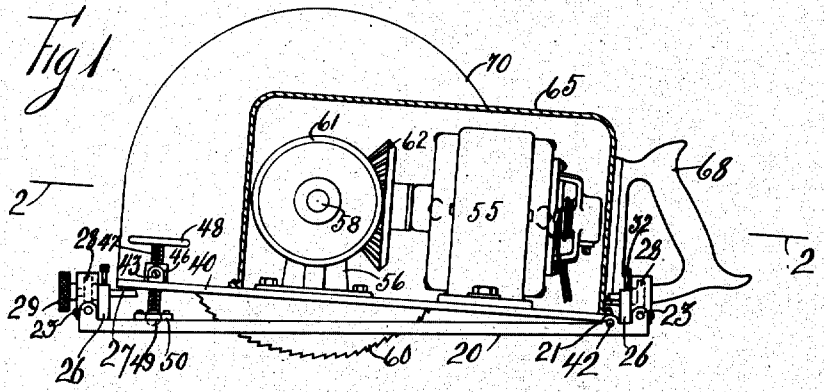


Fig 2

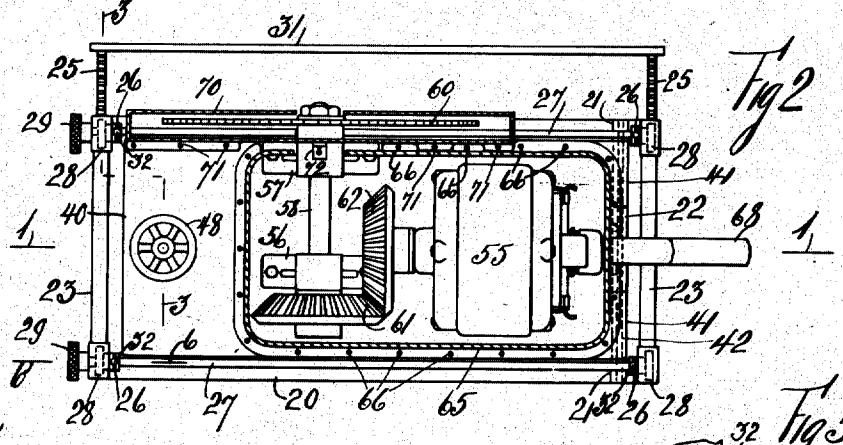


Fig 4

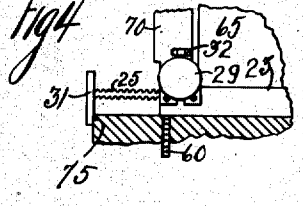


Fig 3

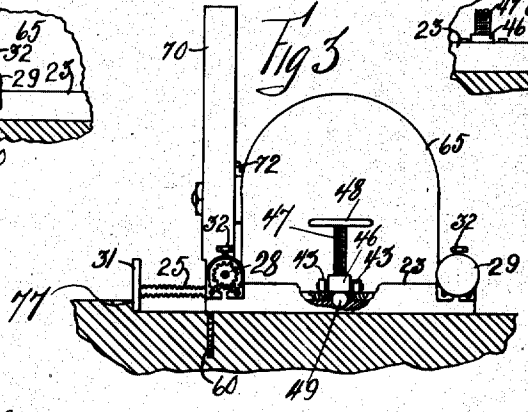


Fig 5

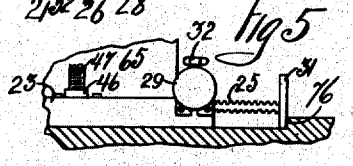
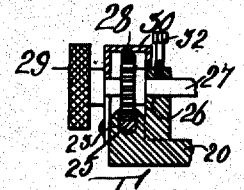


Fig 6



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH METZGER, OF BROOKLYN, NEW YORK.

PORTABLE TOOL.

1,253,705. Specification of Letters Patent. Patented Jan. 15, 1918.

Application filed July 8, 1914. Serial No. 849,639.

To all whom it may concern:

Be it known that I, JOSEPH METZGER, a citizen of the United States, and a resident of the borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Portable Tools, of which the following is a specification.

This invention relates to a portable tool. The drawings represent an exemplification of the invention with a circular saw.

Figure 1 represents an elevation in part of the invention and a section as on the line 1, 1, of Fig. 2. Fig. 2 shows a plan view in part and a section of Fig. 1 on the line 2, 2, with some of the elements in a lowered position. Fig. 3 is a left hand view in part of Fig. 1 with the elements in a lowered position, and a partial section as on the line 3, 3 of Fig. 2. Figs. 4 and 5 show fragmentary portions of Fig. 3 with some of the elements in changed positions, and Fig. 6 shows a partial enlarged section of Fig. 2 on the line 6, 6.

A base plate is indicated at 20, which has formed therewith the hinge lugs 21, 22. At the ends of the plate 20 are formed the guide channels 23. A double faced rack 25, is supported in each of the guide channels 23. Journal bearings 26 are formed at the ends of the guide channels. A longitudinal shaft 27 is journaled in each pair of journal bearings 26 on the opposite sides of the plate 20. Each of the shafts 27 has fastened thereto a pair of pinions 28, each of which latter meshes with its accompanying rack 25. A knurled head 29 is fastened to each shaft 27. Caps 30 cover the pinions 28 and are fastened to the outer walls with guide channels 23. A guide plate 31 connects the outer ends of the racks 25. Clamping screws 32 in threaded engagement with the crowns of the bearings 26 clamp the shafts 27 in operative position.

A supporting plate 40 has formed therewith the hinge lugs 41 and a hinge pin 42 connects said lugs 41 with the lugs 21, 22. A pair of lugs 43 extend from the supporting plate 40, and have trunnioned therein the threaded sleeve 46. An adjusting screw 47 with the handle 48 and spherical end 49 is in threaded engagement with the sleeve 46. A spherical cavity is formed in the base plate 20 for the spherical end 49. A cover plate 50 is bolted to the base plate 20 and engages said spherical end 49. A ball and socket joint is thus obtained for the adjusting screw 47.

A motor 55 and the journal brackets 56 and 57 are bolted to the supporting plate 40. A shaft 58 is journaled in the journal brackets 56 and 57 and has fastened at one end the circular saw 60, and at the other end the bevel gear 61. A bevel gear 62 on the armature shaft of the motor meshes with the bevel gear 61.

A casing 65 covering the motor 55, the shaft 58 and the bevel gears 61, 62 is bolted to the supporting plate 40 by means of the screws 66. A handle 68 extends from the rear wall of the casing 65. A guard 70 for the saw 60 is bolted to the supporting plate 40, by means of the screws 71. A bracket 72 connects the guard 70 with the bracket 57.

To use the invention, the operator locates the supporting plate 40, so that the circular saw 60, extends the requisite distance below the base plate 20, depending upon the depth of the saw cut to be made. The clamping screws 32 are unscrewed, and the knurled head 29 of the accompanying pinion 28 that meshes with its accompanying rack 25, is turned to locate the guide plate 31 its requisite distance from a guide edge like 75, 76 or 77 to guide the saw as the operator moves it by means of the handle 68. The guide plate 31 can be located on the opposite sides of the base plate 20, as exemplified in Figs. 4 and 5, and said guide plate can be turned with either edge up, to bear either with its inner or outer surface against a guiding edge as exemplified in Figs. 3 and 4.

The longitudinal edges of the guide plate 31 are at unequal distances from the rack 25, by means of which it can be used with different depths of guide edges like 77. The said guide plate is reversible and has opposite guide edges and opposite guide faces as shown by the drawings.

Having described my invention what I desire to secure by Letters Patent and claim is:

In a tool the combination of a base plate, guide channels at the opposite ends of the

base plate, a double faced rack in each guide channel, a reversible guide plate having opposite guide edges and opposite guide faces secured to one end of each rack and means to adjust said guide plate relatively to either side of the base plate.

Signed at the borough of Manhattan, in the county of New York and State of New York, this 24th day of June A. D. 1914.

JOSEPH METZGER.

Witnesses:
A. A. DE BONNEVILLE,
JOHN JESSICH.