

July 5, 1960

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2,943,654

PORTABLE POWER OPERATED ROUTER

Filed Sept. 18, 1957

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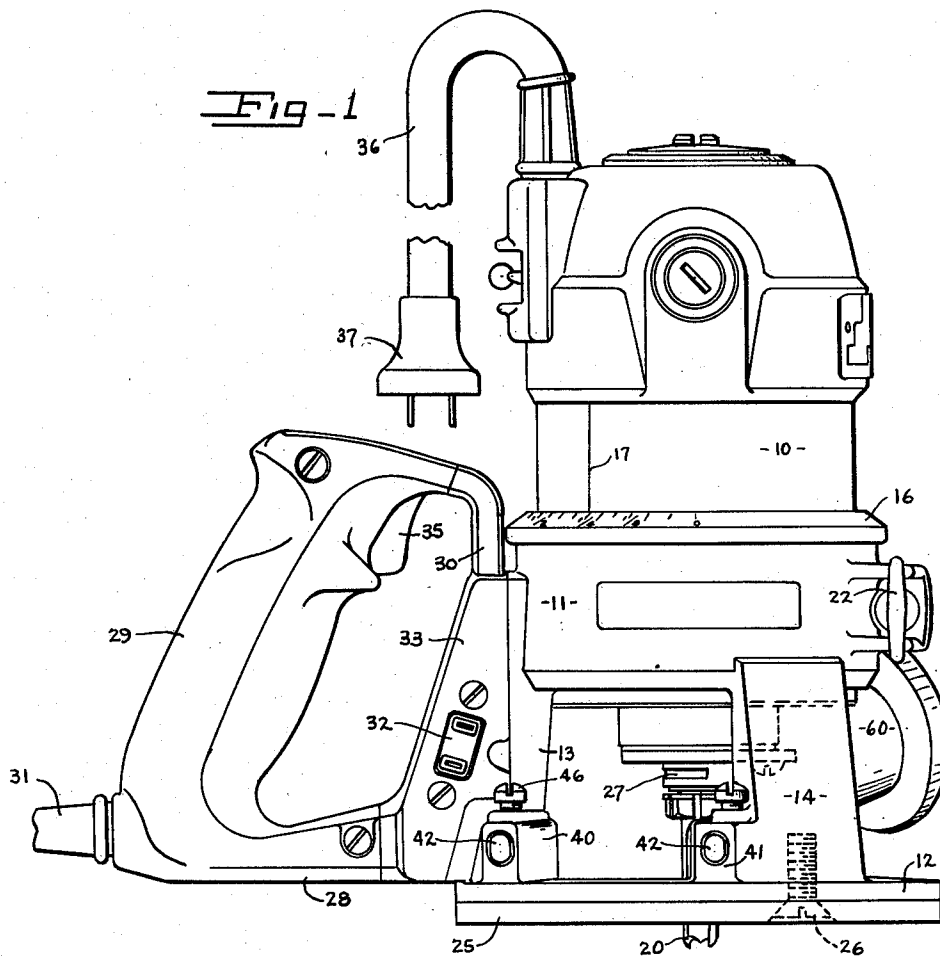
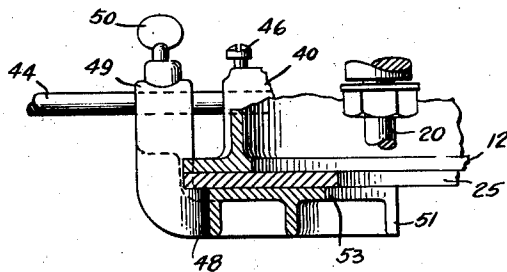


Fig - 6



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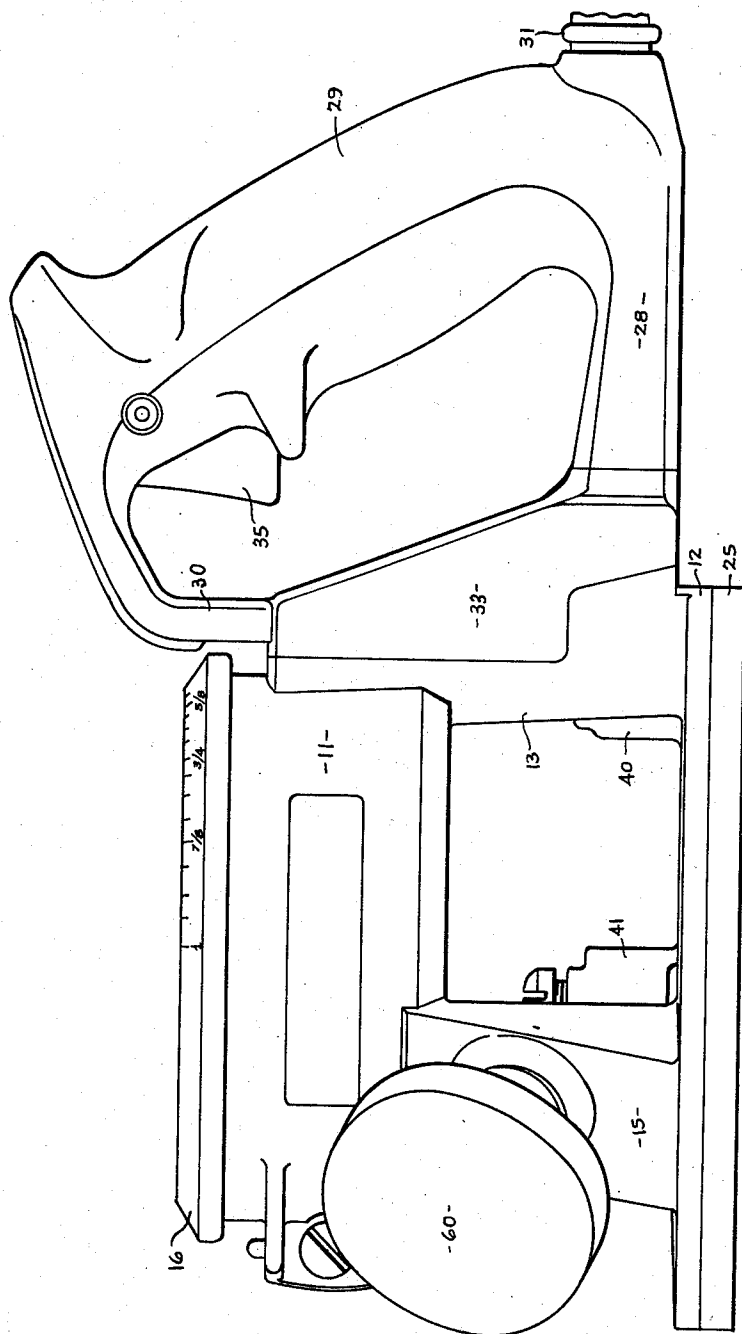


Fig. 2

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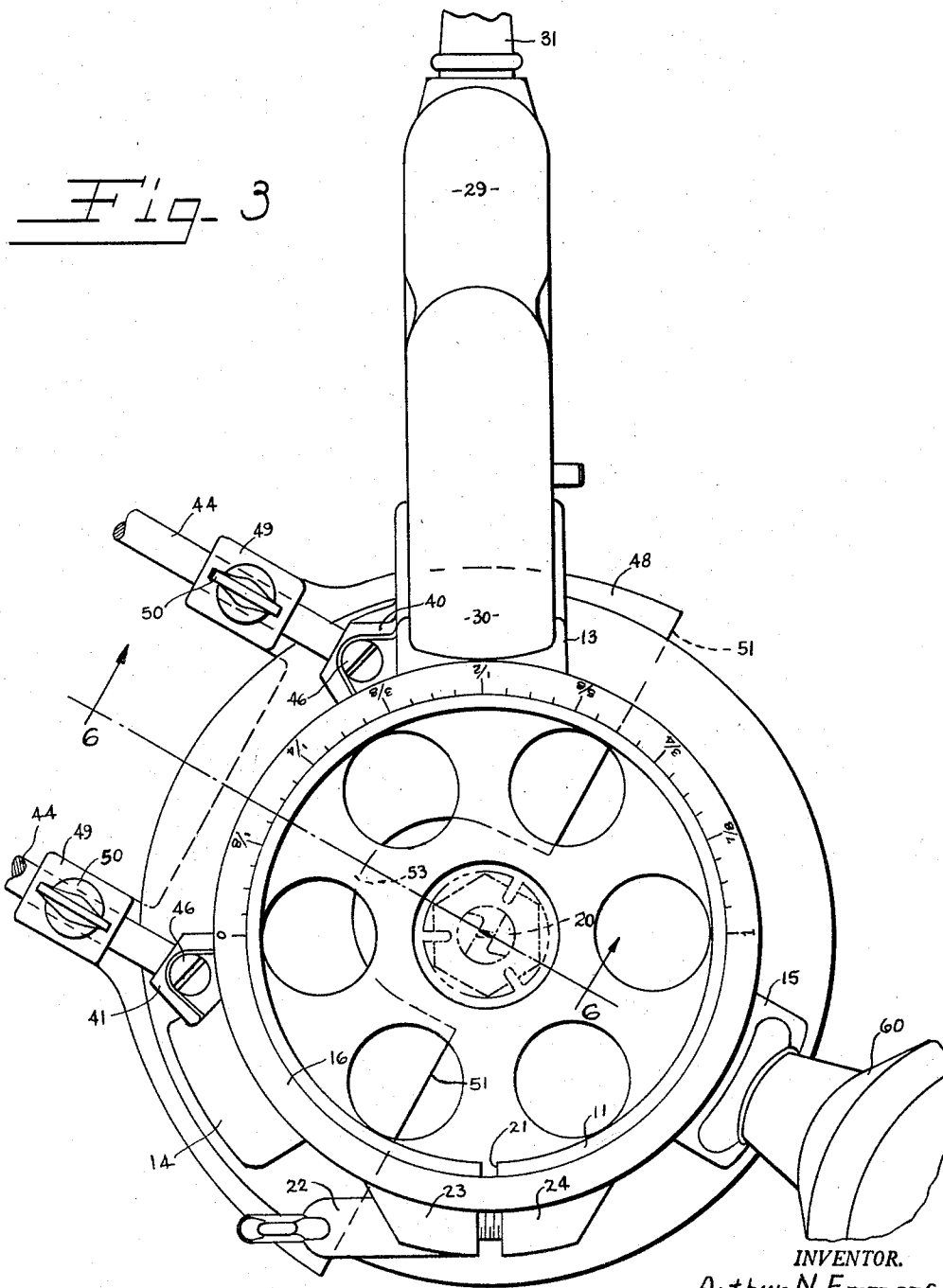
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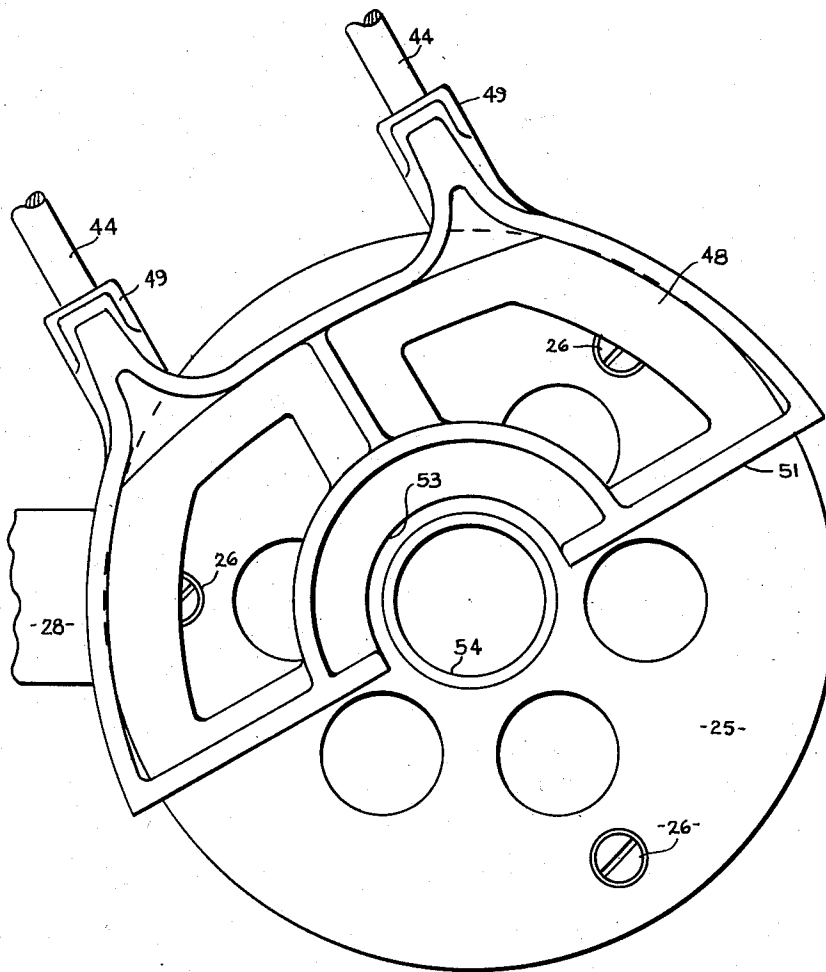


Fig. 4

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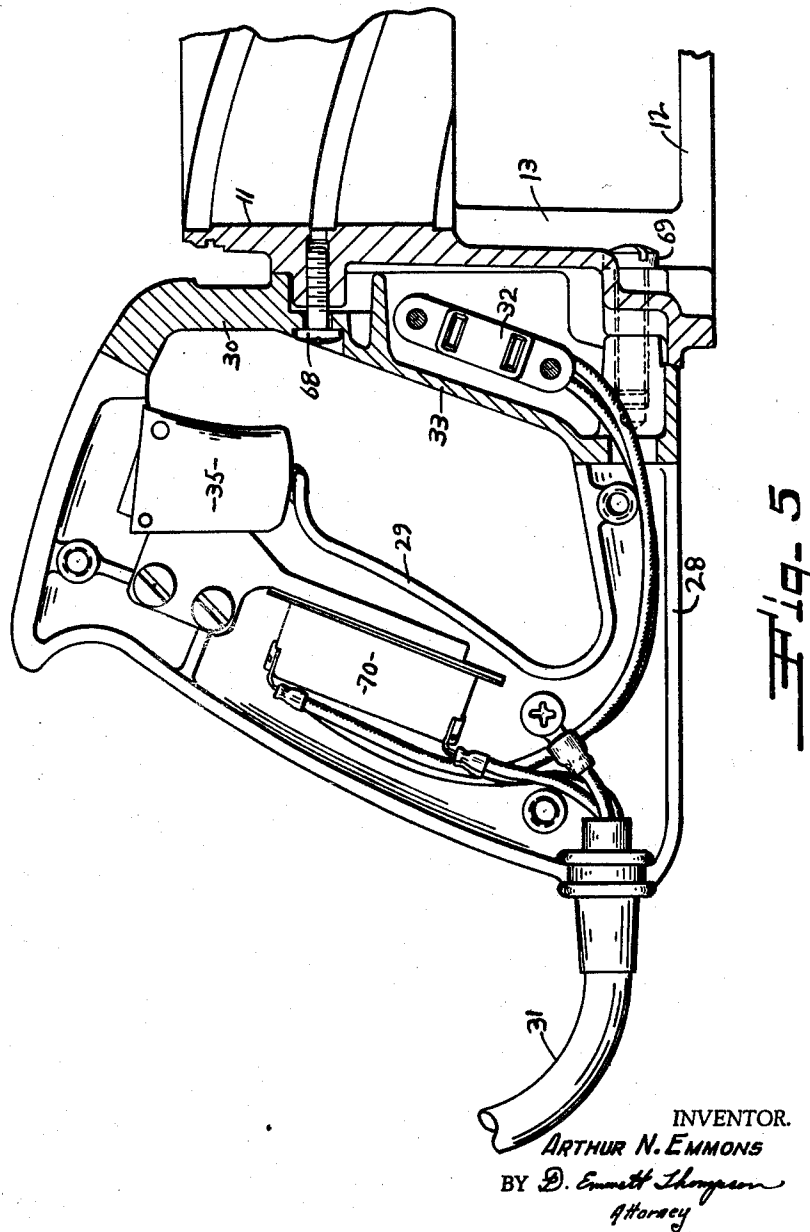
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PORTABLE POWER OPERATED ROUTER

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2,943,654

PORTABLE POWER OPERATED ROUTER

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Filed Sept. 18, 1957, Ser. No. 684,760

2 Claims. (Cl. 144—134)

This invention relates to a portable motor driven tool and particularly to a hand manipulated, wood working tool, as a router. Routers are used extensively in free-hand fashion—that is, the machines are guided and controlled on or against the work by manual manipulation.

These routers, like most motor driven and portable tools, are operated by high speed electric motors of the universal type often having an output in excess of two horsepower. The operator therefore is required to expend a great amount of effort and energy to properly guide such machines on the work when heavy cuts are taken.

This invention has as an object a portable motor driven tool, as a router, having a base structure provided with hand grip and knob handles positioned in respect to each other and to the straight edge gauge to make for particularly convenient guidance and control of the machine.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

In the drawings—

Figure 1 is a side elevational view of a portable power operated tool embodying my invention.

Figure 2 is a side elevational view of the base structure taken on the opposite side to that shown in Figure 1.

Figure 3 is a top plan view of the base structure.

Figure 4 is a bottom plan view of the base structure with parts broken away.

Figure 5 is a vertical sectional view of the hand grip handle.

Figure 6 is a fragmentary sectional view taken on line 6—6, Figure 3.

The router, as a whole, consists of a motor casing 10 of cylindrical formation. The casing 10 is mounted vertically in a base structure comprising an upper cylindrical portion 11, a circular base plate 12 from which there extends upwardly a plurality of legs 13, 14 and 15, for supporting the upper cylindrical portion 11.

The upper cylindrical portion 11 and the motor casing 10 are formed with cooperating parts which function to move the motor casing up and down when the same is rotated relative to the base. The upper portion 11 of the base structure is provided with a rotatable ring 16 provided with graduations which, in conjunction with an indicating line 17 formed in the motor casing, informs the operator the extent to which the cutter 20 extends below the base plate. The upper cylindrical portion 11 of the base structure is formed with a vertically extending slot 21, see Figure 3. When the motor casing 10 is adjusted vertically, it is secured in adjusted position by a thumb screw 22 extending through a boss 23 and threading into a boss 24, the bosses 23, 24, being arranged on the opposite sides of the slot 21, whereby the screw functions to contract the upper cylindrical portion 11 into clamping engagement with the motor casing 10. This specific structural arrangement is more fully disclosed in Patent No.

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2,613,704, issued October 14, 1952, to E. P. Sacrey. A sub-plate 25 may be attached to the bottom plate 12, as by screws 26. The cutter 20 is held in a chuck 27 fixed to the lower end of the output shaft of the motor mounted in the casing 10.

A hand grip handle is affixed to one of the legs, as the leg 13. This handle consists of a horizontally disposed portion 28 extending radially outwardly from the base structure and having a hand grip portion 29 inclining upwardly toward the base structure and having a portion 30 attached to the upper portion of the leg 13 by a screw 68. The lower portion of the handle is attached to the base by screw 69. The power supply cord 31 enters the lower portion of the hand grip handle and is connected to a receptacle 32 mounted in the inner portion 33 of the handle, this connection being effected through a switch 70 mounted in the handle and having an actuating member 35 for engagement by the index finger of the hand. The motor is provided with a cord 36 having a plug 37 adapted to be inserted into the receptacle 32, whereby the motor is controlled by the switch actuating element 35.

The base structure is formed adjacent the bottom plate 12 with a pair of bosses 40, 41, each being formed with an aperture 42 to receive the ends of rods 44, the rods being detachably secured in the bosses, as by screws 46.

The purpose of the rods 44 is to support an edge guide 48, this guide being formed with spaced apart bosses 49 for sliding engagement on the rods 44, the guide being fixed in adjusted position by the thumb screws 50.

The guide is formed with a straight edge 51 for engagement with the side edge of the work piece. The intermediate portion of the guide 48 is formed with a concavity 53 to provide for the cutter 20 which extends downwardly through the aperture 54 formed in the bottom plate 12. The bosses 40, 41 are so positioned relative to the hand grip handle 29 that the straight edge 51 of the guide extends in angular relation of substantially 30 degrees to the handle 29.

A hand knob 60 is attached to the leg 15 and extends outwardly on a radius substantially perpendicular to the straight edge 51 of the guide 48. With this arrangement, the operator grasps the grip handle in the right hand and the knob 60 by the left hand, the handle 29 diverging outwardly from the edge of the work piece at an angle of approximately 30 degrees whereby the operator conveniently urges the cutter against the work, while advancing the machine along the work, the knob 60 serving to aid in keeping the bottom plate flat on the upper surface of the work.

With the arrangement described the operator can conveniently and with ease manipulate the router in making all forms of cuts, and at all times has control of the power motor through the switch 35 without removing either hand from the base.

What I claim is:

1. A portable power operated router comprising a motor supporting base having a bottom plate for engaging the surface of the work piece, a motor disposed in vertical position and detachably secured in said base, a hand grip handle secured to said base and extending radially therefrom, means for supporting an edge guide on the under side of said bottom plate, said guide having a straight edge for engaging the side edge of the work piece, said straight edge of said guide extending transversely of said bottom plate in angular relation of substantially less than 90 degrees to said hand grip handle, and a hand knob fixed to said base, said knob being located in circumferentially spaced relation to said hand grip handle on a radius extending at an angle not in excess of 90° to the plane of said straight edge.

2. A motor driven tool comprising a cylindrical motor

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casing, a motor supporting base structure having an upper portion formed with a vertically disposed cylindrical bore for receiving said motor casing, a bottom plate for engaging the surface of the work piece and having a plurality of circumferentially spaced apart upwardly extending legs supporting said upper portion, one of said legs being formed with a hand grip handle positioned radially outwardly from said leg, means for supporting an edge guide on the under side of said bottom plate, said guide having a straight edge for engaging the side edge of the work piece, said straight edge of said guide extending transversely of said bottom plate in angular relation of substantially less than 90 degrees to said hand grip handle, and a hand knob fixed to another of said legs, said knob being located on a radius extending per-

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pendicular to said straight edge of said guide, the straight edge of said guide extending in a plane located intermediate said knob and said hand grip handle.

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