April 22, 1924. 1,490,912

R. L. CONNER

FLOOR PLANER

Filed Dec. 27, 1921 3 Sheets-Sheet 1

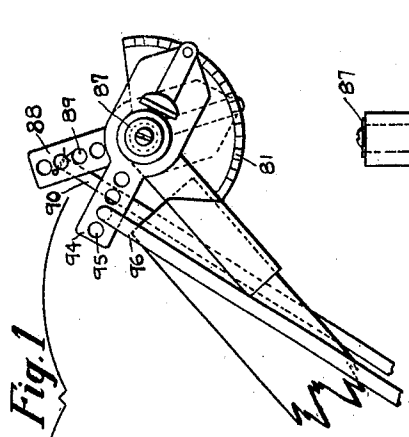


Fig. 1

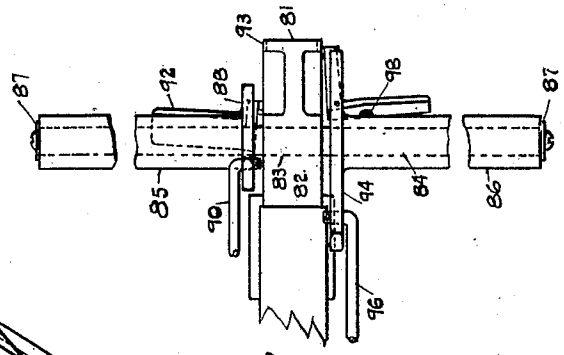
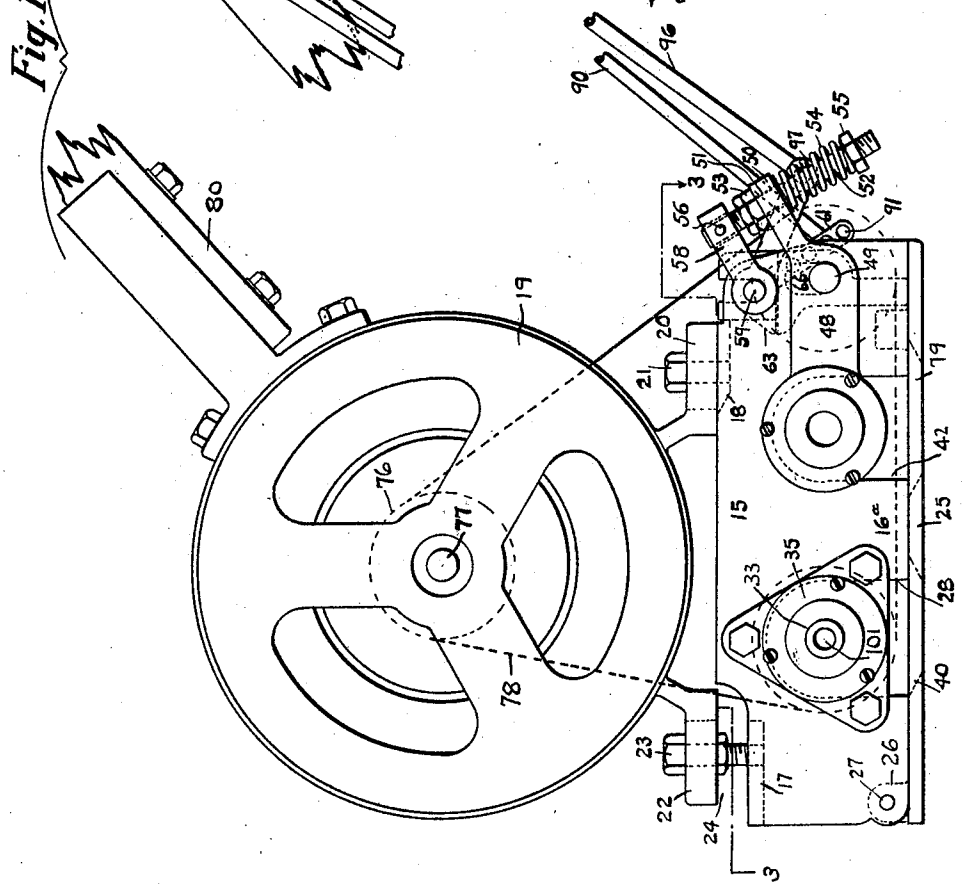


Fig. 2



Witnesses
Frederic C. Whitney
Augustus B. Coppens

Inventor
Ralph L. Conner
by Joshua R. H. Potts
his Attorney

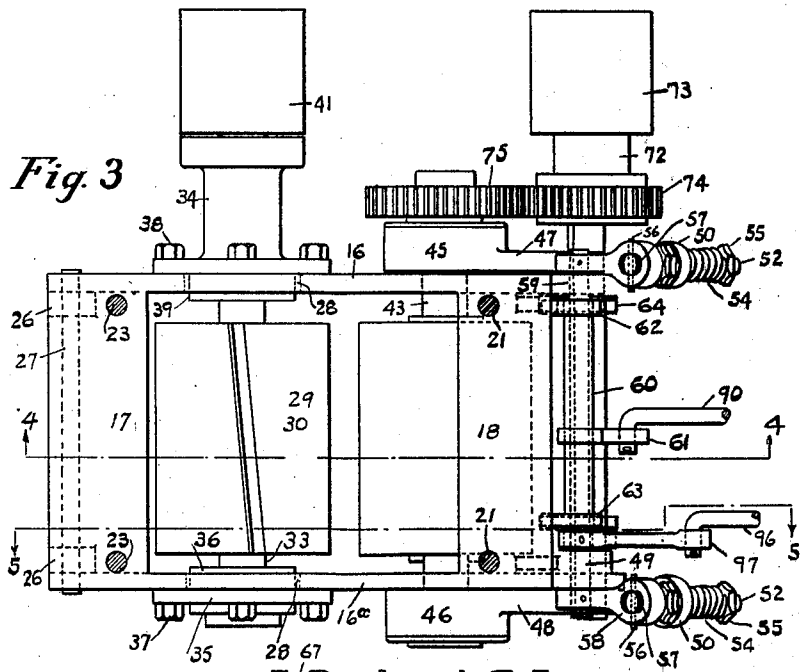
April 22, 1924. 1,490,912

R. L. CONNER

FLOOR PLANER

Filed Dec. 27, 1921 3 Sheets-Sheet 2

Fig. 3



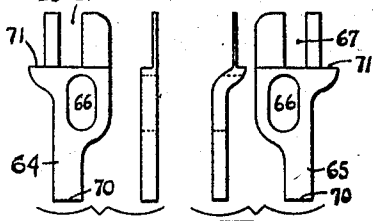
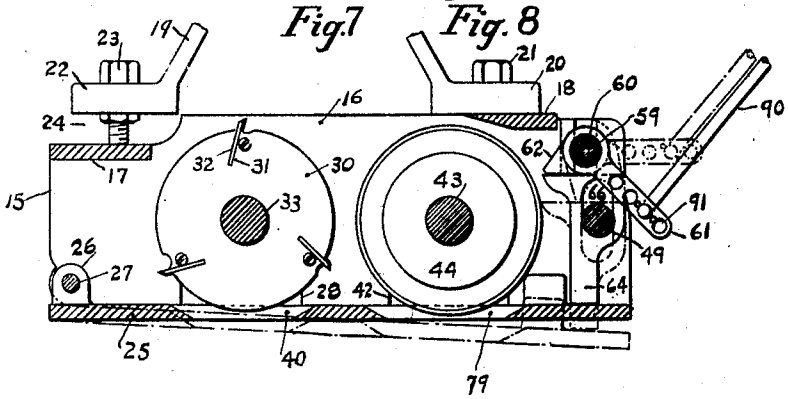


Fig. 4

Fig. 7 *Fig. 8*



Witnesses

Frederic C. Whitney.

Augustus B. Coppes

Inventor

Ralph L. Conner

by Joshua R. H. Potts

his Attorney

April 22, 1924. 1,490,912

R. L. CONNER

FLOOR PLANER

Filed Dec. 27, 1921 3 Sheets-Sheet 3

Fig. 6

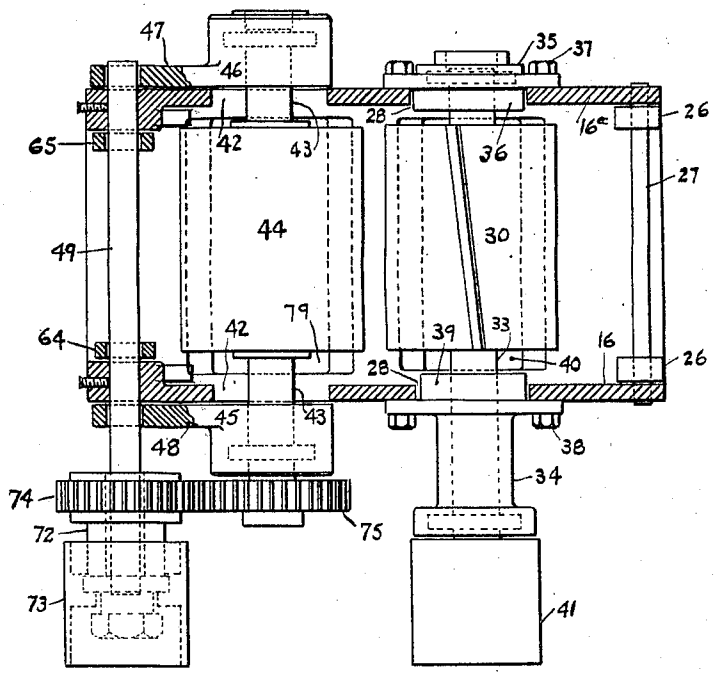
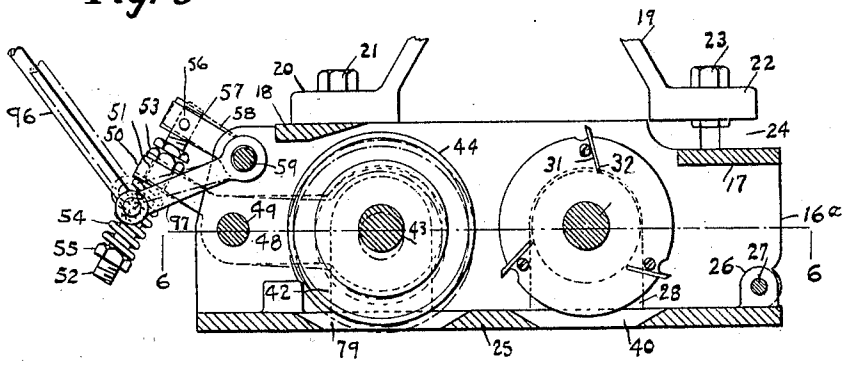


Fig. 5



Witnesses
Frederic C. Whitney
Augustus B. Coppes

Inventor
Ralph L. Conner
By Joshua R. H. Potts
his Attorney

Patented Apr. 22, 1924. 1,490,912

UNITED STATES PATENT OFFICE.

RALPH L. CONNER, OF WILMINGTON, DELAWARE.

FLOOR PLANER.

Application filed December 27, 1921. Serial No. 524,837.

To all whom it may concern:

Be it known that I, RALPH L. CONNER, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Floor Planers, of which the following is a specification.

One object of my present invention is to provide an improved device of simple and durable construction for planing floors and in which the parts can be easily adjusted to suit different requirements during the operation of the device in planing the floor.

Another object is to so construct my improved device that the parts can be readily assembled and manufactured.

A still further object is to so construct my improved device that the knife cutter and sand papering parts can be used in conjunction and the same means which is effective to grade the cutting of the knife cutter can be utilized in varying the degree of sand papering and that the sand papering portion can be used independently of the knife cutting portion.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which—

Figure 1 is a side elevation of a device made in accordance with my present invention; a portion of the handle and its attachments being broken away for purpose of enabling the device to be illustrated on a large scale,

Figure 2 is a top plan view of the handle portion which is broken away in Figure 1,

Figure 3 is a sectional plan view taken on the line 3—3 of Figure 1,

Figure 4 is a sectional plan view taken on the line 4—4 of Figure 3,

Figure 5 is a sectional elevation taken on the line 5—5 of Figure 3,

Figure 6 is a sectional plan view taken on the line 6—6 of Figure 5,

Figure 7 shows a face and edge view of one of the actuating parts which forms a portion of my invention,

Figure 8 is a face and edge view of another of the parts which forms a portion of my invention,

Figure 9 is an elevational view showing how certain of the parts of my invention can be inverted and supported so as to be used as a sawing, planing and sand papering table,

Figure 10 is a fragmentary plan view of a portion of the device as shown in Figure 9, and

Figure 11 is a perspective view of the table top shown in Figure 9.

Referring to the drawings and particularly to Figures 1 to 8 inclusive, 15 represents a frame which can be made of cast metal having sides 16 and 16ª which are arranged parallel and spaced apart; the frame at its top having transversely extending portions 17 and 18 arranged front and rear and connecting the sides. These portions 17 and 18 serve as a support for an electric motor 19; the leg portion 20 of said motor being secured to the portion 18 of the frame by bolts 21 while the leg portion 22 of the base of the motor is secured by adjusting bolts 23 to the portion 17 of the frame; said portion 17 being spaced from the leg portion 22 to allow a slight adjustment between the motor and the frame since in thus forming the construction, a space 24 is provided between the leg portion 22 and the frame portion 17 as clearly shown in Figure 1.

The frame 15 is open at its bottom and below this open bottom is positioned a floor-engaging plate 25; said floor-engaging plate adjacent its forward end having upwardly extending lugs 26 which fit between the sides of the frame and have holes through which a pivot pin or rod 27 extends; said pivot rod also extending through holes in the opposite sides 16 and 16ª of the frame 15. Thus the floor plate 25 is pivotally connected at its forward end to the frame 15. The opposite sides of the frame have notches 28 extending upward through their bottom edges and a cutter 29 is positioned between the sides of the frame; said cutter including a cylindrical body portion 30 having slots 31 cut therein in which are positioned knives 32.

A shaft 33 rotatably supports the cutter and extends in the bearing members 34 and 35; the bearing member 35 having a portion 36 which extends into one of the notches 28 in the side 16ª and this bearing member is secured to the side 16ª by bolts 37. The other bearing member 34 is secured by bolts 38 to the side 16 and has a portion 39 which extends through the notch 28 in said latter side. The floor-engaging plate 25 has a transversely extending slot 40 positioned

below the cutter 29 for the purpose of permitting the knives, during the operation of the device, to engage the floor through the medium of the slot 40. The bearing members 34 and 35 are preferably of the ball bearing type so as to provide a free rotation of the shaft 33 therein and the outer end of the shaft on one side projects beyond the bearing 34 and is provided with a pulley 41.

The sides 16 and 16ª of the frame have other notches 42 extending upward from their lower edge and through these notches extends a shaft 43 which has secured to it between the sides of the frame a sand paper covered roller 44. Bearing members 45 and 46 adjacent the outer surfaces of the sides 16 and 16ª serve as a bearing support for the projecting ends of the shaft 43 and these bearing members have arms 47 and 48 which are pivoted on a transversely extending shaft 49; said shaft being fixed relatively to the frame and extending through the sides thereof. The arms 47 and 48 have extensions 50 provided with holes 51 through which adjusting pins 52 slidably extend; said adjusting pins having screw threaded portions with nuts 53 thereon so that said nuts can engage the upper surfaces of the extensions 50. The adjusting pins below the extensions have coiled springs 54 thereon which are interposed between the lower parts of the extensions and nuts 55 on the lower screw threaded ends of the pins. The upper ends of the adjusting pins above the nuts 53 are secured by pivot pins 56 within slots 57 in levers 58. These levers are secured to a pivot shaft 59 which extends through holes in the opposite sides of the frame. Thus it will be noted that when the pivot shaft 59 is rocked to move the levers 58 upward, the adjusting pins 52 will be moved to compress the springs 54 and the springs will swing the arms 47 and 48 so as to lower the sand paper roller 44 relatively to the frame 15.

The pivot shaft 59 forms a support for a sleeve 60 which has secured to it a lever 61 and two cams 62 and 63. Two plate depressing fingers 64 and 65, which are illustrated in detail in Figures 7 and 8, have slots 66 which extend vertically and through which the shaft 49 freely extends. The upper ends of these plate depressing fingers are bifurcated to provide notches 67 for embracing the pivot shaft 59. The lower ends 70 of the plate depressing fingers are positioned directly above the upper surface of the floor-engaging plate 25 at a position remote from the pivot rod 27. It will thus be noted that if the plate depressing fingers are moved downward relatively to the frame that the ends 70 will engage the plate 25 and the resulting action will be to tilt the frame 15 raising the rear end on the pivot rod 27 as an axis. The plate depressing fingers 64 have horizontal ledges 71 adapted to be engaged by the cams 62 and 63 when the lever 61 and sleeve 60 are rocked.

One end of the shaft 49 is extended beyond the side 16 of the frame and has a collar 72 rotatably mounted thereon; said collar having secured to it a pulley 73 and a gear wheel 74. The gear wheel 74 meshes with another gear wheel 75 which is secured to the shaft 43 at a position outside of the bearing 45. The pulley 73 is in the plane of rotation of the pulley 41 and also in the plane of rotation of a pulley 76 on the motor shaft 77 and a driving belt 78 such as indicated diagrammatically in Figure 1 engages the pulleys 41, 73 and 76. Thus it will be noted that when the motor is in operation it will rotate the cutter 29 directly and will also rotate the sand papering roller 44 through the medium of the pulley 73 and gear wheels 74 and 75. It will also be noted that since the gear wheel 74 is rotatable on the axis of the shaft 49 and since the arms 47 and 48 can be rocked on the axis of said shaft 49, that the arms can be swung to raise or lower the sand papering roller and the gear 75 will remain in mesh with the gear 74 since the gear 75 will take a planetary movement relatively to the gear 74. The floor-engaging plate 25 has a second slot 79 extending transversely below the sand papering roller 44 through which a portion of the sand papering roller can extend for engagement with the floor when the device is pushed over the floor so as to slide with the plate 25 engaging the floor.

For the purpose of pushing the device over a floor, I provide a pole handle 80 which is secured to the motor and extends upward at a slant as shown in Figure 1. This pole handle adjacent its upper end includes a notched segment 81 which is secured thereto; said segment having a portion 82 providing a hole 83 through which a transverse rod 84 extends; this rod having portions extending beyond opposite sides of the segment as clearly shown in Figure 2.

Two sleeves 85 and 86 have a bearing on the projecting portions of the rod 84 and are kept against longitudinal movement by means of disks 87 which are secured by screws to the ends of the rod 84; said disks being of greater diameter than the internal diameter of the sleeves so that the sleeves provide tubular hand holds which can be grasped by the hands of the operator and partially rotated on the rod 84 as a pivot. The hand hold 85 has a projection 88 providing a number of holes 89 at various distances from the axis of the rod 84 and into any one of these holes 89 can be projected the angular end of a link rod 90; this link rod extending outward and having an angular portion adapted to engage in any of

a number of holes 91 within the lever 61; said holes 91 being at various distances from the axis of the pivot shaft 59. Thus by rocking the hand hold 85, the sleeve 60 can be rocked and the cams 62 and 63 will be operative to actuate the plate depressing fingers 64 and 65. The hand hold 85 has a spring-pressed latch 92 pivotally connected thereto for engagement with notches 93 on one side of the segment 81 so that after the hand hold has been rocked it can be secured in its rocked position relatively to the segment and thus the cams will be held in the position into which they are moved until the latch is again released.

In similar manner the hand hold 86 has a projection 94 providing a number of holes 95 at spaced distances from the axis of the rod 84 and in the end of these holes can be inserted an angular end of a link rod 96; said link rod extending downward and being pivotally connected to a lever 97; said lever being secured to the pivot shaft 59. The hand hold 86 is also provided with a spring-pressed latch 98 which is pivotally connected thereto and includes a portion for engagement with any of the notches on the opposite side of the segment 81 so that by rocking the hand hold 86 the pivot shaft 59 will be rocked and in this manner a workman grasping one of the hand holds in each hand during the movement of the device over a floor can, by a simple rocking movement using his thumbs to withdraw the latches from the notches of the segment, cause either the frame to be tilted or the sanding roller to be lowered or he can move both of the devices for effecting a desired result in relative position between the cutter 29 and the sand papering roller 44. If it is desired for any purpose whatever to slightly change the alignment of the sanding roller it can be accomplished by tightening or loosening the nuts on the adjusting pins 52. Or if it is desired to vary the pressure of the springs 54, this can also be accomplished by the movement of said nuts.

While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

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

1. A floor planer including a frame; a floor engaging plate pivotally connected to the frame, arms pivotally mounted on the frame; a shaft carried by the arms; a floor surfacing roller on the shaft; a pivot shaft; means for moving the pivot shaft; means carried by the pivot shaft for rocking the arms; a sleeve embracing the pivot shaft; plate-depressing fingers, and means on the sleeve for moving the plate-depressing fingers to effect a pivotal movement between the plate and frame, substantially as described.

2. A floor planer including a frame; a motor; a cutter rotatable in the frame; a rod fixed to the frame; a gear rotatable on the rod; bearing members pivoted on the rod; an abrasive roller rotatable in the bearing members; a gear fixed to the abrasive roller and meshing with the first mentioned gear; means for operatively connecting the motor to the cutter and first-mentioned gear; a floor-engaging plate pivoted to the frame; a sleeve; fingers slidable on the frame and engaging the plate; cams on the sleeves for moving the fingers; a pivot shaft within the sleeve and rockably mounted in the frame; levers on the pivot shaft; resilient connections between the levers and the bearing members; hand-controlling means for actuating the sleeve, and hand-controlling means for actuating the pivot shaft.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RALPH L. CONNER.

Witnesses:
ELIZABETH GARBE,
CHAS. E. POTTS.