Oct. 26, 1954 G. O. HEESE 2,692,622

PORTABLE JIG SAW

Filed June 1, 1953 2 Sheets-Sheet 1

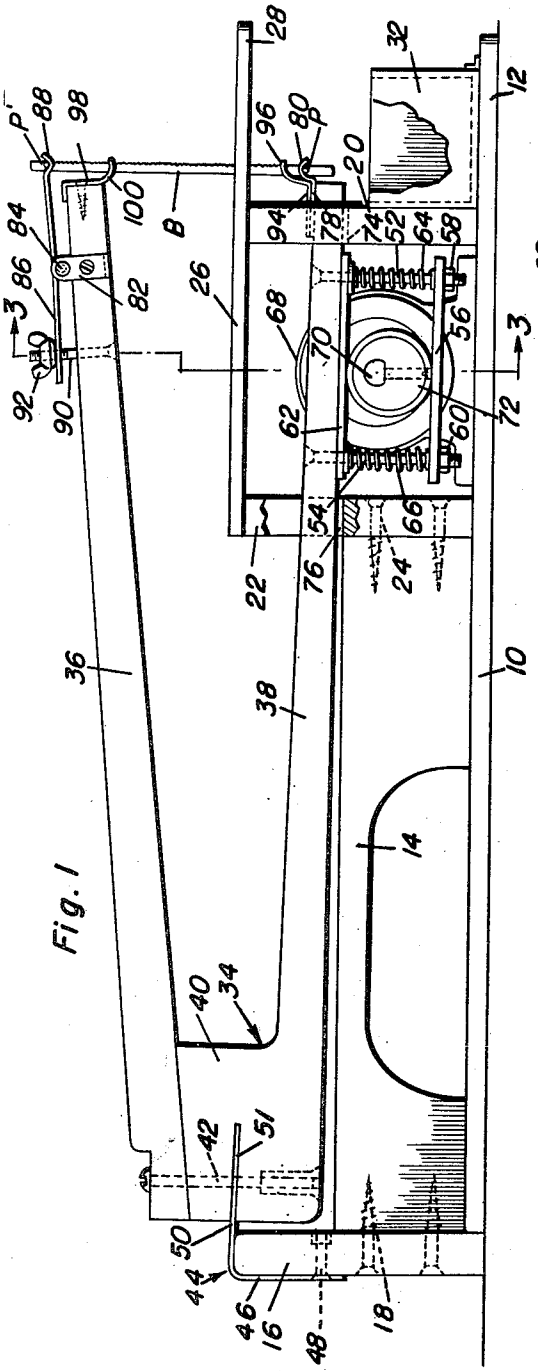


Fig. 1

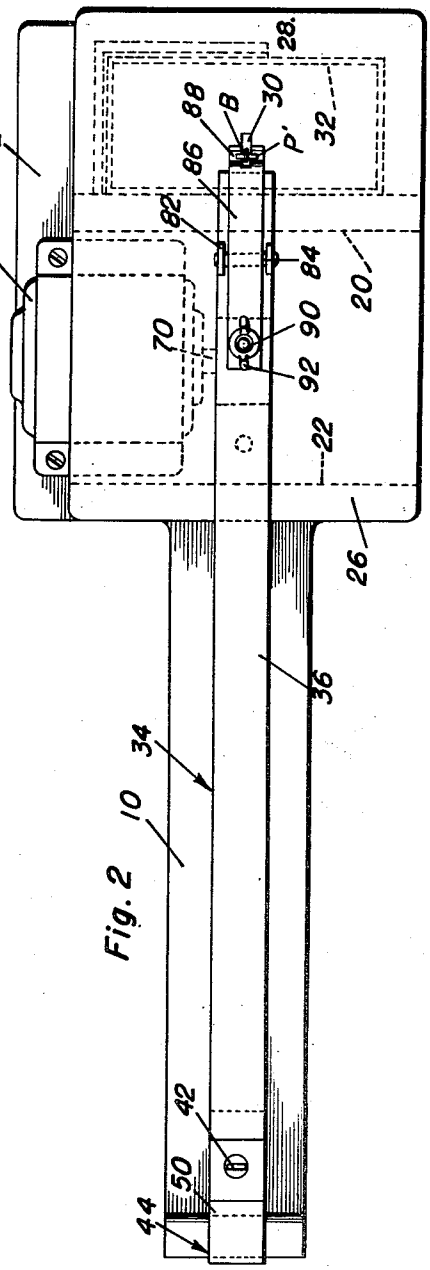


Fig. 2

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PORTABLE JIG SAW

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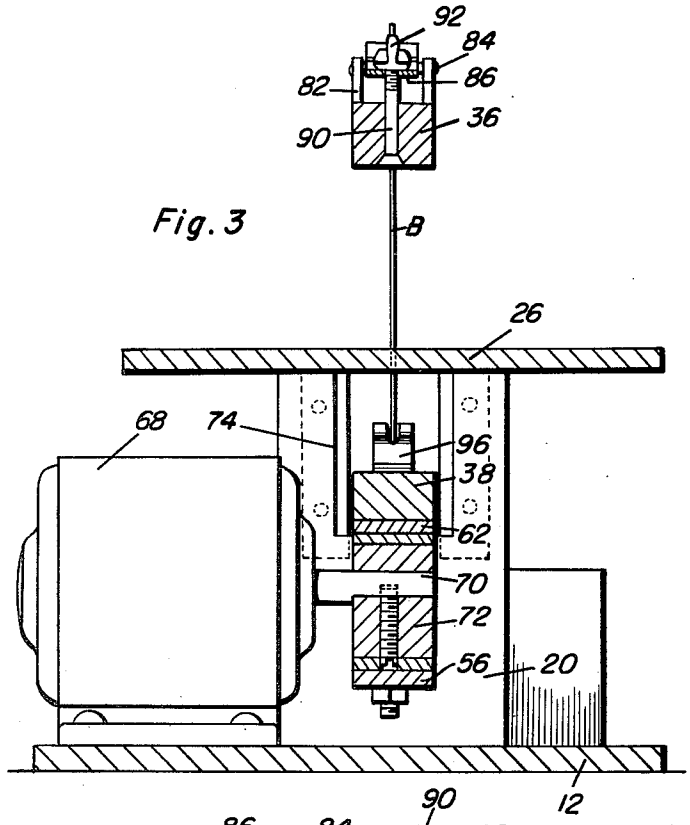


Fig. 3

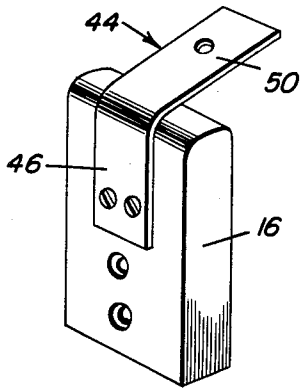


Fig. 6

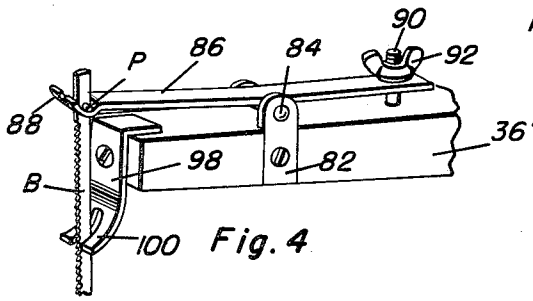


Fig. 4

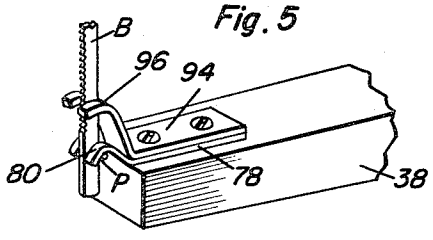


Fig. 5

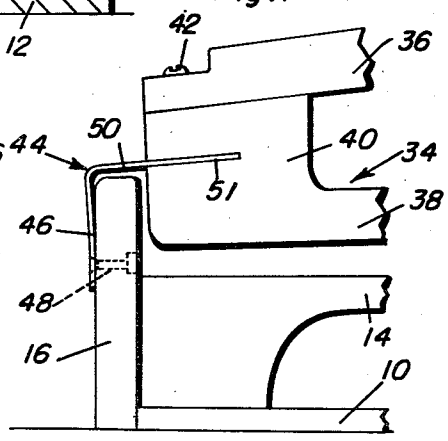


Fig. 7

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UNITED STATES PATENT OFFICE

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PORTABLE JIG SAW

George O. Heese, Roswell, N. Mex.

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2 Claims. (Cl. 143—73)

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This invention relates to new and useful improvements in jig saws and the primary object of the present invention is to provide a jig saw including a support and a blade holding member secured at one end of the support by a novel and improved spring connection whereby the blade holding member may be oscillated in a highly satisfactory manner with the spring means flexing as the blade holding member is moved to its upper and lower limits.

Another important object of the present invention is to provide a jig saw including novel and improved means for imparting oscillatory motion to the blade holding member and which means is so located as to utilize the whole benefit of the length of the blade holding member to obtain a highly advantageous mechanical advantage.

A further object of the present invention is to provide a jig saw including a blade holding member having novel and improved means whereby a blade may be readily attached thereto or removed therefrom in a convenient manner.

A still further aim of the present invention is to provide a jig saw of the aforementioned character that is extremely simple and practical in construction, strong and reliable in use, efficient and durable in operation, small and compact in structure, and inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view of the present invention and with part of the collecting box broken away for the convenience of explanation;

Figure 2 is a top plan view of Figure 1;

Figure 3 is an enlarged transverse vertical sectional view taken substantially on the plane of section line 3—3 of Figure 1;

Figure 4 is a fragmentary perspective view of the upper leg portion of the blade holding member and showing a blade, in part, secured thereto;

Figure 5 is a fragmentary perspective of the lower leg portion of the blade holding member and showing the blade, in part, secured thereto;

Figure 6 is a fragmentary perspective view of the rear end portion of the support and showing the spring member secured thereto; and

Figure 7 is a fragmentary view of Figure 1 and showing the manner in which the spring member flexes as the blade holding member is oscillated to its upper limit.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present

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invention, the numeral 10 represents an elongated flat base having an enlarged forward end portion 12. An elongated support 14 overlies the base and is suitably secured thereto by fasteners or the like that extend upwardly through the base and into the lower edge of the support. Support 14 is provided with a rear end portion 16, in the form of a separate vertical strip that is secured by fasteners 18 to the body portion of the support.

Forward and rear spaced parallel vertical walls 20 and 22 extend transversely of base 10 over end portion 12. These walls may be suitably secured to end portion 12, but the wall 22 is also secured to the forward vertical edge of the support 14 by fasteners 24 for additional strength. The upper ends of the walls 20 and 22 are suitably secured to and support a horizontally disposed platform 26 having a forward overhang portion 28 that extends forwardly of wall 20 and which is provided with a slot 30 to accommodate a blade B.

End portion 12 is adapted to support a removable open top, saw dust collecting box 22 which is disposed in front of wall 20 and under overhand portion 28, whereby saw dust produced while cutting work, may pass through slot 30 to be collected in box 32.

A substantially U-shaped blade holding member 34 overlies the support 14 and includes an upper leg portion 36, the lower leg portion 38 and a connecting portion 40. The connecting portion 40 is preferably integrally formed with the rear end of leg portion 38 and engages the rear end of leg portion 36. A bolt 42 extends through registering bores in the leg portion 36 and connecting portion 40 and has a complemental nut whereby leg portion 36 may be separated from or secured to portion 40.

Means is provided for connecting the blade holding member 34 to the support 14 for vertical swinging or oscillatory motion. This means comprises an L-shaped leaf spring or resilient member 44, having a vertical portion 46 which is secured against the rear face of strip 16 by fastening means 48. The horizontal portion 50 of spring 44 extends forwardly over strip 16 and into a horizontal slot 51 in portion 40 and is held therein by bolt 42 which extends through an accommodating aperture in portion 50.

Means is provided for imparting oscillatory motion to the blade holding member 34. This means includes forward and rear bolts 52 and 54 that extend downwardly through apertures in the forward part of leg portion 38. A lower strip 56 extends between the bolts and under the leg portion 30 and the ends of strip 56 are apertured to slidably engage the bolts 52 and 54. Nuts or abutments 58 and 60 are threaded on the lower end of bolts 52 and 54, under the strip 56, and form rests for strip 56. A second strip 62 extends between the bolts 52 and 54, under leg portion 38, and over strip 56. The ends of strip 62 are also provided with apertures that receive the

bolts 52 and 54. Coil springs 64 and 66 are engaged on bolts 52 and 54 and are biased between strips 56 and 62 to yieldingly urge the strip 62 against the under surface of leg portion 38 and strip 58 against abutments 58 and 60.

An electric motor 68 is secured to the end portion 12 of base 10 and the armature shaft 70 extends transversely of the base and under leg portion 38 between and spaced from the bolts 52 and 54. An eccentric or cam 72 is secured to the armature shaft 70 and is disposed between the strips 56 and 62 to oscillate member 34 as the shaft 70 rotates.

The walls 20 and 22 are provided with registering vertical guide slots 74 and 76 that slidably receive the lower leg portion 38 to restrict horizontal movement of blade holding member 34 as the same is oscillated by powered eccentric 72.

Means is provided for removably holding the blade B extended between the forward ends of leg portion 36 and 38. This means comprises a lower holding strip 78 secured to the upper edge of leg portion 38 and having a forward bifurcated downwardly concaved end portion 80 that extends forwardly from leg portion 38 to engage the lower end and holding pin P of blade B.

Channel bracket 82 is secured to the forward end of leg portion 36 and the ends of the bracket extend upwardly from leg portion 36 and support a pin 84 that is spaced above and which extends transversely of leg portion 36. An arm 86 overlies leg portion 38 and rests upon pin 84 between the upstanding ends of bracket 82 for rocking movement. The foward bifurcated upwardly concaved end 88 of arm 86 engages the upper end of holding lug or pin P of blade B.

A bolt 90 extends upwardly through an aperture in leg portion 36 behind bracket 82 and also extends upwardly through an aperture in the rear end of arm 86. A wing nut 92 is threaded on the upper end of bolt 90 and engages upon the rear end of arm 86 to adjust the arm 86 about pin 84 for tightening blade B.

A lower guide strip 94 is secured over strip 78 and includes an upwardly and forwardly curved bifurcated end portion 96 that receives blade B. An upper guide strip 98 is secured to the forward end of leg portion 36 and includes a downwardly forwardly curved bifurcated 100 that engages the upper part of blade B.

In practical use of the present invention, a blade such as blade B may be readily attached to the blade holding member 34 by loosening nut 92 and engaging pin P' over end 88 after pin P has been gaged under the bifurcated end portion 80 of strip 78. Then nut 92 is tightened to pull the blade B upwardly and retain the blade straight and tensioned.

As the eccentric 72 is driven, the same will ride against the strips 56 and 62 to impart oscillatory motion to member 34. As member 34 is swung upwardly, portion 46 will be spaced from the rear face of strip 16 to urge the member 34 to its normal horizontal position in response to rotation of the eccentric 72 in order to obtain a true up and down stroke for the member 34.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A jig saw comprising a base, an elongated support secured to the base and having forward and rear end portions, a substantially U-shaped blade holding member including upper and lower legs and a connecting portion joining said leg portions at their rear ends and disposed at the rear end of said support, a spring member carried by the rear end portion of said support and engaging said connecting portion to support said blade holding member for vertical swinging movement, means on the base engaging the lower leg portion to impart oscillatory motion to said blade holding member, a platform supported on the base over said lower leg portion and under said upper leg portion and having an opening to accommodate a saw blade carried by the forward ends of said leg portions, and means carried by the forward ends of said leg portion for holding a blade, said spring member comprising an L-shaped leaf spring having a vertical portion and a horizontal portion, said vertical portion being secured to the rear end portion of said support and said connecting portion having a horizontal slot in which the horizontal portion of said spring is secured.

2. A jig saw comprising a base, an elongated support secured to the base and having forward and rear end portions, a substantially U-shaped blade holding member including upper and lower legs and a connecting portion joining said leg portions at their rear ends and disposed at the rear end of said support, a spring member carried by the rear end portion of said support and engaging said connecting portion to support said blade holding member for vertical swinging movement, means on the base engaging the lower leg portion to impart oscillatory motion to said blade holding member, a platform supported on the base over said lower leg portion and under said upper leg portion and having an opening to accommodate a saw blade carried by the forward ends of said leg portions, and means carried by the forward ends of said leg portion for holding a blade, said spring member comprising an L-shaped leaf spring having a vertical portion and a horizontal portion, said vertical portion being secured to the rear end portion of said support and said connecting portion having a horizontal slot in which the horizontal portion of said spring is secured, said connecting portion being integrally formed with the rear end of said lower leg portion and a fastener extending through said connecting portion, said horizontal portion of said spring and the rear end of said upper leg portion to removably secure the connecting portion to the upper leg portion and the horizontal portion of the spring in the slot.

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