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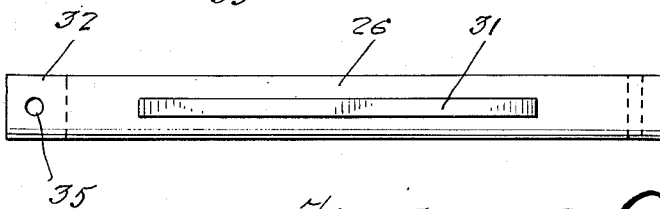
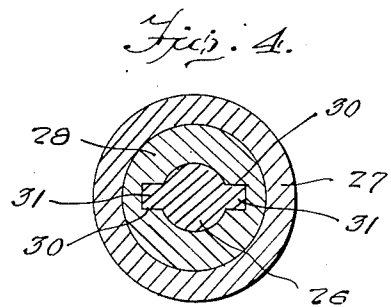
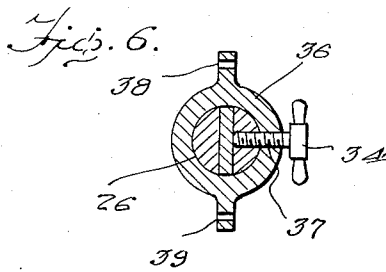
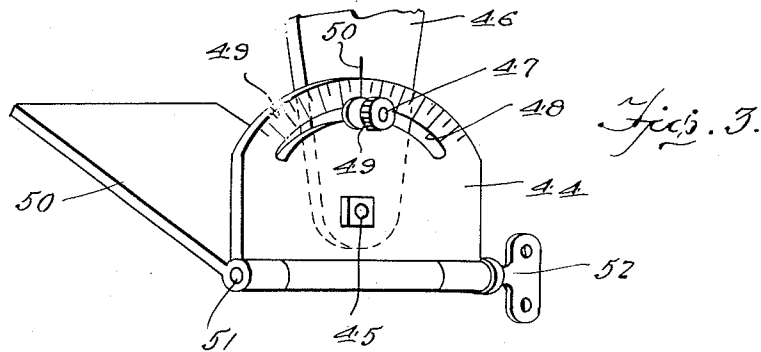
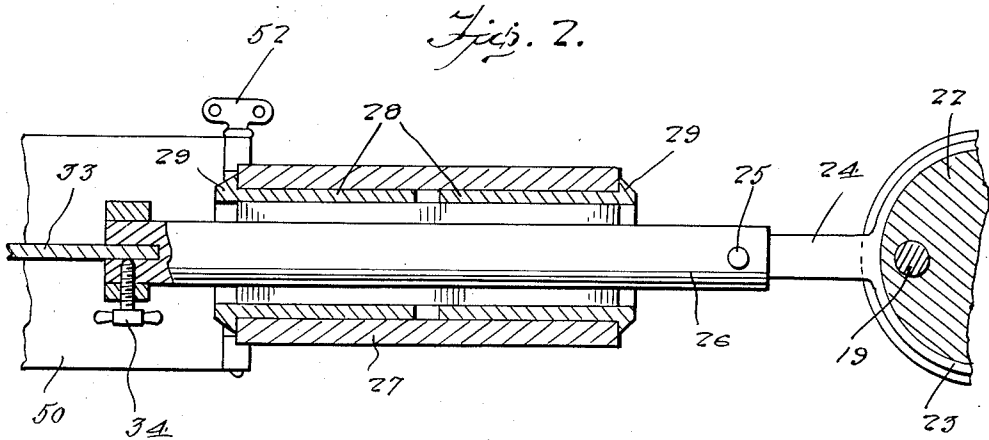
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2,122,611

SAW ATTACHMENT FOR PORTABLE ELECTRIC DRILLS

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2 Sheets-Sheet 2



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SAW ATTACHMENT FOR PORTABLE ELECTRIC DRILLS

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1 Claim. (Cl. 143—68)

This invention relates to attachments for portable electric drills and more particularly to a saw attachment whereby a handy portable power saw may be provided; and the invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:—

Figure 1 is a side elevational view illustrating an application of the invention.

Figure 2 is an enlarged detail sectional view taken substantially on the line 2—2 of Figure 1.

Figure 3 is a fragmentary perspective view of a saw rest.

Figure 4 is a transverse sectional view through a reciprocating member and a guide therefor.

Figure 5 is an elevational view of the reciprocating member.

Figure 6 is a transverse sectional view through the reciprocating member at a collar equipped end thereof.

Referring to the drawings by reference numerals it will be seen that 5 indicates generally a conventional and well known type of portable electric hand drill which includes among other parts a casing 6 equipped at one end with a handle 7 and at a relatively opposite end with an attaching flange 8, and an electric motor 9 housed within the casing 6, said motor being provided with an armature shaft 10.

In accordance with the present invention the head and associated parts of the drill 5 are removed and substituted for said head and associated parts is my saw attachment indicated generally by the reference numeral 11.

The saw attachment 11 comprises a skeleton frame-like head member 12 provided at one end with an attaching flange 13 through the medium of which and bolts or other fastening elements 14 the head 12 is secured to the flange 8 of the drill casing 6 with a gasket 15 interposed between the flanges 13 and 8 as shown.

Provided on one side of the head 12 is a suitable bearing structure 15 in which is journaled a stub shaft 16. On one end shaft 16 is provided with a pinion gear 17 that is in constant mesh with a smaller pinion gear 18 provided on the free end of the armature shaft 10.

Also journaled transversely of the head 12 is a shaft 19 that is driven from the shaft 16 through the medium of bevelled gearing 20.

The head frame 12 is provided with a slot 21 in which is accommodated a grooved eccentric disc 22. Seated in the groove of the disc 22 is an eccentric strap 23 formed integral with a shank

member 24 that is pivoted as at 25 within the bifurcated end of a reciprocating member 26.

The head 12 is provided with an integral cylindrical guide 27 in the respective opposite ends of which are inserted bushings 28 provided on their respective outer ends with flanges 29 that abut the adjacent ends of the guide member 27 as shown in Figure 2.

As best shown in Figure 4 the bushings 28 are provided at diametrically opposite sides thereof with grooves or ways 30 that accommodate keys 31 provided on diametrically opposite sides of the reciprocating member 26, which latter has a sliding fit in the bushings 28 as shown.

At its respective opposite end the reciprocating member 26 is bifurcated as at 32 and clamped within the furcations 32 is one end of a saw blade 33.

The saw blade 33 has its ends secured within the furcation 32 through the medium of a hand screw 34 that is threaded through an opening 35 formed in the end 32 of the member 26 to bind against the saw blade as shown in Figure 2.

Also disposed about the end 32 of the member 26 is a collar 36 that is provided with a threaded opening 37 aligning with the opening 35 to accommodate the screw 34 which latter also serves to secure the collar 36 in position on the reciprocating rod 26.

At diametrically opposite sides thereof the collar 36 is provided with apertured lugs 38 to which are secured one end of springs 39, which springs at one end are also anchored to the head 12 at the forward end of the guide 27 as shown in Figure 1 and acts on the rod 26 for normally urging the same towards the right in Figures 1 and 2.

From the description thus far it will be seen that when the motor 9 is in operation drive will be transmitted from the motor through the gearing 17, 18 to the shaft 16 and from the shaft 16 through the gearing 20 to the shaft 19 causing the slide member 26 and the saw blade 33 connected therewith to reciprocate. Thus a positive sawing action for the saw blade is obtained.

For guiding the saw 33 the head frame 12 is provided with a forwardly extending downwardly curved arm 40 that is bifurcated at its outer end to provide a pair of coextensive arms 50 between which is journaled a grooved roller 42 that bears on the upper edge of the saw as shown in Figure 1.

Also, in accordance with the present invention there is provided a saw rest for use in set-

ting the saw in position for bevel cutting and analogous work.

The improved saw rest is indicated generally by the reference numeral 43 and comprises a scale plate 44 which is pivoted as at 45 to a depending lug 46 formed integral with the guide 27 at the forward end of the latter. Adjacent the lower end thereof the lug 46 is provided with a guide pin 47 which is accommodated in an arcuate slot 48 provided in the scale plate 44 and on which is threaded a nut 49 that is adapted to be threaded home against the scale plate 44 for securing the latter at the desired position of angular adjustment.

At the free arcuate edge thereof the scale plate 44 is provided with a scale 49 graduated in terms of degrees or as otherwise found desirable and on one face thereof the lug 46 is provided with a fixed index 50 adapted to be read against the graduations of the scale 49.

Hinged to the scale plate 44 is the rest plate 50, the pin forming part of the hinge connection between the plate 44 and the rest plate 50 being indicated by the reference numeral 51.

Associated with one end of the hinge pin 51 for securing the rest plate 50 at the desired position of adjustment is a swivel structure 52.

It will be understood that when the saw is used for bevel cutting the scale plate 44 is secured at the proper position of angular adjustment determined by a reading of the index 50 against

the graduations of the scale 49, the nut 49 being threaded home on the pin 47 for securing the plate 44 at the selected position of adjustment.

It will thus be seen that my attachment can be readily applied to a portable electric hand drill necessitating but the removal of the head from the drill and in no wise requiring any material alteration in the drill structure, and that the invention can be used to advantage in work shops for cutting designs, etc.

Having thus described the invention, what is claimed as new is:—

A portable hand saw comprising a casing provided at one end with a handle, a head member mounted on the casing at the end thereof remote from said handle, an electric motor housed in said casing and provided with an armature shaft extending from the casing to one side of and parallel with said head, a fixed guide on said head, a rod having a sliding fit within said guide, means operatively connecting the armature shaft to one end of said rod for reciprocating the latter, a saw blade secured at one end to the free end of said rod, an arm depending from said guide in the plane of said blade, and a saw rest secured to said arm to extend forwardly thereof beneath said blade and adjustable about right angularly related axes into different inclined positions relative to said blade.

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