May 22, 1951 H. O. THOMPSON 2,553,688

TOOL ATTACHMENT

Filed June 13, 1947

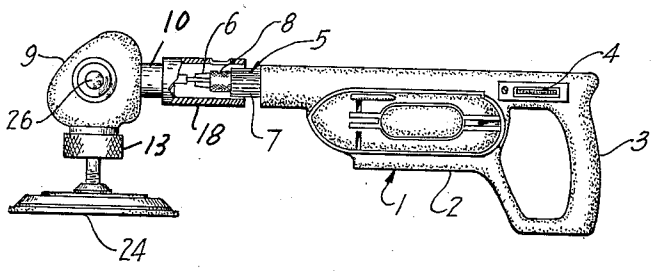


Fig. 1.

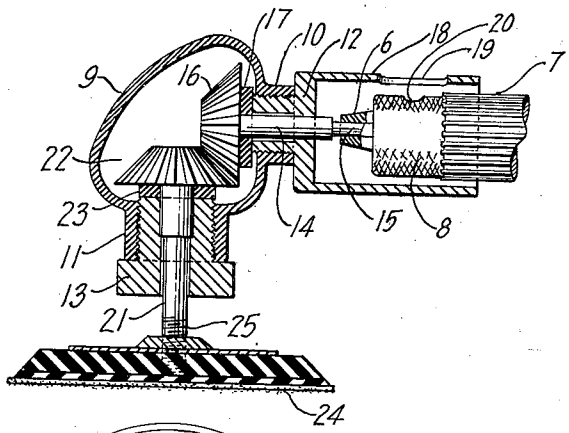


Fig. 2.

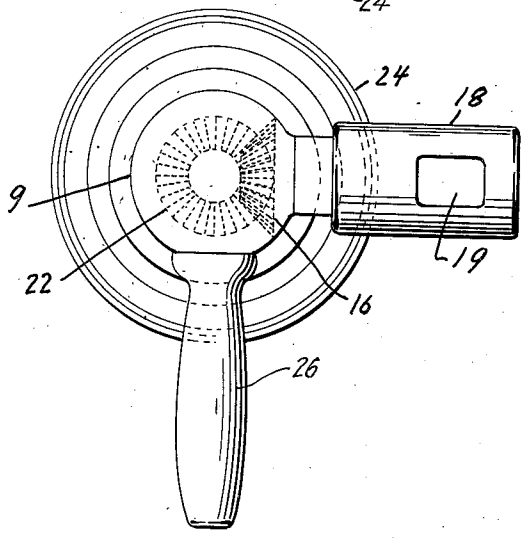


Fig. 3.

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TOOL ATTACHMENT

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2 Claims. (Cl. 51—170)

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The present invention relates to improvements in tool attachments and its principal object is to provide a convenient means for attaching a tool such as a sanding wheel or a buffer to a portable electrical drill or similar instrument.

Portable drills of the character described are made in many different forms, and usually comprise a suitable housing having a motor, a drill chuck driven by the motor, and a handle for holding and directing the tool or instrument, the handle usually having a suitable switch control operable by the thumb or one of the fingers of the operator.

The present invention is a further development of the tool attachment described and claimed in my co-pending application, Serial Number 710,667, filed November 18, 1946, now abandoned.

In the latter invention it was proposed to provide a direct drive between the tool, such as a grinding wheel, and the chuck with a suitable guard surrounding the drive and the chuck to furnish a handle for the operator and to protect the operator from injury.

In the present invention it is proposed to provide a right-angular drive so that the axis of the tool is disposed at a right angle to the axis of the chuck.

It is further proposed to provide a handle arranged at a right angle to both the axes of the tool and the chuck so that the operator may hold the drill handle in one hand and the attachment handle in the other hand for convenient manipulation and may also turn the tool with respect to the chuck into any desired angular position.

It is further proposed to provide a suitable housing surrounding the drive mechanism and a guard projecting from the housing over the chuck so as to protect the hands of the operator.

Further objects and advantages of my invention will appear as the specification proceeds, and the novel features of my invention will be fully defined in the claims attached hereto.

The preferred form of my invention is illustrated in the accompanying drawing, in which

Figure 1 shows my attachment as applied to a portable electrical drill,

Figure 2, a vertical central section, on an enlarged scale, through the attachment and a portion of the drill, and

Figure 3, a plan view of the attachment.

While I have shown only the preferred form of my invention, I wish to have it understood that various changes and modifications may be made within the scope of the claims attached

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hereto without departing from the spirit of the invention.

Referring to the drawing in detail, the electrical drill 1 may be of any suitable form and is preferably made of light weight for convenient handling by the operator. It is here shown as comprising a housing 2 having a motor mounted therein, a handle 3 at the rear end of the housing and having a thumb control switch 4 and a chuck 5 at the front end of the housing, The chuck may be of any suitable kind and is here shown as a Jacobs chuck, comprising a plurality of jaws 6, a revolvable member 7 adapted for tightening the jaws upon the shank of a suitable tool and a member 8 used as an anchoring member for a key (not shown), which is used for driving the operating member 7.

The device thus far described is of conventional construction and no claim of novelty is made for the same.

My invention comprises a suitable housing 9 having two tubular extensions 10 and 11 arranged at a right angle to one another. A bushing 12 is threaded into the extension 10 and a bushing 13 is threaded into the extension 11. The bushing 12 has a shank 14 revolvable therein, and this shank terminates in a reduced extension 15 adapted to be gripped by the jaws 6 of the chuck. The forward end of the shank 14 extends into the housing 9 and carries a bevelled gear 16, a suitable bearing 17 being interposed between the bevelled gear and the bushing 12. The latter bushing has a sleeve 18 projecting over the chuck to serve as a guard and this sleeve is formed with an aperture 19 to allow a key to be inserted into a hole 20 of the anchoring member for operating the member 7 to tighten the jaws 6 of the chuck upon the end of the shank 14.

The bushing 13 carries a second shank 21 arranged at a right angle to the shank 14 and the inner end of this shank has a bevelled gear 22 inside the housing 9 to mesh with the bevelled gear 16. A bearing 23 is interposed between the bevelled gear 22 and the inner end of the bushing 13. The outer end of the shank 21 carries a desired tool, such as a sanding wheel 24, or a buffer, and is threaded as at 25 so that any suitable make of tool may be attached thereto, either directly or by means of an adaptor.

The housing 9 has a handle 26 projecting therefrom, the handle being preferably straight and arranged at a right angle to both of the axes of the chuck and the tool.

The operation of the invention will be readily understood from the foregoing description. The

attachment forms an independent unit and may be easily secured upon the portable drill by introducing the end 15 of shank 14 into the chuck 5 and by tightening the chuck upon the shank by means of a key introduced through the hole 19. The attachment thus having been secured the tool is ready for use, and upon turning on the switch 4 the sanding wheel 24 will be set into rapid rotation. The operator may grip the handle 3 in one hand and the handle 26 in the other hand for guiding the sanding wheel over the surface to be sanded, and he may also turn the attachment about the axis of the chuck to any desired angularity for access to the work from above, from below and from any side and angle desired.

The tool is particularly adapted for sanding and buffing flat and slightly curved surfaces such as automobile body and fender work.

I claim:

1. A tool attachment for a portable electric motor having a casing and a rotary chuck projecting therefrom, the attachment comprising a housing having two tubular extensions arranged at a right angle to one another, a bushing threaded into one of the extensions and having a cylindrical guard projecting outwardly therefrom, the guard having a diameter larger than that of the bushing and forming a shoulder therewith bearing on the end of the extension when the bushing is screwed in fully, the bushing being slightly longer than the extension so as to project inwardly beyond the same when the shoulder bears on the outer end of the extension, a shank revolvable in the bushing and having an outer end located within the guard adapted for gripping by the jaws of the chuck while the guard forms an

enclosure for the chuck, a bevel gear on the inner end of the shank within the housing, a bearing interposed between the bevel gear and the inner end of the bushing, a second bushing threaded into the second extension and having a head bearing on the outer end of the extension and having an inner end projecting inwardly of the inner end of the extension, a second shank revolvable in the second bushing and having a bevel gear within the housing meshing with the first gear and having a tool mounted on its outer end outside of the housing, and a bearing interposed between the second bevel gear and the inner end of the second bushing.

2. A tool attachment as defined in claim 1, in which the housing has a handle projecting therefrom radially with respect to the axis of the first shank to facilitate manipulation of the housing about said axis.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
689,464	Cramer	Dec. 24, 1901
1,391,221	Tuttle	Sept. 20, 1921
1,575,953	Toorks	Mar. 9, 1926
1,785,065	Aborn	Dec. 16, 1930
1,840,108	Kincaid	Jan. 5, 1932
2,101,305	Albertson	Dec. 7, 1937
2,240,755	Briggs	May 6, 1941
2,365,232	Wert	Dec. 19, 1944
2,465,309	Happe et al.	Mar. 22, 1949