Aug. 26, 1958 B. G. METOFF 2,848,850

ELECTRIC SANDERS

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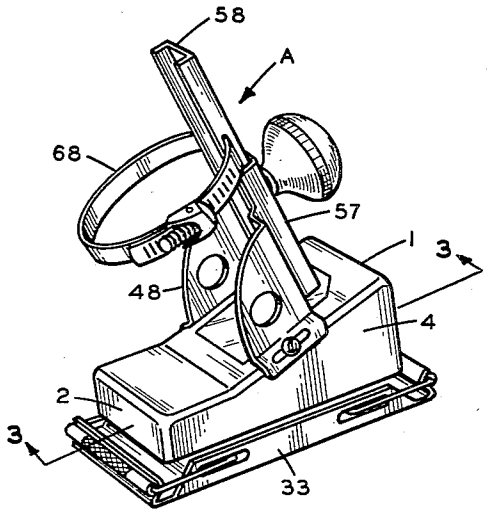


FIG. 1

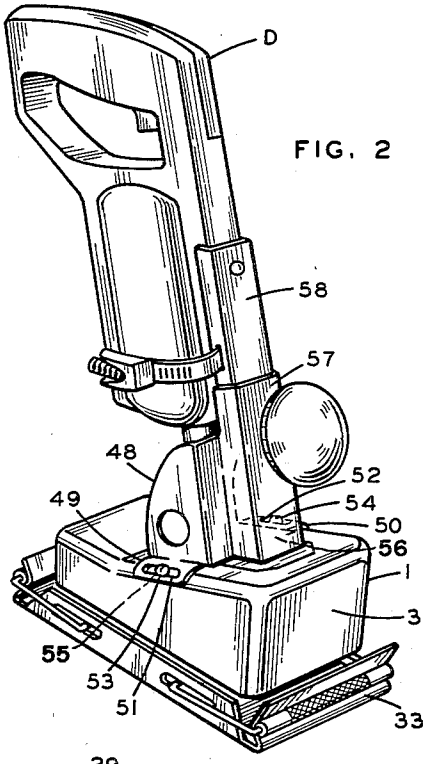


FIG. 2

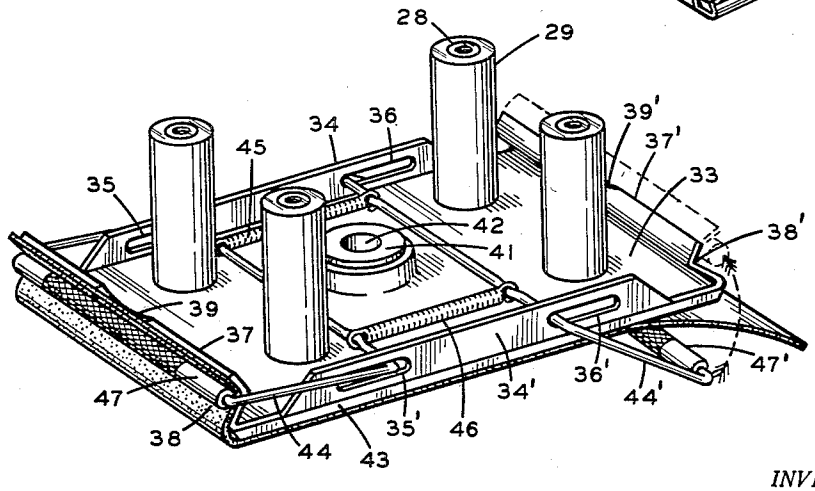


FIG. 4

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ELECTRIC SANDERS

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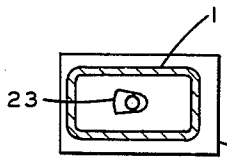


FIG. 5

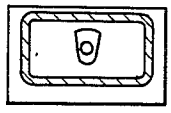


FIG. 6

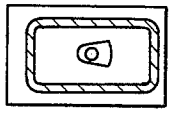


FIG. 7

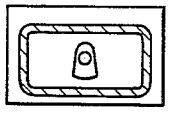


FIG. 8

FIG. 3

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ELECTRIC SANDERS

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Application August 10, 1956, Serial No. 603,423

4 Claims. (Cl. 51—170)

This invention relates to certain new and useful improvements in electric sanders and, more particularly, to a sander attachment which is adapted to fit in an electric drill or similar power hand tool.

It is the primary object of this invention to provide a lightweight, readily portable, inexpensive attachment for an electric drill, which attachment, together with the electric drill, will function as an electric sanding machine.

It is another object of the present invention to provide a sander of the type stated which can be readily and conveniently mounted, as an attachment, upon a portable electric drill or similar power hand tool in a simple and secure manner.

It is an additional object of the present invention to provide a sander attachment which, when operatively mounted upon an electric drill, will be positioned at a comfortable angle for the user.

It is a further object of the present invention to provide a sander of the type stated having a simple, efficient driving and transmission mechanism.

It is also an object of the present invention to provide a sander of the type stated having novel and effective means for holding sandpaper tightly in operative position and quickly releasing same for replacement when necessary.

With the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings—

Fig. 1 is a perspective view of a sander attachment constructed in accordance with and embodying the present invention;

Fig. 2 is a perspective view of the sander attachment shown in operative position on an electric drill;

Fig. 3 is a sectional view taken along line 3—3 of Fig. 1;

Fig. 4 is a perspective view of the platen forming a part of the present invention; and

Figs. 5, 6, 7, and 8 are diagrammatic views of the sander platen in four different positions illustrative of its path of movement in completing a full sanding stroke.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention, A designates a sander attachment provided with a body casting 1 having spaced parallel end walls 2, 3, and spaced parallel side walls 4, 5, these four walls being integrally joined along their upper edges with a top wall 6 to form an open-bottomed chamber *c*. The top wall 6, furthermore, integrally includes an inclined portion 7 and a flat portion 8, the latter being substantially parallel to the plane of the open bottom of the chamber *c*, as can best be seen in Fig. 3.

The body casting 1 is further provided along its inclined wall portion 7 with a recess 9 having a bottom wall 10 and a somewhat elliptical side wall 11 for accommodating two meshing bevel gears 12, 13. The gear 12 is axially bored and tapped on its under face for receiving the threaded end of a headed stud 12A which is journaled in a boss 14 formed on the bottom wall 10 of the recess 9. On its upper face, the gear 12 is provided with a hub 15 which extends upwardly to, and is provided at its upper end with, a straight-sided socket 16. The other gear 13 is provided with a downwardly projecting hub 17 which is also journaled in and extends through a boss 18 formed in the bottom wall 10 of the recess 9. As may be seen in Fig. 3, the bosses 18, 14, are so positioned that the axis of the hub 17 is vertical when the sander A is in operative position, and, similarly, the axis of the hub 15 is perpendicular to the wall portion 7. The top of the recess 9 is covered by a closure plate 19 which is secured to the body casting 1 by screws 20 and has a clearance aperture 21 adapted to fit loosely around the hub 15.

The hub 17 is axially bored and threaded therein is a stub shaft 22 formed integrally as a part of an eccentric 23 which includes radially projecting flange 24 having a counterweight 24' and a downwardly projecting off-center shaft 25.

Adjacent to its four corners, the top wall 6 of the body casting 1 is provided with four symmetrically located apertures 26 adapted for accommodating four screws 27 which engage in corresponding internally threaded inserts 28 respectively molded in the upper end of rod-like rubber mounting posts 29. At their lower ends, the posts 29 are also provided with internally threaded inserts 30 for engagement with screws 31 which extend through corresponding apertures 32 located in the four corners of a rectangular platen 33. The platen 33 is essentially rectilinear in shape having upwardly extending longitudinal flanges 34, 34', provided with elongated slots 35, 36, and 35', 36', the recesses 35, 35', and 36, 36' being respectively in transverse alignment. The platen 33 is also provided, across its short margins, with upstanding transverse flanges 37, 37', which are curved inwardly and upwardly in the provision of open-ended transverse grooves 38, 38', respectively. Centrally of their upper margins, the flanges 37, 37', are respectively provided with arcuate finger-recesses 39, 39'.

The platen 33 is further provided with a centrally located circular socket 40 provided with a platen bearing 41 having a centrally bored aperture 42 for operative engagement with the off-center shaft 25 of the eccentric 23. Adhesively secured upon the flat under face of the platen 33 is a thick rubber sheeting pad 43.

Loosely disposed through the slots 35, 35', and 36, 36', respectively, are U-shaped wire bails 44, 44', resiliently connected by springs 45, 46, and being rotatably attached at their external ends to knurled rod-like rollers 47, 47', which respectively fit in the grooves 38, 38'.

The sander attachment A is further provided with an upstanding mounting bracket 48 which is demountably secured to the body casting 1 by form-fitting flanges 49, 50, which conform to the longitudinal margins of the wall portion 7, said flanges 49, 50, being provided with centrally located slots 51, 52, for accommodating screws 53, 54, which are threaded into corresponding threaded apertures 55, 56. The mounting bracket 48 is further provided with a channel-forming bight-portion 57 for slidably accommodating an upstanding attachment arm 58 and is provided at its lower end with a longitudinally extending slot 59 adapted to receive a headed screw 60 which extends through an aperture 61 in the bight-portion 57 and is engaged by a tubular nut 62. It should be noted that the nut 62 is integrally provided with an externally threaded shank 63 for engagement with a threaded aperture 64 formed in a plastic handle 65. Outwardly with respect to the slot 59, the attachment arm 58 is provided on its longitudinal walls with two opposite, parallel, longitudinally extending slots 66, 67, for accommodating a clamping band 68 which passes around a drill

D for holding the sander attachment A in operative position and at a convenient angle. Provided for mechanically connecting the drill D and sander attachment A is an adapter **69** consisting of a rod-like shank **70** for engagement in the drill chuck **71** and a flat-sided bit **72** for snug-fitting engagement in the socket **16** of the hub **15**.

In use, the sander attachment A is secured to the drill D by the clamping band **68** and by adjusting the attachment arm **58**. When the drill is energized, the adapter **69** will rotate the hub **15** rotating the gear **12**, which, in turn, rotates the gear **13** and the eccentric 23, thereby causing the platen **33** to circulate around a path as illustrated by Figs. 5, 6, 7, and 8, being resiliently supported at all times by the posts **29**.

A rectangular sheet of sandpaper S can be placed flatwise upon the downwardly presented face of the rubber pad **43** with the knurled rods **47**, **47'**, in released position hanging loosely below the platen **33**. Thereupon, first one of the rollers **47**, **47'**, is swung upwardly and into its associated groove and then the other is likewise swung upwardly. As this is done, the rollers **47**, **47'**, roll over the sandpaper S, drawing it snugly and tightly into operative position. Preferably, the piece of sandpaper is cut to a slightly greater length than is required to fit between the grooves **43**, **43'**, and, therefore, a short free portion will project upwardly beyond at least one of the rollers **47**, **47'**. The piece of sandpaper S can thus be very quickly released merely by pulling outwardly and downwardly on such free portion.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the electric sander may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

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

1. In a sander, a platen having upstanding parallel side-flanges and upstanding parallel end-flanges, said side-flanges being provided with elongated slots and said end-flanges being provided with outwardly presented recesses, U-shaped bails slidably mounted in the slots and extending outwardly therefrom along the sides of the platen, each of said bails being provided at its outer end with a roller adapted to fit within one of said recesses, and spring means for biasing the bails inwardly with respect to the end-flanges.

2. In a sander, a platen having upstanding parallel side-flanges and upstanding parallel end-flanges, said side-flanges being provided with elongated slots and said end-flanges being provided with outwardly presented recesses, U-shaped bails slidably mounted in the slots and extending outwardly therefrom along the sides of the platen, each of said bails being provided at its outer end with a roller adapted to fit within one of said recesses, and spring means for connecting the bails to each other for biasing the bails toward each other.

3. For use with electric hand drills and similar electrically powered prime movers; a sander attachment comprising a hollow body member including a chamber having a top wall and a downwardly presented opening, said top wall having an angularly inclined portion provided with a recess having a side wall integral with and projecting downwardly from said inclined portion, a closure plate extending across said recess and being substantially coplanar with said inclined portion, a platen disposed across and in downwardly spaced relation to said opening, a plurality of elongated rubber posts rigidly secured at their lower ends to the platen and rigidly secured at their upper ends to the body member inside the chamber, a rotary eccentric journaled within said chamber and being operably connected to the platen, gear means journaled within said recess and being drivingly connected to said eccentric, said gear means being provided with a hollow hub projecting outwardly through said closure plate substantially at right angles thereto for optional connection with a prime mover, and means for attaching the prime mover to said angularly inclined portion so that the prime mover will extend angularly upwardly and outwardly with respect to the platen.

4. For use with electric hand drills and similar electrically powered prime movers, a sander attachment comprising a body member having an inclined top wall, a U-shaped bracket integrally including two leg members connected by a channel-forming transverse bight, said leg members being provided along lateral edges with flanges adapted for facewise engagement with the top wall in such a manner that the bight extends upwardly and outwardly from the top wall, each flange being provided with an elongated slot adapted to extend lengthwise of said top wall when the flanges are positioned thereagainst, a bolt projecting through each slot for adjustably attaching the flanges to the top wall so that the entire bracket may be shifted lengthwise along the top wall, an elongated channel shaped arm telescopically mounted in the channel-forming bight and extending upwardly and outwardly therefrom, said arm being provided with a longitudinally extending slot, means extending through said slot for optionally locking the arm in any one of several shifted positions with respect to the channel-forming bight, and means on the arm for attachment to the prime mover.

References Cited in the file of this patent

UNITED STATES PATENTS

2,193,418	George	Mar. 12, 1940
2,204,486	George	June 11, 1940
2,475,476	Champayne	July 5, 1949
2,492,372	Smith	Dec. 27, 1949
2,632,982	Osman	Mar. 31, 1953
2,697,897	Dichinson	Dec. 28, 1954
2,722,789	Robins	Nov. 8, 1955
2,775,076	Roods	Dec. 25, 1956