Nov. 20, 1956 R. J. SAXE 2,771,104

PLANER ATTACHMENT FOR ELECTRIC DRILLS OR THE LIKE

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FIG-1

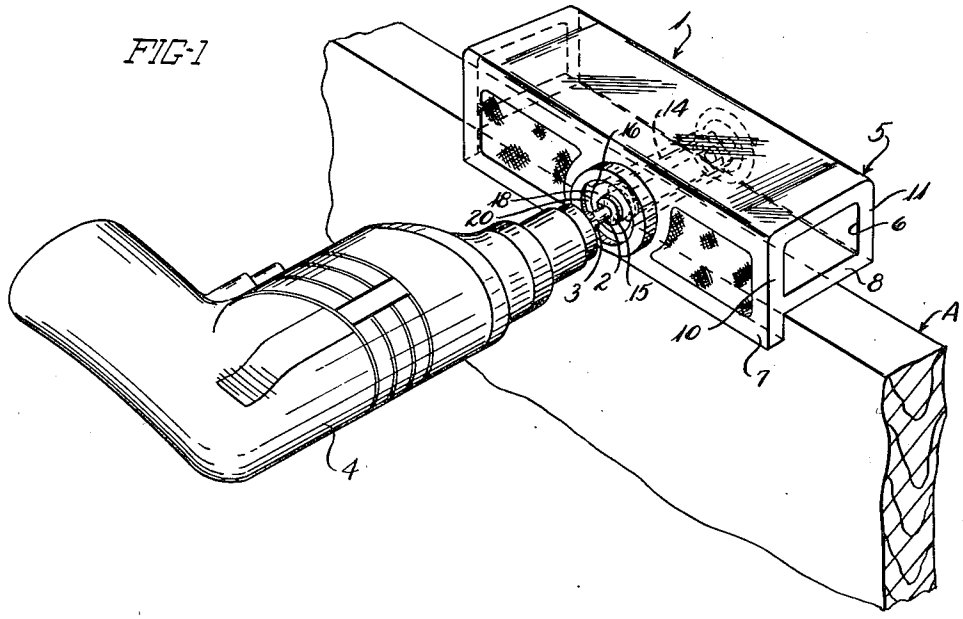
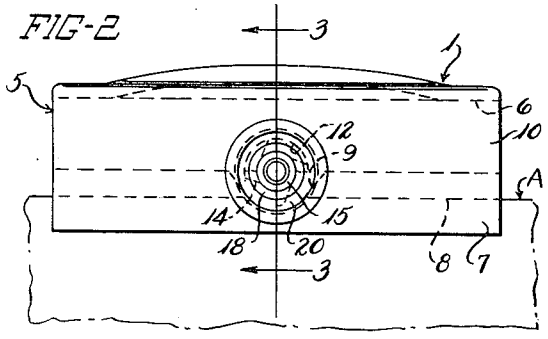


FIG-2



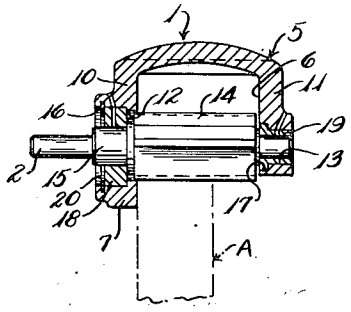


FIG-3

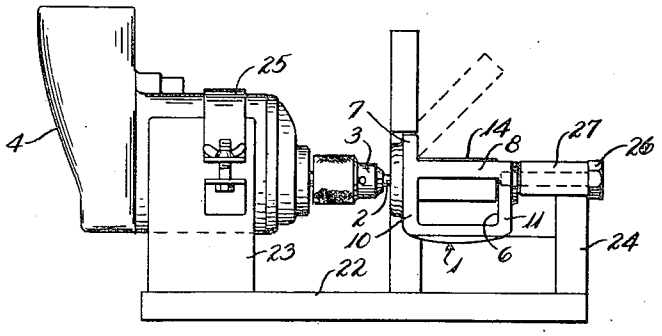


FIG-4

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PLANER ATTACHMENT FOR ELECTRIC DRILLS OR THE LIKE

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5 Claims. (Cl. 144—114)

This invention relates to portable planer units, and especially to such type of a unit that is adapted to be driven by an external power source.

Heretofore there have been many different types of planes produced and a few mechanized plane units have been provided wherein the plane unit is readily portable. Patent No. 2,672,172 shows one such type of an apparatus. However, such plane units have been relatively costly to produce and have been rather bulky or heavy to carry and use. Other types of power planes have been relatively complicated, or have not been portable, or have been objectionable for other reasons.

The general object of the present invention is to provide a portable planer unit characterized by its sturdy, inexpensive construction and by the drive of a cutter unit by an outside power source, such as an electric drill.

A further object of the invention is to provide a sturdy but light weight portable planer unit that is particularly adapted to be engaged with the edges of boards, doors, or the like for a planing action thereon.

Yet another object of the invention is to provide a portable planer unit that can readily be secured to a support and have boards or other articles moved thereover for a planing or jointer action thereon.

Another object of the invention is to provide a planer unit adapted to be secured to an electric drill at the drive chuck thereof and wherein one person can readily hold and operate the combined electric drill and planer unit on a given article.

The foregoing and other objects and advantages of the invention will be made more apparent as the specification proceeds.

Attention now is directed to the accompanying drawings, wherein:

Fig. 1 is a perspective view of the planer unit of the invention shown in combination with an electric drill and engaging an article for planing action thereon;

Fig. 2 is a side elevation of the planer unit of Fig. 1 which embodies the principles of the invention;

Fig. 3 is a vertical section taken on line 3—3 of Fig. 2; and

Fig. 4 is an end elevation of the planer unit of Fig. 1 showing it operatively positioned on a stationary bracket support member.

In referring to corresponding parts shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison between such parts.

The present invention in general relates to a plane unit comprising a generally rectangular, light weight metal housing having a longitudinally extending center opening therein and having a dependant flange along one lateral edge of the housing, which flange is adapted to engage with an article for guide action thereon, a cutter having a cutter support shaft, and means received in the housing and engaging the support shaft to journal the cutter in the housing which has an opening in a base portion thereof through which a part of the cutter protrudes for cutting action. Suitable means secure the cutter in the housing.

Reference now is directed to the details of the structure shown in the drawings, and a portable planer unit is indicated as a whole by the numeral 1. This plane or planer unit has a shaft 2 extending therefrom which shaft 2 engages and is secured to the drive chuck 3 of a conventional electric drill 4. Thus the planer unit 1 and the drill 4 are combined into an operative unit for planing or cutting action upon any suitable work piece, such as the article indicated at A in the drawings. The electric drill 4 connects to a suitable source (not shown) of power usually by a flexible cord so that the completed planer unit is easily movable with reference to the work piece A, as desired. In all events, a light weight, operative unit is provided by the combination of the drill 4 and planer unit 1 so that one person can relatively easily hold the electric drill 4 in one hand and place the other hand upon the planer unit 1 for controlling the position and operation of such assembly on an article A. If desired, two people can operate this apparatus with one person holding the electric drill 4 and controlling it, whereas the other person would maintain the planer unit in the desired relationship to and move it over the work piece or article A.

The planer unit 1 primarily comprises a generally rectangular, metal housing 5 which has a longitudinally extending open bore 6 provided therein. This housing preferably is made from aluminum or other suitable light weight metal or metal alloy. The housing has a downwardly extending or dependant flange 7 provided along one lateral margin of the housing 5 at the base area thereof. Such flange 7 extends normally with relation to a base plate 8 provided on the housing 5 and such base plate 8 and flange 7 normally engage a corner of the article A, as indicated in Fig. 1 of the drawings. The base plate 8 has a transversely extending opening or hole 9 provided therein, as best indicated in Fig. 2 of the drawings, which opening is provided for passage of a cutter member through the base plate, as hereinafter explained in more detail.

Fig. 3 of the drawings best shows that opposed sidewalls 10 and 11 of the housing 5 have holes 12 and 13, respectively, provided therein in opposed and aligned relation. A cutter unit 14, having the shaft 2 either made integrally therewith or, secured thereto and extending therefrom, is suitably journaled in the housing 5. The shaft 2 has an enlarged hub 15 on one portion thereof. The hole 12 is shown with a counterbore 16 extending thereinto from the axially outer end thereof, whereas the hole 13 has a counterbore 17 provided in the axially inner edge thereof, and bronze bearings 18 and 19 are provided for engaging such counterbores 16 and 17, respectively, for journaling the shaft 2 and cutter 14 in the housing 5. The bearing and cutter assembly is retained in engagement with the housing 5 by means such as the use of a split locking ring 20 which engages a suitable recess provided in the housing wall. By the arrangement of counterbores provided in the sidewalls 10 and 11 the cutter unit thus is securely and operatively journaled in a fixed position with relation to the housing 5. At such position, obviously the cutter 14 will have its operative edges extending slightly below the plane defined by the lower surface of the base plate 8 and with such amount of protrusion determining the depth of the standard cut taken by the planer unit when used.

It will be noted that the top wall of the housing 5 is curved upwardly immediately adjacent the cutter 14 and this facilitates movement of chips cut from the article A through the longitudinally extending bore 6 of the planer unit, which chips would exhaust from an end of the bore in the planer housing.

It will be realized that if desired, ball bearings or other suitable bearings may be substituted for the bearings **18** and **19**. In such case a bearing could be received in a deepened counterbore **17** provided in the wall **11** so that such bearing and one positioned in the wall **10** could then likewise be retained in engagement with the shoulders provided in the bores of the sidewalls by a lock ring or other conventional unit.

Should it be desired to position the planer unit and electric drill **4** in a positioning bracket for cutting action on a work piece or article moved thereover, then a support stand **22** may be provided which stand has brackets **23** and **24** provided thereon. A conventional clamp strap **25** is provided on the bracket **23** for securing the electric drill **4** thereto while the frame or housing **5** is secured onto the bracket **24** which is shaped complementary thereto for securing the housing **5** in an inverted operative position, as shown in Fig. 4. The bracket **24** preferably has a plurality of cap screws **26** engaged therewith which cap screws extend through such bracket and engage tapped holes provided in one margin of the housing **5** at longitudinally spaced portions thereof so that the housing **5** can be fixedly secured to the bracket **24**. The bracket **24** preferably has a flat surface or table **27** thereon in alignment with the plane of the base plate **8** of the housing **5** for aiding in supporting an article A thereon to be moved over the cutter **14** for planing action.

Any desired type of a rotary cutter can be used in the planer unit **1**, and variation in the diameter of the removable rotary cutter **14** changes the depth of cut of the planer unit.

While one complete embodiment of the invention has been disclosed herein, it will be appreciated that modification of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What I claim is:

1. A plane unit comprising a generally rectangular one piece metal housing having a longitudinally extending open bore and having a dependent flange along one lateral edge of the housing, said flange being normal to a base portion of said housing, a cutter having a support shaft, means received in said housing and engaging spaced apart portions of said support shaft to journal said cutter in said housing, said support shaft extending beyond said housing for engaging drive means, said housing having an opening in the base portion thereof through which a part of said cutter protrudes, and means for securing said cutter in said housing.

2. A plane unit comprising a generally rectangular tubular one-piece metal housing having a longitudinally extending open bore and having an integral dependant flange along one lateral edge of the housing, said flange being normal to a base portion of said housing, a cutter having a support shaft, and means received in opposite walls of said housing and engaging said support shaft to journal said cutter in said housing, said support shaft extending from said housing for engaging drive means, said housing having an opening in the base portion thereof through which a part of said cutter protrudes.

3. A plane comprising a tubular one-piece frame having a pair of opposed recesses provided in opposite side walls thereof and a base portion with an opening therein extending intermediate said recesses, a cutter cylinder, shaft means for said cutter cylinder engaged with and extending from said cutter cylinder, bearing means engaging said shaft means to journal said cutter cylinder at opposite ends thereof in said frame, and means for securing said cutter cylinder and bearing means in said frame.

4. A plane comprising a frame having a pair of opposed recesses provided therein and a base portion with an opening therein extending between said recesses, a rotary cutter cylinder, shaft means for said cutter cylinder, bearing means engaging said shaft means to journal said cutter cylinder in said frame to protrude slightly from the base portion thereof through said opening, and means for securing said cutter cylinder in said frame, said frame having a base flange extending therefrom normal to the axis of said cutter cylinder at a lateral edge of said frame.

5. In combination, a support stand having a pair of brackets thereon, an electric drill having an output member and being positioned on one of said brackets, means securing said drill to said one bracket, a frame positioned on and secured to said second bracket, a rotary cutter journalled in said frame and protruding upwardly therefrom, and means coupling said drill output member to said cutter to drive it for cutting action.

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