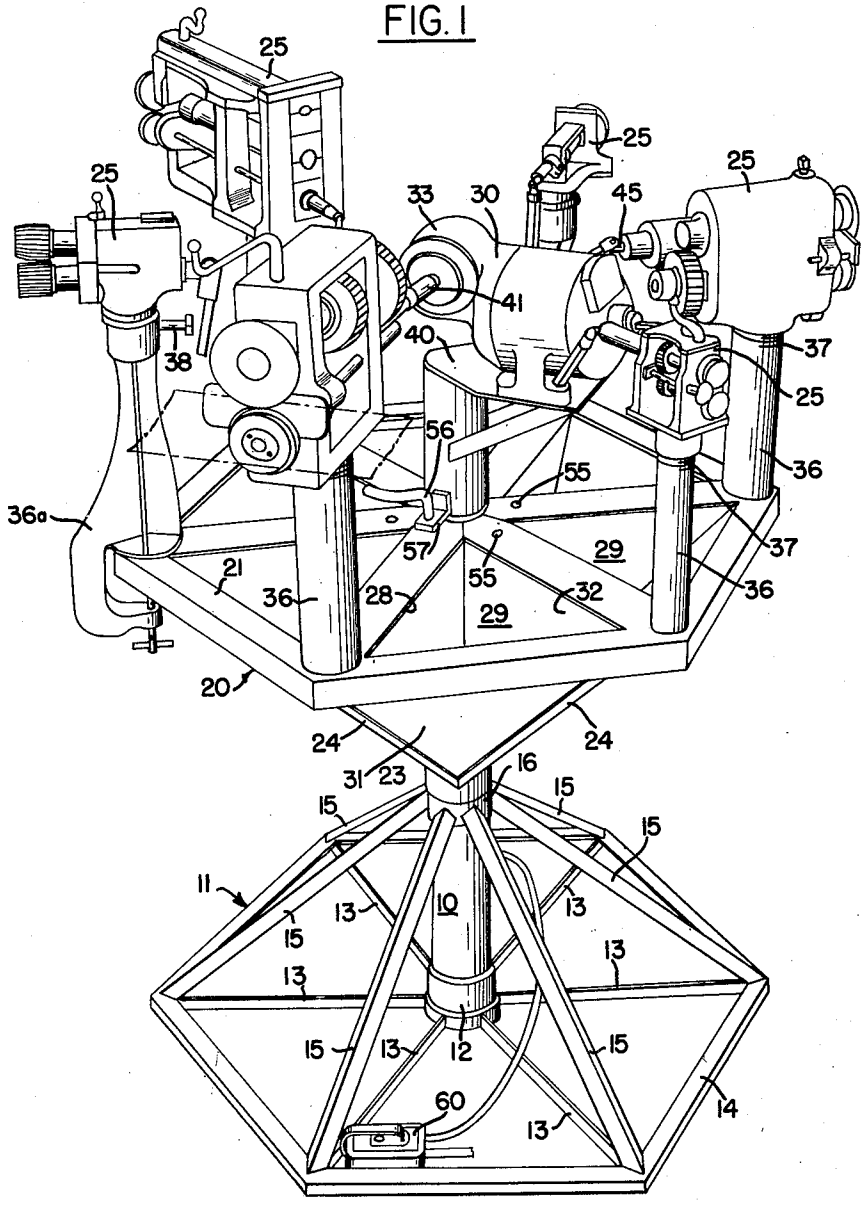
July 22, 1952 W. M. SHOFFNER 2,603,975

TOOL STAND

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FIG. 1



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FIG. 2

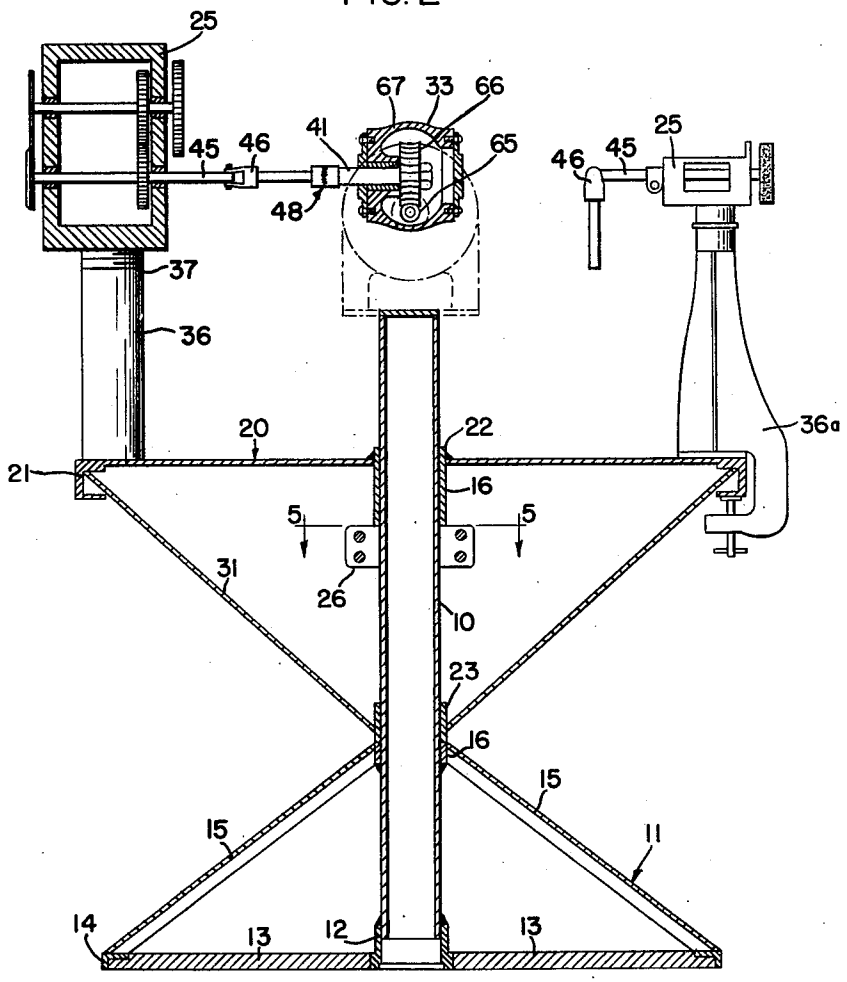
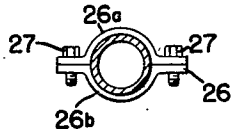


FIG. 5



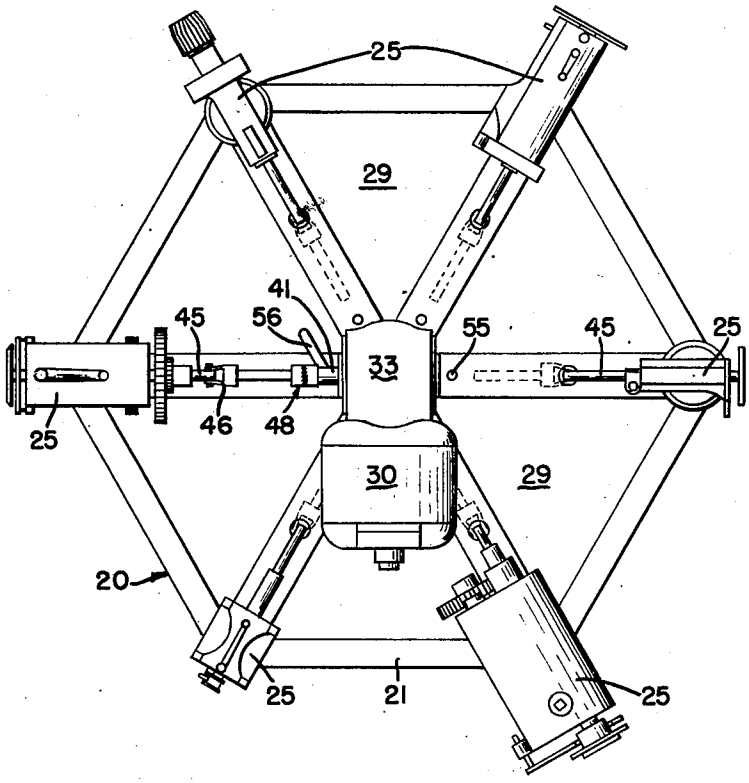
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FIG. 3



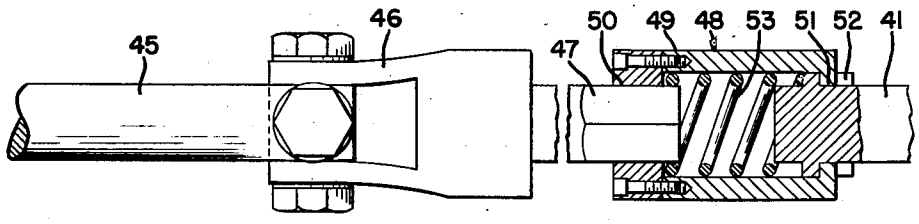


FIG. 4

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TOOL STAND

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Application September 20, 1946, Serial No. 698,324

1 Claim. (Cl. 74—16)

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This invention relates to a tool stand.

An object of the invention is to provide a tool stand upon which a plurality of metalworking tools are removably supported and are adapted for individual attachment to a power unit according to selective use of the metalworking tools.

Another object of the invention is to provide a tool stand in accordance with the foregoing object wherein a single power unit, such as an electric motor, is selectively attachable to any one of a number of metalworking tools carried on the tool stand for individually power-driving the same, and wherein the metalworking tools are adapted to be rotated about the power unit so as to bring them into alignment with the drive shaft of the power unit for connection to the same.

Still another object of the invention is to provide a tool stand in accordance with the foregoing objects wherein the tool stand is provided with bins adapted to store metalworking tools which can be readily installed upon the tool stand for replacement of one of the tools carried on the tool stand for purposes of providing special metalworking devices which are interchangeable with those installed on the tool stand so that the special metalworking devices can be power-driven from the same power unit which drives the metalworking tools on the tool stand.

Still another object of the invention is to provide a tool stand having power-driven metalworking units on the same in accordance with the foregoing objects wherein the power unit is controlled by means of a foot-operated control switch so that the hands of the operator are left free to manipulate the work through the metalworking tools.

Further objects and advantages will become apparent from the drawings and the following description.

In the drawings:

Figure 1 is a perspective elevational view of a tool stand constructed in accordance with this invention.

Figure 2 is a vertical cross-sectional view taken through the tool stand illustrating the construction thereof.

Figure 3 is a plan view of the tool stand illustrated in Figure 1.

Figure 4 is a partial elevational and partial cross-sectional view of a connecting member for connecting between the metalworking tools and the power unit.

Figure 5 is a horizontal cross-sectional view taken along line 5—5 of Figure 2.

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In this invention the tool stand consists of a vertical supporting-post 10 that is supported in a vertical position by means of a base structure 11.

The base structure 11 consists of a central member 12 to which the post 10 is secured and has a plurality of radially extending arms 13 which connect with a frame base 14. A plurality of arms 15 extend from the frame base 14 to engagement with a thrust-bearing ring 16 secured to the post 10. The arms 15 thereby provide for holding the post 10 in a vertical position rigidly.

A turntable 20 is rotatably carried upon the post 10 so that the individual sheet-metalworking tools 25 carried upon the turntable 20 may be brought into alignment with the drive shaft of a power unit 30, which in this instance is an electric motor provided with a speed-reducing head 33.

The turntable 20 consists of a frame 21 which forms a platform for supporting the metalworking tools 25. The platform 21 is provided with a sleeve 22 located centrally thereof which is journaled upon the supporting-post 10. A similar sleeve 23 is positioned co-axial with the sleeve 22, and beneath the same, and is secured in position by means of a plurality of angularly extending arms 24 which connect the sleeve 23 with the platform 21 to hold it in position. The sleeve 23 is also journaled upon the shaft 10 and engages the thrust-bearing sleeve 16 secured to the post 10.

A thrust-bearing sleeve 26 is engaged by the upper sleeve 22 of the turntable 20, thus providing two points of thrust support for the turntable 20.

The upper thrust-bearing sleeve 26 is formed in the manner of a split sleeve consisting of the two parts 26a and 26b, see Figure 5, held together by means of bolts 27. This arrangement allows for placement of the platform 20 upon the support-post 10, with subsequent location of the thrust-bearing sleeve 26 in its proper position.

The turntable 20 is provided with a plurality of openings 28 therein beneath which bins 29 are provided for storage of extra metal-working tools.

The bins 29 may be formed by sheet-metal walls 31 extending between the arms 24. Also, if desired, vertical sheet-metal walls 32 may be provided between the bins 29, or one large bin can be provided beneath the platform by using only the sheet-metal walls 31, as desired.

The platform 21 is provided with a plurality of tool posts 36 which carry the metalworking tools 25. The metalworking tools 25 are remov-

ably secured to the support post 36 to provide for removal and replacement thereof. The tools 25 may be removably secured by means of threaded engagement with the support posts 36, as illustrated by the threaded engagement 37, or may be secured to the posts 36 by means of a set screw arrangement 38. Also, the support post 36 may be removably secured to the platform 21, such as illustrated by the support posts 36a.

The power unit, such as the electric motor 30, is carried upon a platform 40 secured to the upper end of the support post 10. The drive shaft 41 of the power unit 30 which extends from the speed-reducing head 33, is adapted to be connected to any one of the metalworking tools 25. The motor 30 is thus held stationary so that rotation of the turntable 20 upon the support post 10 will bring the various tools 25 into position adjacent the drive shaft 41 of the power unit 30.

Each of the drive shafts of the tools 25 is provided with an extension shaft 45, see Figure 4, which is provided with a universal joint connection 46 which has a square shaft 47 extending from the universal joint connection 46.

The power shaft 41 of the power unit 30 may be provided with a chuck 48 for connecting the square shafts 47 of each of the power tools 25 with the power shaft 41, to thus selectively connect the metalworking tools to the power unit 30.

As illustrated in Figure 4, the chuck 48 may consist of a sleeve 49 having a square opening 50 to receive the square shaft 47. The sleeve 49 is carried upon the shaft 41 and may be provided with a plurality of teeth 51 engaging spline recesses 52 in the shaft 41 to cause rotation of the sleeve 49 with the shaft 41. A spring 53 urges the sleeve 49 into the position illustrated in Figure 4 for engagement with the square shaft 47.

Disconnection of the shaft 47 from the shaft 41 may be occasioned by moving the chuck sleeve 49 to the right, as illustrated in Figure 4.

To properly align the drive shaft 45 of the respective tools 25 with the drive shaft 41 of the electric motor 30, the turntable 20 is provided with a series of holes 55 which are radially in alignment with the support posts 36 relative to the axis of the support post 10. A stop-post 56 is carried upon a lug 57 on the post 10 and is adapted to extend downwardly into the holes 55 to position any one of the tools 25 with the drive shaft thereof in alignment with the drive shaft of the power unit 30.

To allow the hands of the operator to be free in supporting the work, a foot-operated switch 60 is secured to the base frame 14 and is connected electrically with the electric motor 30 to supply current to the same.

By connecting any one of the tools 25 with the power unit 30 it is possible for an operator to have a power-driven tool and to quickly transfer the power from one tool to another to perform various metalworking operations. Such an arrangement is particularly adaptable for use in sheet-metal shops where numerous working operations are performed on the metal in forming various sheet-metal parts. Previously, it was necessary for one operator to handle the work and another to operate the tool. By the use of this invention, however, one operator can perform as much, and more work than that performed by two operators previously.

The speed-reducing head 33 may be of any conventional form, but as illustrated in Figure 2, it may consist of a worm 65 which drives a worm-wheel 66, these members being contained within the casing 67.

While the apparatus disclosed and described herein constitutes a preferred form, and has been described with reference to the use of metalworking tools, yet it will be understood that the apparatus is capable of alteration and of use with tools of other kinds such as plastic-working tools or leather-working tools, without departing from the spirit of the invention, and that all modifications that fall within the scope of the appended claim are intended to be included herein.

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

A portable power tool stand for supporting tools thereon for selective operation irrespective of the elevation of the tool on said stand, said portable power tool stand comprising a base member, a support post secured to said base member and extending vertically therefrom, a horizontally disposed turntable rotatably mounted on the said support post, said support post extending through said turntable at the axis of rotation thereof, said turntable having a flat upper surface extending around the periphery thereof, at least one tool readily removably mounted on said flat upper surface of the turntable, said tool having a driven shaft, a prime mover mounted on the upper end portion of said support post, a drive shaft rotated by said prime mover, said prime mover drive shaft having a chuck mounted on its outer end, said driven shaft on the tool having a chuck-engaging end portion and a universal joint providing for vertical misalignment of said drive and driven shafts, latching mechanism comprising a series of circumferentially arranged holes in said turntable and cooperating apertured lug carried by said support post, said lug having a stop bolt carried thereby which is insertable in said lug aperture and an aligned hole on said turntable whereby said tool support and turntable is locked together, and means for controlling the operation of said prime mover.

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