Aug. 29, 1950 E. A. CHRISTENSON 2,520,116

SHAPER BLADE HOLDER

Filed March 19, 1948

Fig. 1.

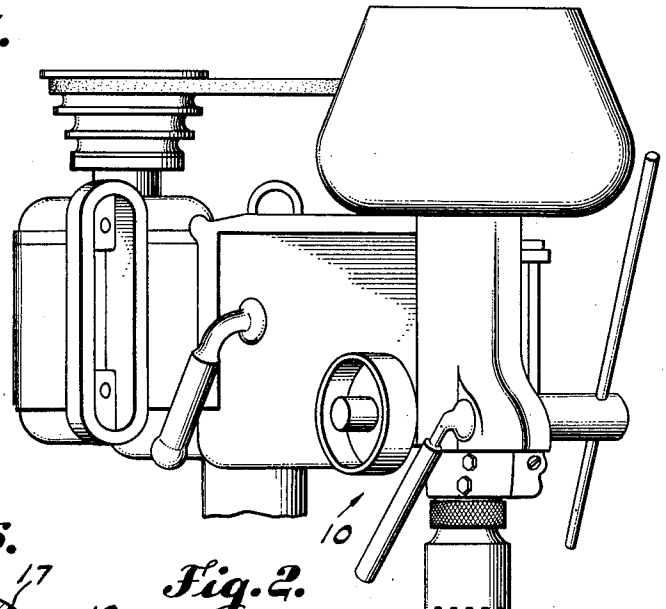


Fig. 5.

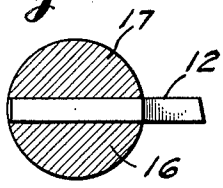


Fig. 2.

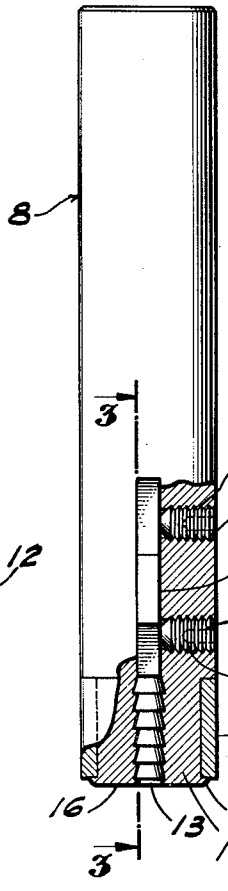
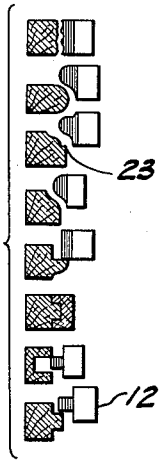


Fig. 7.



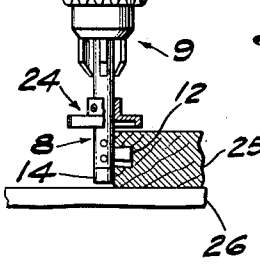


Fig. 4.

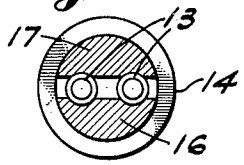
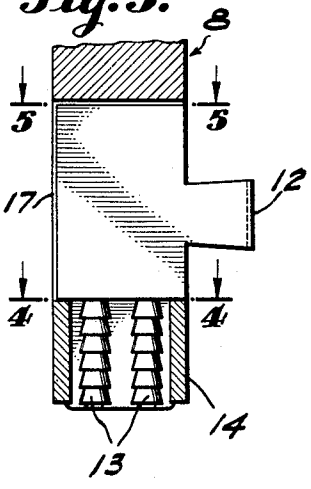


Fig. 3.



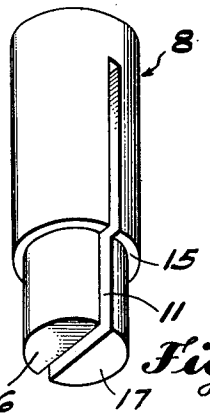


Fig. 6.

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SHAPER BLADE HOLDER

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1 Claim. (Cl. 144—134)

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The present invention relates to a shaper blade holder particularly adaptable for use in any conventional drill press.

One of the principal objects of the invention is to provide the home work shop or the small cabinet shop with a blade holder capable of selectively holding any one of a set of shaper blades whose cutting edges differ in contour whereby both inside and outside fancy edge work may be shaped by the operator in accordance with the particular blade suited for performing such operation.

A further object resides in the new mode of assembling and the peculiar manner in which the assembled parts cooperate to perform new and unobvious results.

A further object is to provide a blade holder which is much cheaper and easier to manufacture, quicker to install, change blade and make adjustments.

A further and more specific object is to provide a blade holding tool having a reduced lower end portion providing a seat for a case hardened collar to resist wear from work held thereagainst being operated upon, said collar being a new element in a combination to support a cutting blade mountable in a transverse slot a portion of which is superjacent the collar.

The invention further contemplates the use of a safety shield mountable upon the blade holder and projecting outwardly so as to completely overlie the full sweep of the blade.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the drawing wherein is shown a preferred embodiment of the invention as now being manufactured:

Fig. 1 is a perspective view of the blade holding device operatively installed in the chuck of a drill press, fragmentary portions of the drill press, work table and work being operated upon being included in the view as well as a safety guard associated with the tool.

Fig. 2 is an enlarged side elevation of the blade holder, a portion being broken away to disclose interior construction.

Fig. 3 is a fragmentary vertical section indicated by line 3—3 in Fig. 2.

Figs. 4 and 5 are transverse sections taken respectively on lines 4—4 and 5—5 of Fig. 3.

Fig. 6 is a perspective view of the lower end of the shaft portion only of the device illustrating the manner of slotting and reducing such end portion.

Fig. 7 is a side elevation of a plurality of

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blades selectively mountable in the holder, each blade being juxtapositioned in relation to a work piece and depicting the work performed by such blade, the three bottom views comprising the set illustrating how a tongue and groove joint may be constructed through the use of a single blade.

Referring in detail to the drawing the numeral 8 indicates the blade holder mountable upon a chuck 9 of a drill press 10 partially shown. A longitudinal slot 11 is diametrically cut into one end portion of the cylindrical shaft forming the blade holder, said slot extending well into the shaft body to provide not only space wherein to mount the cutter blade 12 but also room wherein to drive the pins 13 to provide an auxiliary support for the blade when the latter is not fully supported by the ring 14.

The slotted end portion of the shaft is diametrically reduced by cutting thereinto a circumferential groove or recess 15 wherein to mount the ring 14 to prevent spreading apart of the reduced end portions 16 and 17, see Fig. 6, as a result of forming the longitudinal slot 11 therein. Said groove 15 is cut to a depth equal to the thickness of the ring so that when the latter is in its mounted position the faces of the ring and shaft will be flush.

The ring is constructed of case hardened steel to resist wear as the work being operated upon by the blade 12 is always held abuttingly thereagainst and the pins 13 in addition to performing the function already stated maintain the ends 16 and 17 in their fully spread apart condition so as to provide a constant width of the slot 11 in order to prevent binding of the blade 12 when being inserted or removed. After the ring 14 is mounted in the position shown in Fig. 2 and the pins 13 driven home the end portions of the split parts 16 and 17 are peened over the end of the ring as indicated by the numeral 18 in the latter view to securely hold the ring in its mounted position.

Vertically alined holes 19 and 20 are tapped into the diametrically unreduced portion of the shaft, at one side of slot 11, for the reception of screws 21 and 22 to hold the blade in its mounted position within the slot 11.

Commenting briefly on the manufacture and assembly of the parts, the lower end portion of the shaper blade holder is first turned down to the desired length and diameter. Then the slot 11 is milled to the desired width and length for inserting the shaper blades with a working fit. Next the ring 14 is made and assembled into the annular recess and the two pins 13 preferably

of the alligator type are driven into the slot to retain the proper spacing for the blade and also to provide a rest for the blade when it is projected so far on one side as to unseat the end opposite the blade from its rest position on the collar, such projection of the blade being necessary in cutting the horizontal edge as indicated by the numeral 23 in Fig. 7. Then the ends of the split end portions 16 and 17 are peened over the end of the collar 14 as indicated at 18 in Fig. 2. Finally the holes 19 and 20 are drilled and tapped for the socketed screws 21 and 22. Incident to placing the blade in position in the holder the annular guard 24 is slipped over the end of the holder and set-screwed in position to accommodate the work piece 25 being operated upon, which is supported upon the work table 26.

I claim:

A holder for supporting a shaper blade comprising a cylindrical shaft having a longitudinal slot diametrically cut into one end thereof, such slotted end of said shaft having its outer end portion diametrically reduced, and a collar mounted on said reduced portion with its outer surface flush with the unreduced portion of said shaft, the resulting split end portions of the shaft being peened over the outer end of said collar to hold the latter in place, at least one pin being driven into the slot to maintain the spaced apart walls of the slot parallel for the insertion and withdrawal of a shaper blade.

EDWARD A. CHRISTENSON.

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