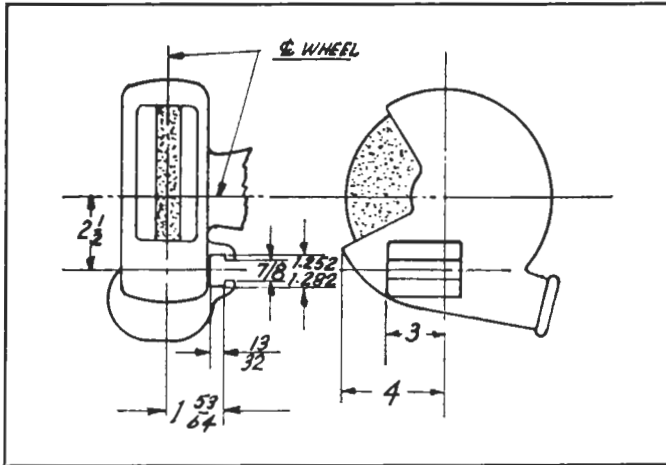


GRINDER ACCESSORIES

Instructions for No. 1296 Improved Drill Grinding Attachment

MOUNTING AND OPERATING



The Improved Drill Grinding Attachment while designed for our grinders may be used on some other types where design permits attachment to be used with an adapter provided mounting dimensions shown above are held. These dimensions establish the relative position of the drill grinding attachment with wheel and guard.

NOTE:—It is important that wheel face be dressed before mounting the drill grinding attachment. When dressing wheel, slide the dresser quickly across the face. Too slow movement will smooth the wheel and impair its cutting qualities.

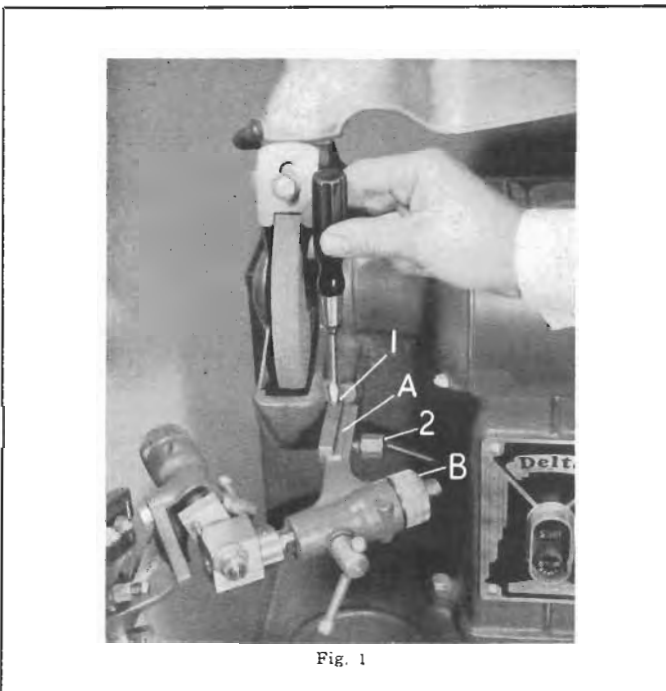


Fig. 1

MOUNTING

Turn screw 1 Fig. 1 in support arm outward to position where arm can enter T-slot with slight drag on screw head to hold horizontal alignment of the attachment. Set firmly in place with screw 2.

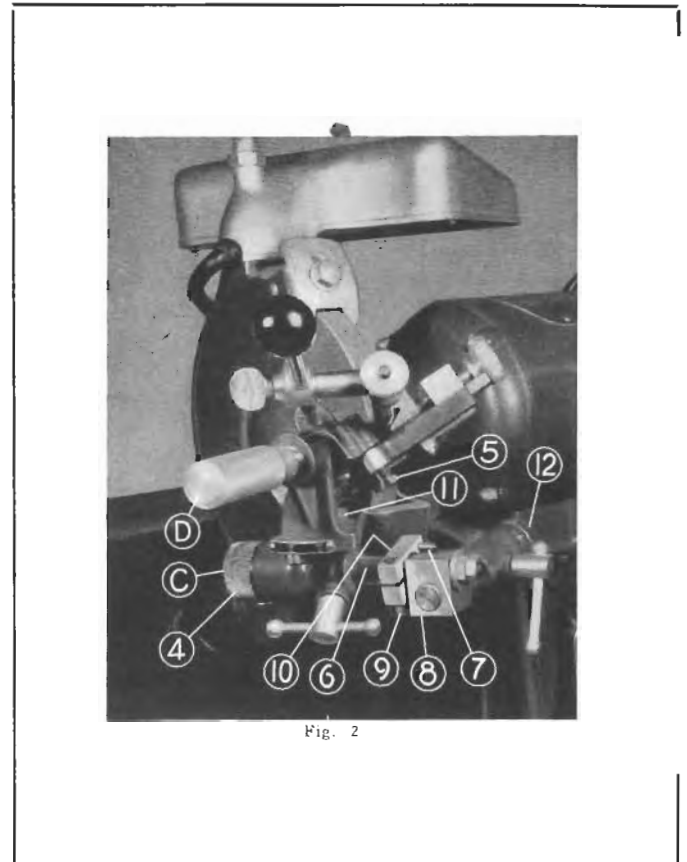
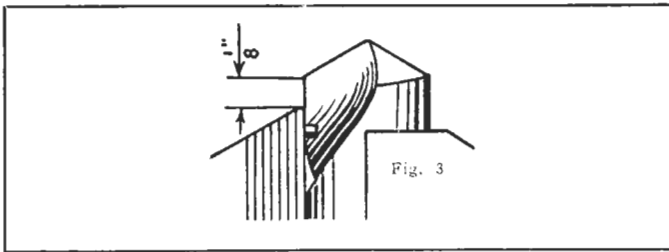


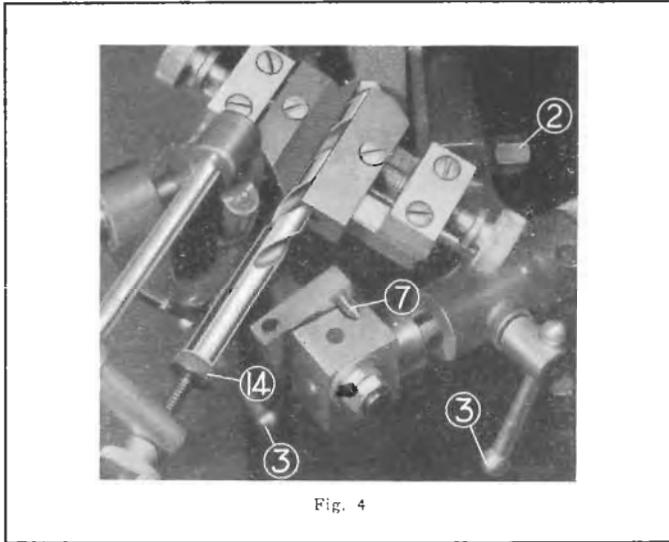
Fig. 2

GRINDING 118° POINTS (59 Degrees)

Set notch on support bracket to 118° on scale of feed screw bracket. Fasten in position with hex head screw 11 Figure 2. Moving feed screw thimble D. Figure 2 downward, will bring the scale on jaw shoe into view. Set back face of left hand jaw in line with graduation corresponding with size of drill to be ground.



Insert drill with flute engaging locating pin at end of jaw, with cutting lip extending approximately $\frac{1}{8}$ " beyond end of jaw Figure 3.



Clamp in position with right hand jaw. Next back off feed screw thimble exposing about $\frac{5}{8}$ to $\frac{3}{4}$ " length of thread.

Move end of lead-screw thimble upward until stop pin 7 Figure 4 contacts swivel joint. Next, "back off" clamp-screw 2 Figure 4 and move the support arm inward or outward in T-slot to bring drill lip approximately $\frac{1}{8}$ " from and parallel with wheel face. Loosen clamp bolt 3 at the right, Figure 4 sufficiently to maintain a slight drag on stud. Next turn knurled knob 12 Figure 2 to move drill point toward wheel. This movement being angular to wheel face, it may be necessary to use knurled knob 4 Figure 2 in a like manner. These adjustments in combination with movement forward by means of feed screw thimble will bring drill point into exact position for grinding. Set both clamp bolts 3 Figure 4 firmly. When drill point is in proper location, outer edge of lip should be approximately $\frac{3}{32}$ " in from outer edge of wheel face as shown in Figure 4.

OPERATING

Start grinder, feed drill point into wheel by turning feed-screw thimble clockwise while rocking clamp jaw shoe upward and downward by means of ball hand lever, feeding one graduation per movement up and down. After sufficient material has been removed, swing drill point away from wheel face and observe graduation mark, lining up with scribe line on feed screw. Turn back feed screw thimble one revolution to exactly the same mark, set stop 14 Figure 4 on hand lever against end of drill shank. Release drill by opening right hand jaw and turn drill 180° to locate un-ground lip against pin and repeat, feeding 1 revolution inward to exact position. The graduations on thimble have no function other than to serve as a guide in grinding both lips equal.

GRINDING 82° AND 135° POINTS

After setting notch on support bracket to the desired angle on scale of feed screw bracket the procedure is the same as for 118° point. When special point such as 125° is required, the operator should carefully choose the proper unmarked position on scale.

GRINDING THREE AND FOUR LIP DRILLS

The grinding procedure of three and four lip drills is the same as outlined for regular two lip drills except that stop screw 5 Figure 2 must be set to prevent adjacent lip from contacting grinding wheel.

ADJUSTMENTS

The Improved Drill Grinding Attachment is provided with four individual adjustments Fig. 1 and Fig. 2. ADJUSTMENT A (Figure 1) permits movement inward to allow for wheel wear to $5\frac{1}{2}$ " Diam. Min. ADJUSTMENT B (Figure 1) provides angular movement to suit various widths of wheels $1\frac{1}{16}$ to 1" wide. ADJUSTMENTS C and D (Figure 2) serve to bring drill point into exact grinding position.

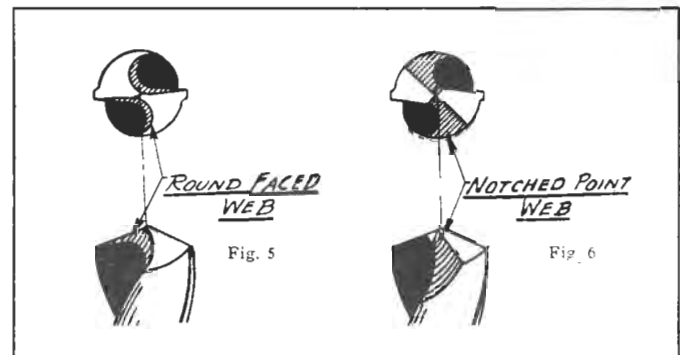
STOP PIN

The stop-pin is pre-set at the factory and has a match mark punched on the back face of clamp and shoulder stud 6 and 10 Figure 2.

This setting establishes the average clearance angle (12° to 15°) of cutting lips, for the various point angles. Clearance angle can if desired be increased by holding pin 7 Figure 2 in contact with point 8 Figure 2 after backing off socket head screw 9 Figure 2 and tilting unit slightly downward.

WEB THINNING

The web of a drill becomes thicker as it approaches the shank, and as the drill is ground down and re-sharpened, more power is required to force it through the work. To partly eliminate this heavy end thrust, the web of the drill should be thinned. Correct web thinning is as important as point grinding in order to secure satisfactory performance from a drill.



Two common methods of web thinning are shown in illustrations. Figure No. 5 shows the Round Face method, which requires the use of a special $\frac{1}{8}$ " thick wheel with a round face. Figure No. 6 shows the Notch point method, the preferred way and requires no special wheel; the work being done on the regular grinder wheel.

NOTE:—High-speed steel drills are often burned, with a consequent loss in temper, when ground on an ordinary wheel. It is best to use No. 1267 wheel, a cool, porous, vitrified aluminum oxide wheel, light blue in color, and especially adapted for this purpose.

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