COUNTERSINK ATTACHMENT FOR DRILLS

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COUNTERSINK ATTACHMENT FOR DRILLS

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1 Claim. (Cl. 77—66)

1. This invention appertains to drill bits and more particularly to a countersink attachment therefor.

A primary object of the invention is to provide a countersink attachment which can be readily attached to a drill bit and utilized for countersinking openings as they are drilled.

Another object of the invention is to provide a countersink attachment for drill bits which can be readily adjusted on the bit to take care of the drilling of an opening to any depth desired before the countersinking operation takes place.

A further object of the invention is to provide a countersink attachment for drill bits wherein the depth of the countersink can be regulated accurately.

Still a further object of the invention is to provide an attachment of the character stated which is of simple construction and capable of being manufactured at low cost.

These and other objects and advantages of the invention will become apparent to the reader of the following description.

In the drawing:

Figure 1 is a fragmentary side elevational view, with parts in section, showing a drill bit, the attachment and the work into which the bit has been partially operated;

Figure 2 is a section taken substantially on line 2—2 of Figure 1 with parts of the attachment broken away to disclose the clamp screws;

Figure 3 is a horizontal sectional view taken substantially on line 3—3 of Figure 1.

Referring to the drawing, reference character A denotes a piece of work into which a drill bit B has been driven. Numeral 5 generally refers to the countersink attachment, which is clamped to the bit in a manner which will be described hereinafter.

The attachment includes a cylindrical body 6, preferably of solid metal and being divided into a pair of diametrically divided halves a, a, between which the bit B is located.

The half sections a, a have cut-away portions 7, 7 and from these points through each half section a is a bore 8 to receive a machine screw 9 to be driven into a threaded recess 10, registering with the corresponding bore 8 in the opposed portion of the complementary section a. The screws 9 thus connecting the sections a, a serve to clamp the sections a, a firmly against the bit B.

Extending vertically in each half section a is a threaded recess 11 for receiving screws 12, each screw having a head 13 and a shoulder 14 spaced from the head sufficiently to accommodate the thickness of a disc 15, which has diametrical slots 16, 16 extending outwardly from a point near center, to the periphery. A depending circular guide 17 is provided at the center of the disc 15, circumscribing an opening therein denoted by numeral 18 and through which in a downward direction, projects a countersink 19, divided into a pair of sections, each section being carried by a corresponding half section a of the cylindrical body 6.

One vertical edge portion of each section of the countersink 19 is sharpened to provide a cutting edge 20 and these lower portions of the countersink sections are tapered as at 21 to define a composite cone, for penetrating the work A and cutting a countersink to the depth allowed by the guide collar 17.

In the use and operation of this attachment, the cylinder 6 is first firmly clamped to the bit B by the screws 9, with the countersink 19 depending down the bit B and into the guide collar 17. The amount the conical portion of the countersink 19 depends below the lower limits of the guide collar 17, depends upon how much of a countersink is desired. By screwing the screws 12 upwardly or downwardly the guide collar 17 will be lifted or lowered to regulate the depth to which the countersink can cut.

Further, the cylinder 6 can be lifted or lowered to the desired height to take care of the depth to which the bit B before action of the countersink 21 takes place.

While the foregoing description sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:

A countersink attachment for drills comprising a cylindrical body, an integrally formed cylindrical reduced portion for said body, said body and its reduced portion being longitudinally diametrically divided into two complementary parts and each part having a centrally disposed longitudinal groove for receiving in conjunction with its complementary groove a drill bit, a countersink forming cutting edge at the free end of each reduced part, a pair of adjustable screws each interconnecting the parts of the body at opposite sides of the vertical groove, an annular gauging collar snugly slidable on the reduced portion, a flange for the collar having a pair of
diametrically opposed radial slots extending inwardly from its periphery and a screw disposed in each slot and adjustably interconnecting the flange and the body.

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