

Oct. 20, 1953

J. A. LABBEE, JR

2,655,964

SCREW TAPER DRILL ATTACHMENT

Filed Feb. 16, 1951

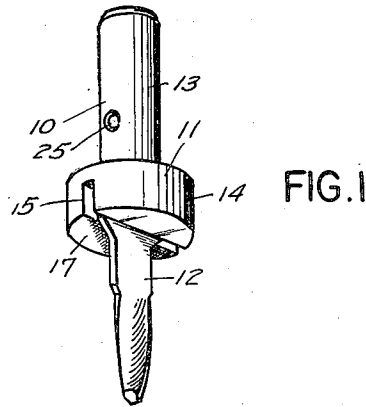


FIG. 1

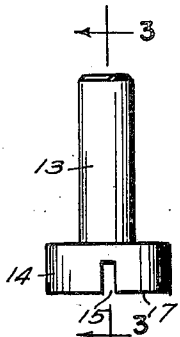


FIG. 2

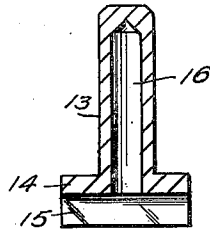


FIG. 3

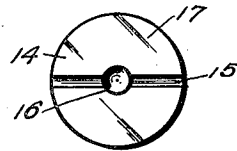


FIG. 4

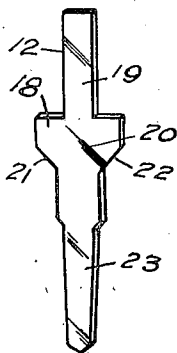


FIG. 5

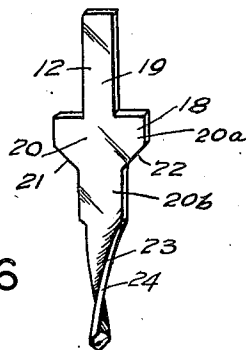


FIG. 6

INVENTOR.
Joseph A. Labbee Jr.
BY *Nathaniel Fruchter*
ATTORNEY

UNITED STATES PATENT OFFICE

2,655,964

SCREW TAPER DRILL ATTACHMENT

Joseph A. Labbé, Jr., Providence, R. I.

Application February 16, 1951, Serial No. 211,367

2 Claims. (Cl. 145—125)

1

This application is a continuation in part of application Serial No. 138,324, filed January 13, 1950, for Screw Taper Drill Attachment.

The present invention relates to power drills, and has particular reference to a novel attachment for drilling a screw-receiving countersunk hole.

The principal object of the invention is to provide a simple and effective screw taper drill attachment which includes a countersink and an automatic stop device.

Another object of the invention is to provide a drill element of special shape, which eliminates the need for a leader hole and a piercing hole, and which provides a strong screw thread lock.

A further object is to provide a simple drill assembly which may be readily mounted in a standard chuck.

With the above and other objects and advantageous features in view, the invention consists of a novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more specifically defined in the claims appended thereto.

In the drawings,

Fig. 1 is a perspective view of one embodiment of the novel attachment;

Fig. 2 is a side view of the head thereof;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a bottom plan view of Fig. 2;

Fig. 5 is a perspective view of the drill blank; and

Fig. 6 is a perspective view of the drill.

It has been found desirable to provide a screw taper drill attachment which is preferably made of high speed steel and which has a countersink and a stop. To this end, I blank out a drill element of special form, and I utilize a head in which the drill element is mounted and lock swaged, to provide an attachment which can be readily mounted in a standard drill chuck. The drill is basically of the same taper as the body of the screw which is intended to be used, whereby the screw can enter for its entire length and cut a threaded seat without breaking the screw or splitting the wood or other material, whereby need for a piercing hole and a leader hole is eliminated.

Referring to the drawings, the novel attachment 10 includes a head 11 and a drill element 12. The head 11 has an upper shank 13 for insertion into a standard drill chuck, and a base 14 of cylindrical form which has a vertical diametral slot 15, the base and the shank being drilled to

2

provide an axial cylindrical bore 16, and the lower surface 17 of the base being plane to function as a drill stop.

The drill element 12 is preferably stamped of high speed steel, and includes an upper laterally extending rectangular key 18 adapted to seat in the slot 15, an upwardly positioned projection 19 adapted to seat in the bore 16, a shank 20 which has an upper portion 20a with lower edges 21, 22 inclined downwardly to provide countersink edges and a lower portion 20b which is a shank clearance portion, and a depending drill tip 23 which is tapered and is then twisted as indicated at 24 in Fig. 6 to correspond to the body shape contour of the screw opening to be cut and with a beveled end and to provide spiral cutting edges, the resulting screw opening being preferably equal to or very slightly less than the size of the screw body to permit a firm locking of the screw in the screw opening. The projection 19 is locked in the bore 16 by swaging or indenting the shank 13 as indicated at 25 in Fig. 1.

It is clear that the drill element 12 will make a tapered hole in wood, plastic, brick, aluminum, zinc, white metal, and similar materials, the size of the hole corresponding to the body size of the screw to be threaded therein, and that the hole is countersunk to the desired depth, as the lower surface of the head acts as a stop gage. Since the hole is gaged to properly receive the lock screw, the lock between the screw threads and the material is continuous and uniform throughout the entire length of the screw and the holding power is strengthened.

Although I have described a specific constructional embodiment of the invention, it is obvious that changes in the size, shape and material of the parts may be made to suit the requirements for different screw receiving openings, without departing from the spirit and the scope of the invention as defined in the appended claims.

I claim:

1. A drill element of flat sheet metal stock for a screw taper drill attachment, said drill element having an upstanding projection, a shank having an upper and a lower portion, said upper and lower portions being in the same plane, and a depending drill tip tapering downwardly and twisted to conform to the body contour of a screw and having spiral cutting edges, said upper shank portion having lower countersink edges and said lower shank portion conforming to the shank contour of a screw.

2. A drill element of flat sheet metal stock for a screw taper drill attachment comprising a shank

3

having an upper and a lower portion, said upper and lower portions being in the same plane, and a depending drill tip tapering downwardly and twisted to conform to the body contour of a screw and having spiral cutting edges, said upper shank portion having lower countersink edges and said lower shank portion conforming to the shank contour of a screw, and means on said shank for mounting said drill element in a rotatable support.

JOSEPH A. LABBÉE, Jr.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
60,207	Lewis	Dec. 4, 1866

Number

104,335
252,704
362,934
716,441
1,047,466
1,479,325
1,535,941

10

Number

4,251
142
257,772
638,615

15

4

Name

Date

Monson	June 14, 1870
Southwick	Jan. 24, 1882
Champion	May 17, 1889
Latham	Dec. 23, 1902
Wagner	Dec. 17, 1912
Schubnel	Jan. 1, 1924
Myers	Apr. 28, 1925

FOREIGN PATENTS

Country

Date

Germany	Mar. 10, 1879
Australia	Jan. 15, 1926
Great Britain	Sept. 9, 1926
Germany	Nov. 19, 1936