

UNITED STATES PATENT OFFICE.

LUCIUS E. WHITON, OF WEST STAFFORD, CONNECTICUT.

LATHE-TOOL.

SPECIFICATION forming part of Letters Patent No. 316,713, dated April 28, 1935.

Application filed November 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS E. WHITON, of West Stafford, in the county of Tolland and State of Connecticut, have invented a new and useful tool for holding the scroll-plates of scroll-chucks while the backs of said plates are being turned to the required shape by properly-devised cutting-tools, of which the following is a specification.

The objects of my invention are, first, to provide a means of holding one of these plates which shall permit the whole of the back of the plate to be finished at one operation; second, to make sure that the work performed upon the back of the plate shall be perfectly central with the scroll-thread upon its face; and, third, to provide means for the easy removal of the finished plate without marring or otherwise injuring its surface. I attain these objects by the mechanism hereinafter described, and illustrated in the accompanying drawings, in which—

Figure I is a face view or plan of my improved tool. Fig. II is a longitudinal section on line *a a* of the plan, and showing an unfinished scroll-plate in place ready to be operated upon by the cutting-tool. Fig. III is a section of a part of my improved tool on line *a a*, and showing the finished plate partially removed; and Fig. IV is a face view of the scroll-plate of a geared scroll-chuck, showing its scroll-thread or spiral groove.

Referring to the drawings, an accurate scroll-thread, 7, is cut upon the face of the block 1, having the same pitch as the thread upon the face of the scroll-plate which it is desired to operate upon, but in the opposite direction, as is shown by a comparison of Figs. I and IV. In cutting the thread upon 1 the space A is left slightly wider than the thread B of the scroll-plate 6, so that when the plate 6 is properly placed upon the block 1 the threads will interlock, as shown in Fig. II. In this position, Fig. II, the plate 6 is subjected to the action of the cutting-tool, which may be moving, as with the revolving spindle of a drilling-machine, or fixed, as is the dead-center of an engine-lathe. It is evident that by preventing the revolution of the block 1 by suitable arms, M M, which shall come in contact with stops upon the drilling-table, or by attaching the block 1 to the chuck-plate of an

engine-lathe, according as it is deemed best to use a revolving or a fixed cutting-tool, the interlocked threads will firmly resist the action of the cut. This means of holding the plate 6 permits its entire back to be finished at one operation, because projecting clamps or other mechanism for holding said plate are unnecessary.

In the center of the upper face of the block 1 a circular recess is made, having its axis coincident with that of the scroll-thread 7. Into this recess an annular ring or bushing, 2, is fitted, with its outer end made of suitable size to form a journal-bearing or guide upon which to revolve the scroll-plate 6 until it reaches a position which will allow the threads to interlock. Without this guide it would be difficult to readily place the scroll-plate in a proper position for the threads to become interlocked. The center hole, *c*, of this bushing is made of proper size to form a journal-bearing for the guide-pin of the cutting-tool, which thus acts as a pin-drill. As the axis of this bushing 2 coincides with that of the scroll-thread 7, it follows that said scroll-thread and the cutting-tool are held central; hence, guided by the interlocking threads, the scroll-plate 6 will also assume a position central with the cutting-tool, and thus the work performed upon the back of said scroll-plate will be central with the thread B upon its face.

It is evident that by the use of various guide-bushings 2 scroll-plates of various sizes may be conveniently held upon the block 1, provided the pitch and direction of their threads remain the same. The approach of the cutting-tool may be predetermined by a suitably-arranged stop, and thus uniformity in the thickness of the finished scroll-plates may be secured.

To provide means for the easy removal of the finished plate, a screw-thread, *d*, is cut upon the body of the block 1, to which is fitted a threaded sleeve or nut, 4, operated by convenient handles, N N. Three or more grooves, *e*, are made in the body of the block 1 parallel to its axis, of relatively great radial depth, and extending below the screw-thread *d* and nut 4. Into each of these grooves *e* a sliding piece or dog, 3, is loosely fitted, having a projection, *f*, which rests upon the nut 4. The dogs 3 3 3 transmit the pressure pro-

duced by revolving the nut 4 upon the thread d to the finished scroll-plate 6, thus lifting it gradually from contact with the thread upon the block 1, as shown in Fig. III, after which
 5 it may be easily removed. To retain the dogs 3 3 3 in position and to strengthen the tool, a ring, 5, is fitted and firmly driven upon the block 1.

By means of the mechanism above described
 10 the cost of manufacturing the scroll-plates is greatly lessened, for it permits the entire back of the plate to be finished at one operation—a method heretofore unknown.

Having thus described my invention, what I
 15 claim as new, and desire to hold by Letters Patent, is—

1. The block 1, adapted to be held upon the

chuck-plate of a lathe or the drilling-table of a drilling-machine, having a scroll-thread, 7, upon its face adapted to receive the scroll-
 20 thread of the scroll-plate to be operated upon, substantially as described.

2. The block 1, adapted to be held upon the chuck-plate of a lathe or the drilling-table of a drilling-machine, having a screw-thread, d ,
 25 and a scroll-thread, 7, adapted to receive the scroll-thread of the scroll-plate to be operated upon, in combination with the guide-bushing 2, threaded nut 4, sliding dogs 3 3 3, and ring
 5, all substantially as described and set forth. 30

LUCIUS E. WHITON.

Witnesses:

HENRY LUFLEK,
 PLINY M. HARWOOD.