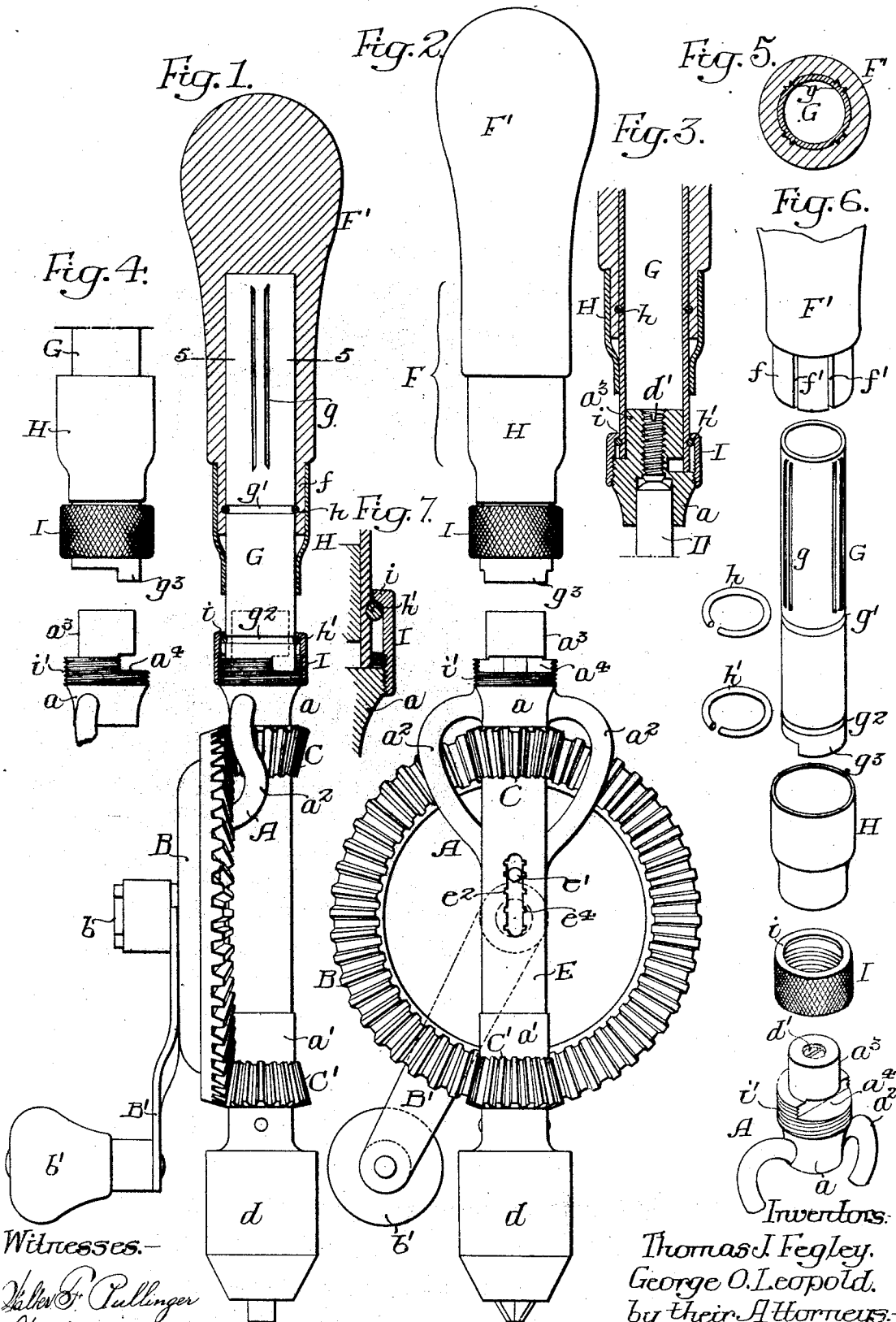


T. J. FEGLEY & G. O. LEOPOLD.
 MEANS FOR ATTACHING HANDLES TO TOOLS.
 APPLICATION FILED MAR. 2, 1909.

1,059,132.

Patented Apr. 15, 1913.



Witnesses:-
 Walter E. Pullinger
 Villa A. Burrows

Inventors:
 Thomas J. Fegley,
 George O. Leopold,
 by their Attorneys:
 Howson & Howson.

UNITED STATES PATENT OFFICE.

THOMAS J. FEGLEY AND GEORGE O. LEOPOLD, OF PHILADELPHIA, PENNSYLVANIA,
ASSIGNORS TO NORTH BRO'S M'FG CO., OF PHILADELPHIA, PENNSYLVANIA, A
CORPORATION OF PENNSYLVANIA.

MEANS FOR ATTACHING HANDLES TO TOOLS.

1,059,132.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed March 2, 1909. Serial No. 480,980.

To all whom it may concern:

Be it known that we, THOMAS J. FEGLEY and GEORGE O. LEOPOLD, citizens of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Means for Attaching Handles to Tools, of which the following is a specification.

One object of our invention is to construct a breast drill in such a manner that the handle can be readily detached from the body of the tool and a further object is to so construct the handle that it can be used as a tool holder.

A still further object is to provide means for attaching the metallic part of the handle to the wooden body, so that the parts can be readily assembled, and when once assembled can not be removed without destroying the parts.

In the accompanying drawings, Figure 1, is a side view, partly in section, illustrating our improved handle coupling applied to a breast drill; Fig. 2, is a face view showing the handle detached from the body portion; Fig. 3, is a longitudinal sectional view of a portion of the handle and illustrating the coupling; Fig. 4, is a side view showing the body portion and the handle separated; Fig. 5, is a sectional view on the line 5-5, Fig. 1; Fig. 6, is a perspective view showing the several parts detached; and Fig. 7, is an enlarged view showing a detail of our invention.

A is the frame of the drill having an upper bearing *a* and a lower bearing *a'*. The upper bearing is connected to the lower bearing through the arms *a²*. Mounted on the frame A is a stud *b* carrying the gear wheel B to which is attached the crank B' having a suitable hand hold *b'*, by which the wheel B is turned. The wheel B meshes with two beveled pinions C, C' mounted on a spindle D adapted to the bearings *a*, *a'*, and carrying at its lower end a chuck *d* in the present instance. The upper end of this spindle rests against a thrust bearing *d'* in the form of a screw adapted to a threaded opening in the extension *a³* of the bearing *a*, as illustrated in Fig. 3.

Between the lower bearing *a'* and the beveled pinion C is a casing E inclosing the ratchet mechanism which is controlled by a

slide *e* having a projection *e'* which extends through a slot *e²* in the casing. This ratchet mechanism is of the well known form, and by shifting this mechanism the spindle can be turned to right or left hand ratchet and locked, or can have a continuous forward movement. As this ratchet mechanism forms no part of our invention we have not shown it in detail.

F is the handle adapted to be coupled to the frame A. This handle has a body portion F' of wood in the present instance, and this wooden handle is bored out to receive the tube G, shown in detail in Fig. 6. The tube G has a series of longitudinal ribs *g* made by cutting grooves in the tube and allowing the burs formed by the cutting tool to project so that when the tube is driven into the handle, the projecting ribs will prevent the tube turning therein. The tube is grooved at *g¹* and *g²* to receive rings *h* and *h'*. The end of the body portion of the handle is reduced at *f* to receive the ferrule H which is shaped to fit the reduced portion of the body and also the tube G, as shown in Fig. 1, and the portion *f* is slotted at *f'* as shown in Fig. 6 so as to allow it to yield when the tube G with the ring *h* in place is forced into the wooden body portion of the handle; when the tube is in place and the ferrule applied, the tube cannot be withdrawn until the ferrule is removed from the wooden portion of the handle.

The lower end of the tube G is cut away at one side so as to form a projecting portion *g³* which is adapted to the cut out portion of the upper bearing *a*. The extension *a³* of this bearing fits snugly within the tube and the edges of the projection *g³* rest against the threaded portion of the bearing preventing the handle turning on the frame A when once in place.

In order to lock the handle to the frame we provide a threaded sleeve I having a beveled internal flange *i* which rests back of the ring *h'* adapted to the groove *g²* in the tube G. Figs. 3 and 7. The threaded portion of this ring is adapted to the threaded portion *i'* of the bearing *a*, as shown in Fig. 1, so that when the two parts are coupled together and the ring screwed down into position, the handle is firmly connected to the frame—the screw sleeve drawing the

two parts firmly together and the beveled portion of the flange i tends to force the ring h' into its groove g^2 retaining it in place, and the projecting portion g^3 of the handle is locked in the recessed portion a^4 of the bearing, thus the handle is prevented from turning on the frame and is held rigidly thereto.

By the above arrangement we are enabled to make a very compact breast drill with a detachable hollow handle which can be utilized to hold the tools or drill bits not in use, and the exposed end of the handle is perfectly smooth and shaped as an ordinary handle. The two parts can be readily coupled or uncoupled so as to take up very little space in packing when uncoupled, the coupling being very simple in construction and rigid when the handle is applied to the frame, and the means for securing the tubular section to the wooden portion of the handle can be cheaply and readily manufactured.

While we have shown a round end on the handle F , the handle may be shaped with a broad flat end as in the larger size breast drills, or may be formed into any shape desired, without departing from the essential features of our invention.

We claim:—

The combination in means for attaching handles to tools, of a frame; a bearing thereon having a screw threaded periphery; a reduced extension projecting beyond the bearing; said bearing being cut away at the base of the extension to form shoulders; a handle having a tubular extension cut away at one side, the projecting portion of the tube extending into the cut away portion of the bearing and resting against the shoulders, whereby one part is prevented from turning independently of the other, the extension snugly fitting in the tube so as to rigidly support it; said tube having an annular groove; a threaded sleeve having an internal flange, the threaded portion of the sleeve being screwed to the threaded bearing; and a ring mounted in the groove of the tube and forming a shoulder for the internal flange of the sleeve.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS J. FEGLEY.
GEORGE O. LEOPOLD.

Witnesses:

WM. E. SHUPE,
WM. A. BARR.