

G. O. LEOPOLD.
 LOCK FOR GEARING.
 APPLICATION FILED DEC. 23, 1909.

955,815.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

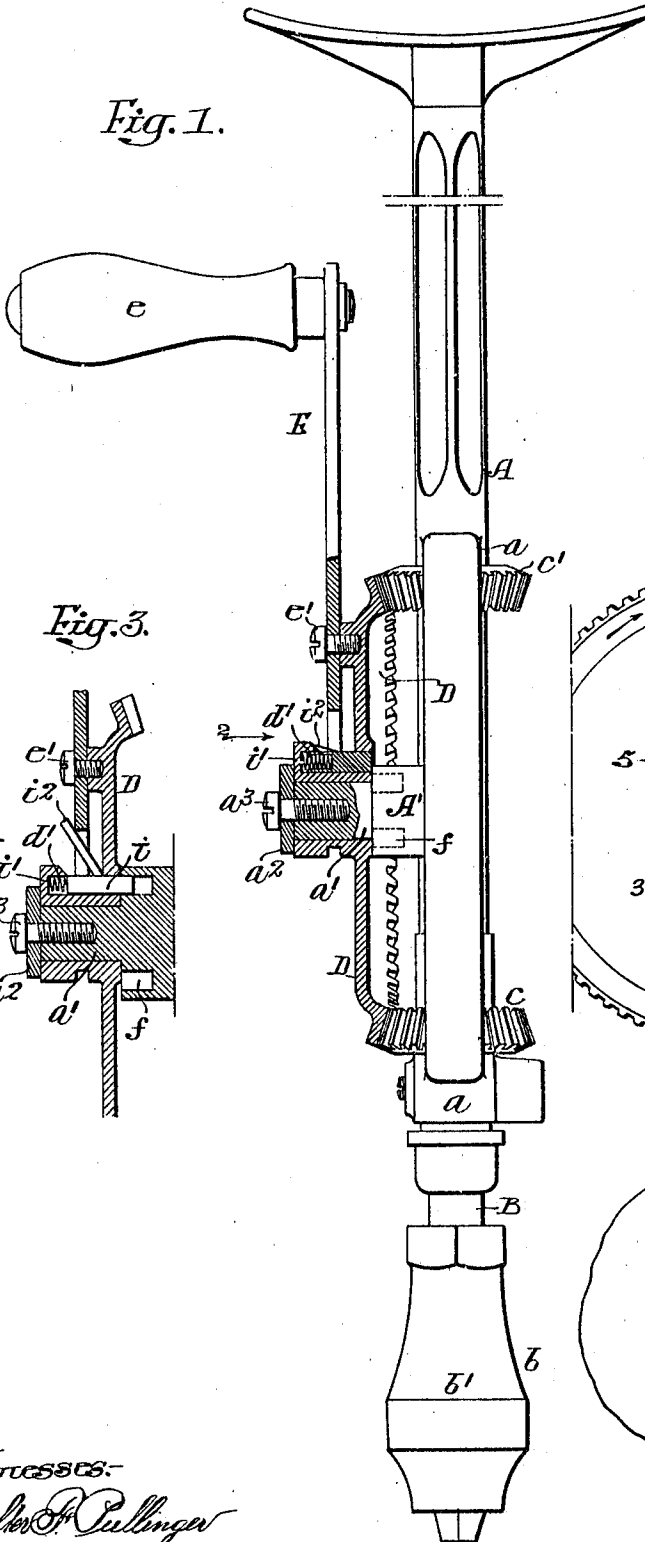


Fig. 2.

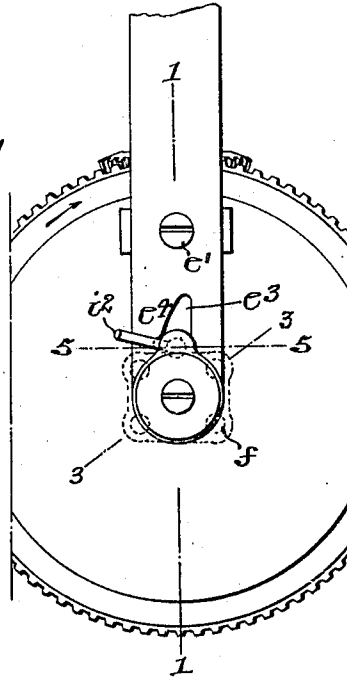


Fig. 3.

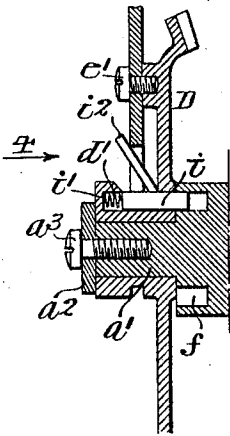
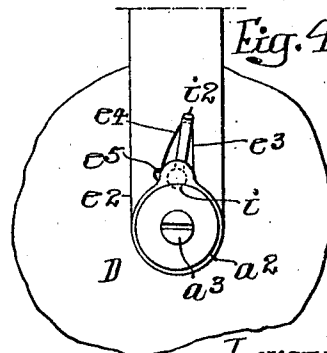


Fig. 4.



Witnesses:
Walter C. Pullinger
Willa H. Burrows

Inventor—
 George O. Leopold.
 by His Attorneys—
Howm & Howm

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2 SHEETS—SHEET 2.

Fig. 8..

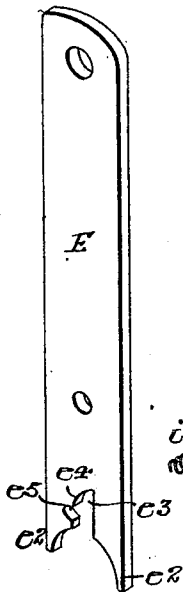


Fig. 7.

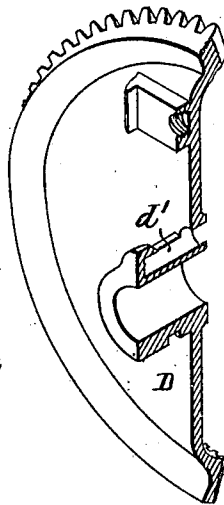


Fig. 9.



Fig. 6.

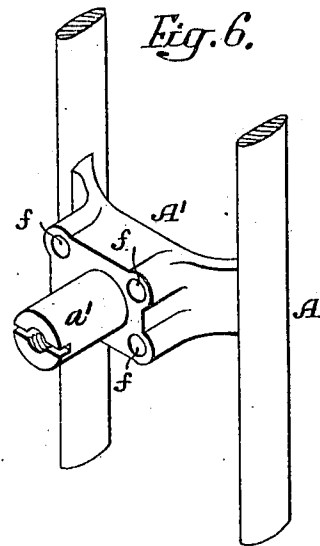
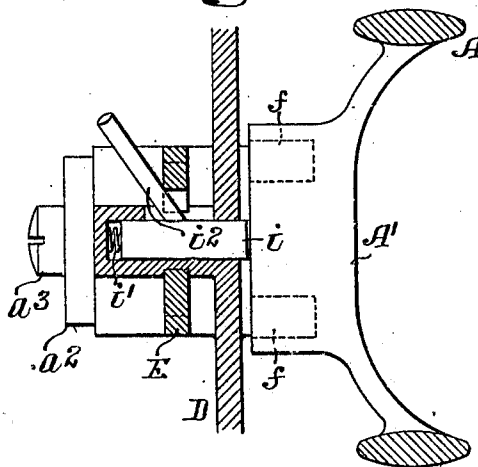


Fig. 5.



Witnesses—

Walter P. Pullinger
 Villa A. Burrows

Inventor—
 George O. Leopold,
 by his Attorneys:
 Howson & Howson

UNITED STATES PATENT OFFICE.

GEORGE O. LEOPOLD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO NORTH BRO'S
M'FG CO., OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYL-
VANIA.

LOCK FOR GEARING.

955,815.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed December 23, 1909. Serial No. 534,705.

To all whom it may concern:

Be it known that I, GEORGE O. LEOPOLD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Locks for Gearing, of which the following is a specification.

My invention relates to certain improvements in mechanism for locking gearing, especially the gearing of breast drills.

The object of the invention is to so lock the gearing that the spindle will not turn when the chuck is opened or closed to remove a drill bit or place it in position. This object I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a side view of a breast drill illustrating my invention, part of the mechanism being in section taken on the line 1—1, Fig. 2, the bolt being withdrawn; Fig. 2, is a side view of sufficient of the drill to illustrate my invention, looking in the direction of the arrow 2, Fig. 1; Fig. 3, is a sectional view on the line 3—3, Fig. 2, showing the bolt thrown; Fig. 4, is a view looking in the direction of the arrow 4, Fig. 3; Fig. 5, is an enlarged sectional view on the line 5—5, Fig. 2; and Figs. 6, 7, 8 and 9, are detached perspective views illustrating my improvement.

A is the frame of a breast drill having bearings *a*, *a* for the spindle B. This spindle has at one end a chuck *b* of any suitable type, in which the drill bit is clamped. On the spindle B are two bevel pinions *c*, *c'*, the pinion *c* is secured to the spindle, while the pinion *c'* is loosely mounted thereon.

A' is a bracket projecting from the frame A and carried by this bracket is a stud *a'* on which is mounted the bevel gear wheel D. This bevel gear wheel meshes with the two pinions *c*, *c'*. The wheel has an extended hub and is held in place by a washer *a''* secured by a screw *a'''*, as shown clearly in Fig. 1.

E is an arm having a handle *e*, this arm is secured to the bevel wheel D in the present instance by a screw *e'*. The lower portion of the arm is forked and the portions *e''* fit over the hub of the wheel so that the handle is held rigidly to the wheel. On turning the handle motion is imparted to the spindle B.

In the ordinary type of breast drill, in

order to open or close the chuck *b* the gears have to be held by one hand so as to prevent the spindle turning with the shell *b'* of the chuck which is grasped by the other hand.

The object of this invention is to provide means for locking the gearing so that when it is desired to open or close the chuck it is not necessary to hold the gearing with the hand.

i is a bolt adapted to slide in a cavity *d'* in the hub *d* and back of this bolt is a spring *i'* which tends to force the bolt forward. An arm *i''* projects at an angle from the bolt and rests in a cavity *e''* in the arm E, Fig. 8, and this cavity has a cam face *e'''* and in the cam face is a recess *e''''*, so that when the arm *i''* is shifted from the position shown in Fig. 4 to that shown in Fig. 2, the bolt will be withdrawn clear of the bracket against pressure of the spring, as illustrated in Fig. 1. If the arm is turned to the position illustrated in Fig. 4, then the bolt is free to be projected into any one of the openings *f* in the bracket A', as illustrated in Fig. 3, thus locking the gear wheel D to the bracket or frame of the breast drill, and when in this position the chuck can be opened and closed without grasping the gearing, as the spindle is locked by the bolt *i* through the medium of the gearing.

I claim:—

1. The combination of a frame having a bearing provided with an opening, a gear wheel mounted on the bearing, a spindle mounted in bearings on the frame, a pinion on the spindle meshing with the gear wheel, and a bolt carried by the gear wheel and adapted to be projected into the opening in the bearing to lock the wheel to the bearing and the spindle to the frame.

2. The combination of a bracket, a spindle on the bracket, a gear wheel mounted on the spindle, said bracket having one or more openings, a bolt carried by the wheel and adapted to enter one of said openings, a cam on the gear wheel, and an arm on the bolt by which it is turned, said arm resting against the cam so that on turning the bolt it will be moved to and from the bracket.

3. The combination of a bearing, having a spindle, a gear wheel mounted on the spindle, a bolt carried by the gear wheel, a

spring back of the bolt, an arm on the bolt,
a handle adapted to the gear wheel and hav-
ing a cam surface over which the arm on the
bolt travels when turned, said cam causing
5 the bolt to be withdrawn against the pres-
sure of the spring.

In testimony whereof, I have signed my

name to this specification, in the presence of
two subscribing witnesses.

GEORGE O. LEOPOLD.

Witnesses:

WALTER CHISM,
WM. A. BARR.