

(No Model.)

A. H. FLEMING.
WATCHMAKER'S TOOL.

N^o. 525,810.

Patented Sept. 11, 1894.

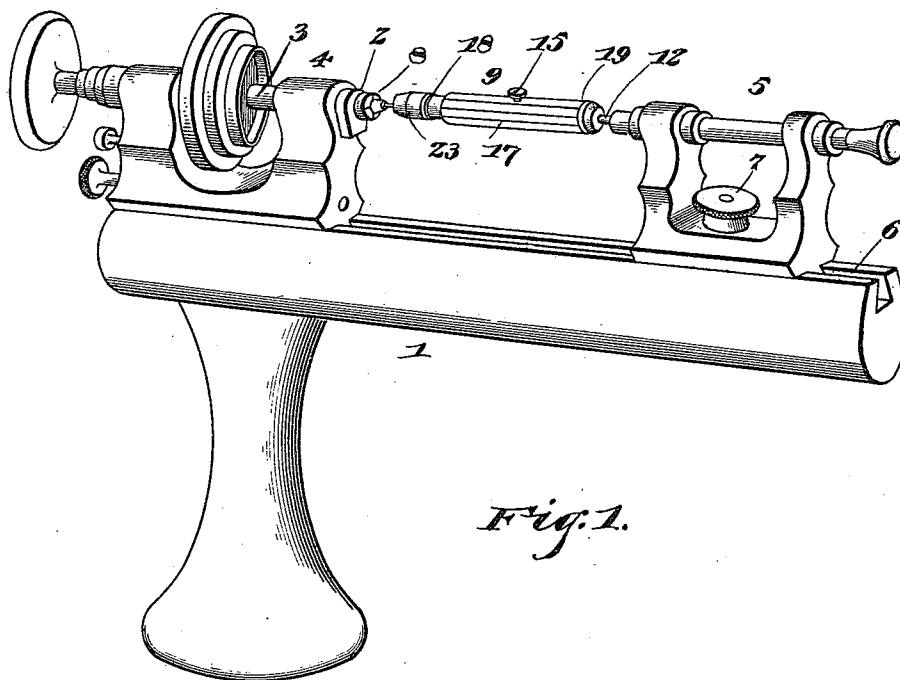


Fig. 1.

Fig. 2.

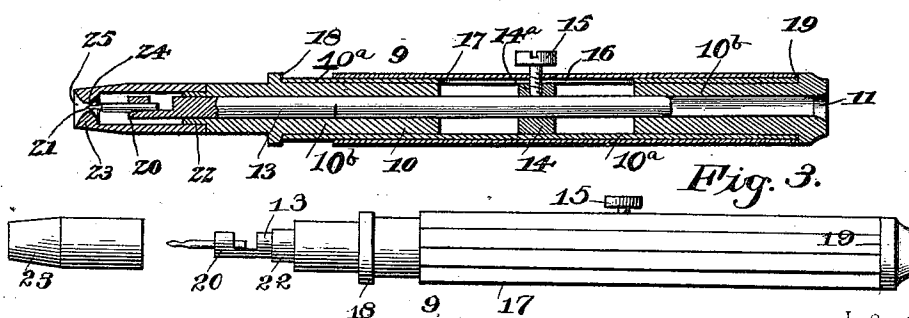


Fig. 3.

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Witnesses

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UNITED STATES PATENT OFFICE.

ALLISON HOWARD FLEMING, OF FAIRMONT, WEST VIRGINIA.

WATCHMAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 525,810, dated September 11, 1894.

Application filed April 12, 1894. Serial No. 507,287. (No model.)

To all whom it may concern:

Be it known that I, ALLISON HOWARD FLEMING, a citizen of the United States, residing at Fairmont, in the county of Marion and State of West Virginia, have invented a new and useful Watchmaker's Tool, of which the following is a specification.

My invention relates to a centering and drilling tool for watchmakers' lathes; and has for its objects to provide a simple, inexpensive, and efficient device for automatically centering and guiding a drilling tool for drilling center sockets in staffs and pinions of watch mechanism; to provide means for advancing and retracting the drill with facility; and to provide means for adjusting and replacing the various parts of the tool for different kinds of work.

Other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the claim.

In the drawings:—Figure 1 is a perspective view of a centering and drilling tool embodying my invention applied in the operative position to a lathe of the construction known as "American watchmaker's lathe." Fig. 2 is a longitudinal central section of the tool. Fig. 3 is a side view of the centering and drilling tool showing the centering chuck detached.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a lathe, of which 2 is the drill-chuck carried by the shaft 3, which is mounted upon the standard 4, and 5 the tail-chuck mounted slidably upon the guide 6 and provided with the usual set-screw 7.

The numeral 8 represents a staff, which is secured in the drill-chuck in position for operation.

9 represents the improved centering and drilling tool comprising essentially the cylindrical casing 10 provided at its rear end with a center socket 11 for the reception of the center cone 12 on the extremity of the tail-chuck. Within this casing is fitted slidably the stem 13, which passes through an annular block 14 fitting in an enlarged portion of the bore of the cylinder and provided with a threaded transverse aperture 14^a, which receives the inner end of a set-screw 15. This

set-screw extends through a longitudinal slot 16 in the side of the casing and is carried by a holding and operating sleeve 17 which is fitted slidably upon the exterior of the cylinder, and is limited in its longitudinal movement by the stop-shoulders 18 and 19 located respectively near the front and rear ends of the cylinder and is held from rotary movement by the contact of the shank of the set-screw with the sides of the longitudinal slot in the cylinder. In the construction illustrated in the drawings, said cylinder 10 comprises a tubular shell 10^a, in the ends of which are fitted tubular plugs 10^b, said plugs terminating short of the center of the shell in order to provide an enlarged bore to receive the annular block 14. The shoulders 18 and 19 are integral, respectively, with these tubular plugs 10^b, and in the registering bores of the latter is fitted the stem 13, the plug which carries the shoulder 18 being extended beyond such shoulder to support a centering chuck, hereinafter described.

The stem 13 is provided at its front end with a drill-bit socket 20, in which fits the bit 21, and the front end of the cylinder beyond the front stop-shoulder 18 is reduced to form a cylindrical projection 22 upon which is removably fitted the centering chuck 23. The bore of this centering chuck is enlarged at its rear end to receive the projection on the end of the cylinder, and is reduced at its front end to a size corresponding with the diameter of the drill-bit which is in use. Such reduction of the front portion of the bore of the centering chuck is accomplished by means of a rounded annular shoulder 24, clearly shown in the sectional view, Fig. 2. The portion of the bore of the centering chuck, beyond said annular reducing shoulder, is flared, as shown at 25, for the reception of the extremity of the staff or pinion to be bored or drilled.

In operation, the center socket at the rear end of the cylinder of the centering and drilling tool is fitted upon the centering cone of the tail-chuck of the lathe, and the flared terminal of the bore of the centering chuck is fitted upon the extremity of the staff or pinion to be drilled, the drill being retracted within said centering-chuck by the arrangement of the holding and operating sleeve in contact with the rear stop-shoulder 19. Said holding

and operating sleeve is then advanced by the operator to cause the drill-bit to press with the desired force upon the extremity of the staff or pinion.

5 It will be seen that by means of the adjustable block through which the stem passes said stem may be adjusted longitudinally through the block and hence with relation to the holding and operating sleeve to vary the
10 amount of projection of the drill-bit and to accommodate the length of such bit. Furthermore, the centering-chuck being removable from the end of the cylinder may be replaced as the bit is changed, whereby the guiding
15 portion of its bore may agree with the particular bit in use to prevent vibration of the front or operating end of said bit.

20 It will be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having described my invention, what I claim is—

The combination of a cylinder, a stem slid- 25
ably fitted therein and provided with a socket for the drill tool, a block slidably fitted in the cylinder and provided with an opening through which said stem extends, a set-screw to secure the stem at the desired point in the 30
block, a slot being formed in the cylinder through which the set-screw extends, a sleeve slidably fitted upon the cylinder and engaged by the set-screw, and a centering cap remov- 35
ably fitted upon the reduced front end of the cylinder, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

A. HOWARD FLEMING.

Witnesses:

R. C. DUNNINGTON,
W. H. KELLEY.