

(No Model.)

L. & F. CLAXTON.
JEWELER'S DRILL.

No. 460,713.

Patented Oct. 6, 1891.

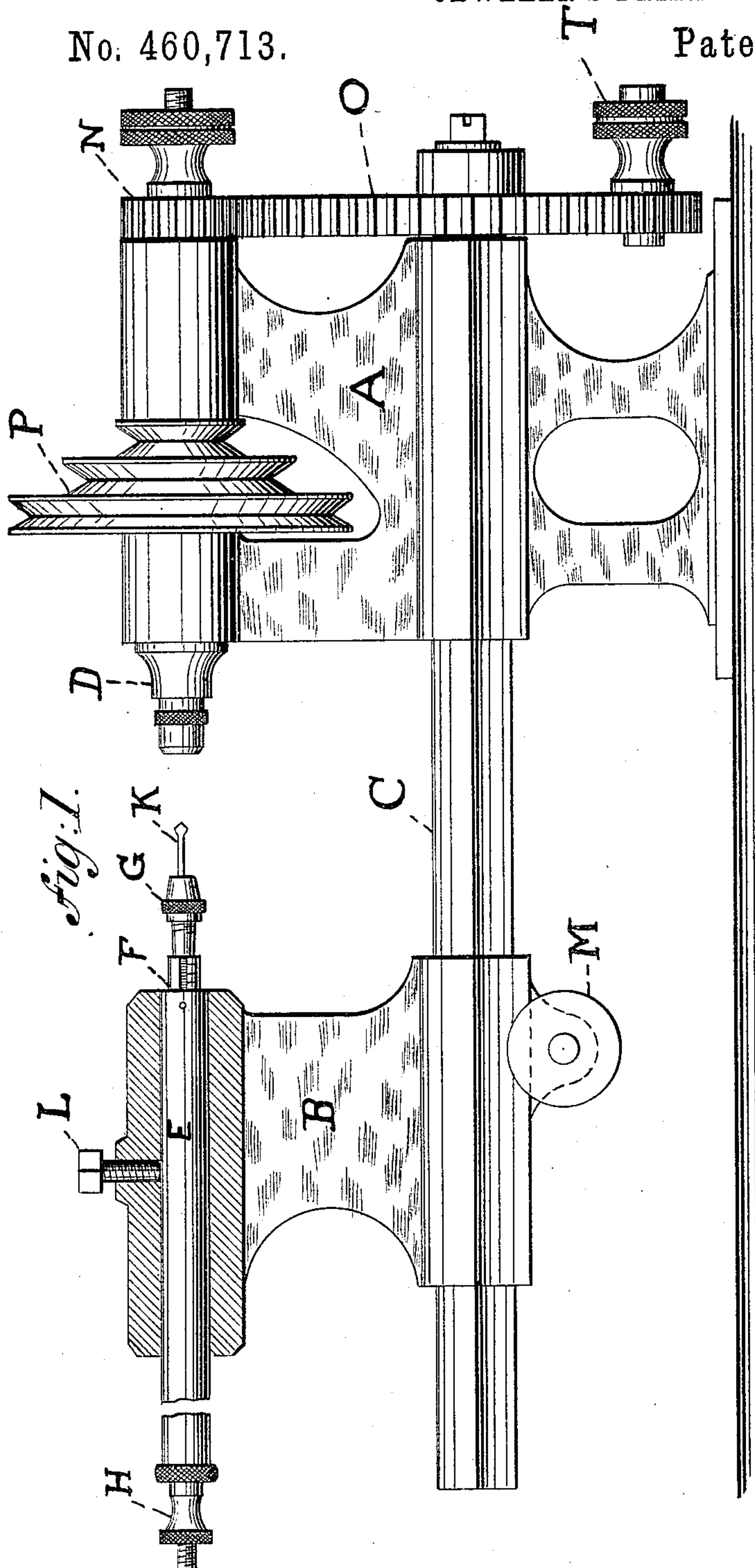


Fig. 1.

WITNESSES:

Y. A. Smith
J. M. Liero

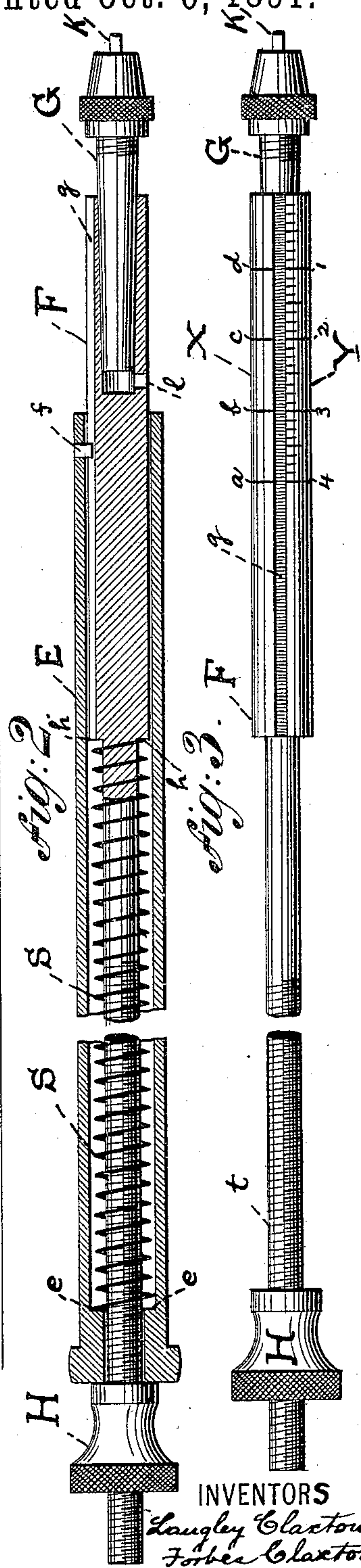


Fig. 2.

Fig. 3.

INVENTORS

Langley Claxton
Forbes Claxton

BY

Geo. M. Baker
their ATTORNEY.

UNITED STATES PATENT OFFICE.

LANGLEY CLAXTON AND FORBES CLAXTON, OF PATERSON, NEW JERSEY.

JEWELER'S DRILL.

SPECIFICATION forming part of Letters Patent No. 460,713, dated October 6, 1891.

Application filed June 13, 1891. Serial No. 396,073. (No model.)

To all whom it may concern:

Be it known that we, LANGLEY CLAXTON and FORBES CLAXTON, citizens of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Jewelers' Drills, of which the following is a specification.

Our invention relates to that class of drills which are used for drilling small holes. Heretofore it has been customary for the operator to hold the drill in his hand with its point against the revolving metal into which the hole is to be drilled.

The object of our invention is to provide a machine in which the drill may be placed and the work of drilling performed by power, and by means of which the amount of pressure of the drill and the depth of the hole to be drilled may be regulated. We accomplish this by the devices shown in the accompanying drawings, in which similar letters and figures refer to like parts.

Figure 1 is an elevation of a machine, partly in section, containing our improvements. Fig. 2 is a view, partly in section, of the spindle which holds the drill. Fig. 3 is an elevation of the spindle which holds the drill, its actuating-spring and inclosing cylinder having been removed.

A is the head-stock; B, the tail-stock; C, the guide-bar; D, the revolving spindle in the head-stock.

E is a cylinder inclosing the spring S.

G is a chuck at one end of the rod F.

H is a nut at the other end of rod F.

K is the drill-point.

P are pulleys to permit the spindle D to be rotated by power.

N O are gear-wheels to permit the spindle D to be rotated by hand.

S is a spring surrounding the rod F.

By referring to the drawings the construction and operation of our improved drill will be apparent. We claim nothing new in the construction of the head-stock and its live-spindle or in the manner of rotating the latter. Our improvements are in the drill-spindle. This latter consists of a rod F, threaded at one

end, as shown at *t* in Fig. 3, and provided with a nut H, adapted to be screwed upon the threaded portion of said rod. For a portion of its distance the rod F is surrounded by a spiral spring S, which latter is compressed between the shoulders *e* and *h*. The rod F and its spring S are incased in the cylinder E, the rod F projecting at both ends of the cylinder, the threaded end having screwed thereon the nut H, and the other end having inserted therein the chuck G, which holds the drill-point K, as shown in Fig. 2. The end of the rod F, which holds the chuck G, is provided with the two scales X and Y, (see Fig. 3,) the former for measuring the pressure of the drill upon the surface to be drilled and the latter for determining the depth of the hole to be bored.

The letters *a*, *b*, *c*, and *d* may indicate pounds, and the figures 1, 2, 3, and 4 may designate inches, or any other units of measurement may be adopted.

The drill-spindle is placed in the stock B and securely fastened therein by means of the screw L. By screwing up the nut H the spring S will be compressed until the desired pressure at which the drill is to work is obtained, which will be indicated on the scale X. The piece to be drilled having been placed in the end of the live spindle D, the tail-stock *b* is moved along the guide-bar C until the drill-point K is in contact with the object to be drilled, and the stock B is then made fast to the bar C by means of the screw M. The nut H is then unscrewed, thereby releasing the spring S, and the live-spindle D is rotated. The desired depth of the boring will be indicated on the scale Y.

The spring S not only maintains a constant and practically uniform pressure of the drill, but also allows the drill to recoil when the point of the latter meets with obstructions in the course of its drilling. It often happens that in such cases when the drill is held rigid the point of the drill will be broken. It is common therefore, as above stated, for the drill to be held in the hand, and the operator almost unconsciously relieves the pressure on the drill in the cases above referred to. By the use of

our improved drill the same result is attained automatically. As shown in the drawings, the spindle D may be rotated by power by using the pulleys P, or by hand by means of the gears N O.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a jeweler's drill, the combination of a spindle capable of rotary motion and adapted to hold the piece to be drilled, means for rotating said spindle, and an opposing spindle provided with a drill, which latter is capable of a reciprocal longitudinal motion, substantially as described, and for the purposes set forth.

2. In a jeweler's drill, the combination of a spindle capable of rotary motion and adapted to hold the piece to be drilled, means for rotating said spindle, and an opposing spindle carrying a drill, which latter is provided with a spring adapted to move said drill longitudinally, substantially as described, and for the purposes set forth.

3. In a jeweler's drill, the combination of a spindle capable of rotary motion and adapted to hold the piece to be drilled, means for rotating said spindle, and an opposing spindle consisting of a rod provided with a drill-point on one of its ends and having its other end threaded and provided with a nut, a spring surrounding said rod, and a cylinder inclosing said spring, substantially as described, and for the purposes set forth.

4. In a jeweler's drill, the combination of the spindle D, means for rotating the same, cylinder E, rod F, spring S, drill-point K, nut H, stock B, and screw L, substantially as shown and described.

5. In a jeweler's drill, a drill-spindle provided with a drill-point, a spring adapted to move said drill-point longitudinally, and a

scale adapted to indicate the pressure of said spring, substantially as shown and described.

6. In a jeweler's drill, a drill-spindle provided with a scale adapted to indicate the depth of the bore, substantially as shown and described.

7. In a jeweler's drill, a drill-spindle consisting of the cylinder E, rod F, spring S, nut H, drill-point K, and scale X, in combination with the stock B and screw L, substantially as shown and described.

8. As a new article of manufacture, a jeweler's drill consisting of the head-stock A, spindle D and means for rotating the same, guide-bar C, tail-stock B, cylinder E, rod F, spring S, nut H, drill-point K, chuck G, and screw L, substantially as shown and described.

9. As a new article of manufacture, a jeweler's drill consisting of the head-stock A, spindle D and means for rotating the same, guide-bar C, tail-stock B, cylinder E, rod F, spring S, nut H, drill-point K, chuck G, and scale X, substantially as shown and described.

10. As a new article of manufacture, a jeweler's drill consisting of the head-stock A, spindle D and means for rotating the same, guide-bar C, tail-stock B, cylinder E, rod F, spring S, nut H, drill-point K, chuck G, and scale Y, substantially as shown and described.

11. As a new article of manufacture, a jeweler's drill consisting of the head-stock A, spindle D and means for rotating the same, guide-bar C, tail-stock B, cylinder E, rod F, spring S, nut H, drill-point K, chuck G, and scales X and Y, substantially as shown and described.

LANGLEY CLAXTON.
FORBES CLAXTON.

Witnesses:

JOHN DOIG,
URIAH GARSIDE.