C. W. COE.

Drilling-Machine.

No. 216,381. Patented June 10, 1879.

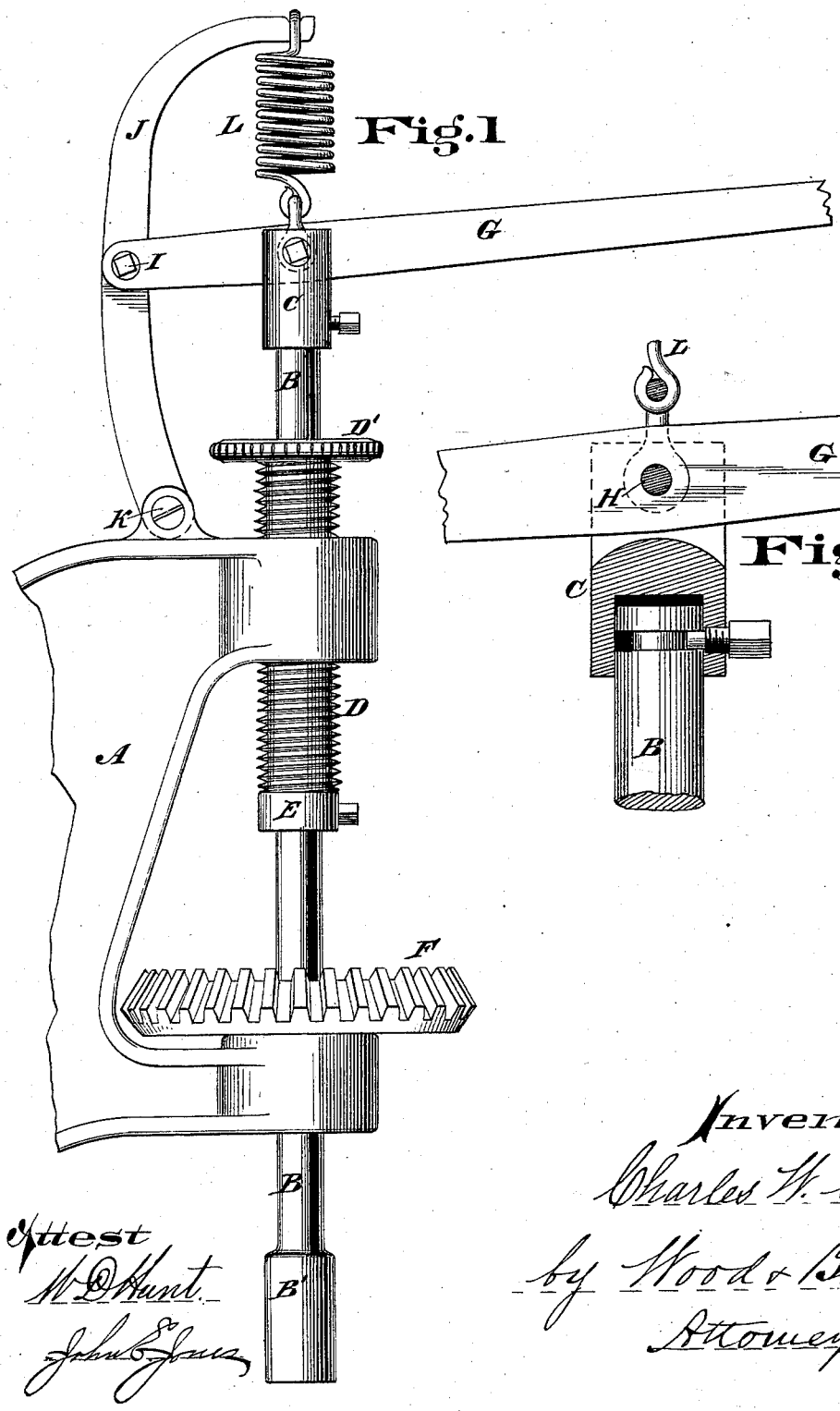

Fig. 1

Fig. 2

Attest

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UNITED STATES PATENT OFFICE

CHARLES W. COE, OF FENTONVILLE, MICHIGAN.

IMPROVEMENT IN DRILLING-MACHINES.

Specification forming part of Letters Patent No. **216,381**, dated June 10, 1879; application filed January 22, 1879.

To all whom it may concern:

Be it known that I, CHARLES W. COE, of Fentonville, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Drilling and Boring Machines, of which the following is a specification.

The invention relates to the feeding mechanism, and may be applied to a drill like that patented to me January 20, 1863, or to any drilling or boring machine.

Figure 1 is a side elevation, and Fig. 2 is a partial section, of the invention.

A represents so much of the frame of any ordinary machine as is necessary to show the application of the invention. B is the drill-spindle, having the socket B′ for the drill or auger, and being attached to the cap C by a swivel-joint, as clearly shown in Fig. 2. D is a hollow screw-spindle working in a nut or screw-thread in the frame, and carrying an ordinary ratchet-wheel, D′. E is a collar secured to the spindle B, against which the screw D bears when screwed down, as it may be by hand or by the application of automatic devices, as shown in my said patent. Rotary motion is given to the spindle B by connecting gearing with the bevel-wheel F, which rests on a socket of the frame.

G is a lever turning on a pin, H, in the cap C, and having one end pivoted, as at I, to the bracket J, which is pivoted to the frame at K. The top of the cap C is connected to the upper end of the curved bracket by a spring, L. A foot-treadle may be connected to the lever G.

For drilling hard metal I prefer to use the screw-feed D; but for light drilling or boring in wood I prefer to use the lever, either by hand or foot, because much time is saved in raising the drill, the action of the spring being instantaneous upon the pressure being released from the lever.

To allow the fulcrum H to travel in a vertical plane, the bracket J is pivoted; but it is obvious that if the lever was slotted at either H or I a like result would be obtained, but with increased friction; and hence the plan shown is preferred.

When it is desired to bore any particular depth the screw D is so set as to control the play of the spindle by the end of cap C striking wheel D′.

In boring various materials, especially where they are not homogeneous throughout, as is often the case in metals, it is found convenient that the workman should have direct control of the drill, so that he may vary the pressure upon the same to prevent injury to the drill. This cannot be effected by the screw alone, but is readily attained by means of the lever, by which a variable pressure can be produced upon the drill, as required.

Having thus described the invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the drill-spindle B and cap C, connected by a swivel-joint, of the lever G, spring L, permanently fixed at its upper end, and the vertically-adjustable wheel or head D′, forming a stop for the downward movement of said cap C, substantially as described.

2. A drilling or boring machine having the interchangeable feeding devices, consisting of the hollow screw-spindle D, supported in a screw-threaded bearing and surrounding the drill-spindle B, and adapted to press against the adjustable collar E′, and the cap C, swivel-jointed to the upper end of the drill-spindle, lever G, for forcing said cap downward, and spring L, for raising the same, substantially as described.

3. The combination, with the drill-spindle B, having cap C and adjustable collar E′, of the hollow screw-threaded spindle D, having wheel D′, supported in a suitable screw-threaded bearing, and adapted to either serve as a feeding device or an adjustable stop for the drill-spindle, substantially as described.

In testimony whereof I have hereunto set my hand this 4th day of January, 1879.

C. W. COE.

Witnesses:
EDWARD BOYD,
E. E. WOOD.