

**J. C. CHAPMAN.**  
**Hand-Drilling Machines.**

No. 157,373.

Patented Dec. 1, 1874.

Fig. 1.

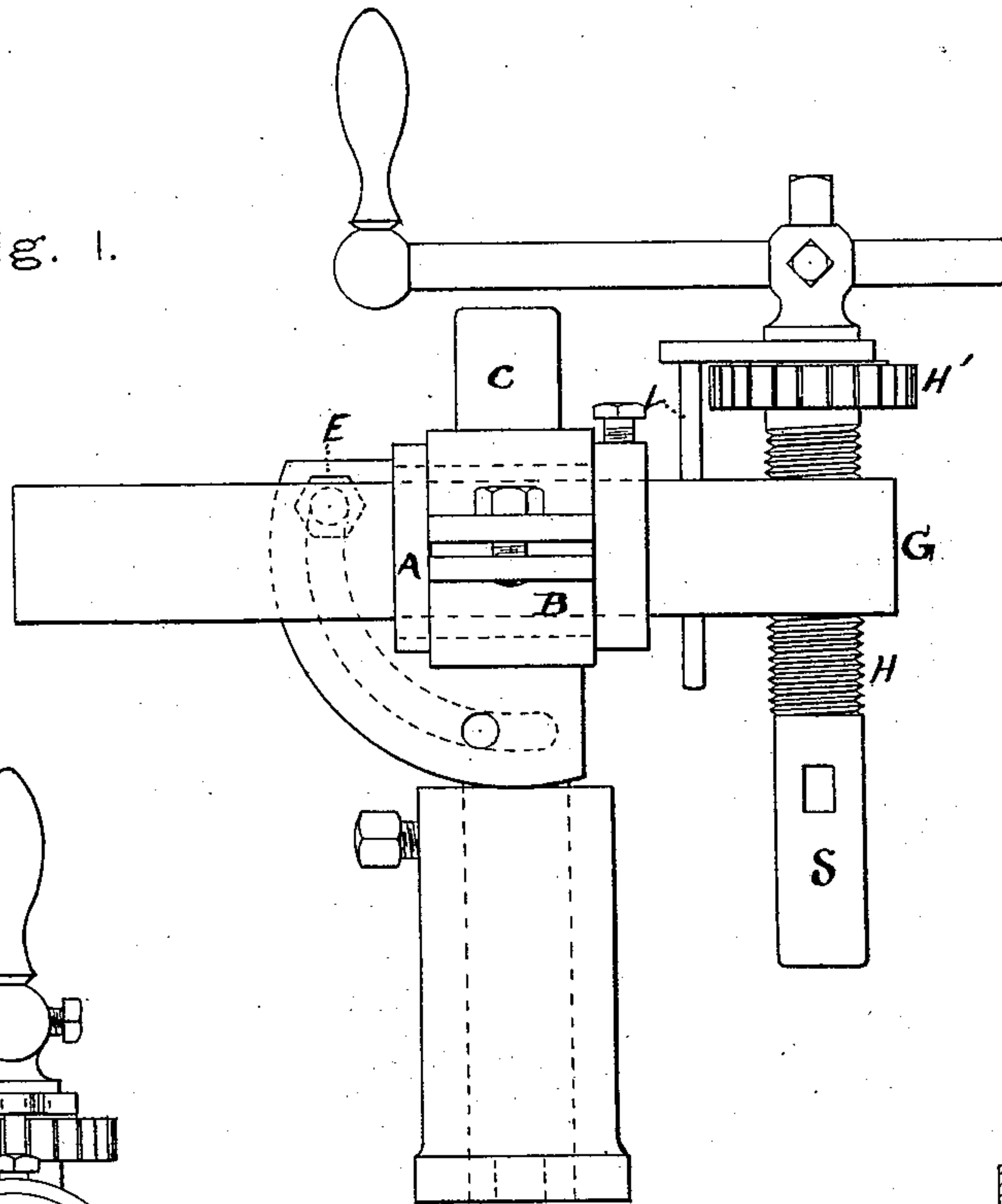


Fig. 2.

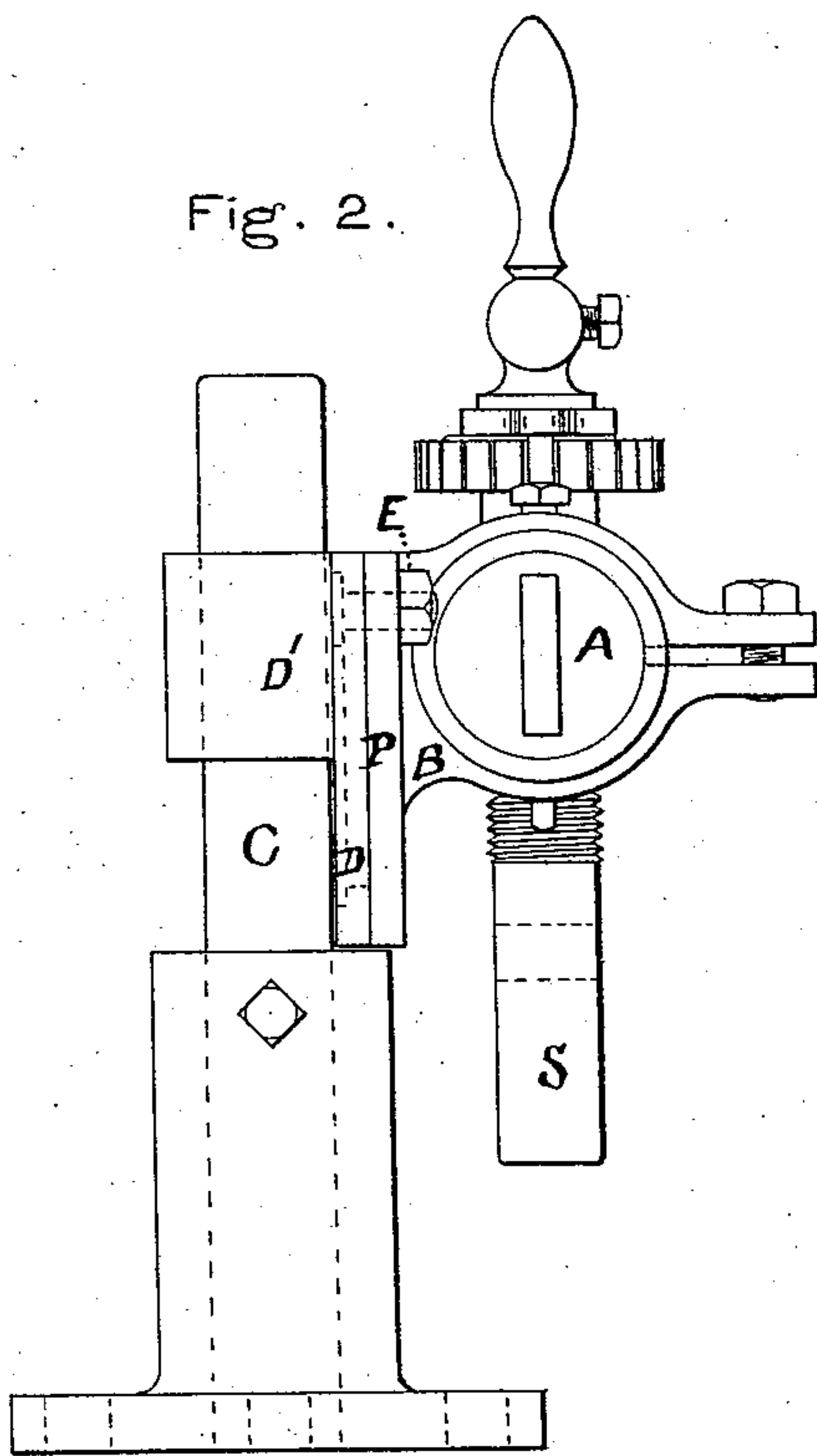


Fig. 4.

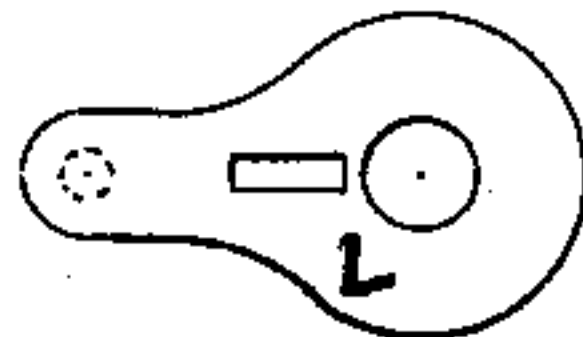


Fig. 5.

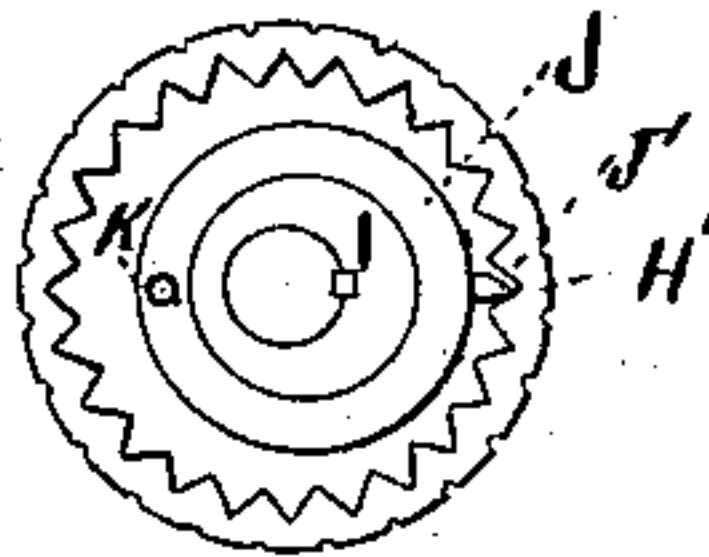


Fig. 6.

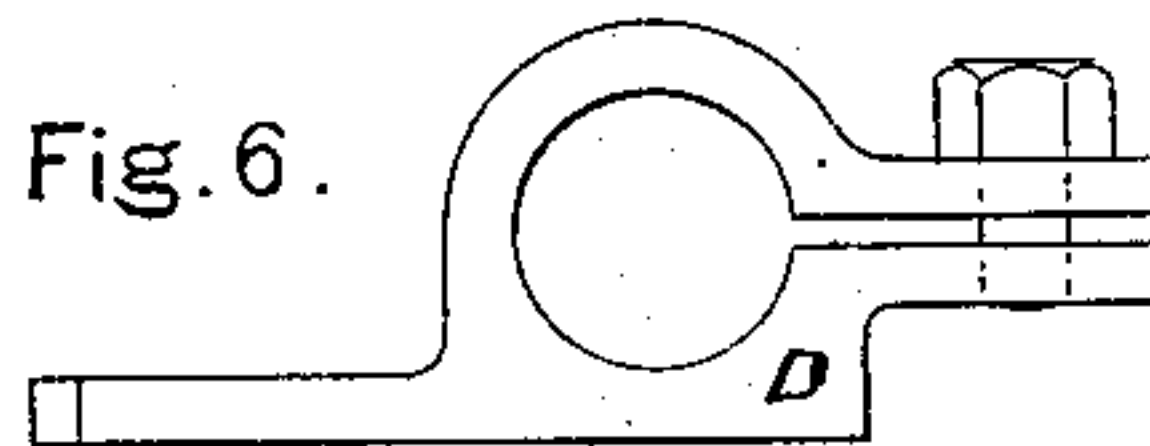
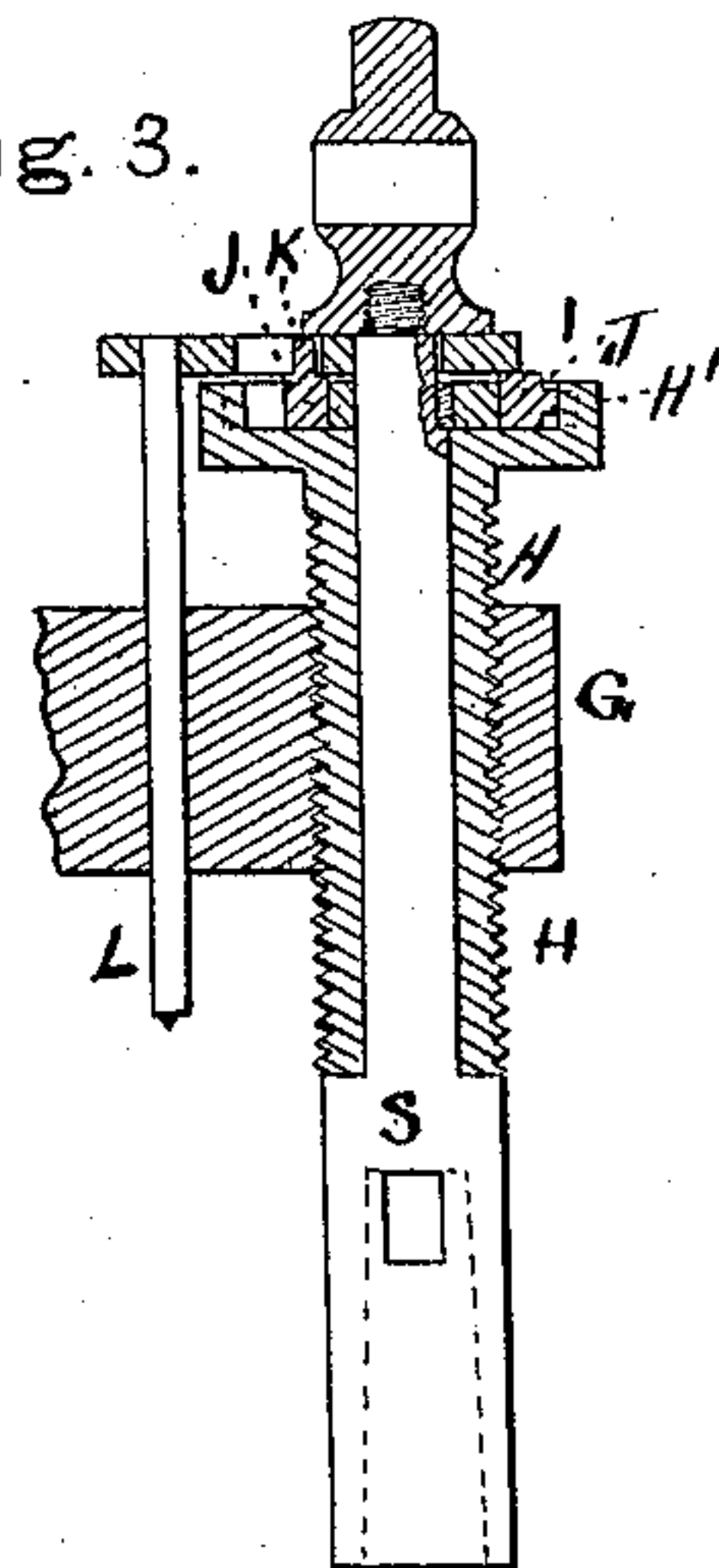


Fig. 3.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOHN C. CHAPMAN, OF PASSAIC, NEW JERSEY.

## IMPROVEMENT IN HAND DRILLING-MACHINES.

Specification forming part of Letters Patent No. **157,373**, dated December 1, 1874; application filed September 14, 1874.

*To all whom it may concern:*

Be it known that I, JOHN C. CHAPMAN, of Passaic, in the county of Passaic and State of New Jersey, have invented certain Improvements in Hand Drilling-Machines; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a front elevation. Fig. 2 is a side elevation. Fig. 3 is a vertical section through the spindle. Figs. 4, 5, and 6 are details to be referred to.

In drilling-machines now in use many disadvantages are apparent. They arise principally from inefficient means of adjustment, and a lack of an automatic intermittent feed.

The object of my invention is to overcome these disadvantages; and it consists in certain details of improvement, as more fully hereinafter described.

In order that those skilled in the art may make and use my invention, I will proceed to describe the manner in which I have carried it out.

The construction of my machine is as follows: The bar or arm for carrying the drill-spindle is rectangular, and is fitted into a cylindrical piece, A, which rests in a bearing, B, on one of the quadrants, P. The other quadrant, D, is secured to P by the binding-bolt E, and both together may be revolved about the standard C, the standard C being fastened or secured to any piece of work. The drill-spindle may be brought to any required position by moving the piece D horizontally around the standard C, and revolving the piece A in its bearing, as required, and the bearing B may be swiveled to any angle in the vertical plane, and then secured by the binding-bolt E. The piece B is divided on one side of the cylinder, and has ears and a binding-screw to hold the cylinder A in position.

The automatic feed is composed of several

parts, and is operated by the revolution of the drill-spindle. The spindle is surrounded by a sleeve, H, having a screw on its outer surface, and at its upper end a wheel, H', with an internal ratchet, as seen in Fig. 5. The arm or bar G is tapped out to receive the screw of the sleeve H, surrounding the spindle, and as the spindle is revolved it operates an eccentric, I, and strap J, the strap having a tooth, J', projecting from its outer surface, and engaging with the teeth of the ratchet H'. The eccentric has also a pin, K, on its top side, working into a slot in the piece L. The piece L is held at one end by passing around the spindle, and at the other end by a small rod, L', which keeps it in place to guide the eccentric strap.

The use of the slot and pin K is to allow the strap J an oscillating and limited rotary motion, so as to intermittently turn the wheel H' by means of the tooth J', which engages with the ratchet-wheel at each revolution of the spindle. By this turning of the wheel H', the screw-sleeve H is gradually fed forward, and the drill on the end of the bar S advanced to its work.

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

1. The screw-sleeve H, bearing the ratchet-wheel H', in combination with the spindle S, eccentric I, strap J, bearing the tooth J' and pin K, and slotted piece L, all constructed and operated substantially as set forth.

2. The quadrant D, provided with the clamp D', and quadrant P, provided with the clamp B, in combination with the standard C, cylinder A, and bar G, as described, for the purpose specified.

JOHN C. CHAPMAN.

Witnesses:

JER. LODER,  
JOHN FARREL.