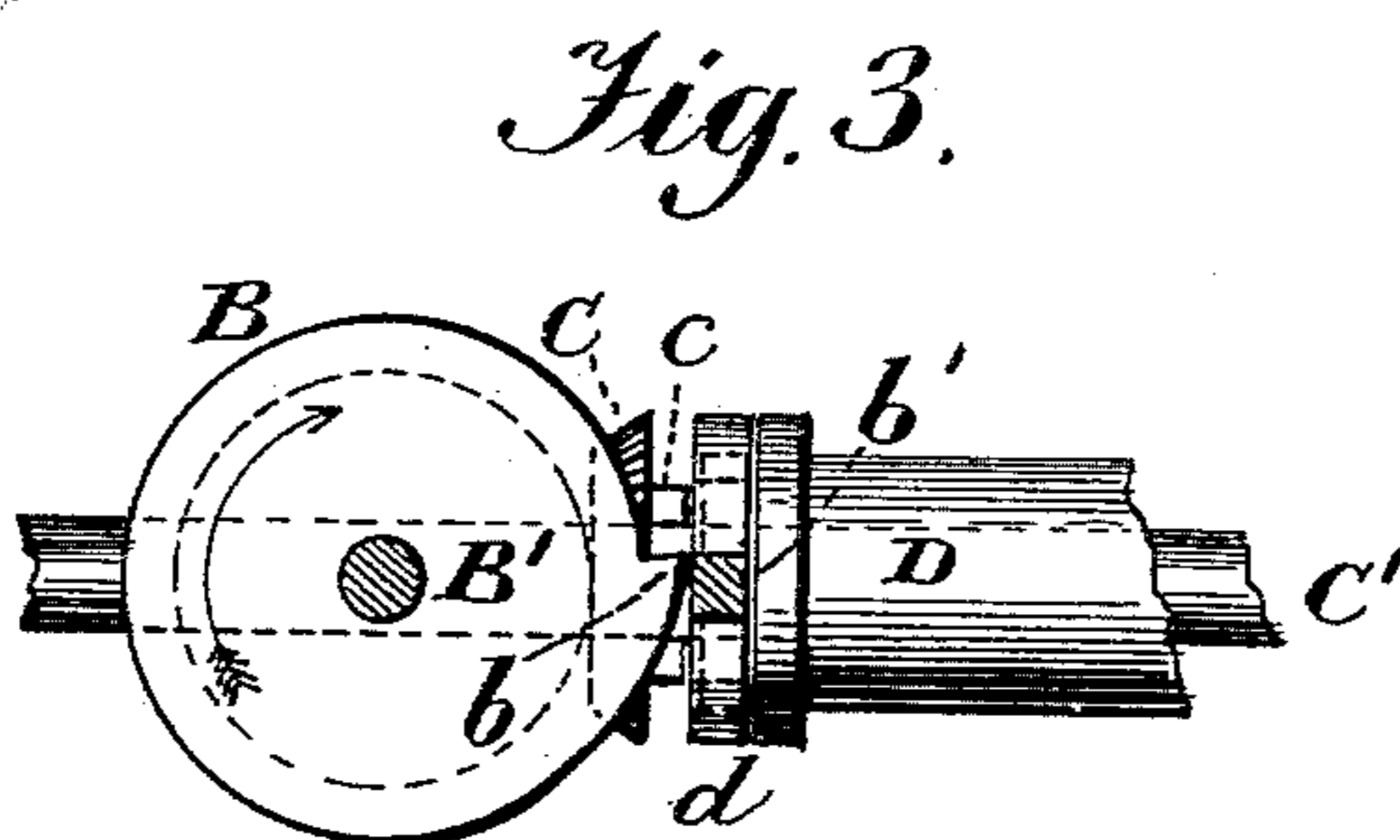
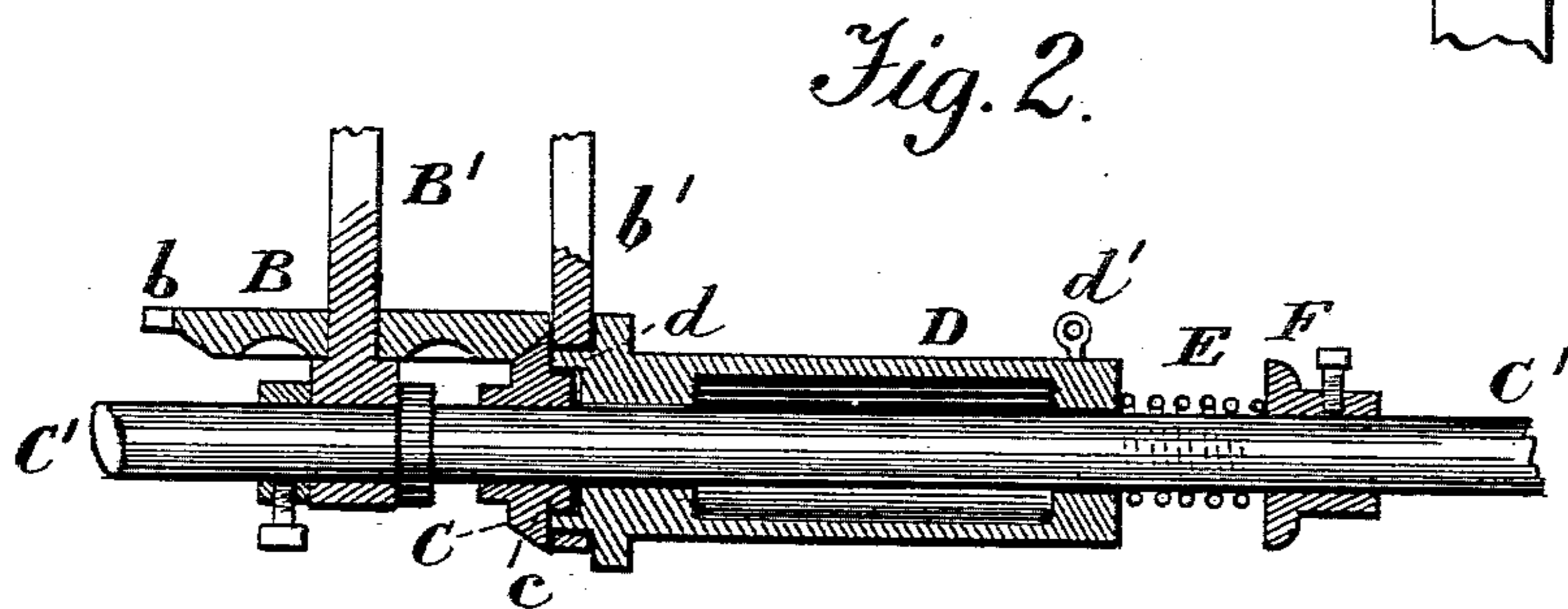
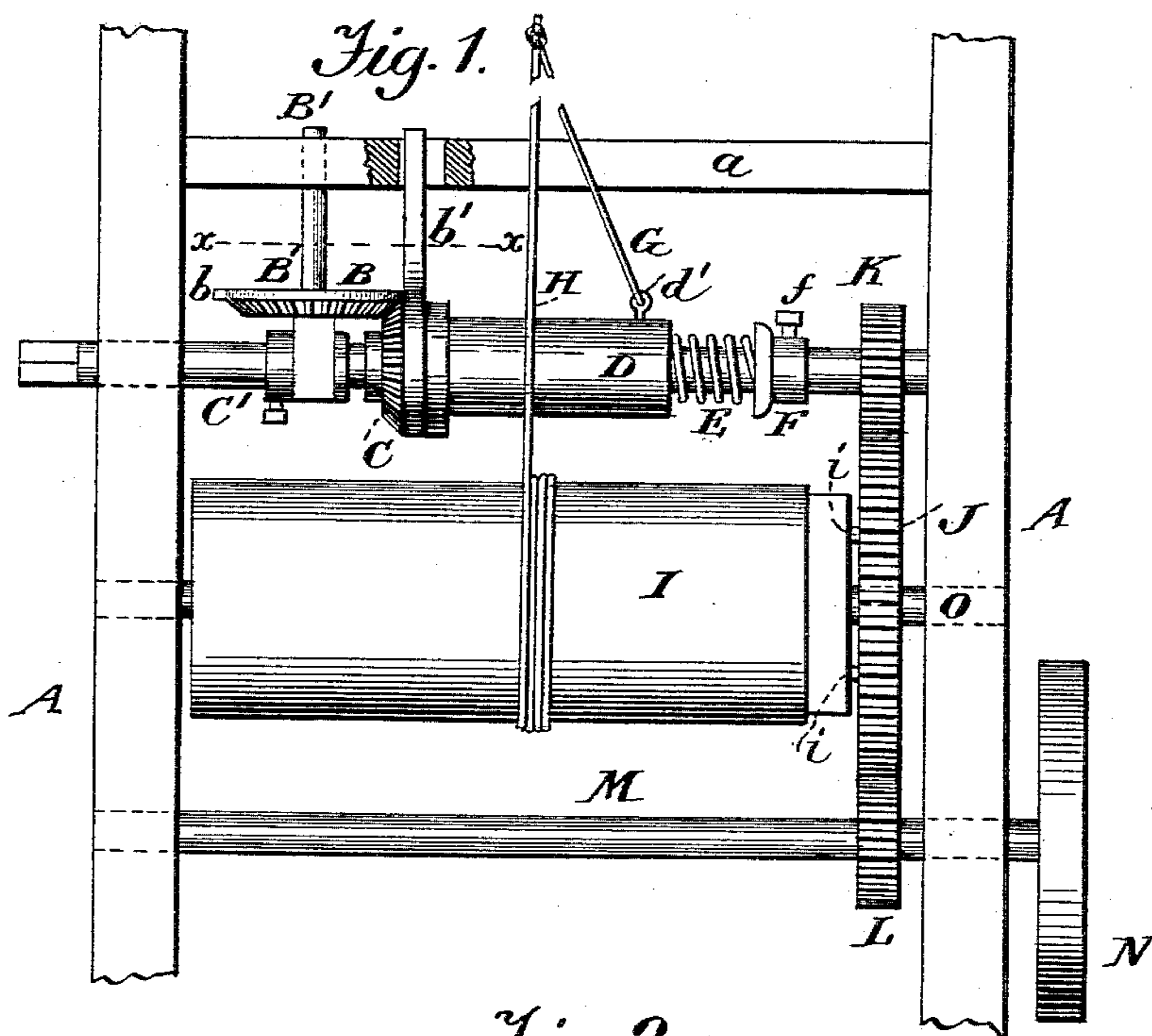


(No Model.)

J. G. LEE.
WELL DRILLING MACHINERY.

No. 476,467.

Patented June 7, 1892.



Witnesses.
A. Ruppert.
G. B. Towles.

Inventor.
Joseph G. Lee
Per
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Atty

UNITED STATES PATENT OFFICE.

JOSEPH G. LEE, OF DALLAS, TEXAS, ASSIGNOR OF ONE-HALF TO GIDEON T. MACON, OF SAME PLACE.

WELL-DRILLING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 476,467, dated June 7, 1892.

Application filed November 30, 1891. Serial No. 413,543. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. LEE, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Well-Drilling Machinery; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The special object of the invention is to make a well-drilling machine which will drop the drill at the proper time and from the proper height.

Figure 1 of the drawings is a front elevation; Fig. 2, a longitudinal section of the devices on the power-shaft, and Fig. 3 a section on the dotted line *x x* of Fig. 1.

In the drawings, A represents the drill-frame, in whose cross-bar *a* is a bearing for the fast vertical shaft B', which carries at its lower end the loose bevel-wheel B, with the cam *b* on its periphery. This wheel B meshes with a pinion C, fast on the power-shaft C', which may be rotated by hand or any other suitable power. The pinion C is connected with a loose drum D by the clutches *c d*, which are kept together by a spiral spring E, supported by a collar F. The shaft C' is connected by the pinion K and spur-wheel J with a shaft O, which carries the windlass I, and the shaft O is connected with a shaft M, carrying the balance-wheel N, by the spur-wheel J and pinion L.

H is the drill-rope, which is fastened at one end to the windlass and at the other end to a drop-drill. The drill is let down and raised out of the well by this windlass, while it is lifted up to the proper height and dropped by the loose drum D, which is for that purpose connected by a short rope G with the

rope H. In letting down the drill with the windlass set-screw *f*, which holds the collar F, is loosened and the loose drum D pushed away from pinion C, so that the wheels B C will revolve without the drum; also the rope G is disconnected from rope H and the brake-bar *b'* pressed firmly down on the loose drum D. By this means the drill is let down gradually. After this is done the rope G, which is fast to an eyebolt *d* on the loose drum D and has a clamp at one end, is secured to rope H, the collar F made tight, so that the spiral spring E will cause the clutches *c d* to engage, and the windlass slid away from the wheel J, so that the pins *i* will no longer engage its spokes. The machine is then ready for the drilling operation, which is as follows: The rotation of the shaft C' revolves the drum D and winds up the rope G until the cam *b* strikes the brake-bar *b'* and disengages the clutches *c d* when the drill falls. The rope H passes over a pulley at the top of the drill-frame in the usual way.

Having thus described all that is necessary to a full understanding of my invention, what I claim as new, and desire to protect by Letters Patent, is—

In a well-drilling machine, the bevel-wheel B, having cam *b* on its periphery and arranged loosely on a vertical shaft B', a bevel-pinion C, fast on power-shaft C', a loose drum D, sliding on shaft C', the spring E, and collar F, in combination with the drill-rope, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH G. LEE.

Witnesses:

J. M. LARKIN,
T. B. SALMONS.