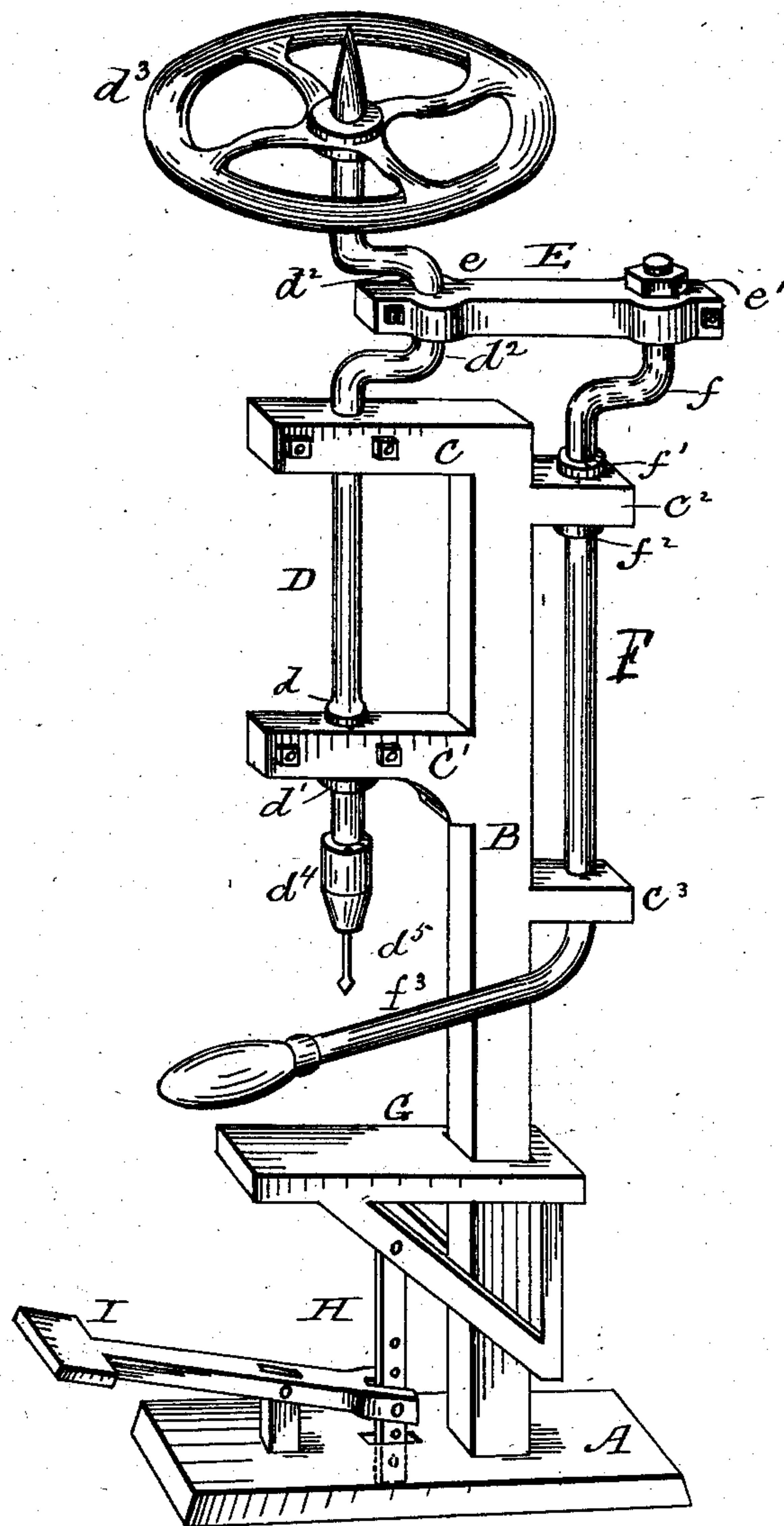


(No Model.)

E. A. HARE.
UPRIGHT DRILL.

No. 259,138.

Patented June 6, 1882.



Witnesses:
E. B. Stocking
Charles H. Kent

Inventor
E. A. Hare
By *[Signature]*
JUL 14-

UNITED STATES PATENT OFFICE.

EUPHRATES A. HARE, OF FARLINVILLE, KANSAS.

UPRIGHT DRILL.

SPECIFICATION forming part of Letters Patent No. 259,138, dated June 6, 1882.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, EUPHRATES A. HARE, a citizen of the United States of America, residing at Farlinville, in the county of Linn and State of Kansas, have invented certain new and useful Improvements in Upright Drills; 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, reference being had to the accompanying drawing, and to letters or figures of reference marked thereon, which forms a part of this specification.

My invention relates to that class of machines for drilling or boring holes in metal or other hard substances in which the drill-shaft is operated vertically; and it consists in certain features hereinafter described, and specifically set forth in the claims.

The drawing illustrates in perspective a machine constructed in accordance with my invention.

Secured to a suitable base or foundation, A, is a standard, B, having extensions or arms C' C² C³, in which are suitable bearings for two upright shafts, D and F, the former being the drill-shaft and the latter the operating-shaft.

The drill-shaft is provided at its lower end with a suitable chuck, d⁴, to hold the drill d⁵, and with collars d d' to bear on the arm C', and prevent longitudinal movement of the shaft, which, after passing through the bearing in the arm C, is formed into a crank, d², and above the crank is provided with a fly-wheel, d³, above which it is pointed to fit in a step or end bearing, if such is desired, though it is not essential to the operation of the machine.

E represents a connecting-rod, the bearing e of which embraces the crank d² of the shaft D, and the bearing e' of which embraces the crank f, formed on the operating-shaft F, which is provided with collars f' f² at the bearing in arm C², as shown. After passing through the bearing in the arm C³ the shaft F is formed into a lever, f³, disposed at substantially a right angle to the main portion of the shaft, so that by oscillating the lever back and forth the crank f is oscillated, and through the medium of the connecting-rod E crank d² is rotated, the fly-wheel d³ operating to carry the crank beyond the dead-center at each end of the movement of the rod E, and thus by an oscillatory movement of the lever f³ the drill-shaft D is rotated.

A sliding table, G, is elevated, and serves to hold the work against the drill by means of a treadle, I, and connecting-rod H in the usual manner.

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

1. The combination of the drill-shaft D, having the crank d², fly-wheel d³, the connecting-rod E, and the shaft F, having the crank f and lever f³, substantially as shown and described.

2. The combination of shaft D, having the crank d², fly-wheel d³, rod E, shaft F, having crank f and lever f³, with the adjustable table G, substantially as shown and described.

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

EUPHRATES A. HARE.

Witnesses:

P. H. AYERS,
W. L. SILSBY.