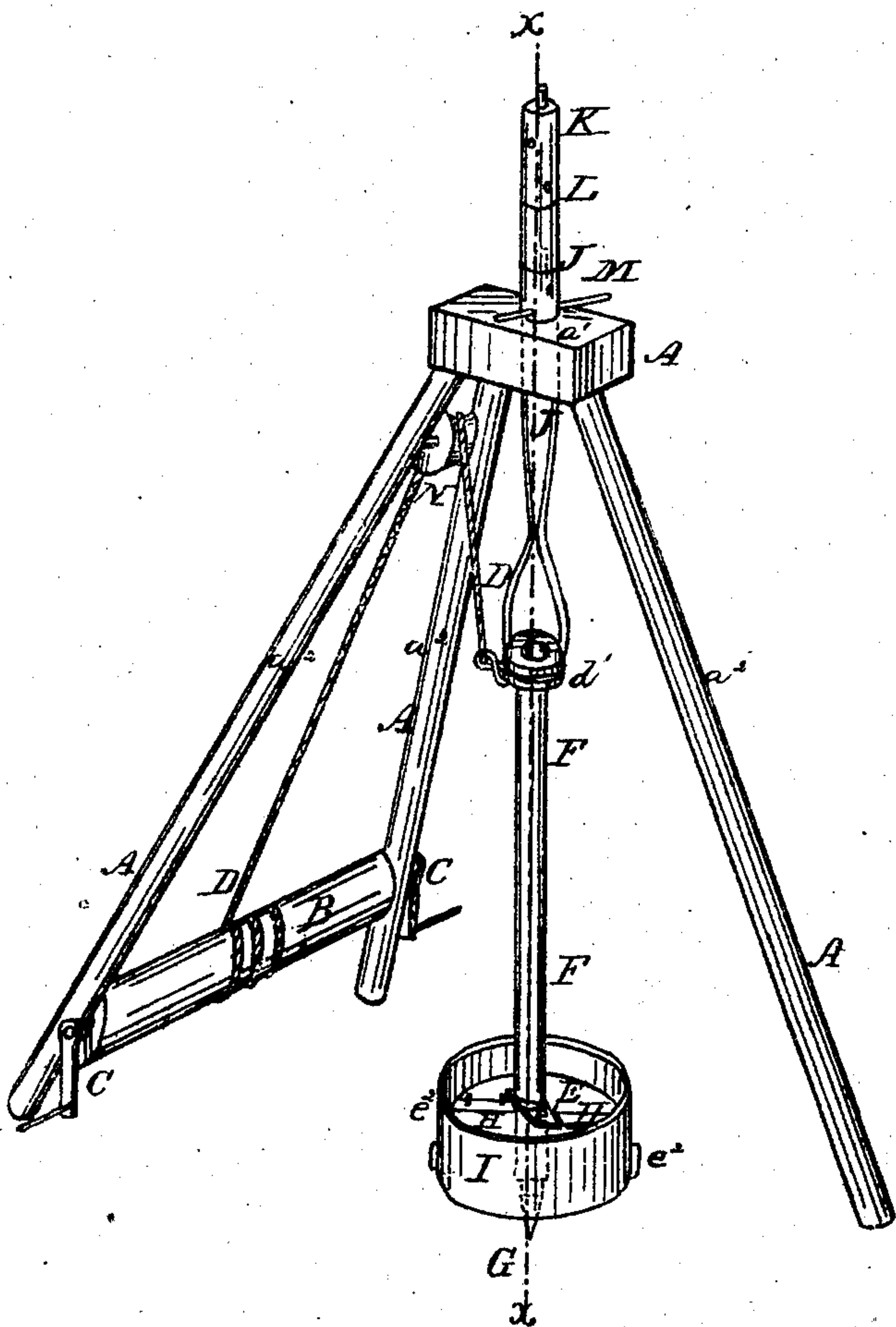


*N. C. Clark,  
Well-Boring-App.*

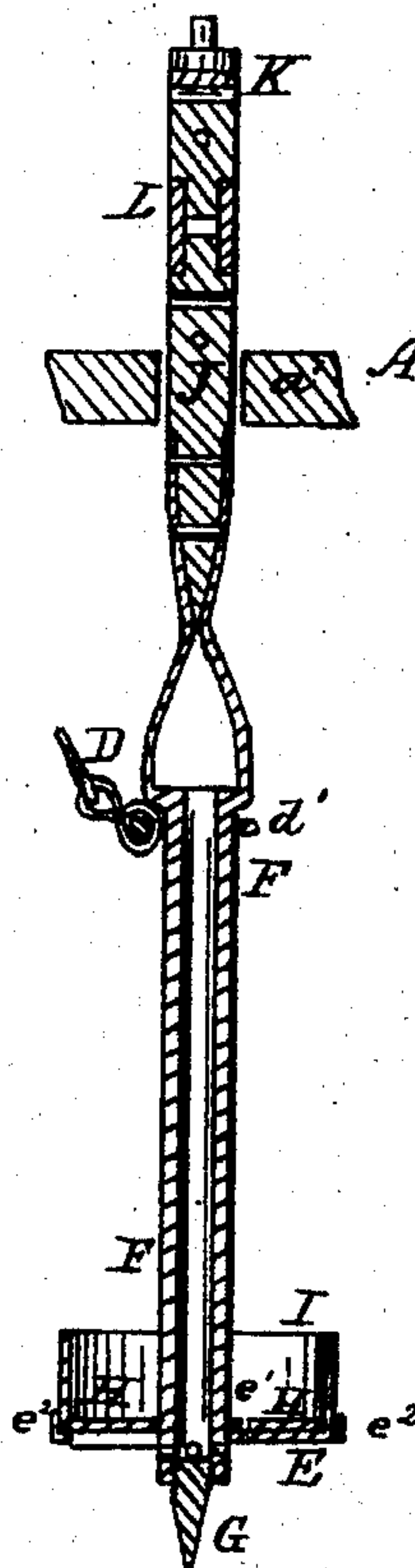
*N<sup>o</sup> 74,503.*

*Patented Feb. 18. 1868.*

*Fig. 1*



*Fig. 2*



*Witnesses*

*Theo Incke  
J. H. Mason & Co.*

*Inventor*

*N. C. Clark  
Per Munnell  
Attorneys*

# United States Patent Office.

N. C. CLARK, OF LOW MOOR, IOWA.

*Letters Patent No. 74,503, dated February 18, 1868.*

## IMPROVED WELL-BORING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, N. C. CLARK, of Low Moor, in the county of Clinton, and State of Iowa, have invented a new and useful Improvement in Well-Boring Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved well-boring apparatus.

Figure 2 is a detail sectional view of the same, taken through the line  $x$ , fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish a simple, effective, and convenient apparatus for well-boring; and it consists in the construction and combination of the various parts of the apparatus as hereinafter more fully described.

A is the frame of the apparatus, consisting of a head-block,  $a^1$ , supported upon three or more inclined legs,  $a^2$ , so as to give it stability when in use. B is the windlass, the axles of which revolve in bearings attached to two of the legs  $a^2$ , as shown in fig. 1. C are cranks, attached to the projecting ends of the windlass or shaft B, to operate the said shaft. D is a rope, one end of which is attached to the shaft B. The rope D passes over the pulley N, pivoted to the upper part of the frame A, and to its other end is attached a ring,  $d'$ , through which the auger-stem passes, so that the auger may be raised and lowered by operating the shaft B. E is the auger, which is made in two parts, nearly semicircular in form, the part of each upon which the lip is formed projecting a little in front of the other. The parts of the auger at their centre are securely fastened to a short bar or nut,  $e^1$ , having a hole through its centre, with a screw-thread cut in it, fitting into a screw-thread cut upon the lower part of the stem F just above the point G. To the parts of the bits or auger upon which the lips are not formed are hinged small plates, H, which shut down over the lips and prevent the slush, dirt, or sand from escaping from the auger while being raised. I is a rim or band, which rests upon the auger E, being kept in place by ears,  $e^2$ , formed upon the edges of the auger E, and which serves as a bucket for raising the sand, dirt, and slush. G is a steel point, upon the base or upper part of which a screw-thread is cut fitting into a screw-thread cut in the inner surface of the lower end of the stem F, so that the said point may be removed, when desired, for sharpening, or for clearing out the vent-holes of the stem. F is an iron stem, which is made hollow, and is open at the top, as shown in figs. 1 and 2, and has four holes, more or less, formed through its sides, above the upper end of the point G and below the auger E, so that when the auger is being raised the air may pass through the stem and into the space below the auger, to allow the said auger to be drawn up with more ease. The upper end of the hollow iron stem F is rigidly connected to the lower end of the wooden stem J, so that the auger may be revolved by the revolution of the stem J. The stem J passes up through a hole in the centre of the head-block  $a^1$ , and may be extended to any desired length by coupling additional parts or pieces, as K, to it, the adjacent ends being secured to each other by a band or splice, L, as shown in figs. 1 and 2. The auger is revolved or worked by means of a lever, M, passed through holes in the stem, as shown in fig. 1.

I claim as new, and desire to secure by Letters Patent—

The combination of the hollow perforated stem F and a detachable point, G, with the extensible rod or stem J, auger E, valves H, and shell or casing I, all constructed and arranged to operate in the manner and for the purpose set forth.

N. C. CLARK.

Witnesses:

WM. N. SHIFF,  
A. J. COVOR.