

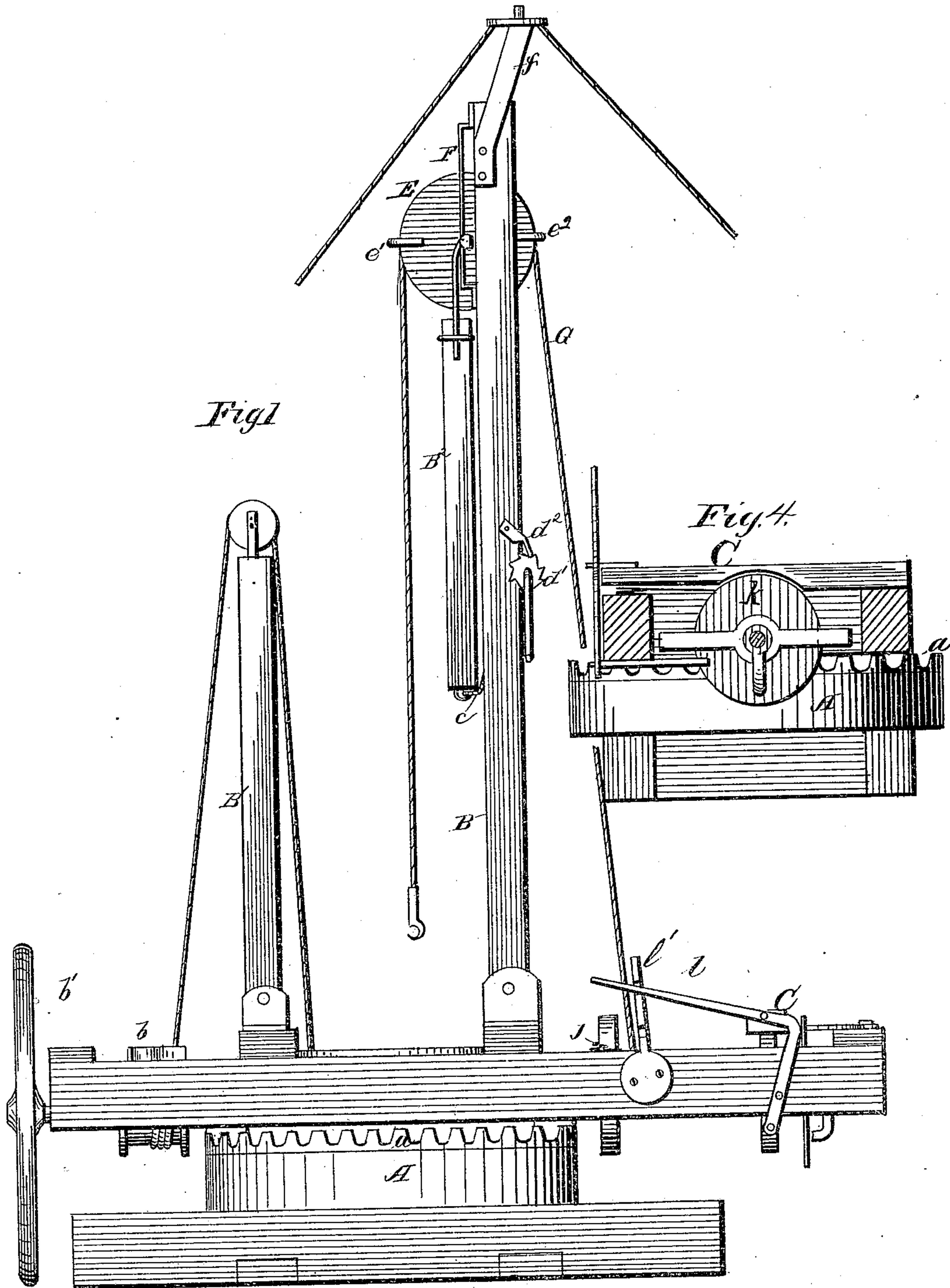
(No Model.)

2 Sheets—Sheet 1.

G. TAYLOR.
WELL BORING MACHINE.

No. 249,115.

Patented Nov. 1, 1881.



WITNESSES

Frederick Dieterich
Will R. Oushander

By his Attorneys

INVENTOR

Samuel Taylor
Wyers & Co.

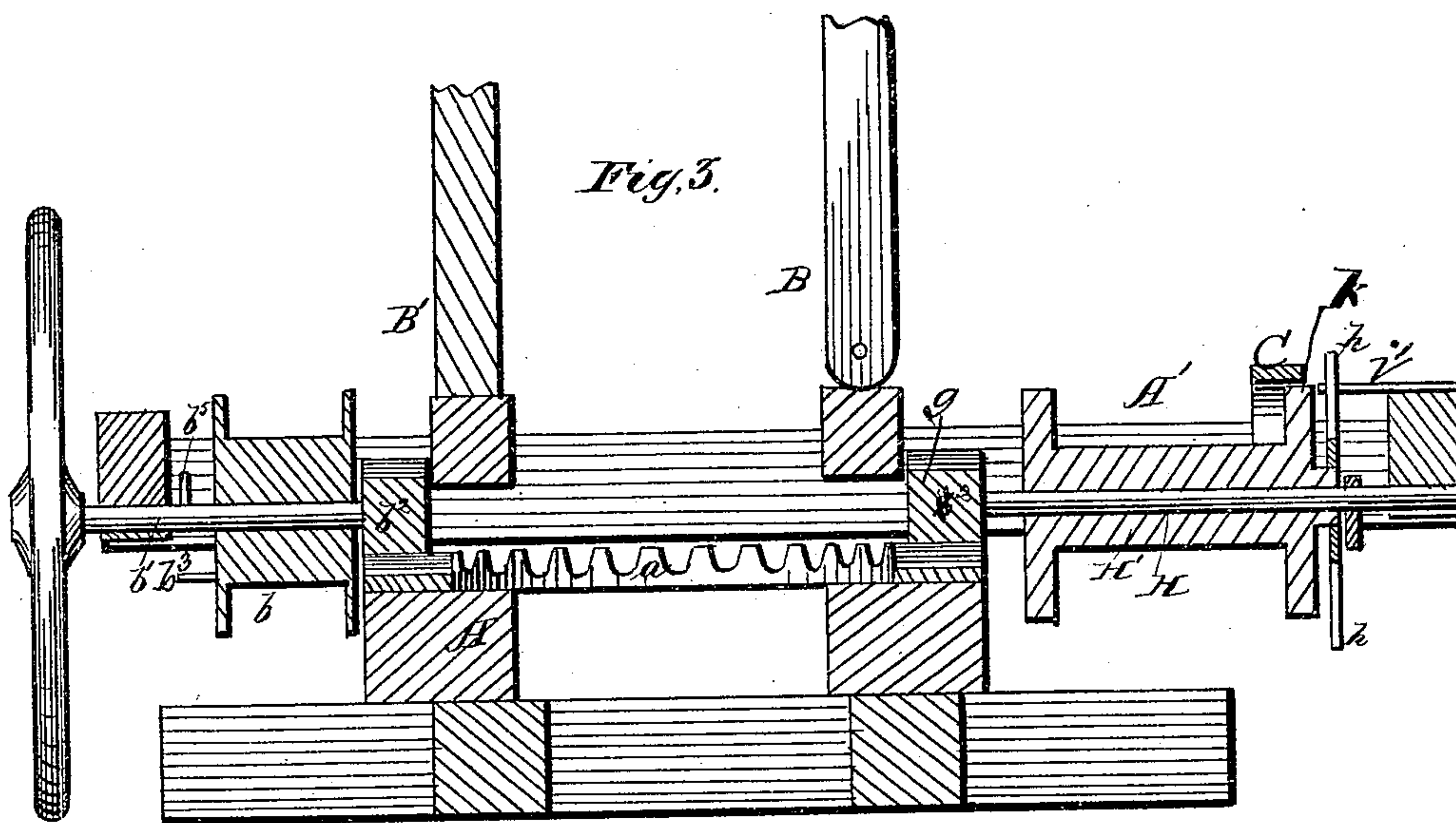
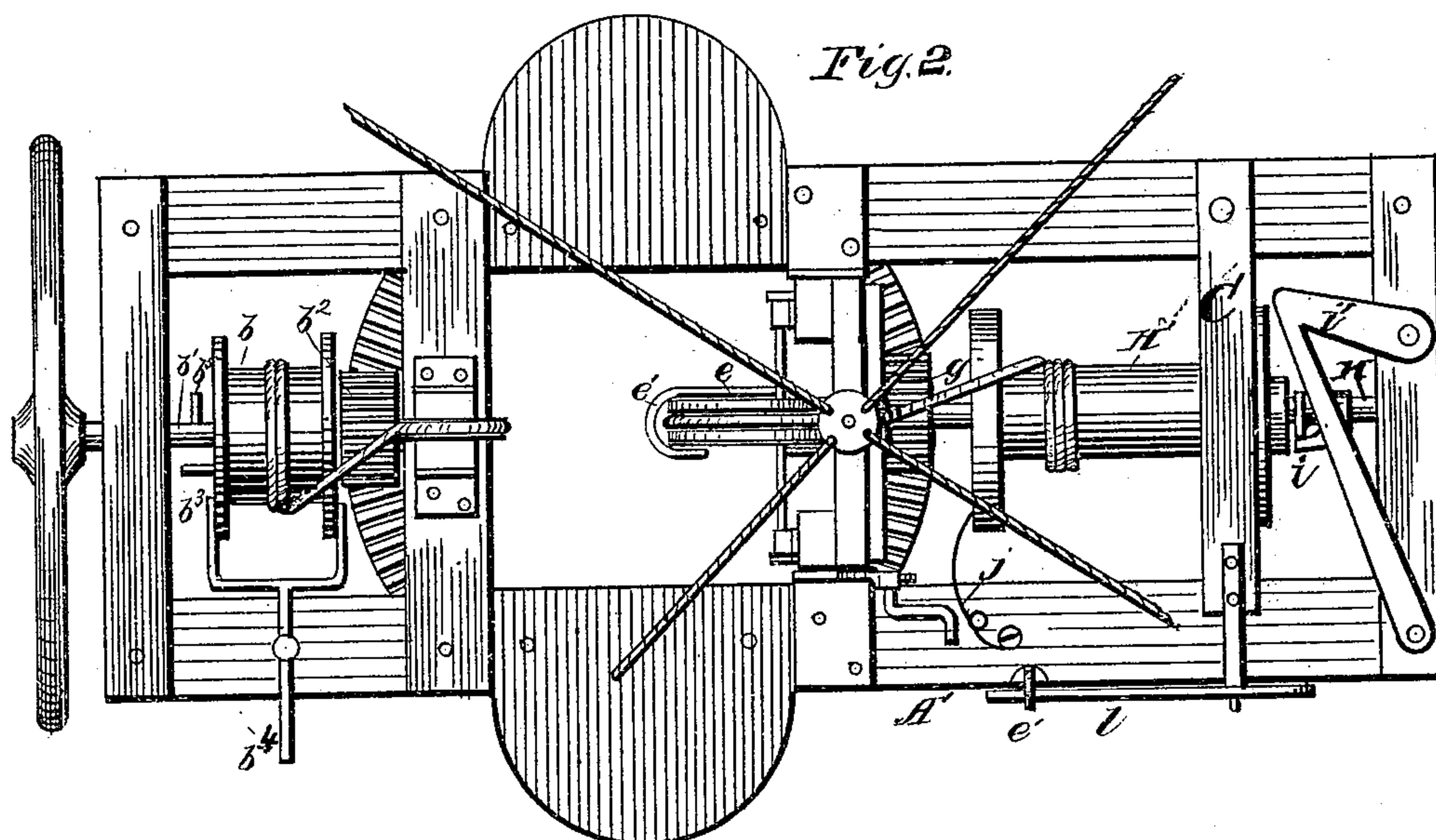
(No Model.)

2 Sheets—Sheet 2.

G. TAYLOR.
WELL BORING MACHINE.

No. 249,115.

Patented Nov. 1, 1881.



WITNESSES

Ad. G. Dietrich
Will R. Owsen

By *his* Attorneys

INVENTOR

Gamaliel Taylor
Wyer & Co.

UNITED STATES PATENT OFFICE.

GAMALIEL TAYLOR, OF DE WITT, MISSOURI.

WELL-BORING MACHINE.

SPECIFICATION forming part of Letters Patent No. 249,115, dated November 1, 1881.

Application filed June 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, GAMALIEL TAYLOR, a citizen of the United States, residing at De Witt, in the county of Carroll and State of Missouri, have invented certain new and useful Improvements in Well-Boring Machines; 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 drawings, and to the letters or figures of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a side elevation of my improved well or rock boring machine. Fig. 2 is a plan view thereof; and Figs. 3 and 4 are a detailed longitudinal section and a transverse section, the former taken through the drum or windlass and the latter just inside of that end of the machine.

This invention relates to improvements in well or rock boring machines; and it consists in the combination and arrangement of certain parts, substantially as hereinafter more fully set forth and claimed.

Referring to the accompanying drawings, A is the bed-frame, upon which is fastened, with its face upward, in a horizontal position, the circular or annular gear-wheel *a*.

A' is a second frame, with hangers taking under an annular flange upon the inside of the wheel *a*, and adapted to travel in a circle thereon; B B', two derricks planted or secured upon the traveling frame A', over a pulley. Upon one of these, B', passes a rope connected at one end to the sand-pump, while its other end is connected to a drum, *b*, upon a shaft, *b'*, driven by a pinion, *b²*, gearing with the wheel *a*, the object of which being to operate the sand-pump at certain intervals of the drilling process. The drum is provided with a stud or pin, *b³*, which is shipped by the shipping-lever *b⁴* in contact with a stud, *b⁵*, upon the shaft *b'*, upon which the drum or spool is adapted to have endwise motion, and thus causes the spool to revolve with said shaft when desired. A fly or balance wheel is attached to the outer end of the shaft *b'*, to counteract the jar or jerking action the falling of the drill would have upon the horse. The other derrick, B, has a

movable upright or bar, B², with its lower end connected by a cord or rope, *c*, to the shaft *d* of the ratchet *d'*, engaged by a pawl, *d²*, while in its upper end is hung between two side rods, *e*, a sheave or pulley, E. The upper ends of the uprights of the derrick B have attached to them a bail, *f*, to which a guy-rope is fastened to secure the derrick in its upright position. One of the rods *e* is carried and formed into a hook, *e'*, on one side of the face of the sheave or pulley E, and the other rod is likewise formed into a hook, *e²*, at the opposite side of the face of the pulley, the object of which being to prevent the slipping off of the rope. The axis of the sheave or pulley is extended and adapted to slide in staple-like guide-bars F, to permit of the vertical adjustment of the sheave or pulley to regulate the height at which it may be desired to elevate and let fall the drill to vary the force of the blow. The raising or lowering of the pulley is effected by operating the crank of the ratchet-shaft *d*. Over the pulley E passes a rope, G, with a hook on one end to adapt it to be connected to the tool or auger and to prevent its accidental detachment therefrom. The rotating of the auger is effected by the traveling frame having the windlass upon which the rope G is coiled.

H is a shaft hung upon the under side of the traveling frame A', having a pinion, *g*, gearing with wheel *a*, by which it is revolved, and a drum or windlass, H', adapted to slide thereon, and provided at one end with arms *h* and a hooked arm, *i*, fixed thereto. Fixed to the frame A' is a cam or inclined arm, *i'*. It will be noticed that as the shaft begins to revolve, the drum H', pressed by its spring *j*, so as to cause one or the other of its arms *h* to engage with the hook *i*, will thus be put in motion and wind up a portion of the rope G, which will elevate the drill. When the arm being carried by the hook reaches and passes along the incline of the cam *i'* it will be forced away from said hook, overcoming the action of the spring *j*, and thus allow the drum to revolve independently of and in an opposite direction to the motion of the shaft, which will accordingly allow the tool to fall to effect the drilling of the rock. After this action of the parts the spring *j* will again bring them into engagement, causing a repetition of the described op-

eration, producing the raising and falling of the drill. The revolving of the frame A', to which the horse or other power is attached, effects the turning of the tool, to enable the boring or drilling of the rock.

C is a friction-bar hinged to the frame A', and adapted to rest upon the face of a friction-pulley, k, upon the drum H'. It is connected to a hand-lever, l, pivoted to the frame A', which engages with a rack, l'. By pressing down upon lever l it will be seen that the windlass or drum will be disengaged from the shaft H and allow the drill to fall, and by securing it in the rack l' the operation of boring or drilling can be stopped and the accidental interference with or the elevating of the drill or auger when not desired by the starting up or backing of the machine or horse can be avoided. Further, this arrangement allows the windlass to revolve, and in unwinding it lowers the tools in the well.

A partition or division disk may be arranged upon the drum or windlass, if desired, to restrict to a more limited space the coiling of the rope.

Having described my invention, I claim—

In a well-boring machine, the combination of the derrick B, having the adjustable pulley E, the hoisting-rope G, shaft H, having the pinion g, gearing with the wheel a, and the hook i, the spring-actuated drum H', sliding upon the shaft H, and having the arms h, and the cam i', substantially as and for the purpose set forth.

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

GAMALIEL TAYLOR.

Witnesses:

PHOCION L. GUILLET,
J. P. KENDRICK.