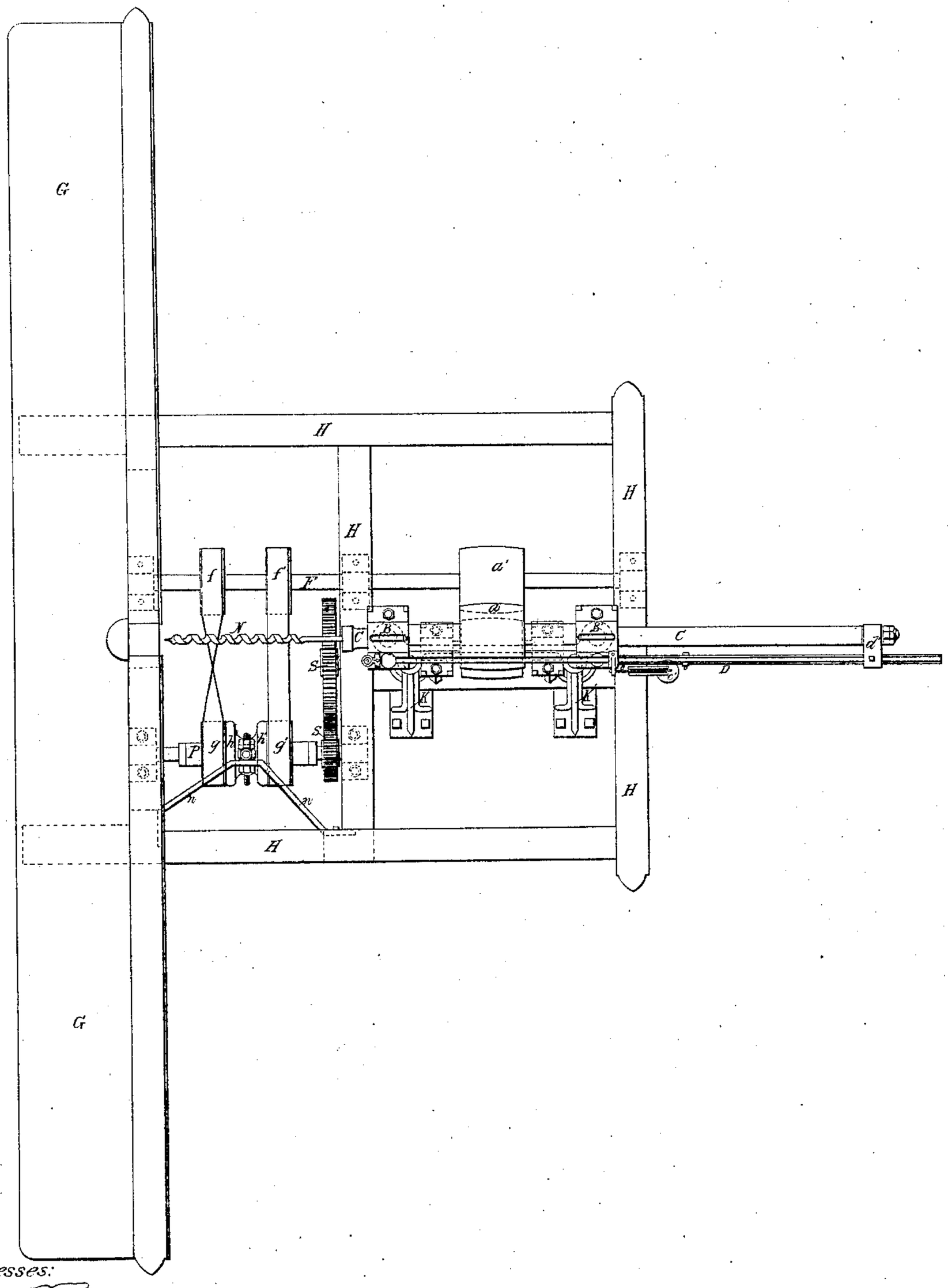
Sheet 1-4 Sheets.

D. Hoit,

Boring Wood,

No. 57,718, Patented Sept. 4, 1866.



Witnesses:
Wm. F. Dennis
A. J. Bell

Inventor:
David Hoit

Sheet 2-4 Sheets.

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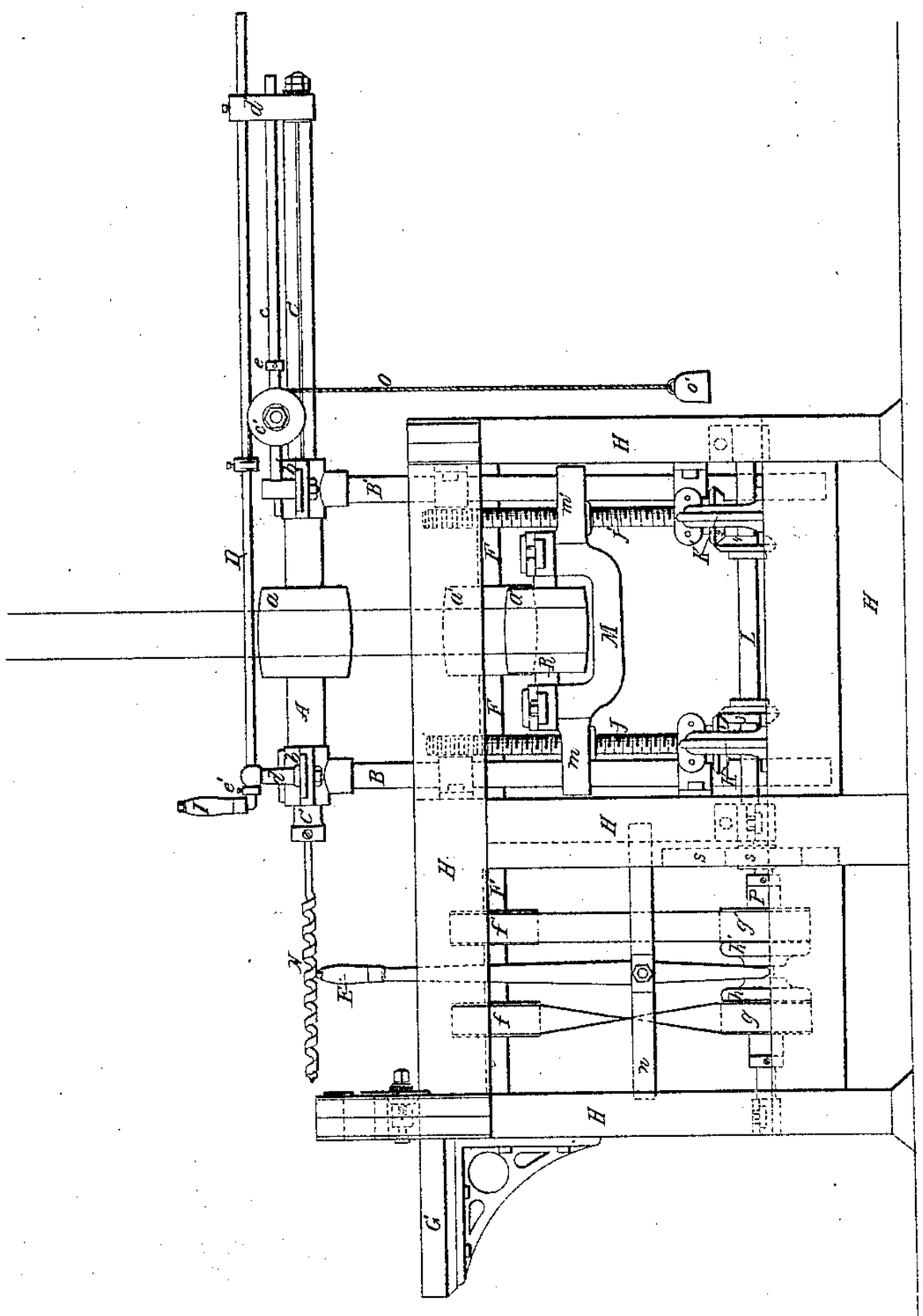

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Inventor:
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Sheet 3 - 4 Sheets.

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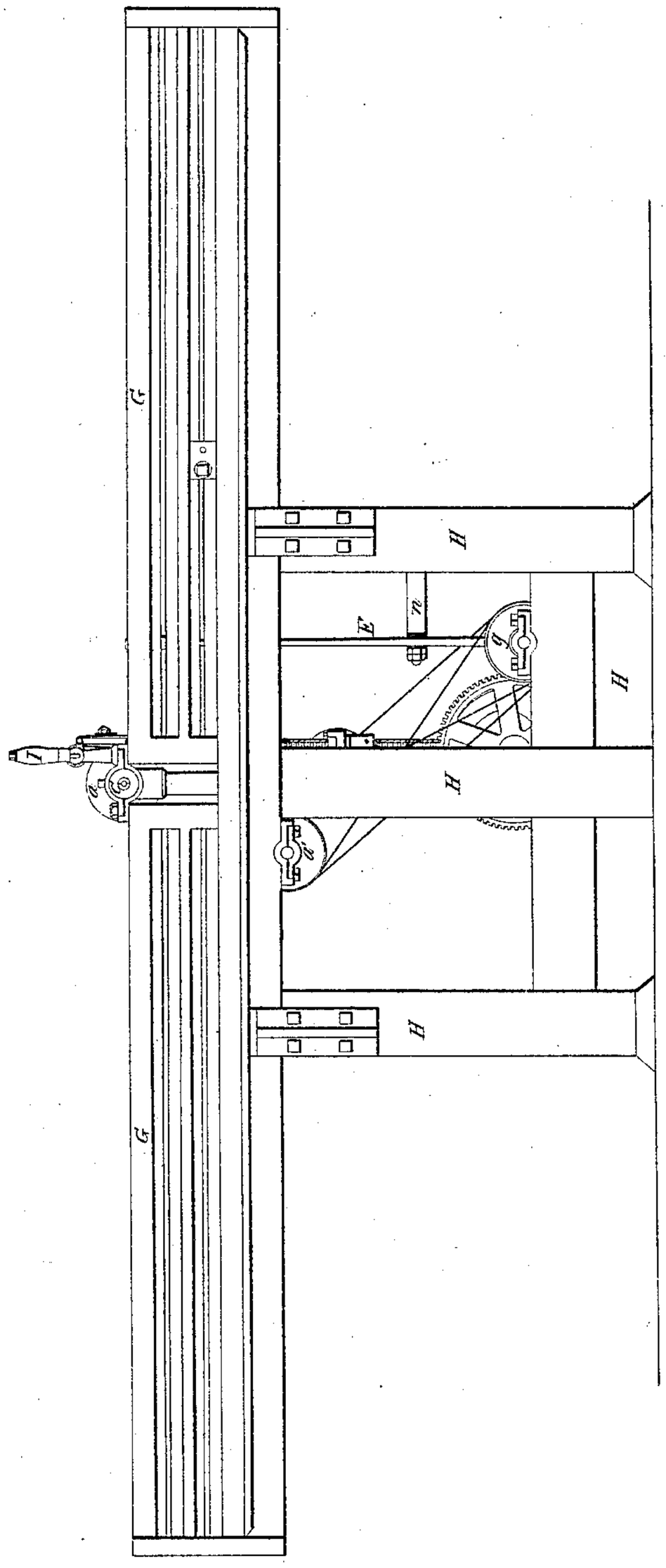

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A. J. Bell

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Sheet 4-4 Sheets.

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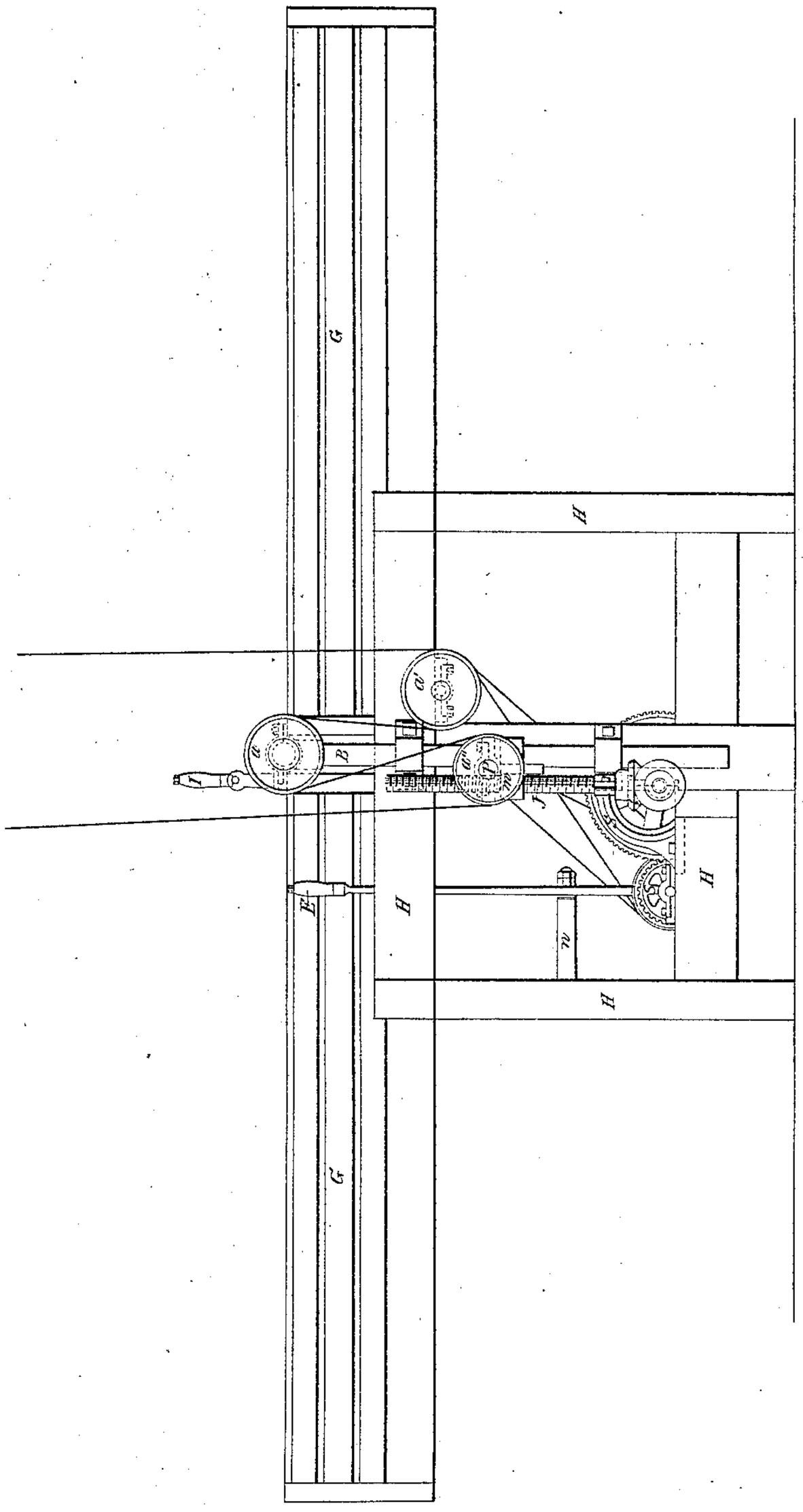
No. 57,718, Patented Sept. 4, 1866.



Witnesses:
Wm. F. Dennis
A. J. Bell

Inventor:
David Hoit

UNITED STATES PATENT OFFICE.

DAVID HOIT, OF FORT WAYNE, INDIANA.

IMPROVEMENT IN WOOD-BORING MACHINES.

Specification forming part of Letters Patent No. **57,718**, dated September 4, 1866.

To all whom it may concern:

Be it known that I, DAVID HOIT, of Fort Wayne, Indiana, have invented certain new and useful Improvements in Boring-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the drawings which accompany this specification, and form a part thereof, and to the letters of reference marked thereon.

My invention consists in an arrangement of devices by which the auger in a boring-machine can traverse up and down and horizontally while in motion, together with an arrangement for gaging the depth of the cut, as may be desired, by means of a sliding collar.

In the drawings, Plate 1 is a top plan of the machine. Plate 2 is an end elevation of the same. Plate 3 is a front elevation of the same. Plate 4 is a transverse section of the same.

In Plate 1, H H H H represent the framing, which is of ordinary construction. N is the auger. C is a shaft, carrying the auger. *a* is a pulley upon the shaft C, which is driven by a belt from any driving-shaft.

The pulley *a* is provided with a hub, A, having a rib on its inner surface fitting into a groove in the shaft C, by means of which the shaft C is moved backward or forward through the pulley *a* by the handle I of the rod D, which is attached to the collar *d'* at the rear end of the shaft C. (See Plate 2.)

F, Plate 1, is a counter-shaft, driven by a belt passing over the pulley *a*, fitted upon the same, and carrying upon its forward end the pulleys *f* and *f'*, which are fitted rigidly upon said shaft.

P is a short shaft attached to the lower part of the front end of the frame, parallel to the shafts C and F, and provided at either end with pulleys *g* and *g'*. The pulley *g* is driven by a half cross belt from the pulley *f* on shaft F, and the pulley *g'* is driven by a straight belt from the pulley *f'* upon the same shaft, these pulleys both running loose upon the shaft P, their inner ends made concave, and closely fitting the ends of the friction-clutch *h h'*, which slides upon and turns with the shaft P.

The friction-clutch *h h'* is actuated by the lever E, which has its fulcrum in the brace *n*. The shaft P has also rigidly attached to it a spur-wheel, *s*, which gears into a larger spur-wheel, S, Plate 4, which is fast upon the forward end of the shaft L, which is furnished with bevel-pinions 3 and 4, Plate 2.

J J' are upright screws, with shoulders resting upon bearings formed by the knees K K', and provided underneath said bearings with bevel-pinions 1 and 2, working into the corresponding bevel-pinions 2 and 3 on the shaft L.

The screws J J' work in nuts *m m'*, which form the ends of the yoke M. Attached to and forming a part of said nuts *m m'* are loops or eyes, which receive and are secured to the guide-posts B and B', which carry the auger-shaft C and its connections. The guide-posts B and B' work in ears above and below, which are attached to the framing. The yoke M serves as a frame for the support of the bearings of the shaft R, to which is attached the pulley *a''*, Plate 2, which acts as an equalizing-tightener in raising and lowering the auger-shaft and attachments.

c, Plate 2, is a short shaft rigidly attached to the bearing of the shaft C at the top of the guide-post B', and working through an eye in the collar *d'*, upon which is a collar-stop, *e*, held by a set-screw, and which serves to regulate the horizontal movement of the auger-shaft C. The shaft D is provided with a similar collar-stop, *e'*, which serves to govern the opposite motion of the auger-shaft C.

The pulley *c'* has its seat upon the shaft *c*, over which runs the cord *o*, to which is attached the weight *o'*. The cord is fastened to the collar-stop *e* of the shaft *c*, and is intended to produce the return motion of the auger-shaft C when the hole is bored.

It will be seen that when the auger is in motion the lever E will maintain its vertical position, and the auger perpendicularly is at rest; but, by pressing the lever right or left, the auger is raised or lowered when and as much as may be desired. The distance between the collar-stop *e* and the collar *d'* will always indicate the depth of the hole to be bored, and can be measured accurately while the auger is in motion.

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

1. The auger-shaft C, shafts *c* and D, and guide-posts B and B′, arranged and operating as described.

2. The shaft L, screws J J′, nuts *m m′*, and yoke M, as and for the purposes set forth.

3. The arrangement and combination of the parts herein described for giving the auger of a boring-machine a perpendicular and horizontal motion independently or simultaneously, in the manner and for the purposes herein set forth.

DAVID HOIT.

Witnesses:
WM. F. DENNIS,
A. W. CORNELL.