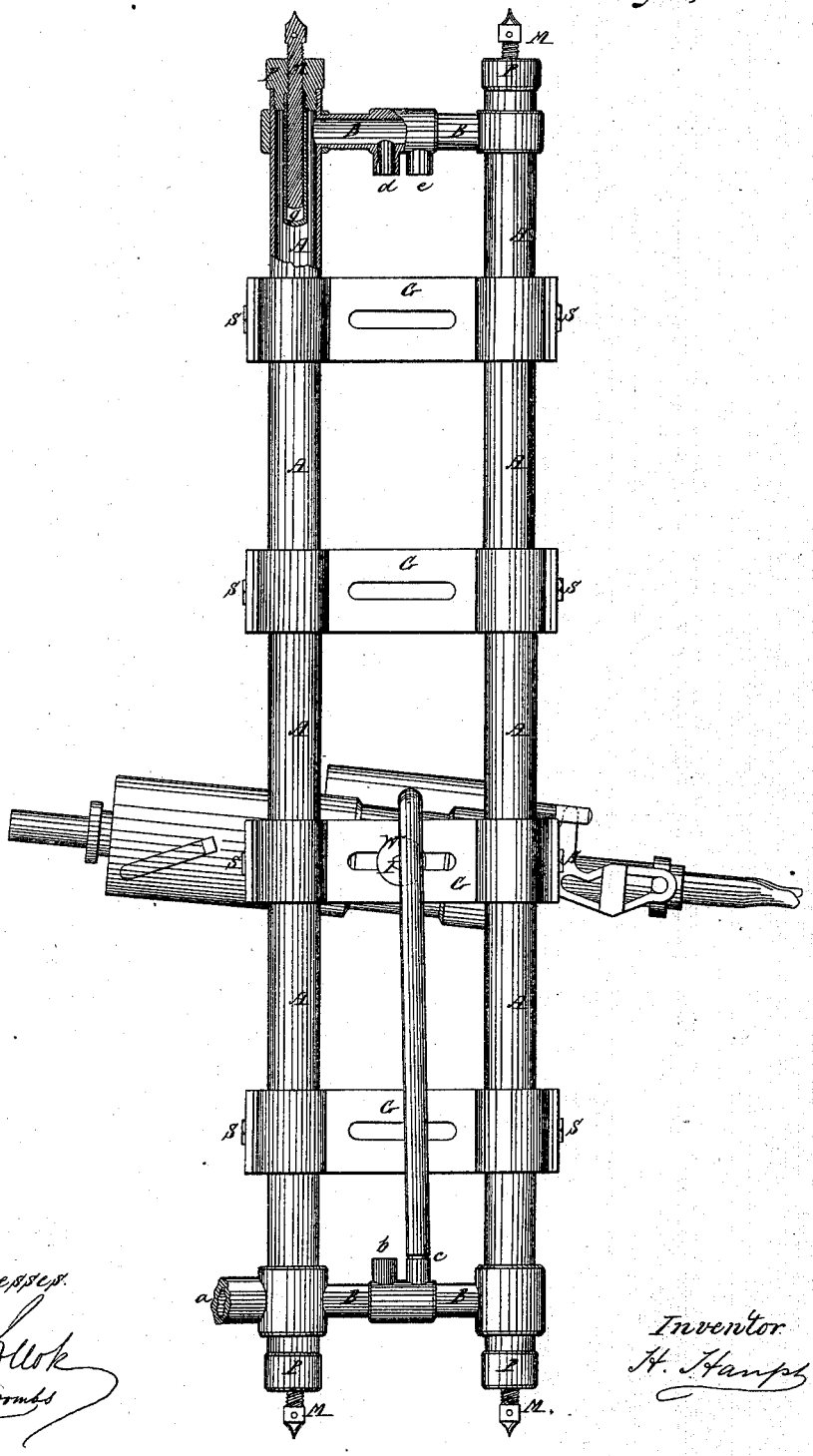
H. Haupt,

Stone Drill.

No. 47,541. Patented May 2, 1865.



Witnesses.

A. Wolk

Jos. L. Coombs

Inventor.

H. Haupt

UNITED STATES PATENT OFFICE.

HERMAN HAUPT, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN MODE OF MOUNTING DRILLS.

Specification forming part of Letters Patent No. **47,541**, dated May 2, 1865.

To all whom it may concern:

Be it known that I, HERMAN HAUPT, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Method of Mounting Drilling, Boring, or other like Machinery; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which represents an elevation of an apparatus constructed in accordance with this my invention.

In an application for patent with even date herewith I have described a drill operated by steam, air, or other elastic fluid, consisting in a cylinder through the hollow piston of which a drill bar or tool is inserted. In lieu of a hollow piston-rod a solid piston-rod may be used in connection with outside gripper boxes, as described in another pending application for patent for improvement in tunnelling or mining machinery.

The object of this invention is to mount such drills so as to economize space and to allow of easy and ready adjustment.

To enable others to make and use this invention, I shall now proceed to describe its construction and operation.

Referring to the said drawing, A are columns or wrought-iron pipes, of which there are four, mutually braced by means of traverse-pipes B. This system of pipes, which are connected, by screw-thread or otherwise, to form hermetic joints, constitutes the main frame, having at convenient points—such as at *a b c d*, &c.—pipe-connections with which india-rubber steam-hose or other hose or tubing is connected, so as to allow of steam or other fluid being conveyed through the columns or pipes to and from the drill. Upon the sides, and to two adjoining columns, are mounted, by means of hooks or clamps tightened by screws *s*, the supports G of the drill. These consist of sheet-iron plates slightly curved and slotted transversely. In these slots are fitted adjustable bearings I, for the trunnions of the drill. Washers W, or other like devices, may be used for rendering the adjustment fixed and immovable. The convexity of the supports permits of the drills being adjusted laterally—*i. e.*, horizontally—at any convenient angle to the face of the rock, while their play upon their trunnions enables their being adjusted at any given angle to the face of the rock vertically or invertical planes. One or more such supports may be used. In the latter case they are arranged one above the other, and I generally use four in galleries or tunnels of usual dimensions. This columnar frame may be held in place and securely braced by means of wedges or other well-known means; but I prefer to effect this by a system of set-screws inserted in the ends of each main column on top and bottom in the manner as follows: The columns are closed by means of plugs P, screwed into the open ends. Through the center of each plug passes a pointed screw, M, which is protected from the effects of steam in the interior of the column by means of a sleeve or thimble, Q, screwed into the plug, but surrounding the set-screw. The set-screws are turned by means of rods or levers inserted in the eye of the set-screw near the point, and are thus elongated or shortened for bracing the frame against the roof of the gallery or for removing the same.

Having thus described my invention and the manner in which the same is or may be carried into effect, I claim—

1. Mounting, drilling, boring, or other like machinery, when arranged for operation by steam, compressed air, or other fluid upon a columnar frame, whether solid or tubular, and whether steam or other fluid is conveyed to said machinery by independent pipes, or through the columns, substantially as set forth.

2. In combination with columnar frame for the support of machinery for drilling or boring rocks or other subterranean operations, the pointed set-screws, or the equivalent thereof, to brace and steady the said frame, in the manner substantially as set forth.

3. In combination with columnar frame, which, for the purpose of conveying steam or other fluid, is hollow, the thimbles incasing the set-screws, to protect the same and prevent leakage, substantially as set forth.

4. The combination of the columnar frame with adjustable supports for the bearings of the trunnions of drills or other like machinery, so as to admit of adjustment of said drills at

any height and at any angle in the plane perpendicular to the axis of the trunnions.

5. Making the supports of a segmental form and forming the bearing therein adjustable, so as to admit of universal motion of the drills, substantially as set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

HERMAN HAUPT.

Witnesses:
A. POLLOK,
EDM. F. BROWN.