

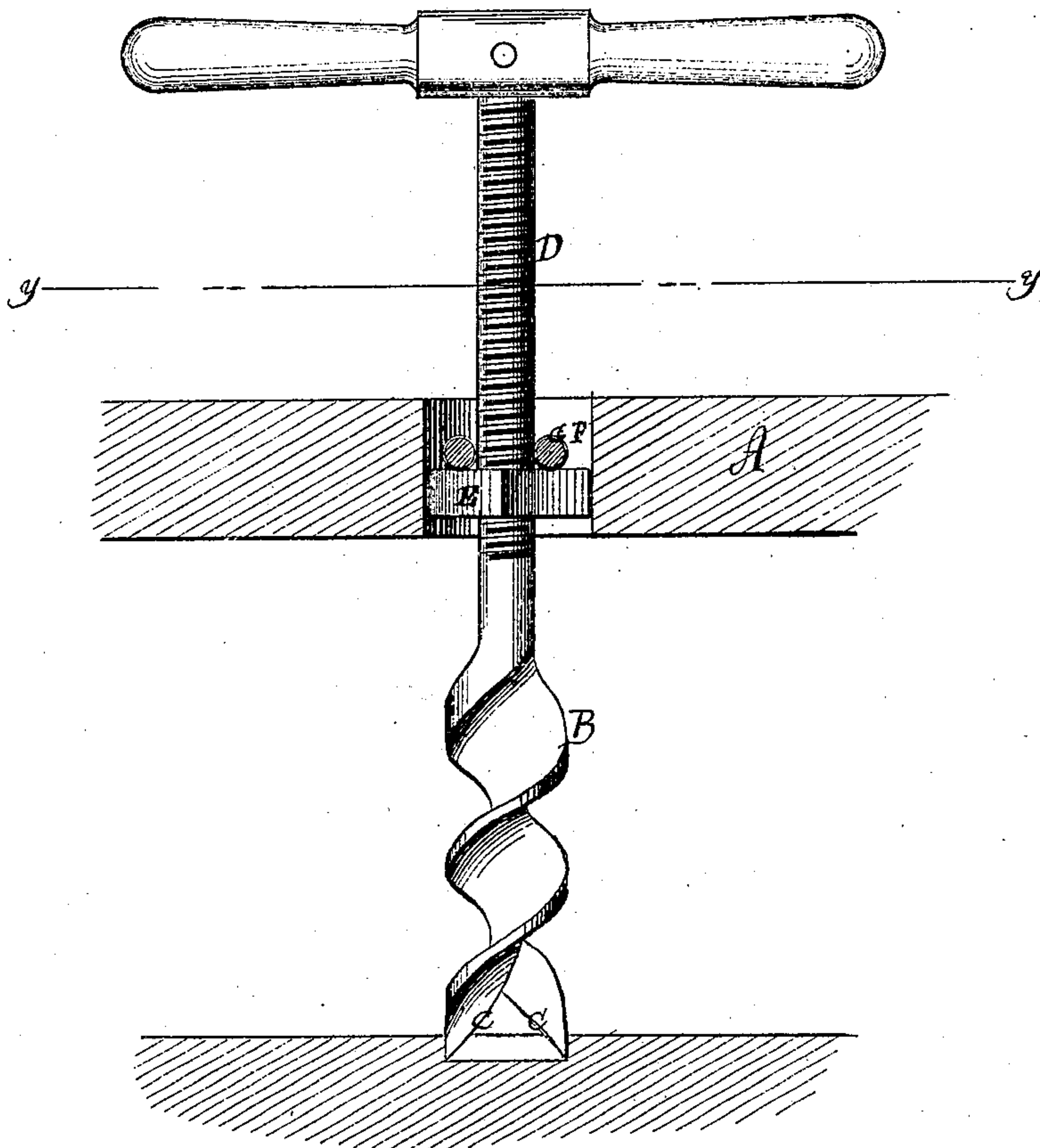
*T. St. John,*

*Rock Boring.*

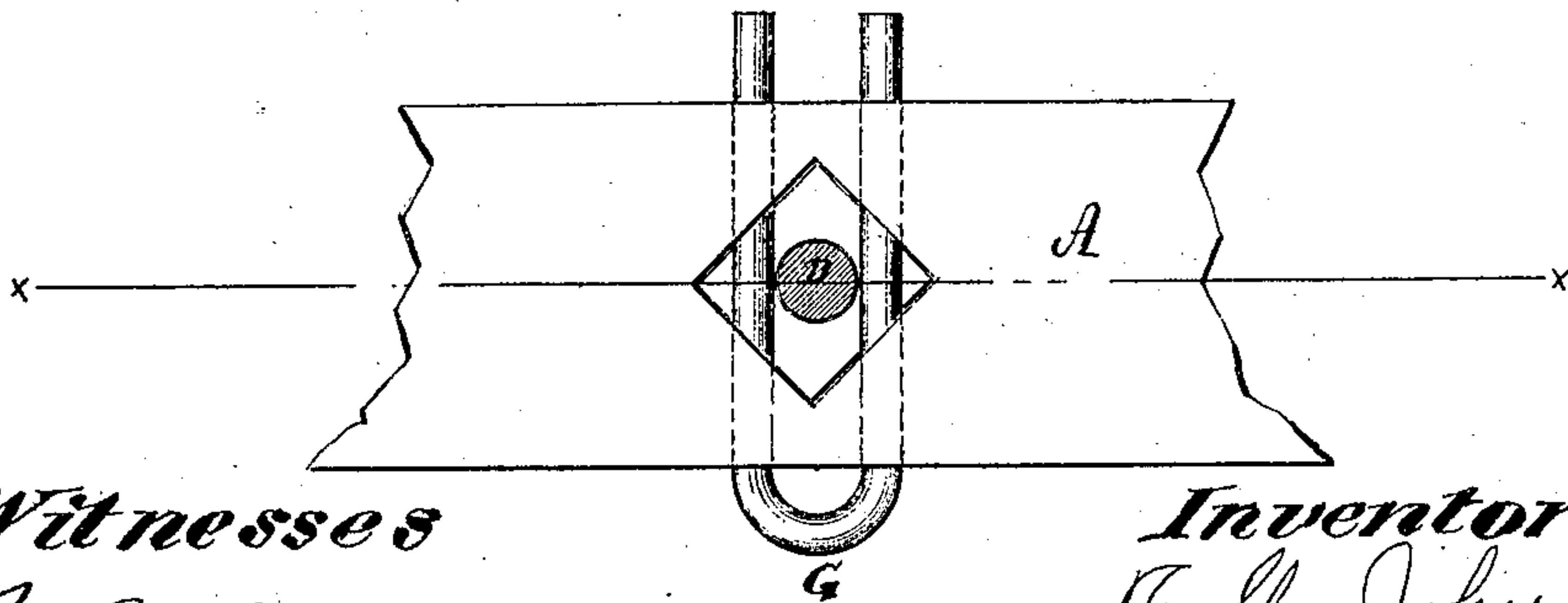
*No. 102610.*

*Patented May 3. 1870.*

*Fig:1*



*Fig:2.*



*Witnesses*

*Wm. D. Barclay*  
*L. S. Mabee*

*Inventor*

*T. St. John*  
*per* *Munn & Co*  
*Attorneys*

# UNITED STATES PATENT OFFICE.

THOMAS ST. JOHN, OF DUNBAR, PENNSYLVANIA.

## IMPROVEMENT IN ROCK-BORING APPARATUS.

Specification forming part of Letters Patent No. **102,610**, dated May 3, 1870.

*To all whom it may concern:*

Be it known that I, THOMAS ST. JOHN, of Dunbar, in the county of Fayette and State of Pennsylvania, have invented a new and Improved Boring Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to devices for boring stone and other hard substances which are found in mines and are blown out by the blasting process.

The invention consists in applying to the threaded shank of the boring-auger a nut, which fits loosely in the vertical beam, through which the auger is fed to its work, and bracing it behind by means of a transverse loose detachable staple or yoke.

The advantage of this invention to the public is that it lessens the time and labor materially in doing a given piece of work.

In boring the holes it is necessary to withdraw the bit after every penetration of about ten inches to clean them. Holes are made ordinarily about thirty inches deep, and these require two withdrawals before the final one. There are now two classes of devices employed for this purpose. One is where two men are required—one to support, the other to bore, and both to exert their united strength at each insertion of the bit to make it "bite." Another is where a frame is employed to support, and a nut to guide, the threaded shank of the bit.

The first is rude, awkward, and wasteful of muscular strength, applying it at great disadvantage. The second is objectionable, because the shank requires to be unscrewed and again screwed up at every cleaning of the bit, or the bit itself requires to be turned, and its hold loosened, and then the clamping-screw of a divided nut unscrewed before it is possible to draw out the auger.

All these difficulties are completely obviated in a simple and effective manner by means of my loose nut and detachable yoke.

A, in Figures 1 and 2 of drawing, represents the supporting-beam, which is planted vertically between the top and bottom of the mine, and is mortised with a rectangular hole, F, corresponding in shape to that of the nut employed. This beam is then fastened by wedges or otherwise in that position.

E is a rectangular nut of sufficient size to nearly fill the hole, but not so large as to prevent its slipping easily in and out of the same. The nut and hole in beam being both angular, the former cannot turn in the latter.

G is a loose yoke, which enters horizontal holes in the beam, straddles the bit-shank, and acts as a brace, against which the strain of the bit is borne while at its work.

The mode of operation is as follows: The several parts being adjusted as shown in Fig. 1 of drawing, and a distance of about ten inches bored, when the bit requires to be taken out and cleaned, instead of unscrewing the shank until the bit has been drawn outside of the rock, I simply draw out the staple or yoke G, and pull back the bit-shank and nut together. Again, after it has been cleaned, instead of being compelled to screw up the bit to the point where it left off, I simply push everything to its former place and insert the yoke. In this way I proceed until the hole is completed to the depth required.

It is obvious that, in a given time, much more work can be accomplished by my apparatus than by any now known to the public.

Having now described all that is necessary to a clear understanding of my invention, what I desire to protect by Letters Patent is—

The combination, with the auger D, having a threaded shank, and the mortised supporting-beam A thereof, of the loose nut E and brace G, relatively arranged as and for the purpose described.

THOS. ST. JOHN.

Witnesses:

JOHN ST. JOHN,  
JAMES ST. JOHN.