J. C. GITHENS.

Chucks for Rock-Drills.

No. 164,991. Patented June 29, 1875.

Fig. 1

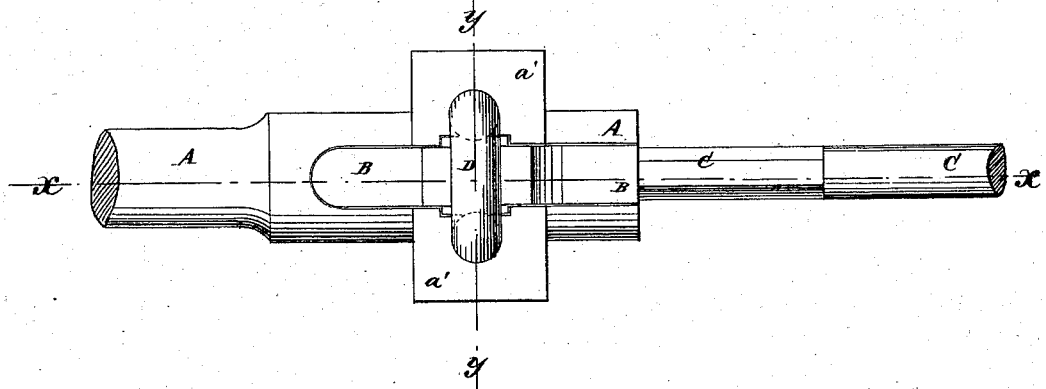


Fig. 2

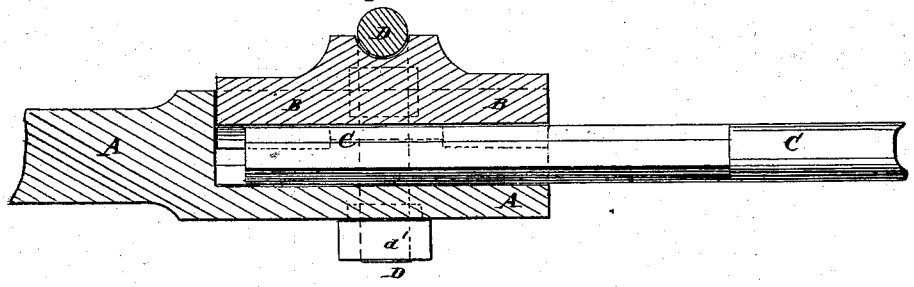
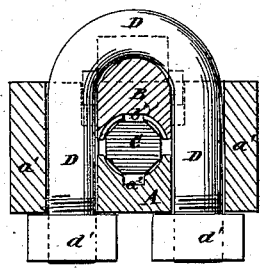


Fig. 3



WITNESSES:

A. W. Almqvist

A. F. Terry

INVENTOR:

J. C. Githens

BY

ATTORNEYS.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JOSEPH C. GITHENS, OF NEW YORK, N. Y.

IMPROVEMENT IN CHUCKS FOR ROCK-DRILLS.

Specification forming part of Letters Patent No. **164,991**, dated June 29, 1875; application filed May 15, 1875.

To all whom it may concern:

Be it known that I, JOSEPH C. GITHENS, of the city, county, and State of New York, have invented a new and useful Improvement in Bit-Chucks for Steam Rock-Drills, of which the following is a specification:

Figure 1 is a front view of my improved chuck. Fig. 2 is a detail longitudinal section of the same, taken through the line *x x*, Fig. 1. and Fig. 3 is a detail cross-section of the same, taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention will first be fully described in connection with drawing, and then pointed out in the claim.

A represents the piston-rod of a steam rock-drill, upon the lower end of which is formed an enlargement, *a'*. In one side of the lower end of the piston-rod A is formed a groove, extending through the enlargement a^1, and the bottom of which is rounded out, so as to be semi-cylindrical in form. This groove is made of such a depth that the center of the cylinder, of which its bottom is a part, may be the axis of the piston-rod A. B is a key, fitted into the groove in the piston-rod A, and the inner edge of which has a half-round groove formed in it, to correspond with the bottom of the groove in the piston-rod, so that when the key B is in place a cylindrical hole will be formed to receive the bit C. The key B has a swell or enlargement formed upon the outer side of its middle part, which is notched transversely, to receive the bend of the bow or U bolt D, the arms of which pass through the enlargement of the piston-rod A upon the opposite sides of the groove in said piston-rod, and have nuts *d'* screwed upon their ends. In the bottom of the groove in the piston-rod A, and in the bottom of the groove in the inner edge of the key B, are formed longitudinal grooves a^2 b^2, as shown in Fig. 3, so that the bit C, when clamped in the clutch, may be held in at least four points, whether its shank may be of the ordinary octagonal form, or turned down into a rounded form. The inner edge of the key B has a wide transverse notch formed in it, that its end parts only may bear upon the bit C.

By this construction, the end parts of the key B bearing upon the bit C and the U-bolt D grasping the middle part of the key, there will be a slight yield or spring to the key, which will cause it to hold the bit C more firmly.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the grooved and notched key B, and the U-bolt D, with the grooved enlarged end of the piston-rod A, substantially as herein shown and described.

JOSEPH C. GITHENS.

Witnesses:

JAMES T. GRAHAM,

ALEX. F. ROBERTS.