

W. HOAR.
Rock-Drills.

No. 156,733.

Patented Nov. 10, 1874.

fig. 1

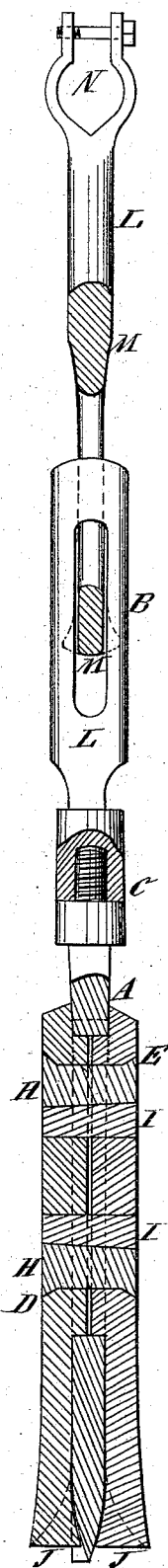


fig. 3



fig. 4



fig. 2

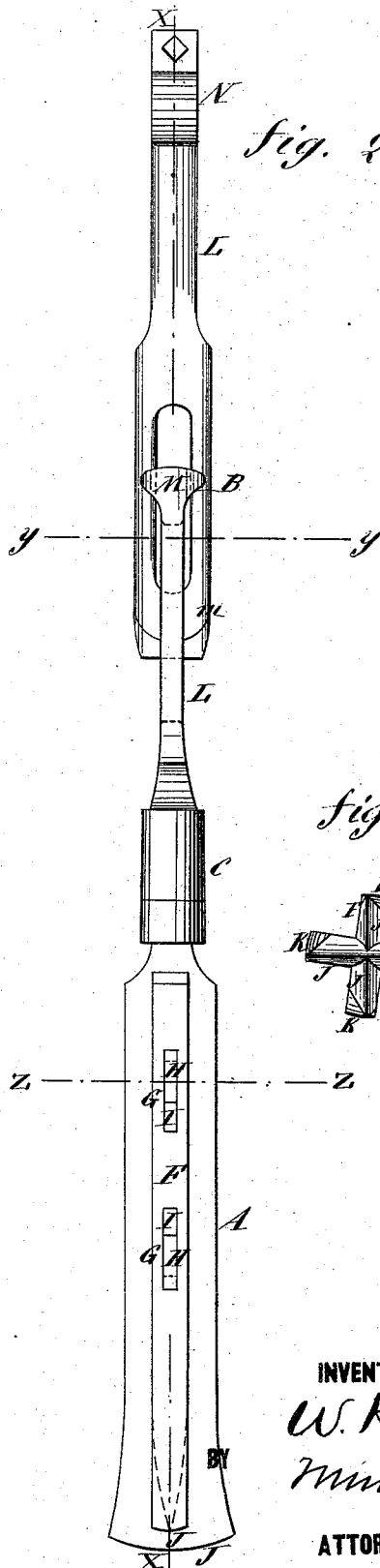
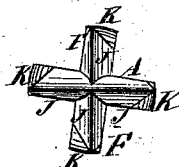


fig. 5



WITNESSES:

C. Neveux.
A. F. Terry

INVENTOR:

W. Hoar
Minneapolis
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM HOAR, OF FLOYD, IOWA.

IMPROVEMENT IN ROCK-DRILLS.

Specification forming part of Letters Patent No. **156,733**, dated November 10, 1874; application filed September 5, 1874.

To all whom it may concern:

Be it known that I, WILLIAM HOAR, of Floyd, in the county of Floyd and State of Iowa, have invented a new and useful Improvement in Sectional Drills, of which the following is a specification:

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

In the accompanying drawing, Figure 1 is a longitudinal section, showing the construction of my improved drill, the section being taken on the line *xx* of Fig. 2. Fig. 2 is an outside view of the drill. Fig. 3 is a cross-section of Fig. 2, taken on the line *yy*. Fig. 4 is a cross-section taken on the line *zz* of Fig. 2. Fig. 5 is a view of the cutting end of the drill.

Similar letters of reference indicate corresponding parts.

A is the main portion of the drill, by which it is attached to the shank B by means of the socket and screw seen at C. The portion A has a long mortise extending in length from D to E. F represents a wing on each side of A, secured by a tenon on each wing, which extends half-way through the mortise, and fills it in length and width. Through each of the wings are two mortises, G G, which re-

ceive each a gib, H, and key I. The outer ends of these mortises G G are made angular, and the gibs H are made to fit, so that they cannot work longitudinally when the keys I are driven, while angular portions serve to hold the two wings together, as shown in Fig. 1. The wings, as well as the main part A, have each a cutting-edge, J, with right-angled lips K, as represented in Fig. 5. The shank B consists of two or more sections, L, put together similar to the links of a chain, but each with a guide or head, *m*, in which is a groove to fit the sides of the section, to guide and keep them in place. The upper of these sections has a rope-eye, N, and to the lower one the drill is attached by the socket and screw C, before described.

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

The combination of drill-section A, having long mortise D E, the wings F F, having each two mortises, G G, the gibs H, and the keys I, as and for the purpose specified.

WILLIAM HOAR.

Witnesses:

M. EUGENE HOAR,
E. D. ABBOTT.