G. H. REYNOLDS.

Tripod for Rock-Drills.

No. 164,395. Patented June 15, 1875.

Fig: 1.

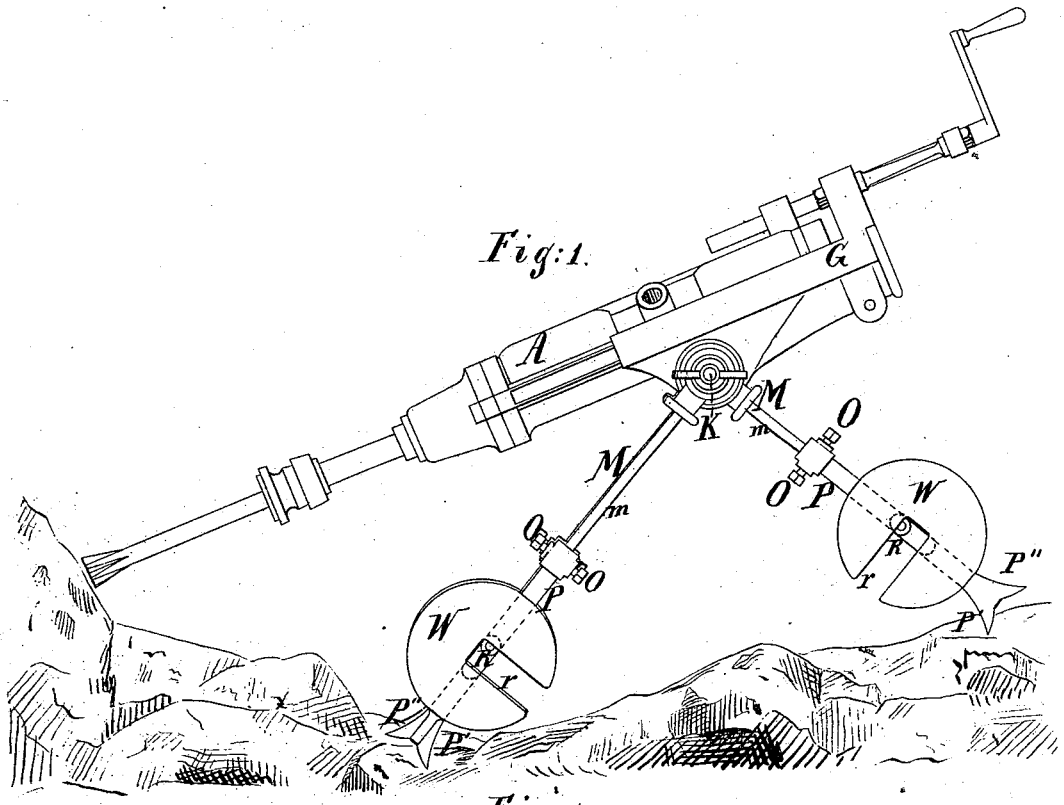


Fig: 2.

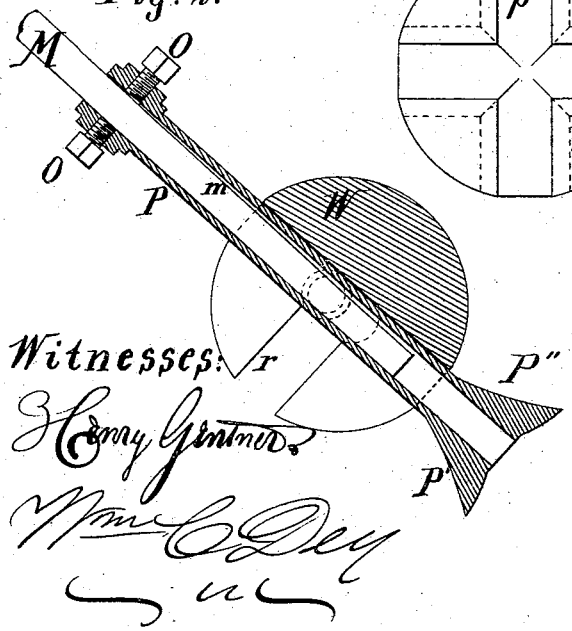


Fig: 4.

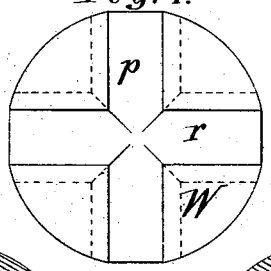
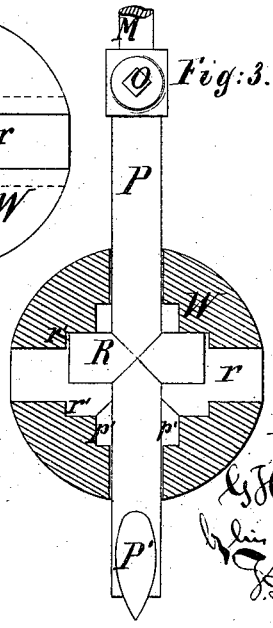


Fig: 3.



Witnesses:

Henry Gentner Jr.

Inventor:

G. H. Reynolds

by his attorney

J. A. Peters

UNITED STATES PATENT OFFICE.

GEORGE H. REYNOLDS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, CORNELIUS H. DELAMATER, AND GEORGE H. ROBINSON, OF SAME PLACE.

IMPROVEMENT IN TRIPODS FOR ROCK-DRILLS.

Specification forming part of Letters Patent No. **164,395**, dated June 15, 1875; application filed April 13, 1875.

To all whom it may concern:

Be it known that I, GEORGE H. REYNOLDS, of New York city, in the State of New York, have invented certain Improvements relating to Supports for Rock-Drilling Machines, of which the following is a specification:

I have invented a tripod for carrying a rock-drill, the peculiarities of the central part of which are particularly described and shown in another application for patent. Among other advantages pertaining thereto I am enabled to change the back leg to the front, and the front legs to the back.

I find that that invention, important and useful as it is, requires a still further invention to make it fully useful. The front legs taking the place of the back one and the back one taking the place of the front ones requires the spurs or points on the bottom of the legs to be capable of being reversed. If only an ordinary point of a drill-leg it would involve troublesome adjustment if the leg were capable of being reversed. I have devised a leg which has double points, which relieves me from the necessity of removing the bottom of this leg from the machine, or from changing the points at the bottom of the leg in any manner.

Another important feature is that I make the bottom part of the leg the stationary piece in place of its being the extension. In ordinary drill-legs the extension-piece has been at the bottom. In my improved leg the extension-piece is the upper end of the leg. In consequence of this change I am enabled to attach the weight to the lower part, and I am enabled to adjust the legs without removing the weight. I have made the double points upon the leg. I have made the cross-piece, or furnished the means upon this bottom leg, for receiving the weight, which allows me to attach the weight, whether the leg is one side up or the other, and also to support and confine the weight, whether the weight rests downward upon this leg or rests in the reverse way. The means employed for confining the weight upon the leg is such that whether the leg be turned over or placed in such position that the weight is inclined to drop outward toward the point, or inward toward the center, it is well supported. The weight itself is so constructed that it fits equally well upon this leg in several positions. It may be reversed entirely in position on the leg, or it may be turned quarter way around. In either of the positions it will be received and firmly retained upon the leg.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a side elevation of the device in use. The succeeding figures show details on a larger scale. Fig. 2 is a vertical section through a leg and weight. Fig. 3 is a section through a weight in the plane of the leg on which it is mounted. Fig. 4 represents a modification of the weight. It is a view from below.

Similar letters of reference indicate like parts in all the figures.

G represents the adjustable cradle, in which is mounted a cylinder, A, inclosing a suitable piston, adapted to give a rapid reciprocation to a drill, with means for feeding forward and controlling, which may all be of any ordinary or suitable character, and operated by steam or compressed air received through a hose. (Not represented.) The legs may be adjustable at various angles, and held at any desired angle by means of a bolt, K. The upper end of each leg is marked M, and is mainly cylindrical, but with a tapering flat portion extending along one side, as indicated by *m*. The upper portion M is of less diameter than the lower portion P, and is adapted to be adjusted up and down within the hollow interior of the latter, and confined by one of the pinching-screws O. Two toes, P^1 P^2, are formed at the base of each leg P, extending in opposite directions. In the positions shown the toes P^1 are effective, and the toes P^2 stand idly in the air. The tripod is formed with two legs extending forward and one leg backward; but it is frequently desirable to reverse the arrangement in this respect. This is instantly effected by supporting the machine temporarily by the hands of men or otherwise, slacking the bolt K, and reversing the arrange-

ment of the legs, carrying the two legs, which are now in front, to the rear, and the one leg, which is now in the rear, to the front. This arrangement brings all the toes P^2 into use, and leaves the toes P^1 idly in the air.

Each of the parts P is cast or otherwise formed with a short stout cross-piece, R, of corresponding diameter. For convenience and lightness I prefer to make this cross-piece R also hollow, corresponding in this respect with the main body P. The weight W is formed with a deep cross groove or score, *p r*, which, when the weight is properly applied upon the leg, receives the leg and cross-piece P R, as will be obvious. The bottom of each of the recesses *p r* is widened near the center, as indicated by *p' r'*. When the weight W has been placed upon a leg in such position that the leg P is received in the score *p*, and the cross-piece R received in the score *r*, so soon as it has been lowered to its place and liberated, it will move downward upon the leg by gravity to the extent allowed by the increased width of the portion *r'* of the cross-score. This locks it against being displaced by any ordinary agitation, even when the legs stand very nearly upright. By making both scores *r r' p p'* similarly conditioned, the weight may be turned quarter round, or may be completely reversed and applied in either position—that is to say, the leg P may be received in the score *p*, or in the score *r*, as chance may determine. This is an important advantage when the machine is worked by ignorant or careless men, or, as is very often the case, is worked with little light.

It is an important advantage of my invention that the leg and cross-piece will engage with and secure the weight with equal readiness and firmness when, as is sometimes required in drilling in the steep side of a cut or tunnel, one leg is required to stand inclined upward.

I make a flattened place, extending along the legs, but growing shallower toward what is in the ordinary position the upper end, so that in case the machine is not properly supported when a pinching-screw is slackened, instead of falling altogether, it will sink slowly as the screw is relaxed, moving down only to such extent as is required to bring the shallower portion of the recess under the screw, and cause the leg to become again set in a new position.

There is a screw, O, on each side of each leg P. When for any reason it shall be desired to bring the other toe P^2 into use, with the leg in the same position in other respects, the screw O is released, the weight W being removed, and the weight of the machine temporarily supported by other means. The leg may then be turned over to bring the point P^2 downward, and the opposite screw O will then be in position to be turned, and effect the proper pinching on the flattened surface *m*. This change may be frequently desirable in case of the fracture or injury of one of the toes.

I claim as my invention—

1. The duplicate points P^1 P^2, formed solid on the legs of a rock-drill support, adapted to allow of reversing in position, as and for the purposes specified.

2. The tripod-leg P R, in combination with the weight W, having grooves adapted to match thereon, substantially as and for the purposes herein specified.

3. A tripod-leg the outer end carrying the weight, and allowing the leg to be lengthened and shortened, while the weight remains undisturbed, as herein specified.

4. The rock-drill tripod with telescopic legs, arranged with the tubular or female part outermost, and provided with means for attaching steadying-weights thereon, as specified.

In testimony whereof I have hereunto set my hand this 12th day of April, 1875, in the presence of two subscribing witnesses.

GEO. H. REYNOLDS.

Witnesses:
WM. C. DEY,
HENRY GENTNER.