

No. 622,264.

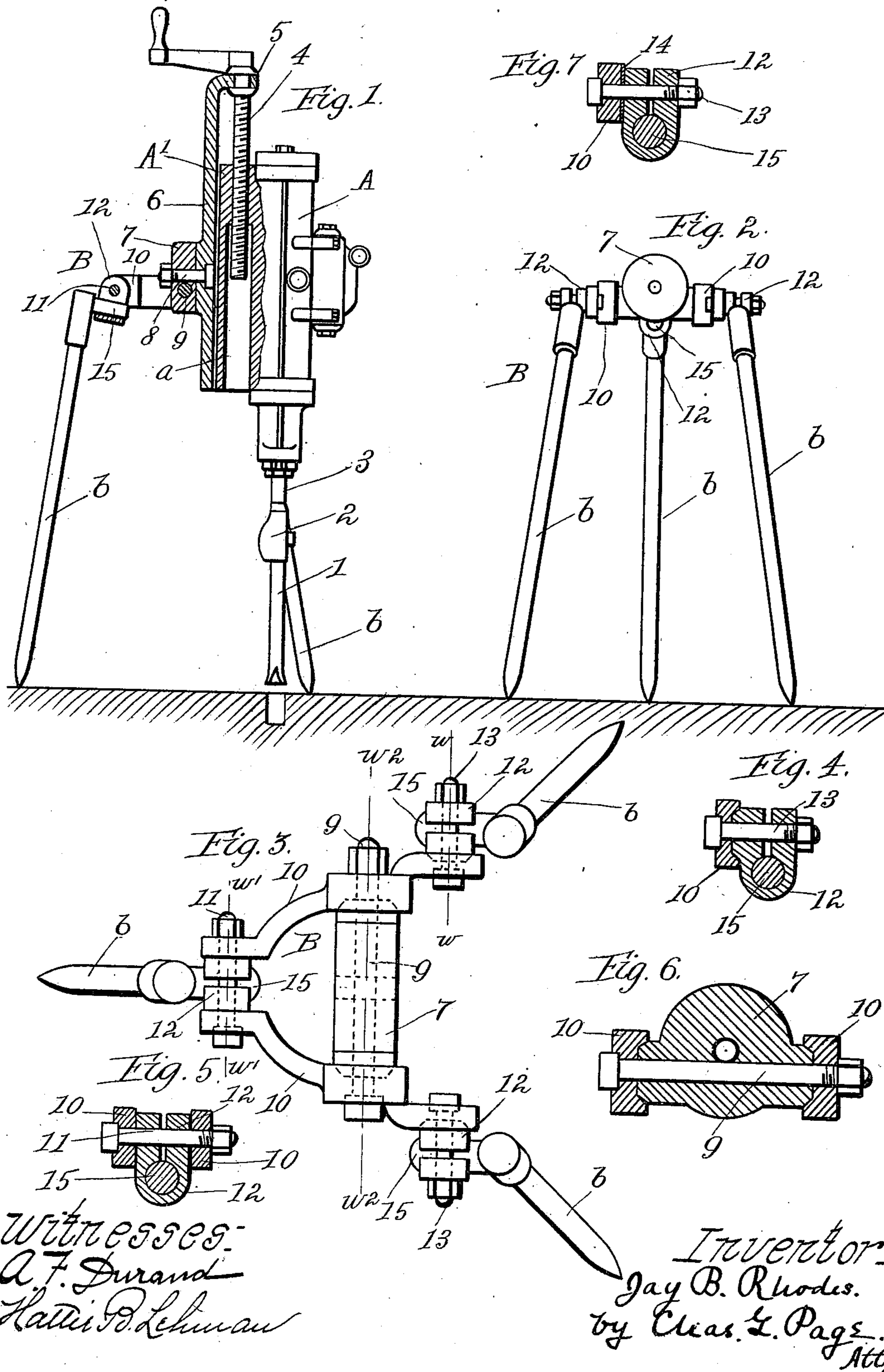
Patented Apr. 4, 1899.

J. B. RHODES.

SUPPORTING TRIPOD FOR ROCK DRILLS.

(Application filed July 5, 1898.)

(No Model.)



Witnesses:  
A. F. Durand  
Harris D. Lehman

Inventor:  
Jay B. Rhodes.  
by Chas. E. Page.  
Atty

# UNITED STATES PATENT OFFICE.

JAY B. RHODES, OF HARVEY, ILLINOIS, ASSIGNOR TO FREDERICK C. AUSTIN, OF CHICAGO, ILLINOIS.

## SUPPORTING-TRIPOD FOR ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 622,264, dated April 4, 1899.

Original application filed May 28, 1897, Serial No. 638,515. Divided and this application filed July 5, 1898. Serial No. 685,193. (No model.)

*To all whom it may concern:*

Be it known that I, JAY B. RHODES, a citizen of the United States, residing at Harvey, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Supporting-Tripods for Rock-Drills, of which the following is a specification.

This application is filed as a division of a previous application for improvement in impact-tools filed by me in the Patent Office on May 28, 1897, and serially numbered 638,515.

Prominent objects of my present invention are to provide a simple, compact, and inexpensive construction of tripod-support for rock-drills, to permit the same to be easily and quickly adjusted in accordance with the requirements of the work, to permit the portions subjected to wear to be easily and conveniently removed and replaced by new parts, and to provide certain novel features of construction and arrangement tending to increase the efficiency of such devices and to reduce their cost of manufacture.

To the attainment of the foregoing and other useful ends my invention consists in matters hereinafter set forth.

In the accompanying drawings, Figure 1 illustrates, partly in side elevation and partly in vertical section, a rock-drill mounted upon a tripod embodying my invention. Fig. 2 is a front elevation of the said supporting-tripod. Fig. 3 is a plan view of such tripod on a slightly-larger scale. Figs. 4, 5, and 6 are vertical sections taken on lines  $w w$ ,  $w' w'$ , and  $w^2 w^2$ , respectively, in Fig. 3. Fig. 7 is a modification of the construction illustrated in Fig. 4.

I have shown in the drawings a drill 1, connected by a suitable connection 2 with a piston-rod 3, which latter is reciprocated so as to effect the desired drilling operation by means of a piston arrangement inclosed within a piston-cylinder A. The said piston-cylinder A is supported upon a suitable tripod, which is made adjustable, so as to permit of the drill being given such elevation and depression and angular adjustments as are necessary to its proper operation. In the arrangement shown said piston-cylinder A is

suspended by a screw-rod 4, Fig. 1, working in a threaded socket provided at the upper end of the cylinder extension A', whereby said cylinder can be adjusted vertically, and entering a cylindrical bore  $a$ , formed in said extension A' below the threaded socket thereof, as it is screwed down through said socket. The screw-rod 4 is confined at its upper end in a suitable socket formed in the upper curved or bent end 5 of a bracket 6. The bracket 6 is in turn pivotally connected with a cross-bar 7 of a suitable tripod B—as, for instance, by means of a bolt 8, extending transversely through said cross-bar 7 and bracket 6—whereby the piston-cylinder A can be swung vertically from side to side, so as to allow the adjustment of the drill to any desired side vertical angle. The cross-bar 7 has a rotatory connection with the tripod B—that is to say, it is supported so as to be capable of a rotary action about its longitudinal axis—whereby the piston-cylinder A can be swung vertically backward and forward, so as to permit of the drill being adjusted to any desired front or rear vertical angle.

The form of rotatory connection for the cross-bar 7 shown comprises a long bolt 9, extending longitudinally through the cross-bar and having its ends confined within suitable sockets formed transversely in a couple of side braces 10, which latter are to such end arranged opposite the ends of the cross-bar and are desirably provided with conical sockets adapted to receive the beveled ends of the latter, as shown in Fig. 6. The rear portions of the side braces 10 are bent inwardly toward one another, and their rear ends are connected by a bolt 11, and also the forward portions of said side braces 10 are preferably bent outward slightly, so as to allow perfect freedom of movement on the part of the piston-cylinder. The cross-bar 7 and the connected side braces 10 thus comprise a simple, compact, easily-constructed, and inexpensive form of tripod adapted to admit the easy attachment of the piston-cylinder and also to permit of the ready adjustment of the same from side to side and from front to rear.

The tripod B thus formed is conveniently

supported upon three legs *b*, which are desirably connected adjustably with the side braces, so as to be capable of being swung from side to side and also from front to rear, whereby the piston-cylinder can be given a certain amount of bodily adjustment from side to side and from front to rear and can also be adjusted vertically to a greater extent than is permitted by the adjusting screw-rod 4, and also whereby the legs themselves can be adjusted so as to allow of their being positioned upon the most desirable ground afforded for the support of the tool. In the arrangement shown the tripod is provided with holders 12 for the legs *b*, whereof the two forward holders are pivotally attached to the forward ends of the side braces 10 by means of pivotal bolts 13, and the third holder is confined between the rear ends of said braces 10 and is pivotally supported by means of the bolt 11, which connects said rear ends of said braces 10, by which arrangement the legs held by said holders can be adjusted vertically backward and forward by adjusting the holders about their pivotal connections with the tripod.

As an arrangement for preventing rotation on the part of the holders 12 when the same are locked in adjustment against the ends of side braces 10 one of said parts can be constructed with an annularly-beveled projection and the other with a correspondingly-beveled socket, as shown in Fig. 4, or both the holders and the side braces can be constructed with flat meeting faces, and a layer 14 of red fiber or the like can be inserted between such meeting faces, as shown in Fig. 7.

As a simple and convenient arrangement of the holders 12 and legs *b* for suitably holding the latter and also for allowing a side-to-side swinging movement of the same the legs *b* are constructed with arms 15, extending laterally from their upper ends, and the holders 12 comprise circumferentially broken or open adjustable sockets adapted to inclose said arms 15 and adapted for adjustment by drawing together or separating the end portions forming the break or opening in the periphery, by which arrangement the legs *b* can be swung from side to side after suitably loosening the holders and can be locked in adjustment by tightening the same.

As a matter of further improvement, the bolts which serve to connect the holders 12 to the tripod are extended through the separated end portions of the socket comprising

said holders, whereby a loosening of the nuts of said bolts allows the legs *b* to be swung from side to side and also from front to rear, and a tightening of the same locks the legs in both of such adjustments.

While I have thus shown and described my invention in connection with a motive-fluid-actuated reciprocating rock-drill, my improved form of tripod is designed to afford a simple and easily-adjusted support for any other type of drill—that is to say, drilling devices, whether rotary or reciprocating, electric or fluid-actuated, may be supported from the cross-bar of the tripod and operated with equal facility and without departing from the spirit of my invention.

What I claim is—

1. In a supporting-tripod for rock-drills, a leg-holder comprising a circumferentially broken or split socket adapted to receive a lateral projection on the upper end of the tripod-leg; the said leg-holder being adjustably connected to the tripod-frame by a pivot-bolt which extends through the separated end portions of the socket comprising said holder, whereby a loosening of the nut of said bolt permits the leg to be swung from side to side and also from front to rear, and a tightening of the same locks the leg in both adjustments.

2. A supporting-tripod for rock-drills comprising a frame consisting of a couple of side braces connected by a cross-bar; three adjustable leg-holders whereof one is pivotally connected to and between the rear ends of said braces, and the others are pivotally connected respectively to the forward ends of the said two side bars, and three adjustable supporting-legs held by said leg-holders; each of said leg-holders consisting of a circumferentially broken or split socket adapted to receive a lateral projection on the upper end of a supporting-leg, and each of said leg-holders being connected to the said frame by a pivot-bolt which passes through the separated end portions of the socket comprising said holder, whereby a loosening of the nut of said bolt permits the leg to be swung from side to side and also from front to rear, and a tightening of the same locks the leg in both adjustments.

JAY B. RHODES.

Witnesses:

ARTHUR F. DURAND,  
CHARLES G. PAGE.