

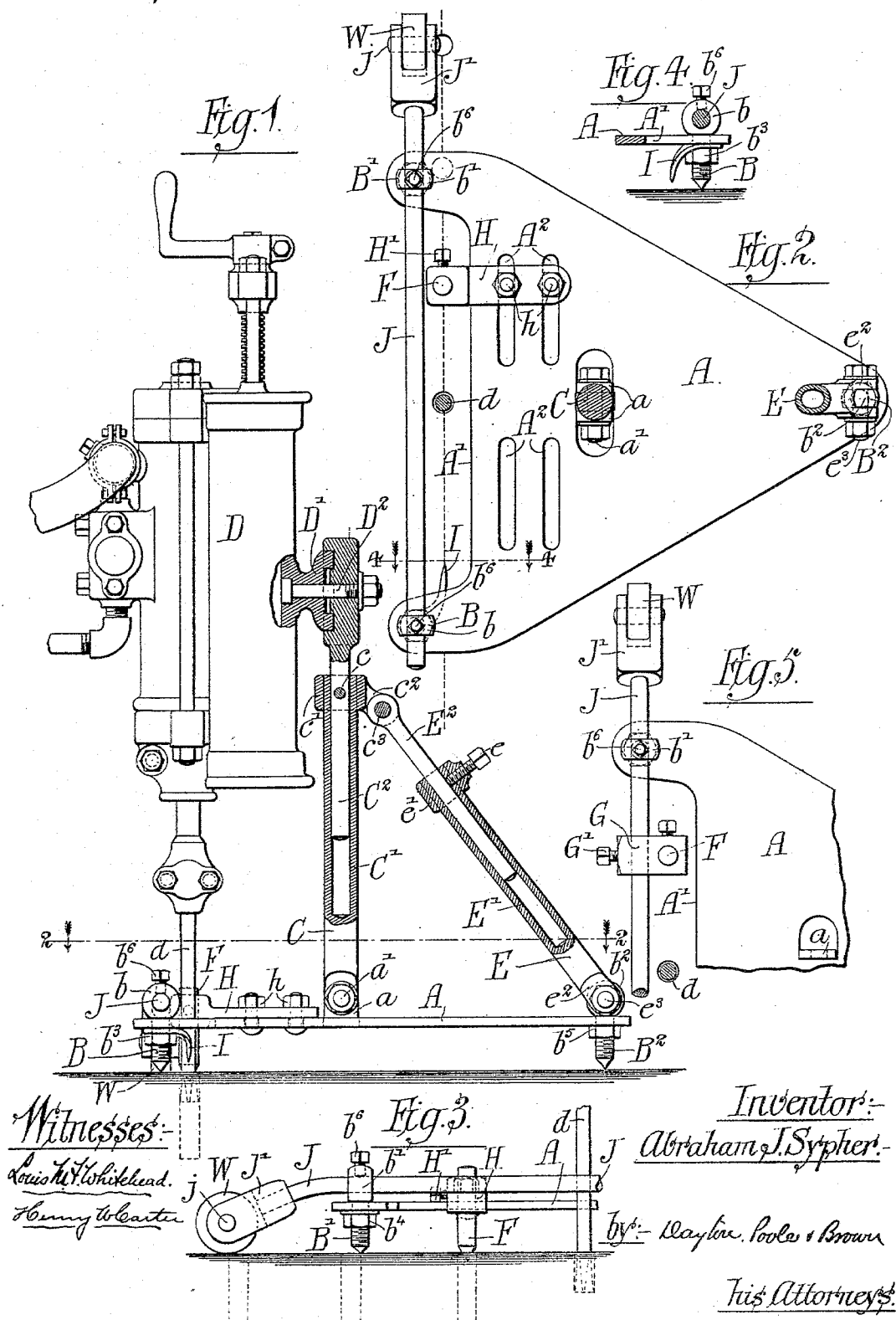
(No Model.)

2 Sheets—Sheet 1.

A. J. SYPHER.
ROCK DRILL TRIPOD.

No. 511,103.

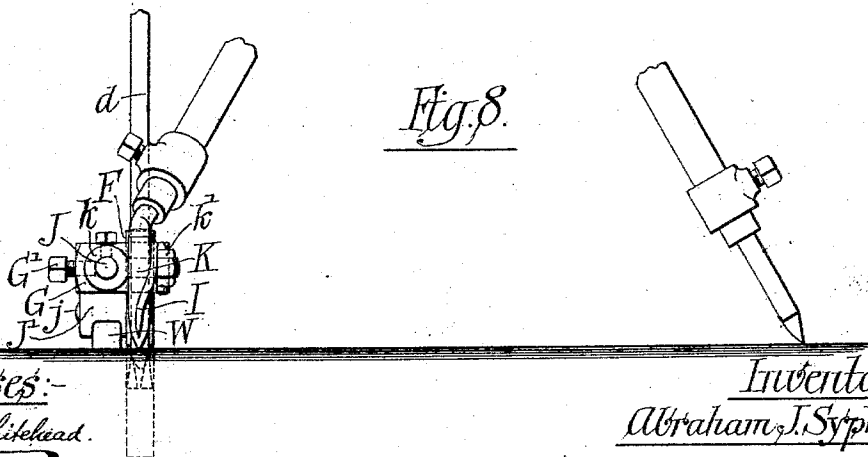
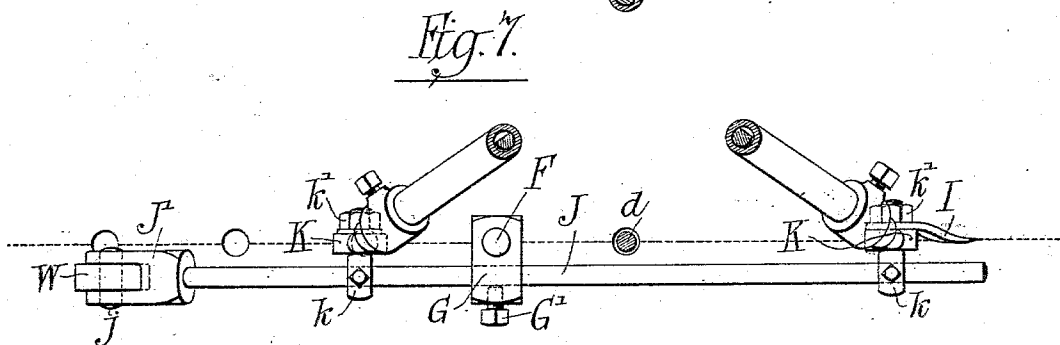
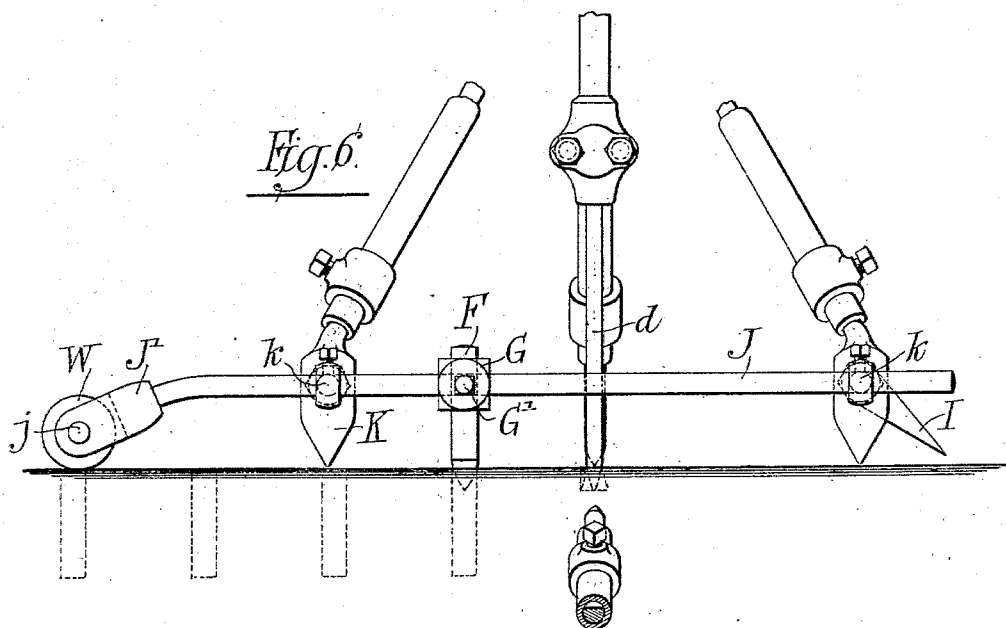
Patented Dec. 19, 1893.



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No. 511,103.

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Witnesses:
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UNITED STATES PATENT OFFICE.

ABRAHAM J. SYPHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO MILAN C. BULLOCK, OF SAME PLACE.

ROCK-DRILL TRIPOD.

SPECIFICATION forming part of Letters Patent No. 511,103, dated December 19, 1893.

Application filed January 11, 1893. Serial No. 457,979. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM J. SYPHER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Rock-Drill Tripods; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked there-
10 on, which form a part of this specification.

This invention relates to rock drill supports or tripods.

Its object is to provide an improved construction in devices of this character and to
15 this end my invention consists in the parts, improvements and combinations hereinafter described and particularly set forth in the appended claims.

In the accompanying drawings: Figure 1 is
20 a side elevation, partly in section, of a rock drill support embodying my invention, with a drill in place thereon. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a front detail view showing the supporting
25 wheel and spacing pin. Fig. 4 is a detail section on the line 4—4 of Fig. 2. Fig. 5 is a plan detail of a construction slightly modified from that shown in the preceding figures, the spacing pin being attached to the wheel sup-
30 porting bar instead of to the platform of the drill support. Fig. 6 is a front elevation of a portion of an ordinary tripod with my improved spacing and supporting wheel applied thereto. Fig. 7 is a horizontal section of a
35 same. Fig. 8 is a side elevation of the same.

Referring to the construction shown in Figs. 1, 2, 3 and 4, A designates a base plate or platform which is preferably of triangular form, and is shown as made of a single
40 sheet of plate metal, although it may be of any other suitable shape and material if desired. Said plate is supported by short stiff legs B, B', B², one at each corner, said legs being provided with enlarged heads b b' b²
45 and screw-threaded shanks which pass down through suitable apertures in the platform and are provided with screw-threaded nuts b³ b⁴ b⁵ between which and said enlarged heads the platform is clamped and the legs thus rig-
50 idly secured in place. Said platform is also shown as cut away or recessed on one side at

A' to permit the drilling point to strike within the base line of the supporting legs. Secured to the upper side of the platform is a frame work for supporting the drill D, consisting, 55 in this instance, of a single standard C pivoted to the platform near the center thereof and provided at its upper end with a circular recess within which the drill back disk D' is adjustably clamped by the usual pivot bolt 60 D², said standard swinging on its pivot in a plane at right angles to the plane of the drill back disk, whereby angular adjustment of the drill may be effected in any direction, and being supported in the desired position by 65 means of an extensible brace rod E pivoted at its upper end to the standard C and at its lower end to the platform A in the plane of movement of said standard C. Provision is also made for the vertical and pivotal adjust- 70 ment of the drill by making the standard C extensible in like manner with the brace rod E, both consisting, to this end, of lower tubular sections C', E' and upper cylindrical sections C², E², sliding within the lower sections 75 C' E', and adjustably secured therein by set screws c e near the upper ends of the said tubular lower sections, the latter being provided at said upper ends with tightly fitting collars c' e', serving to provide additional 80 length of bearing for said set screws and to strengthen the said sections at this point. Parallel lugs c² on the collar c', between which the upper end of the section E² of the brace rod E is secured by the pivot bolt c³, conven- 85 iently afford the pivotal connection between the brace rod and standard, while similar lugs e², formed by bifurcating the lower end of the section E' of the brace rod E, embrace a lug on the platform A, which lug is formed, 90 in this instance, by the enlarged head b² of the leg B², and are secured thereto by a pivot bolt e³, thus affording the pivotal connection between the said brace rod E and platform A. The pivot joint between the standard C and 95 platform A is also shown as formed by parallel lugs a on the platform, between which the lower end of the standard C is secured by a pivot bolt a'; said lugs being provided in this instance by cutting out and bending up 100 the metal of the platform.

Upon the platform A the attendant may

conveniently stand during the operation of the drill and thus maintain the stability of the structure without the use of the usual weights, thereby avoiding the expense of providing said weights and the inconvenience of handling them. A low first cost of manufacture is further secured by the fact that the platform or base plate with its standard securing lugs may be made from a single piece of sheet metal, and by the fact that the supporting legs are exactly alike and are consequently interchangeable.

For the purpose of quickly and accurately locating the drill support for each of a series of holes which it is desired shall be spaced at regular distances apart, I provide on the support a spacing point or pin F capable of being secured in fixed relation to the drilling point at a distance therefrom equal to the distance desired between the adjacent holes of the series, said pin being adapted to engage the hole last drilled and to thus bring the said drilling point over the spot where the next hole should be located. Such spacing pin F is preferably made adjustable on the platform in order that its distance from the drilling point, and consequently the common distance between the adjacent holes of the series, may be varied at will, and to this end said pin is mounted in the end of a bar H adjustably secured to the platform and projecting over the recess A' in the edge thereof, said pin being removably clamped in an aperture in the arm H by means of a set-screw H'. The adjustment of the bar H is, in this instance, effected by means of parallel slots A² A² in the platform and clamping bolts h h passing through said slots and through suitable apertures in the arm H and serving to clamp the latter to the platform at any desired point of the length of the slots. Similar slots are provided at each side of the platform so that the pin F can be located on either side of the drilling point, as desired. In addition to the spacing point F, I provide a guide finger I, adapted to be secured to the support on the opposite side of the drilling point from the said spacing pin and normally in line with said pin and point, and designed to aid the attendant in securing the exact alignment of the several holes of the series. Such finger, in this instance, consists of a piece of metal bent to an L-shape and attached to the platform A by means of a perforation in its upper horizontal part through which passes one of the supporting legs (the leg B in the drawings), the finger being held or clamped between the clamping nut b' on the leg and the under side of the platform A, with its point extending downwardly to within a short distance of the ground. When the spacing pin is brought into engagement with the hole last drilled and the guide finger brought vertically over the previous marked line of the series, it is obvious that the drilling point will stand centrally over such line.

To enable the attendant to easily move the

drill and support without lifting them bodily from off the ground, a wheel W is mounted on the support in such manner as to normally stand in proximity to the surface of the ground at a point without the base line of the supporting legs and is adapted to serve as a rolling support upon which the drill and its support may be trundled along in moving it, in the same manner as a wheelbarrow upon its single wheel. In the instance illustrated, said wheel is carried upon the end of a downwardly and outwardly projecting bar J, secured to the platform. In the construction illustrated the bar J passes through apertures in the enlarged heads b b' of the supporting legs B B' and is held therein by set-screws b', and a bifurcated head J' is rigidly attached to the end of the bar between the arms of which the supporting wheel W is journaled by means of a suitable pin j. When this construction is used in connection with the spacing pin the arm supporting said pin may conveniently be adjustably mounted on the rod J instead of being bolted directly to the platform. Such a modification is shown in Fig. 5, in which the arm G supporting the spacing pin is provided with an aperture engaging the rod J and is adjustably clamped in place by a set screw G'.

The features of my invention relating to the wheel, spacing pin and guide finger are equally useful when applied to the ordinary form of tripod, and accordingly in Figs. 6, 7 and 8 I have shown them so applied. In this construction the point sections K of the tripod legs are provided with eye-bolts k inserted in apertures in said sections and clamped in place by nuts k', said eye-bolts serving to engage and support the carrying bar J' to which are adjustably secured the spacing pin F and guide finger I in a similar manner and to the same end as hereinbefore described.

I claim as my invention—

1. A rock drill support, comprising a platform upon which the attendant may stand, a standard composed of a lower tubular section pivoted at its lower end to the platform and an upper section sliding within the tubular section and adjustably secured therein, said upper section being provided with a circular recess adapted to have the drill back disk pivotally bolted therein, a brace bar composed of a lower tubular section pivoted at its lower end to the platform and an upper section pivoted to the upper portion of the standard and sliding adjustably in said lower section, substantially as described.

2. A rock drill tripod, comprising a sheet metal platform upon which the attendant may stand, parallel lugs formed by parts cut from the metal of the platform, a drill carrying standard pivoted between the lugs, and an adjustably extensible brace rod pivoted at its upper end to the standard and at its lower end to the platform, substantially as described.

3. A rock drill tripod, comprising a platform upon which the attendant may stand,

provided with apertures on its corners, supporting legs provided with screw-threaded shanks extending through the apertures, enlarged heads engaging the upper side of the platform and nuts on the screw-threaded shanks engaging the under side of the platform and clamping the legs in position, a drill carrying standard pivoted to the platform, an adjustable extensible brace bar pivoted at its upper end to the standard and bifurcated at its lower end to embrace the enlarged head of one of the supporting legs, and a bolt engaging corresponding apertures in the bifurcated end of the brace bar and in the enlarged head to pivotally connect the same, substantially as described.

4. A rock drill support provided with a downward projecting spacing pin adapted to engage a previously drilled hole, said pin being adjustably secured to the support, whereby it may be set at different distances from the drilling point, substantially as described.

5. A rock drill support, comprising a platform upon which the attendant may stand, supporting legs for the platform, a drill carrying standard secured upon the platform, an arm adjustably secured to and extending beyond the edge of the same, and a downward projecting spacing point secured to the said arm and adapted to enter a previously drilled hole, substantially as described.

6. A rock drill support, comprising a platform upon which the attendant may stand, supporting legs for the platform, a drill carrying standard secured upon the platform, an arm adjustably secured to said platform and extending beyond the edge of the same, said arm being secured to the platform by means of bolts passing through slots in the platform, and a downwardly projecting spacing point secured to the said arm and adapted to enter a previously drilled hole, substantially as described.

7. A rock drill support provided with rigid pointed supporting legs, a wheel mounted on the support in proximity to the ground and without the base line of said supporting legs, and a spacing point secured to the support and adapted to engage a previously drilled hole, substantially as described.

8. A rock drill support, comprising a drill carrying frame having supporting legs, a bar secured to the frame and projecting beyond the base line of the supporting legs, an arm adjustably secured upon said bar, a down-

ward projecting spacing pin secured to the arm, and a wheel journaled at the outer end of the arm in proximity to the ground, substantially as described.

9. A rock drill support, comprising a triangular platform on which the attendant may stand and provided with apertures in its corners, supporting legs provided with screw-threaded shanks extending through said apertures, enlarged heads engaging the upper side of the platform and nuts upon the screw-threaded shanks engaging the under side of the platform and clamping said legs in position, a drill carrying standard on the platform, a bar supported in apertures in the enlarged heads of the supporting legs and extending beyond the base line of the same and a wheel journaled in the outer end of said bar, substantially as described.

10. A rock drill support, comprising a drill carrying frame having supporting legs, a downward projecting spacing pin secured to the said frame and adapted to engage a previously drilled hole to facilitate the location of the support for drilling another hole, and a guide finger secured to the frame on the opposite side of the drilling tool from the spacing pin and in line with said point and pin, substantially as described.

11. A rock drill support, comprising a triangular platform on which the attendant may stand, provided with apertures in its corners, supporting legs provided with enlarged heads engaging the upper side of the platform, and nuts on the screw-threaded shanks engaging the lower side of the platform and clamping said legs in position, a drill carrying standard secured upon the platform, a spacing pin adjustably secured to the platform and adapted to engage a previously drilled hole, and a guide finger having an aperture at its rear end to engage the screw-threaded shank of a supporting leg, the point of said guide finger and the spacing pin being so located as to normally stand on opposite sides of but in line with the drilling tool, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

ABRAHAM J. SYPHER.

Witnesses:

C. CLARENCE POOLE,
HENRY W. CARTER.