

(No Model.)

H. C. SERGEANT.

COLUMN SUPPORT FOR ROCK DRILLS.

No. 315,668.

Patented Apr. 14, 1885.

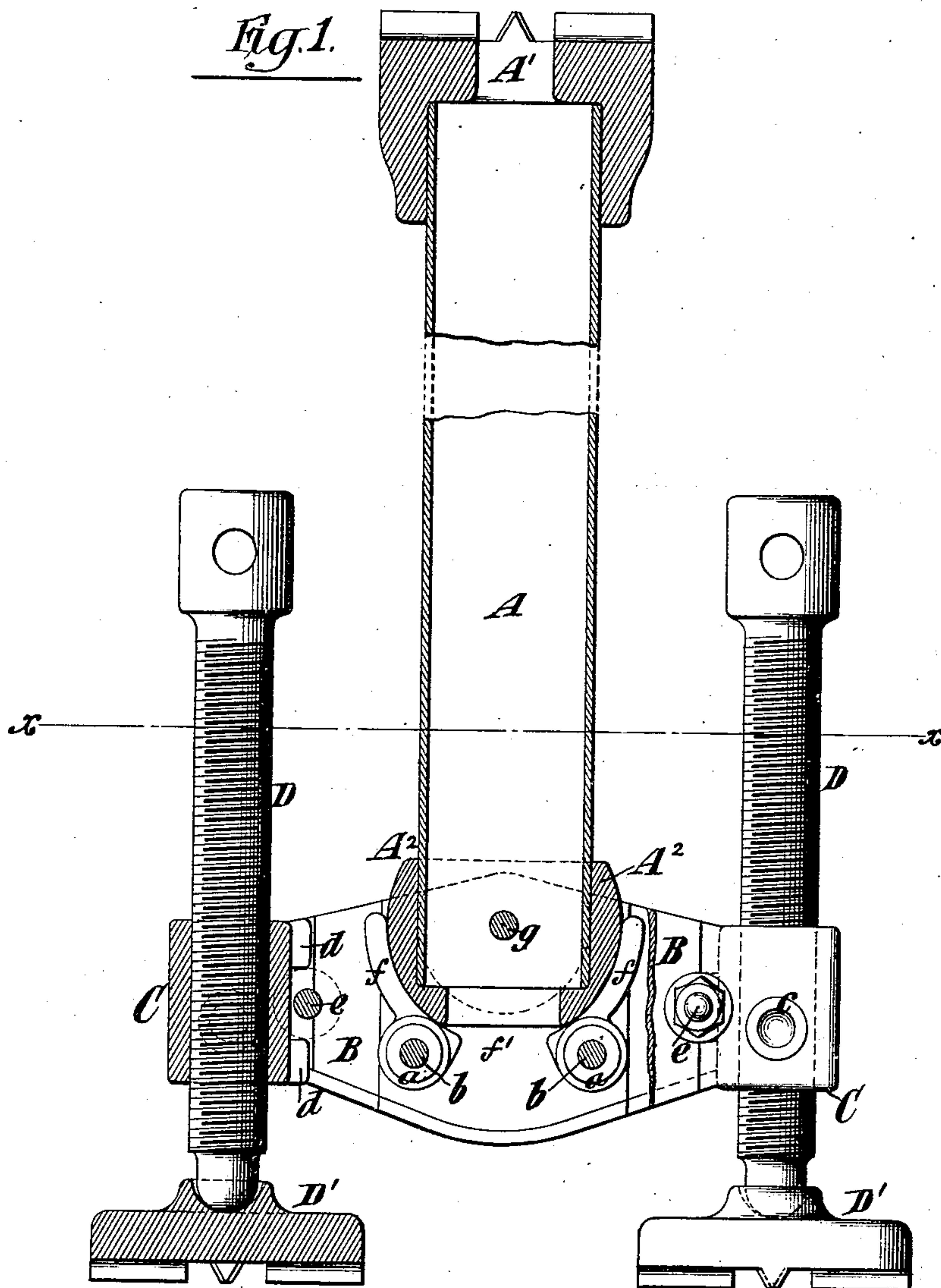
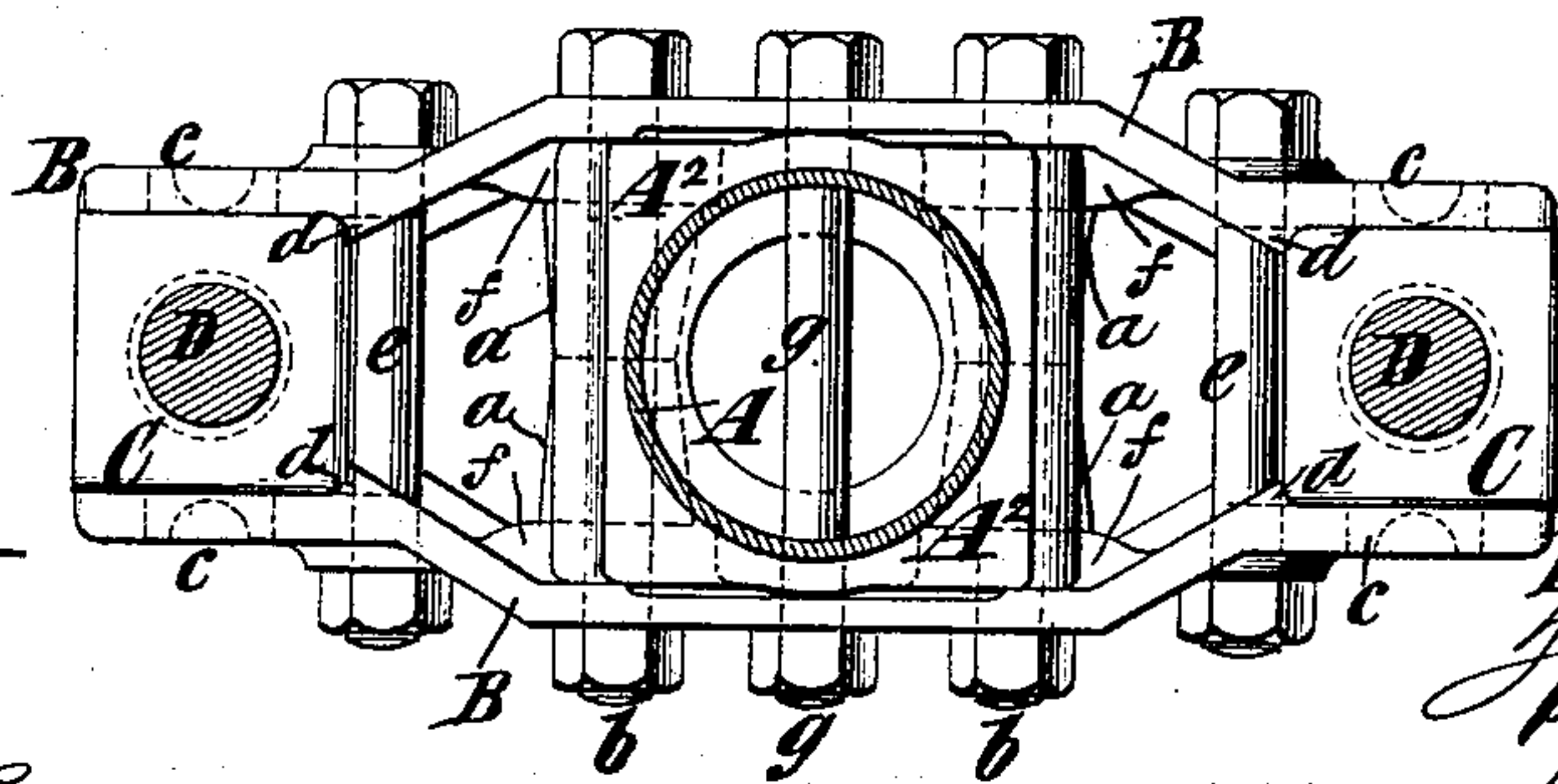


Fig. 2.



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COLUMN-SUPPORT FOR ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 315,668, dated April 14, 1885.

Application filed June 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SERGEANT, of the city and county of New York, in the State of New York, have invented a new and
5 useful Improvement in Column-Supports for Rock-Drills, of which the following is a specification.

My invention relates to rock-drill supports which consist of a single column or piece of
10 a pipe of any suitable length, and a base-piece arranged transversely across the foot of the column and provided with adjusting-screws fitting nuts therein.

In drill-supports of this class as heretofore
15 constructed the base-piece has been formed with a socket in which the foot of the column is rigidly secured by shrinking or otherwise, so that the column stands permanently at right angles to the base-piece. In tightening
20 up the screws the base-piece is subjected to very severe strain, because the screws are turned alternately, and when each screw is tightened it greatly relieves the other screw of strain, and so throws the strain very un-
25 equally on the base-piece.

The base-pieces of drill-supports of the kind above described are very frequently broken by such unequal strain, and they have to be made very heavy to avoid the danger of breaking,
30 and are therefore expensive and very cumbersome and heavy to handle.

The object of my invention is to connect the base-piece and column, so that the base-piece will be self-adjusting relatively to the column
35 in a plane in which are the column and adjusting-screws, and thereby to equalize the strain on the screws, so that when either is turned to tighten it the strain will be evenly distributed between the screws and the base-piece
40 will be relieved of any unequal strain.

The invention consists in the combination, with a single column having at the bottom an approximately cylindric foot, the axis of which is horizontal, of a base-piece having
45 between its ends an approximately cylindric seat the axis of which is transverse to the length of the base-piece and to which the foot of the column is fitted, and adjusting-screws fitting nuts at opposit ends of the base-piece.
50 When one of these screws is tightened, the

base-piece will adjust itself relatively to the column and distribute the strain equally between the two screws, even though the other screw is not turned at all; and hence no unequal strain will be exerted on the base-piece. 55 I also construct the base-piece in a novel manner, hereinafter described, whereby lightness, strength, and cheapness are secured.

In the accompanying drawings, Figure 1 is a vertical section, a small part only being
60 shown in external elevation, of a column-support embodying my invention; and Fig. 2 is a sectional plan view on the plane of the dotted line *x x*, Fig. 1.

Similar letters of reference designate corresponding parts in both figures. 65

A designates the column; here shown as made of tubing, and having a head, A', driven or otherwise secured upon it. Upon the lower end of the column is a foot or foot-piece, A²,
70 which has a cylindrical socket receiving the column, and which is approximately cylindrical in form, the axis of the foot being horizontal. The cylindric foot A² rests upon a corresponding seat formed in the base-piece, and I
75 have here shown a peculiar construction of base-piece whereby lightness, strength, and facility of construction are secured. The said base-piece consists of two side plates, B B, and nuts C C, secured between the end portions of
80 said plates, and receiving through them the screws D. The lower ends of the screws D bear upon plates D', as is usual. The two plates B B are spread apart sufficiently to receive between them the foot A², and are retained at
85 such a distance apart by bosses or hubs *a*, which project from the inner sides of said plates half across between them. The abutting ends of the bosses or hubs on opposite plates coming together hold the plates a
90 proper distance apart, and receive through them securing-bolts *b b*, passing through both side plates and preventing their spreading. The nuts C are held in proper position between the plates B by teats or hubs *c*, project-
95 ing from opposite sides of the nuts and fitting holes in said plates, and by projecting lugs *d*, which are formed on the inner sides of the plates and bear on the nuts C near top and bottom. Bolts *e e*, inserted through the side 100

plates, B, close to the nuts C, serve to bind the nuts tightly between said plates, and with the bolts *b b* make a rigid structure of the base-piece.

5 Projecting inward from the plates B are flanges *ff*, which are curved or rounded vertically, and which form an approximately cylindric seat for the column-foot A^2 . The flanges *f* on each plate B have between them
10 an opening, *f'*, which prevents any dirt from lodging and remaining on them, and while they form a sufficient step-bearing for the column-foot A^2 they provide for the self-adjustment of the base-piece and column in the ver-
15 tical plane in which are the column and the screws D.

The column and base-piece are connected and held together by a bolt, *g*, which is concentric with the foot-piece and cylindric seat
20 *f*; but this bolt when of small size is not intended to relieve the seat of pressure.

If desired, the column may be detached and a longer or shorter column substituted and used with the same base-piece by simply re-
25 moving the bolt *g*.

With the base-piece and column thus connected all strain will be evenly distributed between the screws, and there will be no liability of the base-piece breaking.

30 I am aware that it is not new to provide a column for a rock-drill support with an adjusting-screw at the top and with a double claw or foot-piece destitute of screws pivoted to the foot of the column. In such case each
35 column has its own pivoted foot and top adjusting-screw.

I am also aware that it is not new to provide a column with a base-piece having adjusting-screws and a socket wherein the end
40 of the column is rigidly secured by shrinking or otherwise, there being no opportunity for adjustment between the column and base-piece. In such case the base-piece has to be made very much heavier than would other-
45 wise be necessary, and even then is liable to break, and a separate base-piece and screws are provided for each column.

I do not claim either of the constructions above described as of my invention. By mak-
50 ing the cylindric foot on the column and a similar seat in the base-piece which is furnished with adjusting-screws, I provide for the free adjustment of the base-piece to equal-

ize strain on the two screws when one is tightened more than the other and avoid any un- 55
equal strain on the base-piece which would tend to break the same. I also enable one base-piece and screws to serve for different heights of column by simply providing pieces
60 of pipe of different length, each having a cylindric foot the axis of which is horizontal or transverse to the length of the pipe, and either of which may be used with the base-piece.

What I claim as my invention, and desire to secure by Letters Patent, is— 65

1. In a rock-drill support, the combination, with a single column having an approximately cylindric foot the axis of which is horizontal, of a base-piece having between its ends an approximately cylindric seat the axis of which
70 is transverse to the length of the base-piece, and to which the column-foot is fitted, and adjusting-screws fitting nuts in opposite ends of the base-piece, substantially as herein described. 75

2. The combination, with the column A, provided with the cylindric foot A^2 , of the base-piece composed of the two plates B B, provided on their inner sides with the curved flanges *ff*, which form a seat for the column-
80 foot, and bolts inserted through said plates and securing them together, substantially as herein described.

3. In a rock-drill support, the combination, with the column A, having the cylindric foot A^2 , of the base-piece composed of plates B B, between which is a cylindric seat for the column-foot having its axis transverse to the
85 length of the base-piece, the nuts C, clamped between said plates and provided with bosses or hubs *c*, fitting holes in said plates, and the screws D, fitting said nuts, substantially as herein described. 90

4. The combination, with the column A, having the cylindric foot A^2 , of the base-piece
95 composed of plates B B, provided with inwardly-projecting lugs *dd*, and curved flanges *ff*, forming a seat for the column-foot, and hubs or bosses *a a*, the nuts C C, arranged between said plates outside the lugs *dd*, the
100 screws D D, and the clamping-bolts *b e*, all substantially as herein described.

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Witnesses:

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