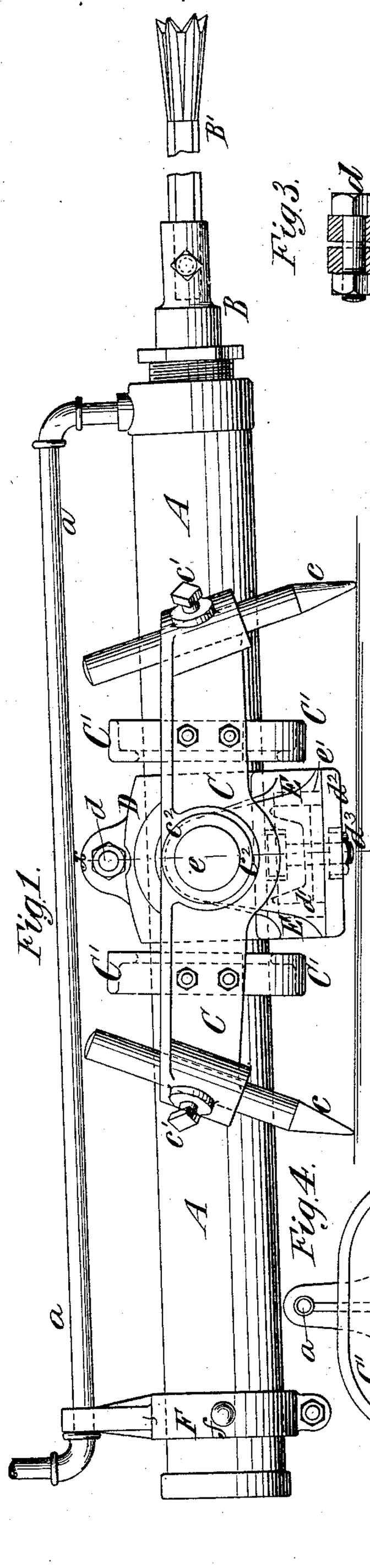
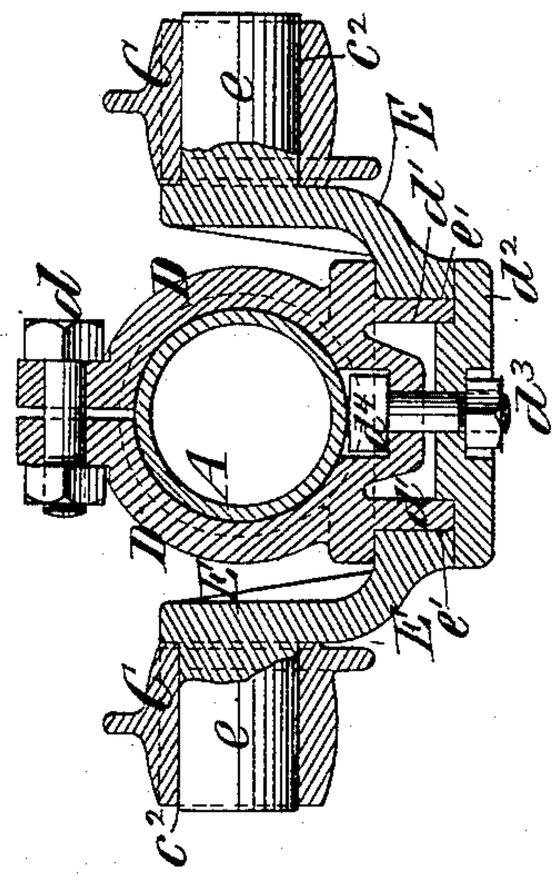
(No Model.)

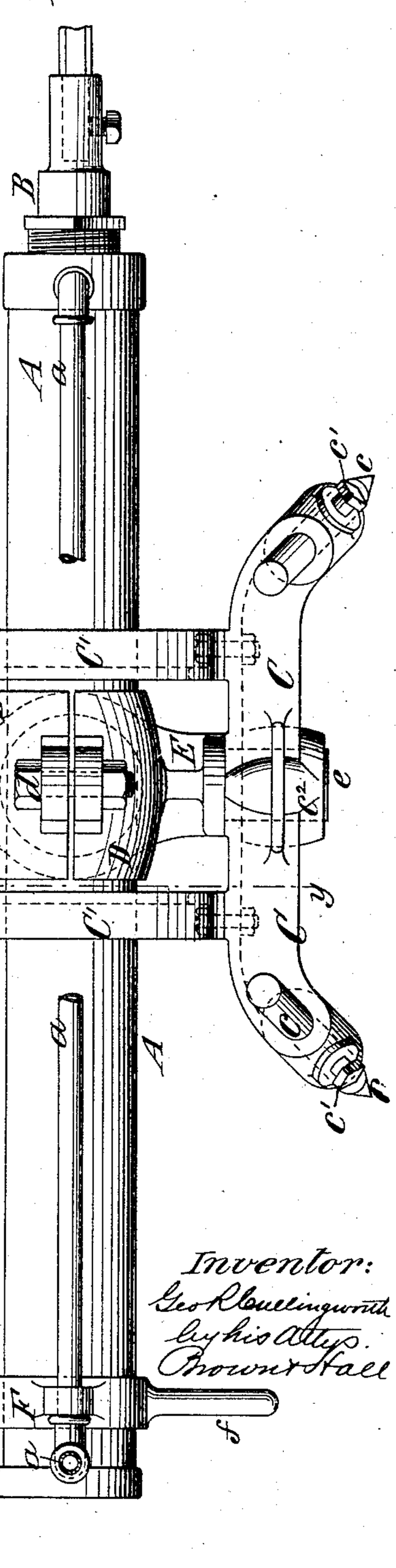
G. R. CULLINGWORTH.

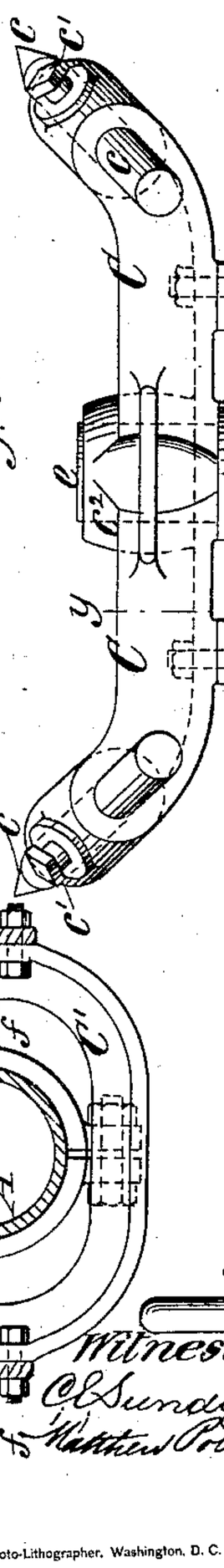
ROCK DRILLING MACHINE.

No. 328,196. Patented Oct. 13, 1885.









Inventor:
Geo R Cullingworth
by his Attys.
Brown & Hall

Witnesses:
C L Sundgren
F Mathies Pollock

UNITED STATES PATENT OFFICE.

GEORGE R. CULLINGWORTH, OF NEW YORK, N. Y.

ROCK-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 328,196, dated October 13, 1885.

Application filed February 19, 1885. Serial No. 156,333. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. CULLINGWORTH, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Coal-Cutting Machines, of which the following is a specification.

In getting out or mining coal it is desirable to channel inward in the wall of coal near the floor of the drift to a considerable depth, thereby rendering it possible, by drilling holes higher up in the wall and driving in wedges, to detach large masses of coal with but little labor and expense. For this purpose I contemplate using a machine having a reciprocating piston very similar to a rock-drill, and which, in its internal mechanism, embodies the invention set forth in United States Letters Patent No. 213,663, granted March 25, 1879, to James B. Johnson.

The object of my invention is to provide a simple carriage or support wherein such machine may be mounted, and which will enable the operator to readily handle the machine and swing it either in a vertical or horizontal plane to change the directions of its blows.

The invention consists in novel combinations of parts and details of construction in such carriage or support, as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the machine and a carriage or support therefor embodying my invention. Fig. 2 is a plan thereof. Fig. 3 is a transverse section on the plane of the dotted line *x x*, Fig. 1; and Fig. 4 is a transverse section on the plane of the dotted line *y y*, Fig. 2.

Similar letters of reference designate corresponding parts in the several figures.

A designates the cylinder, which may be supplied with steam or compressed air through a pipe, *a*, from any suitable source.

B designates the reciprocating piston-rod, and B′ the drill or bit carried thereby. I have not here shown any internal mechanism for operating the piston-rod B, inasmuch as it forms no part of my invention, and such mechanism may be understood by reference to the Letters Patent hereinabove referred to.

The carriage or support consists, essentially, of two side pieces, C, each provided at opposite ends with adjustable feet *c*, which may be secured in place by set-screws *c′*, and two cross-pieces, C′, each made of annular form to receive the drill-cylinder through it, as shown in Fig. 4.

The drill-cylinder A, which may consist of a piece of tube of suitable length, is secured fast in a split collar, D, which may be clamped thereon by tightening the bolt *d*, connecting its ends, and which is constructed with a downwardly-extending trunnion, *d′*, as shown in Fig. 3.

E designates a yoke or saddle-piece extending transversely between the side pieces, C, the former having trunnions or pivots *e*, which are fitted to the trunnion-bearings c^2 in said side pieces. This yoke or saddle E drops down below the axis of the trunnions *e*, between the side pieces, and has a cylindric bearing, *e′*, to which is fitted the trunnion or pivot *d′* of the split collar D. To the lower end of the trunnion or pivot *d′* is applied a cap, d^2, overlapping the bearing *e′*, and by means of the bolt d^3, the head d^4 of which is received in a cavity in the split collar D, the split collar D may be secured in the yoke or saddle E.

Near the rear end of the cylinder A is secured a second split collar, F, which forms a bearing and steadiment for the pipe *a*, and which is provided with handles *f*. The four feet *c* serve to properly support the machine, and by taking hold of the handles *f*, the workman can adjust the cylinder A, so as to cause the bit or drill to work in the right direction. The trunnion or pivot and pivot-bearing *d′ e′* of the split collar D provide for swinging the cylinder in a horizontal plane, and the trunnions *e*, with which the yoke or saddle E is provided, and which fit bearings c^2 in the side pieces, C, provide for swinging the cylinder in a vertical plane.

It will be seen that the carriage or support herein described is light, simple, and inexpensive in construction, and that it provides for the necessary swinging movements of the cylinder A.

The split collar D, with its trunnion *d′*, may be considered as a part of the cylinder.

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

1. The combination, with a cylinder, A, of a carriage or support therefor consisting of side pieces, C C, on opposite sides of the cylinder, and each having adjustable feet at its opposite ends, cross-pieces rigidly connecting the side pieces, and a saddle or yoke, E, extending between the side pieces and having trunnions *e*, fitting bearings c^2 in said side pieces, and a trunnion or pivot, *d'*, extending transverse to the cylinder and fitting a bearing in said yoke or saddle E, substantially as herein described.

2. The combination, with the cylinder A and the split collar D applied thereto and having a transverse pivot or trunnion, *d'*, of the carriage or support consisting of side pieces, C C, on opposite sides of the cylinder, each provided at its opposite ends with feet *c*, and cross-pieces rigidly connecting said side pieces, and a yoke or saddle, E, having trunnions *e*, fitting bearings c^2 in said side pieces, and also having a bearing, *e'*, for the cylinder trunnion or pivot *d'*, substantially as herein described.

3. The combination, with a cylinder, A, provided with a transverse trunnion or pivot, *d'*, of a carriage or support consisting of side pieces, C, provided with feet *c* and annular cross-pieces C', receiving the cylinder through them, and a yoke or saddle, E, provided with trunnions *e*, fitting bearings in said side pieces, and also provided with a bearing, *e'*, for the cylinder trunnion or pivot *d'*, all substantially as herein described.

G. R. CULLINGWORTH.

Witnesses:
FREDK. HAYNES,
MATTHEW POLLOCK.