

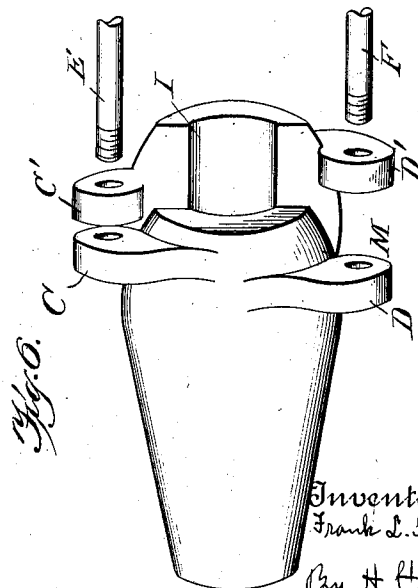
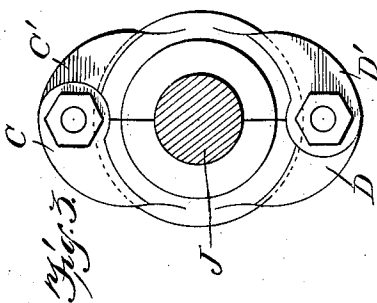
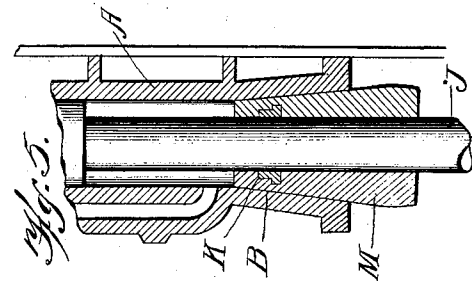
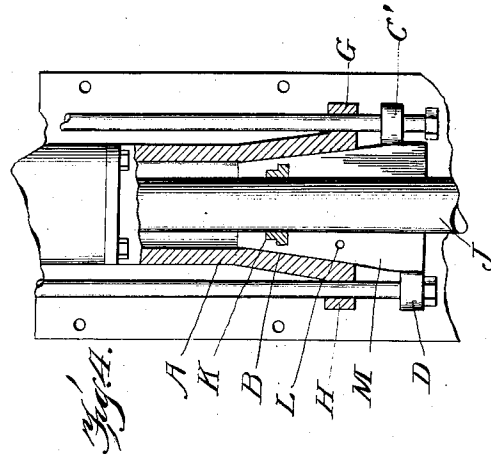
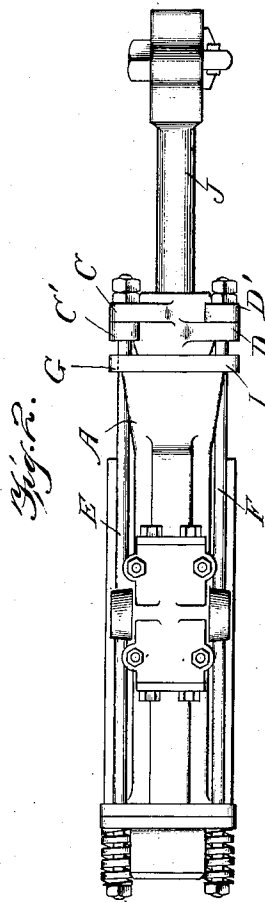
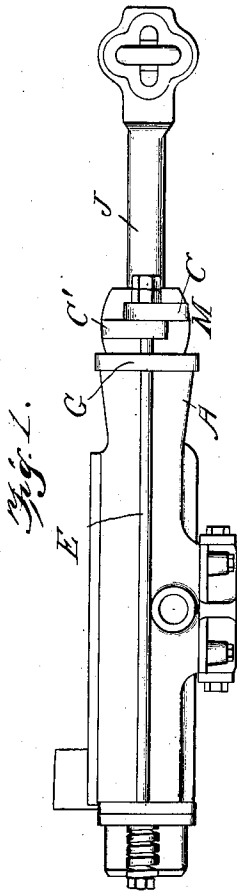
F. L. SESSIONS.

CYLINDER HEAD.

APPLICATION FILED AUG. 29, 1907.

933,789.

Patented Sept. 14, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK L. SESSIONS, OF COLUMBUS, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE JEFFREY MANUFACTURING COMPANY, A CORPORATION OF OHIO.

CYLINDER-HEAD.

933,789.

Specification of Letters Patent. Patented Sept. 14, 1909.

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To all whom it may concern:

Be it known that I, FRANK L. SESSIONS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Cylinder-Heads, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates to cylinder heads which are particularly adapted for use as the front heads of rock drills.

The invention can be best explained in connection with the accompanying drawings of which,

Figure 1 is a side elevation of a rock drill cylinder embodying my invention. Fig. 2 is a rear elevation of the same structure shown in Fig. 1. Fig. 3 is an enlarged sectional view of the front end of the structure shown in Figs. 1 and 2. Fig. 4 is an enlarged central longitudinal section of the front end of a rock drill cylinder with the front head in position, a portion of the drill and piston rod being shown. Fig. 5 is an enlarged central longitudinal section at right angles to Fig. 4. Fig. 6 is an enlarged detailed perspective view of the parts of the front head.

Referring to the drawings it will be seen that the cylinder A is provided with a tapered seat B adapted to receive the cylinder head. The cylinder head M as a whole, is tapered to fit against the seat B and is provided with ears C, D, C' and D' by means of which it is secured in position with relation to the cylinder. Bolts E and F, passing through holes in the ears C, D, C' and D' serve to secure the head in position. These bolts are provided with nuts or heads outside the cylinder head and at their other ends are suitably secured. The bolts E and F may pass through guiding ears G and H upon the cylinder. A central hole I for the passage of the piston rod J is formed in the head and a groove K for containing packing extends circumferentially about the hole I. In order that the head can be easily taken out, repacked and replaced, it is split into two parts as shown, the plane of separation of the parts being preferably diametric and passing centrally through the holes in the ears C, D, C' and D'. The abutting faces of the parts of the cylinder head are preferably made smooth as by scraping so that a

close joint will be obtained. In order that the parts of the head may be held in proper relation a dowel pin L may be secured in one of the parts while the other part contains a recess for the reception of the dowel pin.

The piston rod which is secured to the drill reciprocates in the head under the action of pressure upon a piston which, it will be understood, is, in practice secured to the end of the piston rod opposite the drill and runs in the cylinder A. This piston has not been shown as its relations to the cylinder and piston rod are apparent.

It will of course be understood that suitable provision is made for supplying motive fluid to the cylinder but no means for this purpose is illustrated as many such means are well understood and the means which is employed for this purpose is not material to the present invention. Sufficient of a fluid pressure drill has been shown to illustrate the present invention.

While the invention has been illustrated in connection with a concrete embodiment it will be understood that other structures than the one shown may embody the invention and therefore the invention is not limited to the structure shown.

What I claim is:

1. The combination with a cylinder having a tapered seat at one end, of a tapered cylinder head split along longitudinal lines and engaging said seat and means for securing said cylinder head to said cylinder whereby the tapered seat serves to hold the two parts of the head together from end to end.
2. The combination with a cylinder having a tapered seat at its end, of a piston rod, a tapered cylinder head split along longitudinal lines and fitting said seat and having a central hole for the passage of said piston rod, and means for securing said head to said cylinder whereby the two parts of the head are held firmly together from end to end.
3. The combination with a cylinder having a tapered seat at its end, of a tapered cylinder head fitting said seat and formed in two parts divided along longitudinal lines, said head having holes for the passage of securing bolts and bolts passing through the said holes whereby the bolts act both to hold the head in position longitudi-

nally with respect to the cylinder and to hold the two parts of the head solidly together.

4. The combination with a cylinder having a tapered seat at its end, of a piston rod, a cylinder head tapered to fit said seat and having holes through which securing bolts pass, said cylinder head being split through the plane of the axis of said holes for the securing bolts and having a central hole for the passage of said piston rod, and securing bolts.

5. The combination with a cylinder having a tapered seat at its end, of a piston rod, a cylinder head split along longitudinal lines and tapered to fit said seat, said head having a hole for the passage of said piston rod and a packing groove about said hole, and means for securing said head to said cylinder the said means acting additionally to hold the two parts of the head together.

6. The combination with a cylinder having a longitudinally elongated tapered seat at its end, of a piston rod, a longitudinal split cylinder head tapered to fit said seat and comprising a dowel pin for holding the parts of the head in proper relation, and means for securing said head to said cylinder

whereby the two parts of the head are held in proper relation to each other.

7. The combination with a cylinder having a relatively elongated tapered seat at its end, of a piston rod, a cylinder head having holes for the passage of securing bolts, a central hole for the passage of said piston rod, a packing groove, being tapered to fit said seat and split through the plane of the bolt holes for the securing bolts, and securing bolts adapted to hold the head longitudinally in position with respect to the cylinder and to hold the two parts of the head in position relatively to each other.

8. The combination of a cylinder head split centrally and longitudinally into two halves of constant inside diameter and an outside diameter varying from a maximum to a minimum, with a surrounding yoke, and means for holding said yoke as near as possible toward the part of the cylinder head of maximum diameter.

In testimony whereof I affix my signature, in presence of two witnesses.

FRANK L. SESSIONS.

Witnesses:

C. E. WAXBOM,
E. P. SNIVELY.