

G. JOHNSON.
Packing for Hydraulic Pistons.

No. 224,695.

Patented Feb. 17, 1880.

Fig.1.

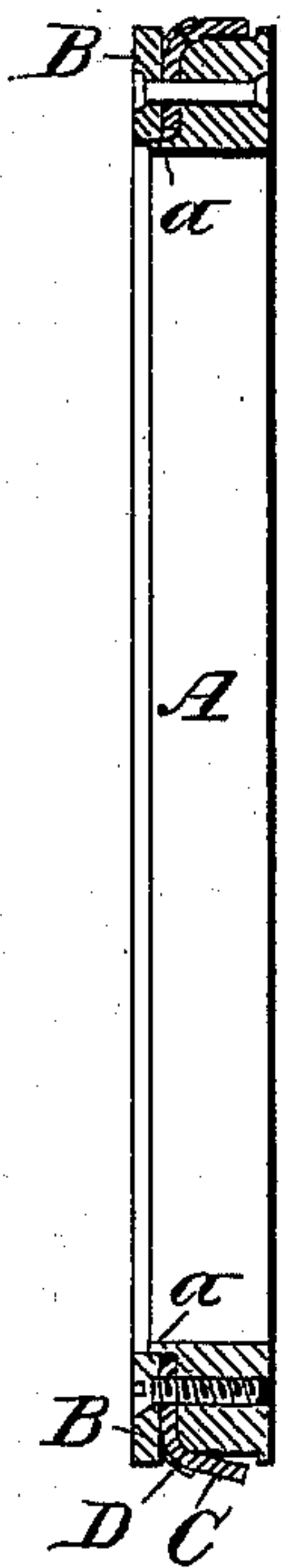


Fig.2.

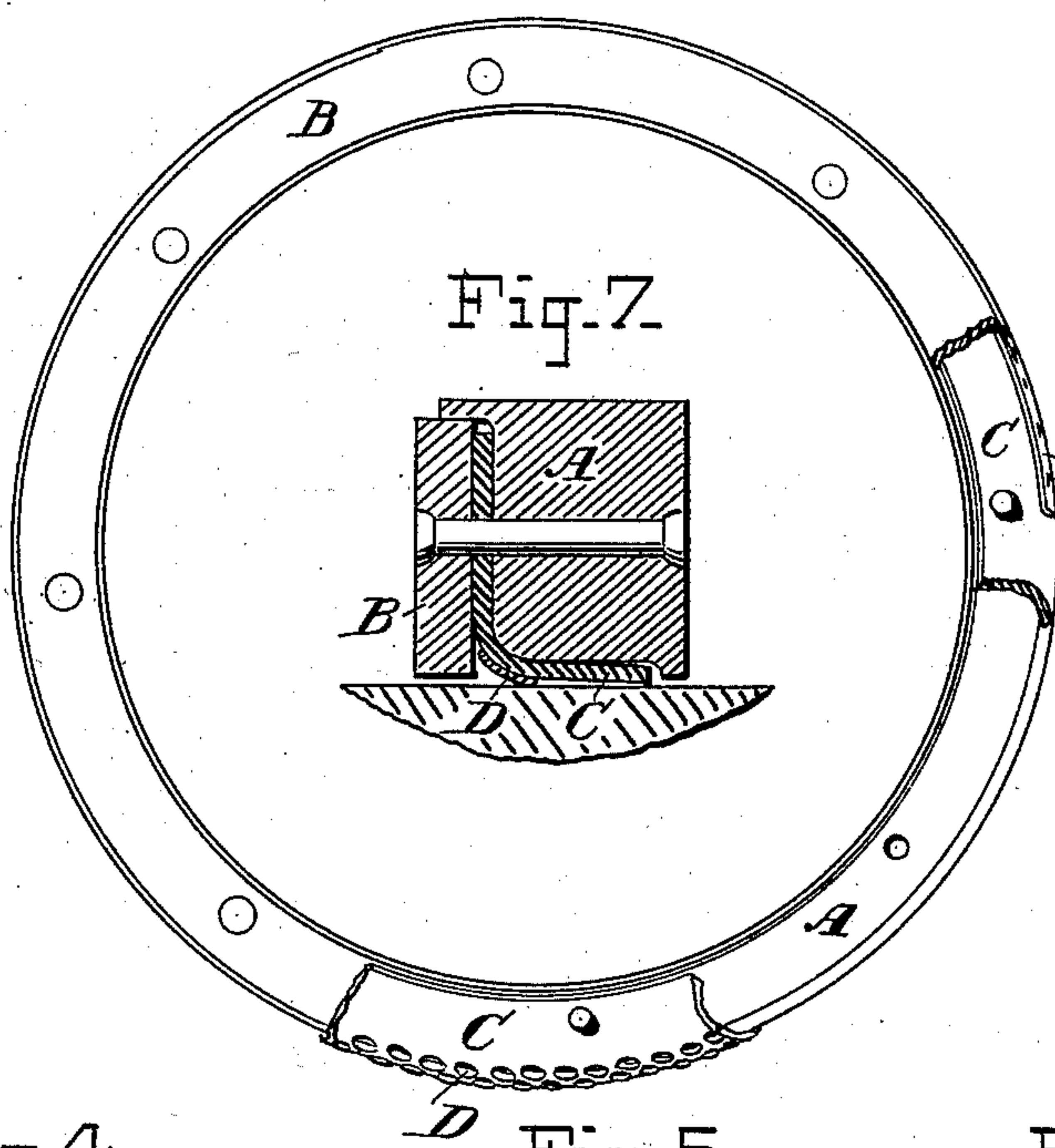


Fig.3.

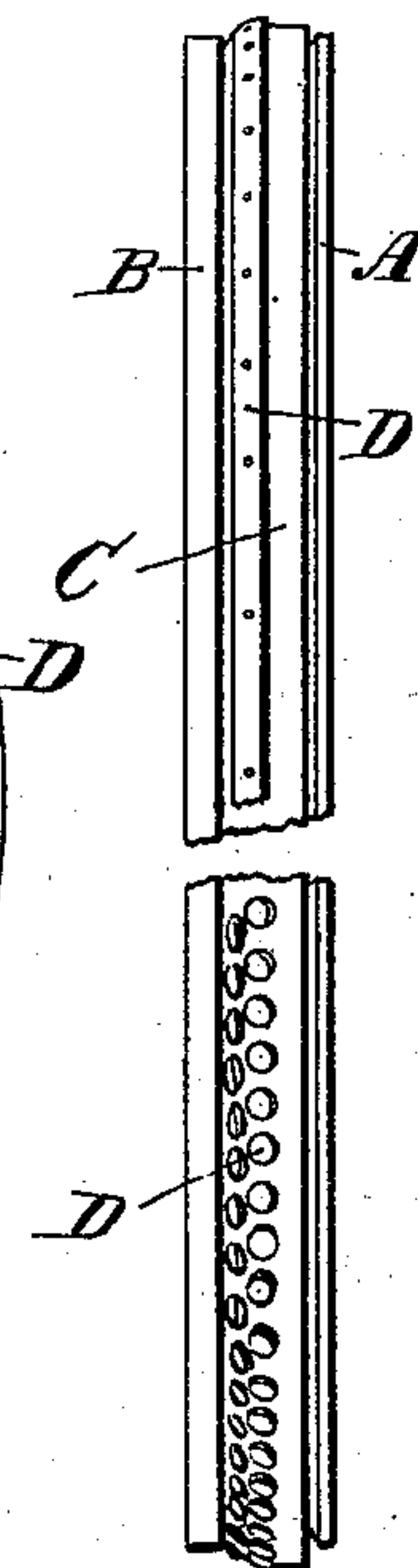


Fig.4.

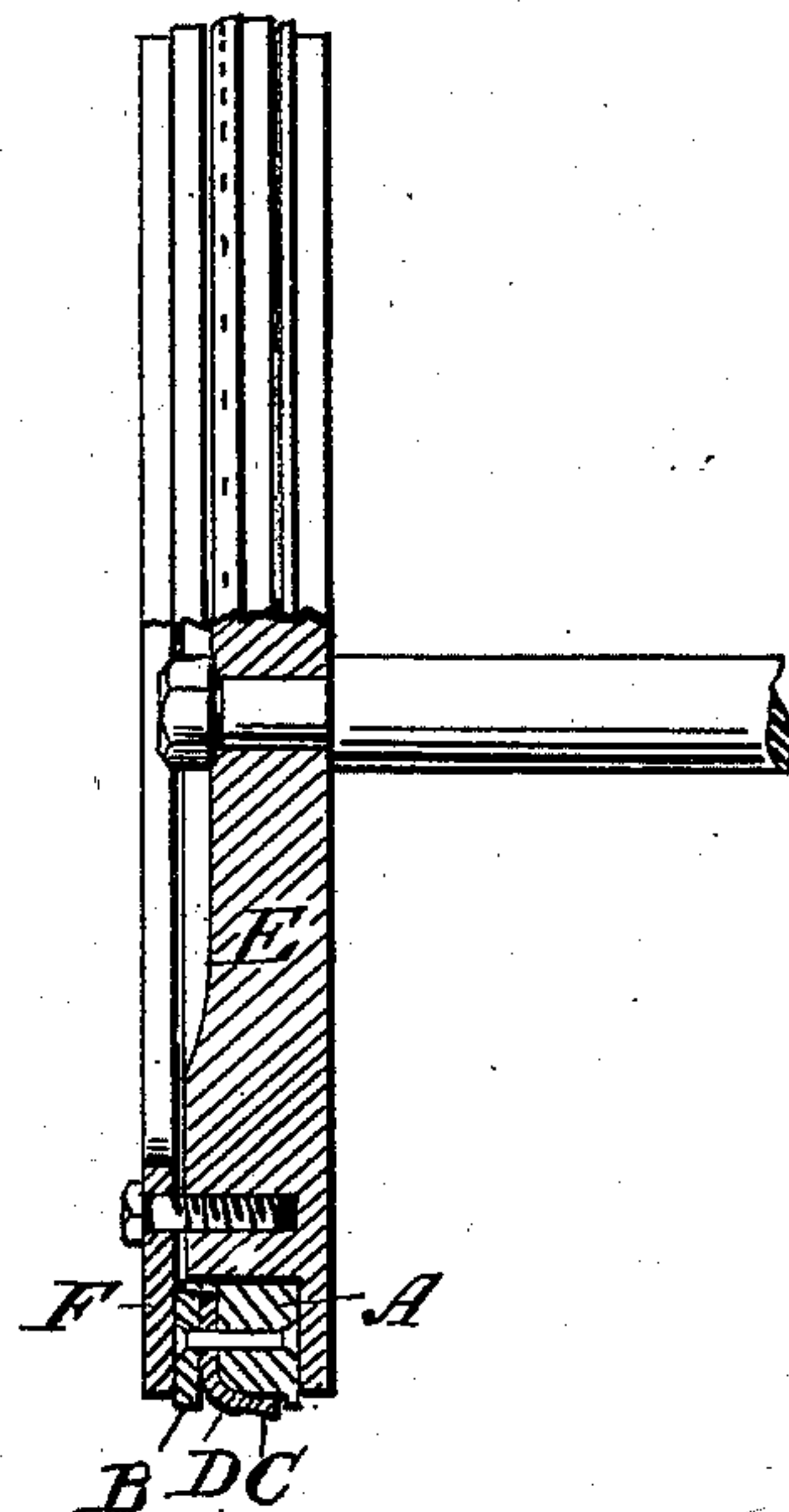


Fig.5.

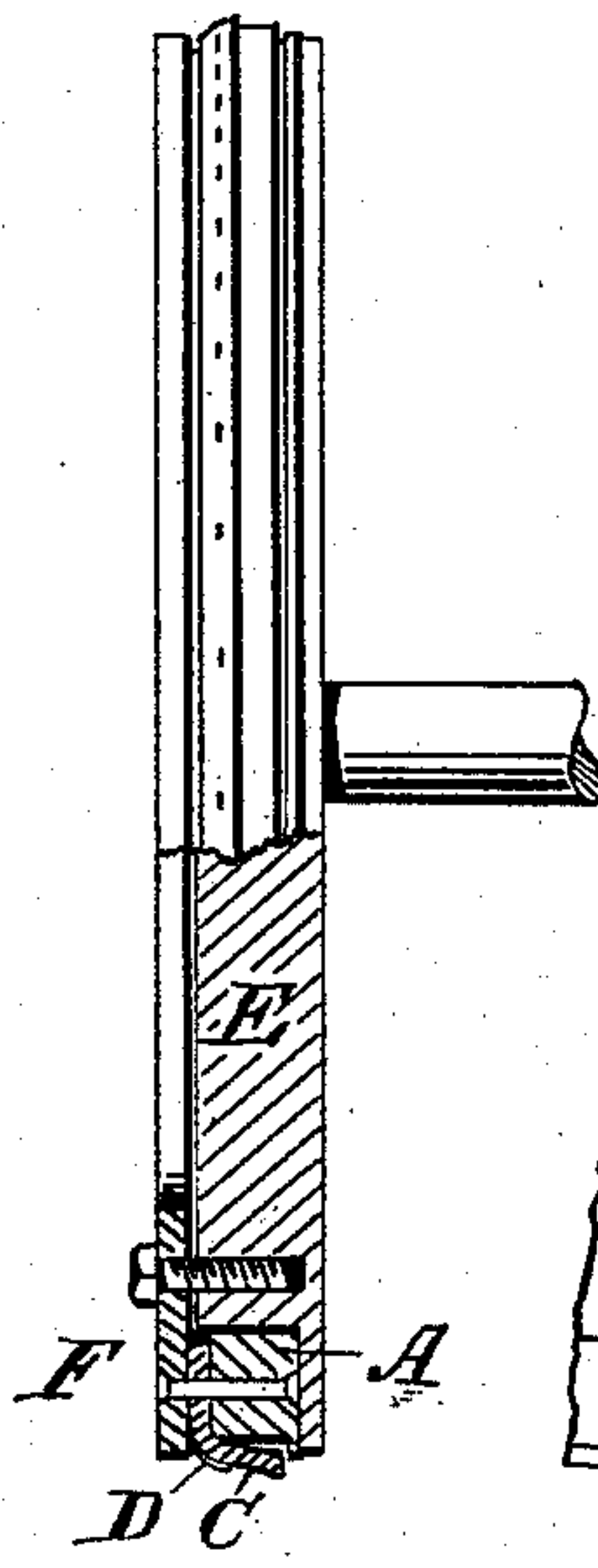
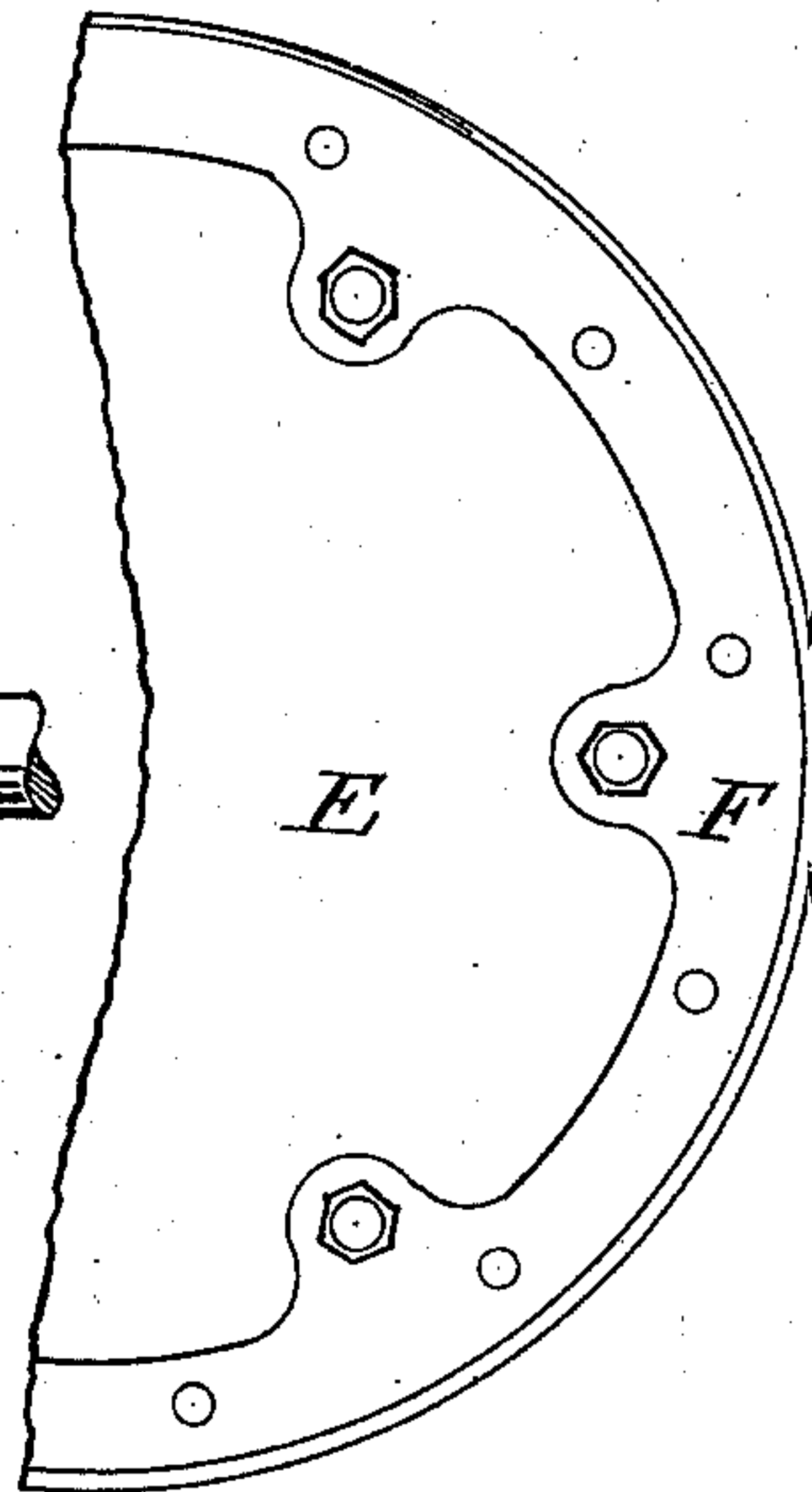


Fig.6.



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GEORGE JOHNSON, OF CINCINNATI, OHIO.

PACKING FOR HYDRAULIC PISTONS.

SPECIFICATION forming part of Letters Patent No. 224,695, dated February 17, 1880.

Application filed September 5, 1878.

To all whom it may concern:

Be it known that I, GEORGE JOHNSON, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain
5 Improvements in Packing for Hydraulic Pistons, of which the following is a specification.

This invention relates to packing for the pistons of hydraulic engines most particularly; and the object is in part to provide a packing-
10 ring that may be removed when worn and replaced by another with the least possible expenditure of time and trouble.

Elevators are in constant use—often night and day; and their stoppage for more than a
15 few minutes at a time, from injury or wear of the parts, is a source of great annoyance. A large proportion of these elevators are operated by hydraulic engines, the packing in the cylinders of which, as ordinarily constructed,
20 is subject to rapid deterioration from constant use. This packing usually consists of a crimped or cupped disk of leather, and to remove a worn one and replace it by another requires the removal of the heavy piston and
25 the careful fitting in of the new packing—an operation which involves the consumption of considerable time, during which the elevator must be stopped.

My invention, which I will now describe,
30 seeks to obviate these difficulties.

In the drawings, Figure 1 is a diametrical cross-section of the packing-ring. Fig. 2 is a plan of the same, parts being broken away to show the construction. Fig. 3 is an edge view
35 of the same. Fig. 4 is a partial section, showing the ring in the piston. Fig. 5 is a similar view to Fig. 4, showing a modification. Fig. 6 is a partial plan of the piston shown in Fig. 5. Fig. 7 is a detail view in cross-section enlarged.
40

The packing consists of two metal rings, A B, adapted to be screwed or riveted together, and a cupped gasket or ring, C, of leather or its equivalent, interposed between the rings
45 and held fast. One of the rings A is, by preference, made thicker than the other, and its outer face recessed somewhat in the form of an ogee, to form a support or backing for the cupped edge of the leather.

At D is shown a strip or pieces of copper, 50 the purpose of which is to protect the leather from wear at its bend. This forms no part of my invention, and is not essential to the construction of the packing-ring.

Referring to Figs. 4, 5, and 6, E is the piston, 55 provided with an annular rabbet in its edge to fit and receive the packing-ring, and F is a cap-plate or ring which rests upon the piston and ring and holds the latter in place. This cap-plate may be secured to the piston 60 by screws or bolts in the usual manner, and in some cases the ring B of the packing may be omitted and the plate F be arranged to rest directly upon the leather C. In this case the plate F really takes the place of the ring 65 B, and is secured by rivets or otherwise to the ring A.

Two or more of the completed packing-rings may be kept on hand, and when one is found to be working badly from any cause 70 it is only necessary to run the piston to the open end of the cylinder, secure the car of the elevator, and run the water out of the cylinder, take off the cap-plate F, and remove the injured ring, replacing it with a spare one. 75 This will require but a few minutes, as the packing-ring is simply set in its place and requires no adjustment.

To cause the rings A B to fit properly together, I provide the ring A with a rim, a, 80 substantially as shown; but this may or may not be used.

I claim—

The integral packing for hydraulic pistons, consisting of the metal rings and the inter- 85 posed cupped ring of leather or its equivalent, the three firmly secured together and adapted to fit as a whole into the rabbet in the piston, substantially as set forth.

In witness whereof I have hereunto signed 90 my name in the presence of two subscribing witnesses.

GEORGE JOHNSON.

Witnesses:

HENRY CONNETT,
JOSEPH GOODRICH.