

No. 889,275.

PATENTED JUNE 2, 1908.

T. TURNER.
PUMP PISTON.

APPLICATION FILED DEC. 11, 1907.

Fig. 1.

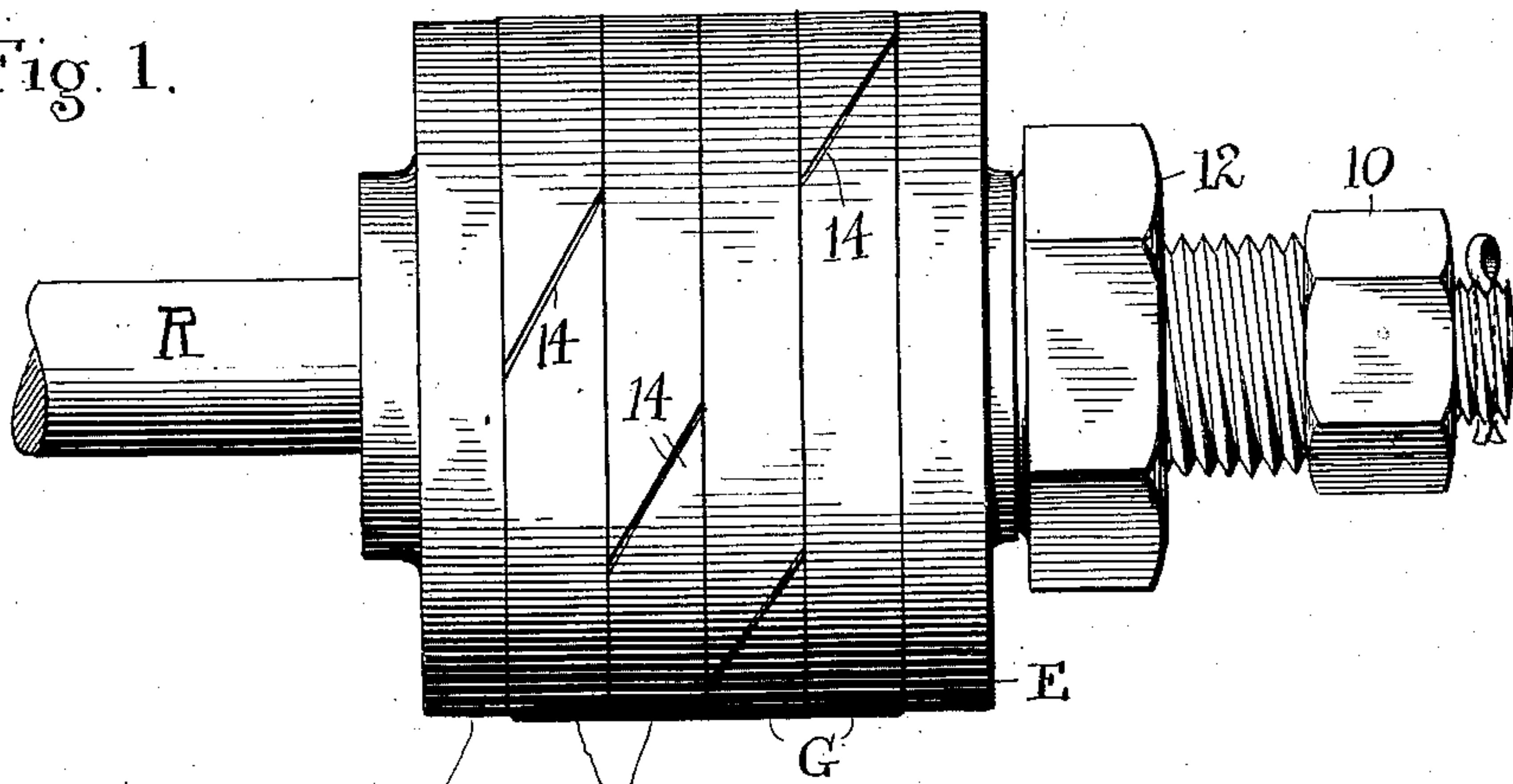


Fig. 2.

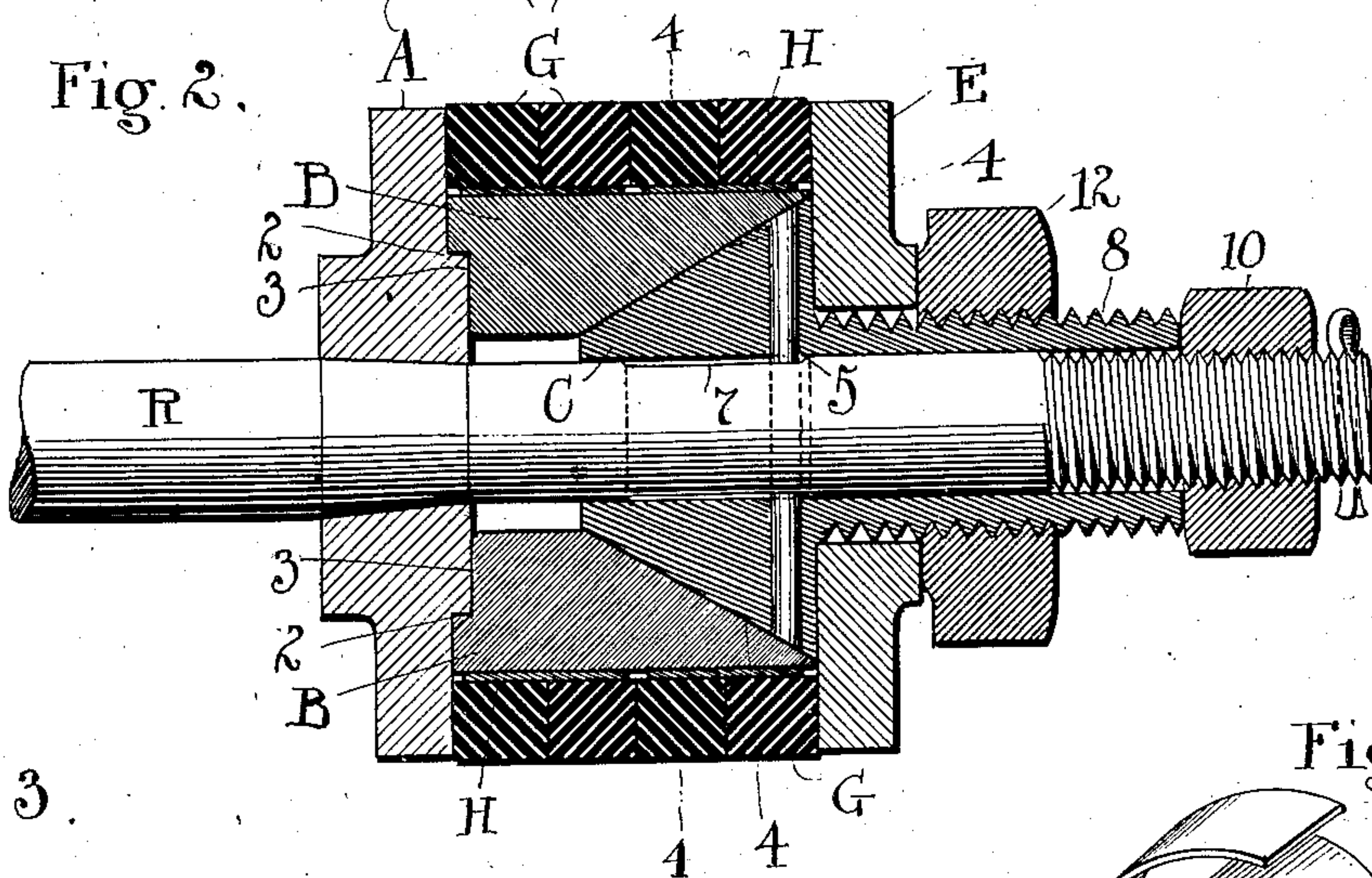


Fig. 3.

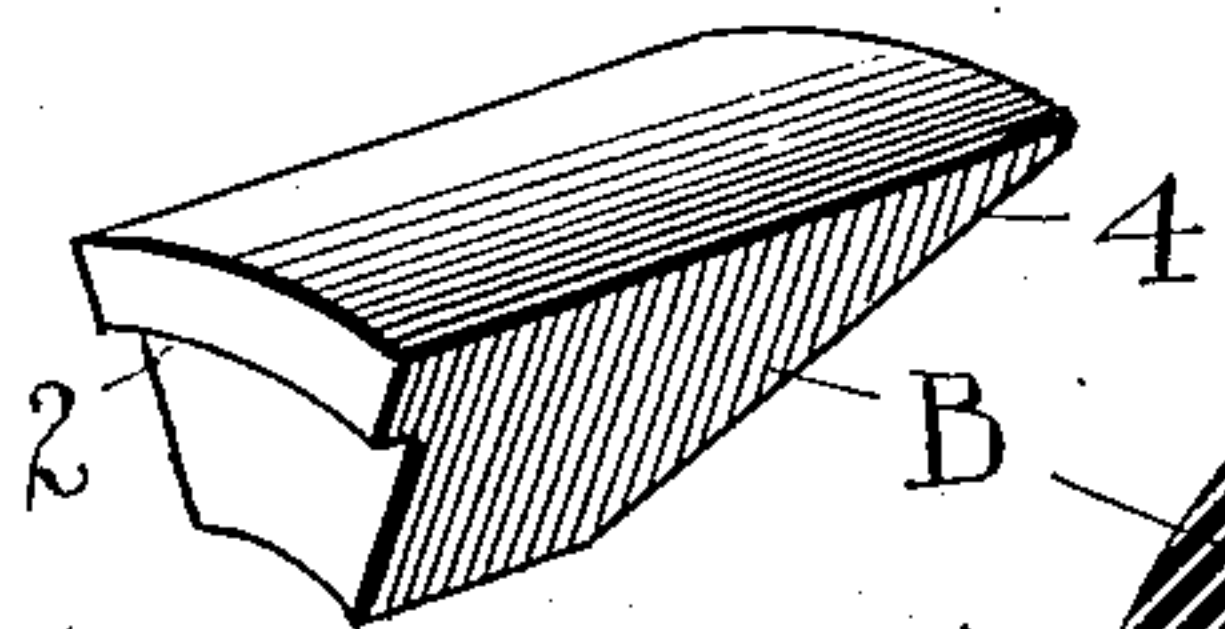


Fig. 4.

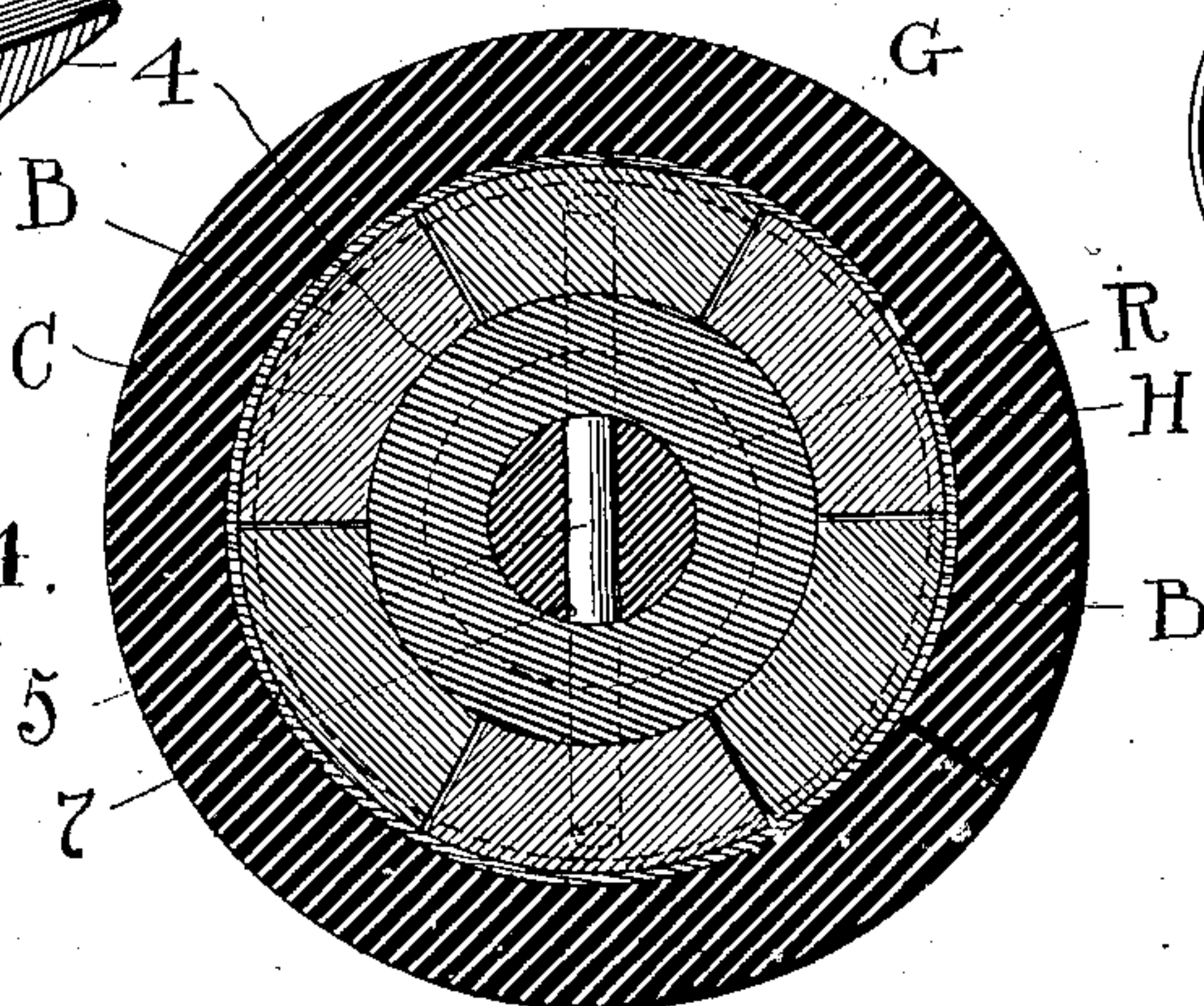
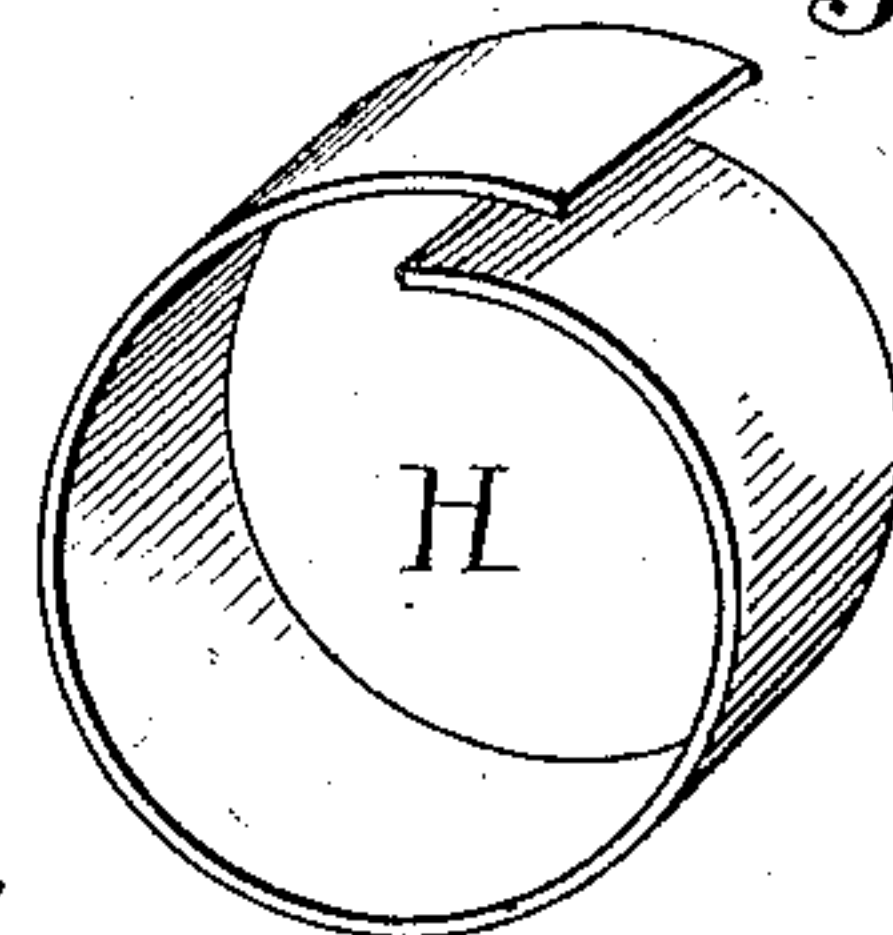


Fig. 5.



ATTEST
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UNITED STATES PATENT OFFICE.

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PUMP-PISTON.

No. 889,275.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed December 11, 1907. Serial No. 406,113.

To all whom it may concern:

Be it known that I, THOMAS TURNER, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Pump-Pistons, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in pump pistons, such as are adapted to be used for pumping oil, water and the like, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the piston and a section of a rod or shaft on which it is mounted. Fig. 2 is a longitudinal sectional elevation of Fig. 1, and Fig. 3 is a detail of one of the sections of the body of the piston. Fig. 4 is a cross section of the piston on a line corresponding to 4—4, Fig. 2, and Fig. 5 is a perspective view of one of the bands that encircle the body of the piston.

The invention as thus shown consists in a piston designed more particularly for pumping various liquids, and the novelty resides in the novel construction for expanding the piston to take up wear, as will hereinafter fully appear. To these several ends I show a piston rod R, or one end of such rod, upon which the piston is mounted, and the piston proper comprises a body consisting of several similar sections or segments B, Fig. 3, which as originally assembled and related, constitute a complete circle with the sections lying close together as in Fig. 4. The said sections have recesses 2 at their base adapted to accommodate a boss 3 on head A and about or upon the shoulder of which said sections are assembled, as in Fig. 4, while the other ends of said sections B are formed with a long bevel 4 on their inner sides which when said sections are brought together, form a conical space occupied by spreading cone C and which give a practically wedge shape to said beveled ends. The said cone is slidably mounted or sleeved on rod R, and a transverse pin or rod 5 in said cone passes through a lengthwise slot 7 in piston rod R and serves to lock said cone rotatably with the rod and yet leaves it free through slot 7 to move the cone inward and spread the parts about the same to take up wear in the piston. The

said cone has a tubular stem or sleeve extension 8 projecting outward beyond the piston proper and which is sleeved over rod R, and threaded externally and serves as the adjusting medium for the cone. To these ends the extremity of the piston rod also is externally threaded and projects beyond sleeve 8 so as to receive a nut 10 adapted to bear against the end of said sleeve. Then a head E is loosely mounted rotarily on said sleeve 8 and adapted to bear against the body B of the piston, and a nut 12 on said sleeve locks said head in place.

A series of four packing rings G encircle body B and are confined between the two heads A and E. Said rings have split diagonal ends 14, which enable them to be spread to take up wear as they become worn in use. Two expansible spring-steel bands H also are provided and which encircle body B beneath rings G and serve to bridge the gaps or open spaces that come between the sections of said body when the piston is expanded beyond its original size, Fig. 4. The split joints 14 of said rings are staggered so as not to come opposite each other. Head A is fixed as to piston rod R, while head E is loose upon its support except as fastened by nut 12.

In operations, the wear on the packing rings is taken up; first, by loosening nut 12 which bears against head E; and second, by screwing up nut 10 which bears against the end of sleeve 8 thereby forcing cone head C axially on rod R and segments B radially outward to expand packing rings G. When adjusted, nut 12 locks the parts together and serves as a lock nut combined with nut 10. Spring bands H also serve to hold segments B in place when changing packing rings G.

What I claim is:—

1: A piston comprising a body formed of sections having corresponding internally tapered ends, a spreading cone engaging said tapered ends, a piston rod having a slot lengthwise and a pin in said cone engaged in said slot, heads on said piston and expansible bands about said body, packing rings mounted between said heads over said bands, a lock nut mounted on an extension and bearing against one of said heads, and a tightening nut for the cone mounted on the end of the piston rod and bearing against the end of said cone extension.

2. A piston rod having a slot lengthwise

therein, a body for the piston consisting of a series of sections arranged about the portion of said rod containing said slot, a cone on the rod to spread said sections having a tubular
5 extension externally threaded and a pin through said cone engaged in said slot, disk shaped heads bearing against the ends of said body sections and one of said heads overlapping the base of said cone and mounted over
10 the threaded extension thereof, a nut on said extension to fasten said head and a nut on

said rod bearing against the end of said extension, whereby the cone is driven inward to expand the said body sections and take up wear. 15

In testimony whereof I sign this specification in the presence of two witnesses.

THOMAS TURNER.

Witnesses:

R. B. MOSER,

F. C. MUSSUN.