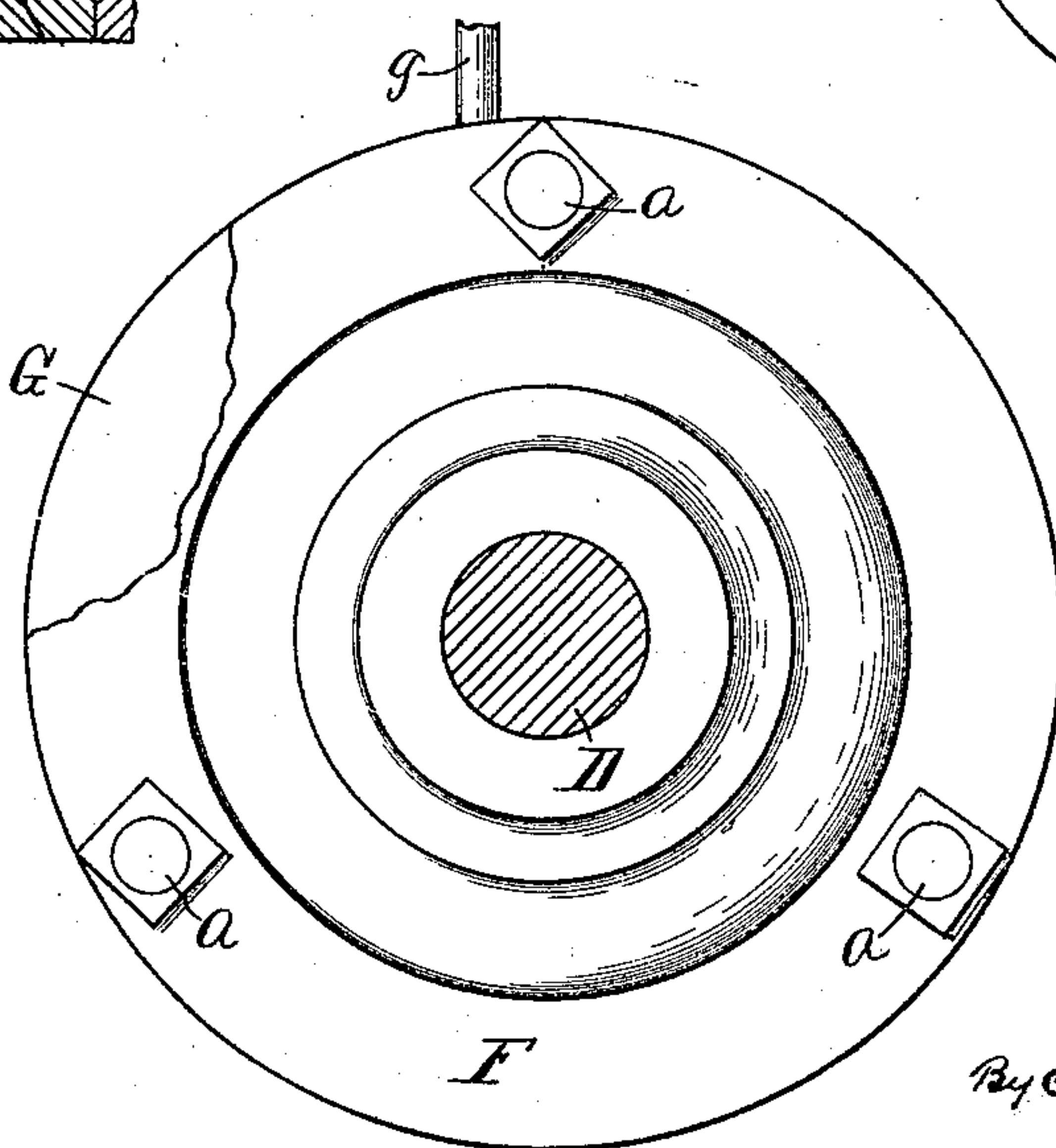
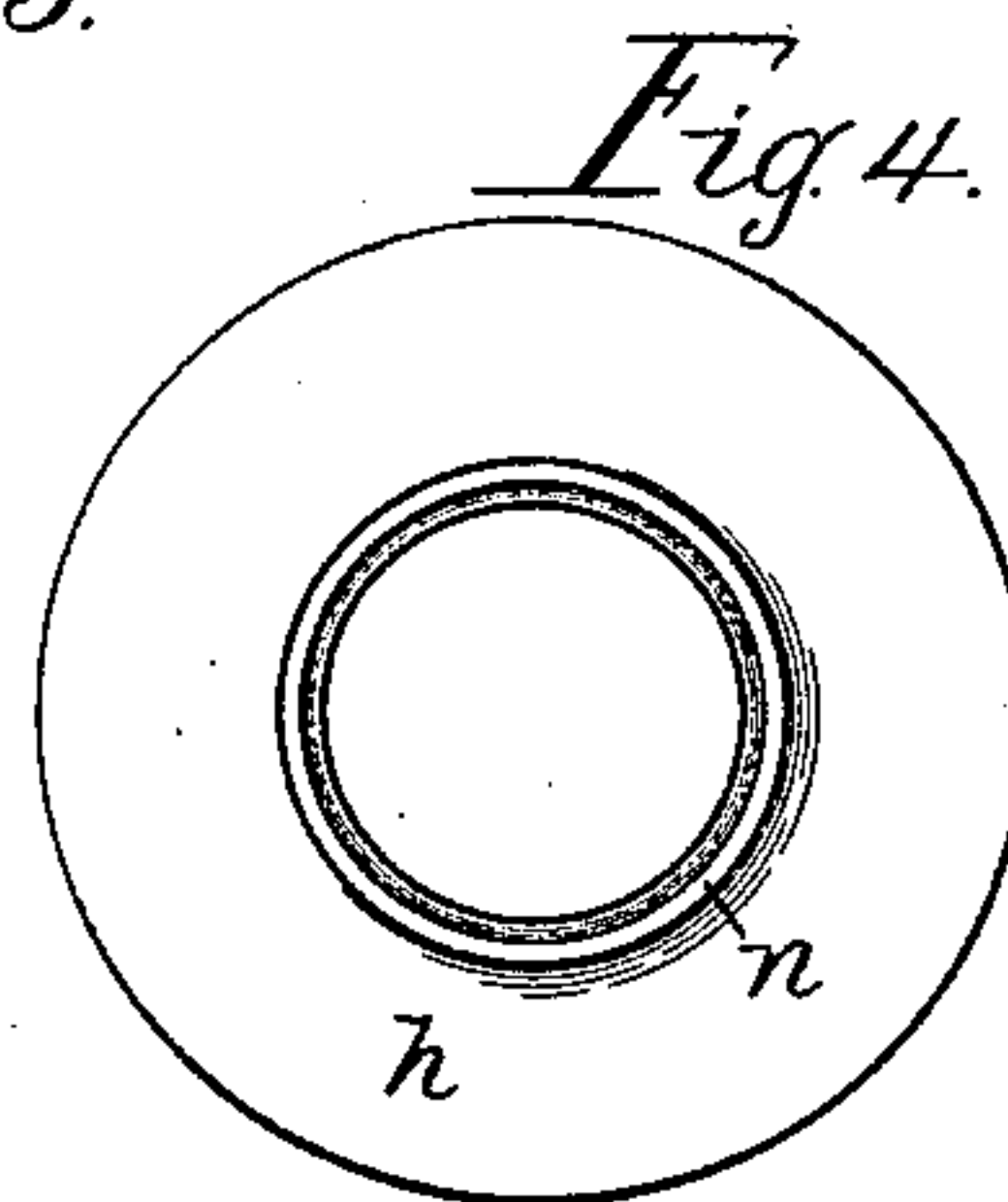
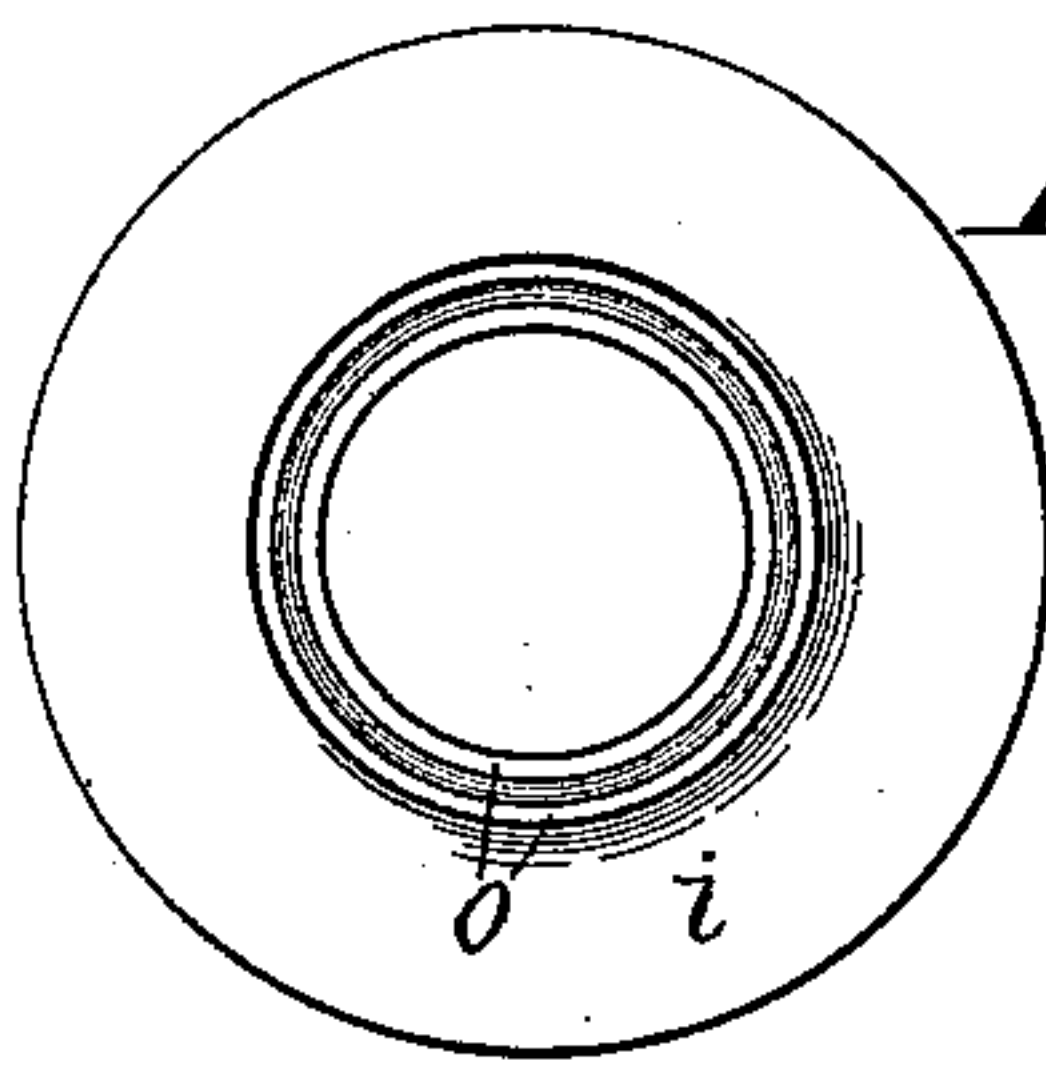
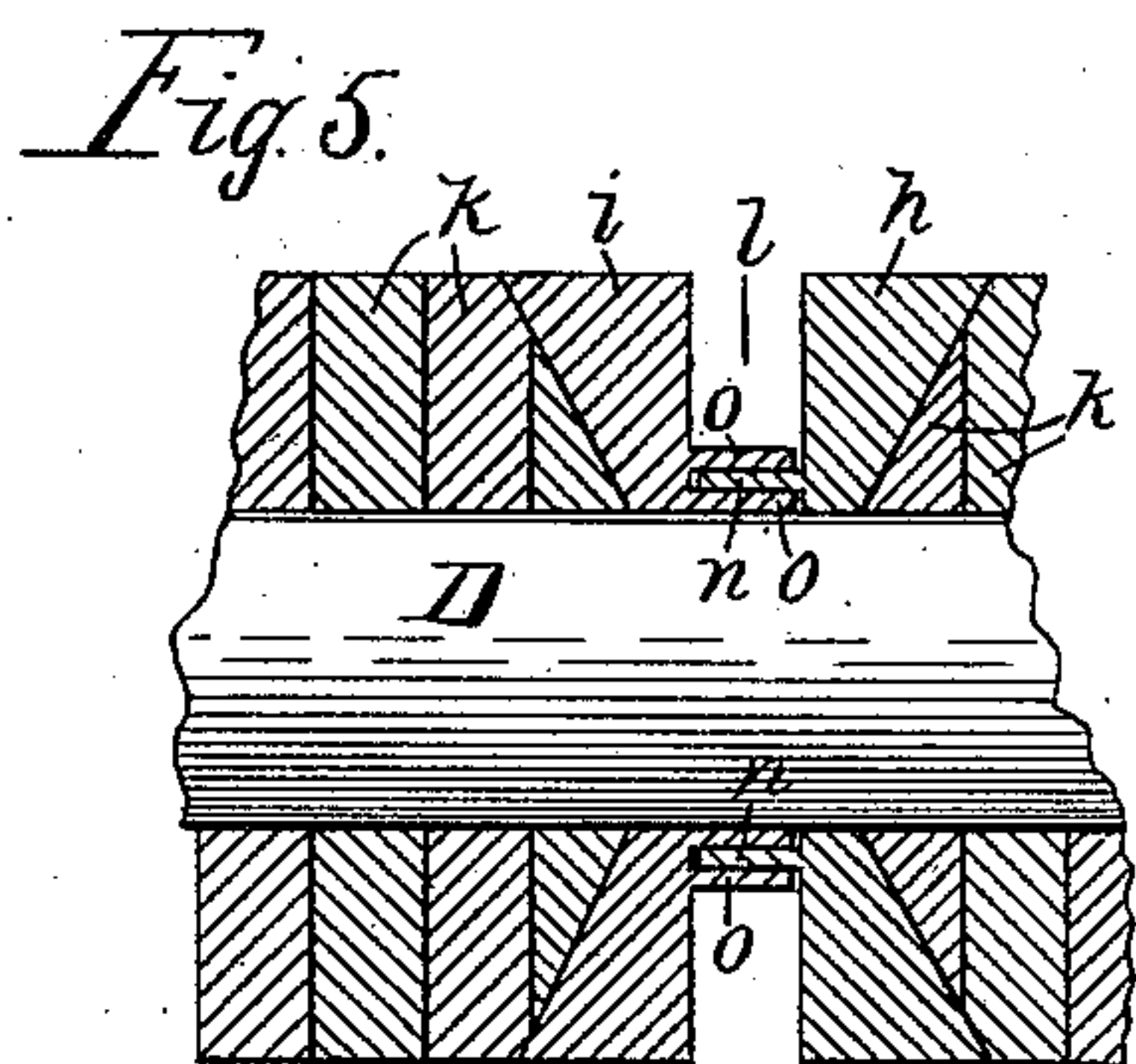
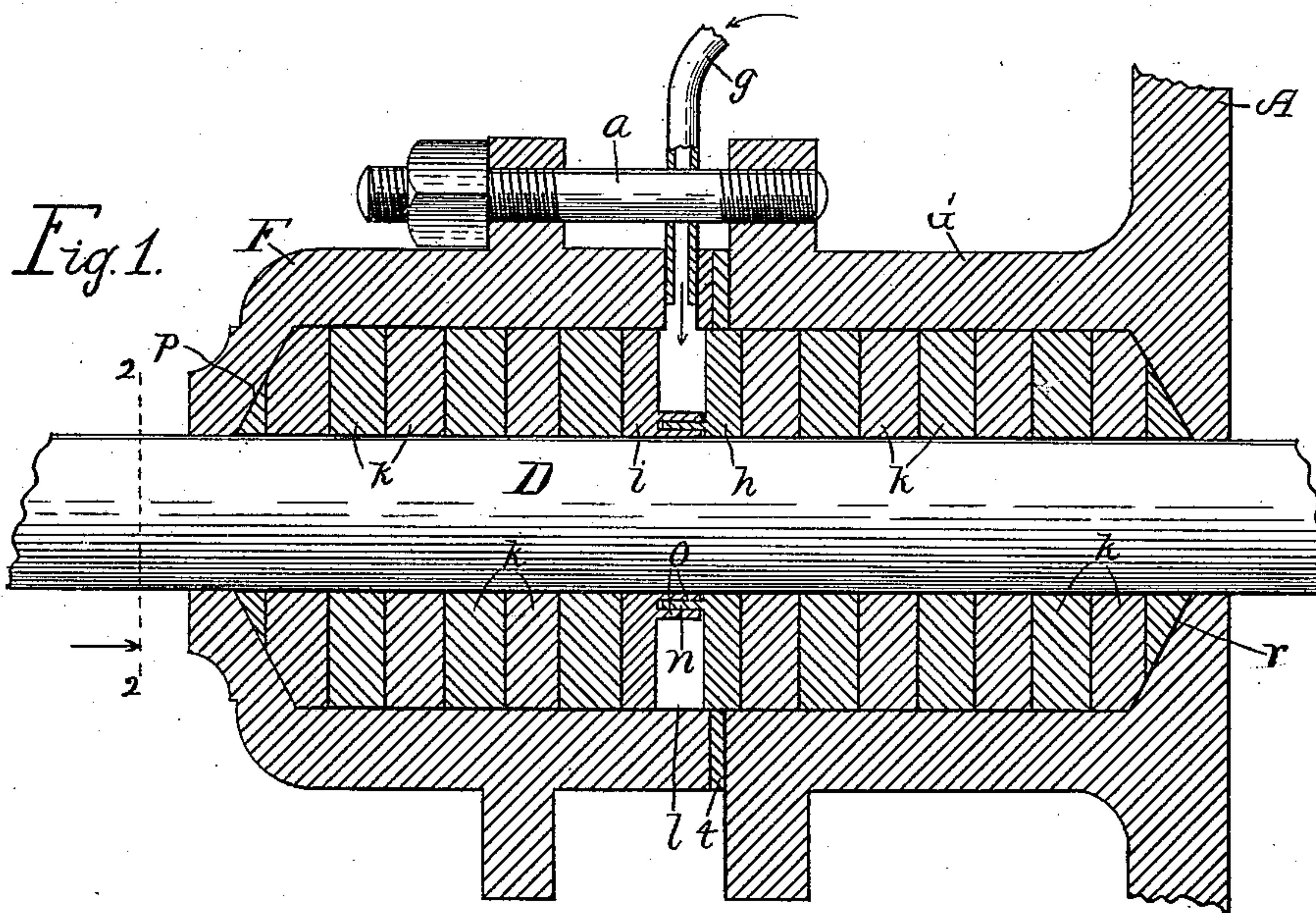


(No Model.)

O. J. GARLOCK.  
PISTON ROD PACKING.

No. 574,353.

Patented Dec. 29, 1896.



Attest:  
M. L. Winston.  
M. V. Layler

Inventor:  
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Atty.



# UNITED STATES PATENT OFFICE.

OLIN J. GARLOCK, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE GARLOCK PACKING COMPANY, OF PALMYRA, NEW YORK.

## PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 574,353, dated December 29, 1896.

Application filed August 31, 1896. Serial No. 604,446. (No model.)

*To all whom it may concern:*

Be it known that I, OLIN J. GARLOCK, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Piston-Rod Packing, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My present invention relates to means or devices for packing piston-rods, more particularly those of steam-cylinders, the invention being hereinafter fully described, and more particularly pointed out in the claim.

Referring to the drawings, Figure 1 shows a portion of the head of a steam-cylinder, with the stuffing-box and associated parts, in longitudinal section. Fig. 2 is an end view seen as indicated by arrow in Fig. 1, the piston-rod being transversely sectioned as on the dotted line 22 at the point of the arrow. Figs. 3 and 4 are face views of the plates or followers for the packing. Fig. 5 shows a simple modification of the form of the outer faces of the plates.

Referring to the drawings, A is the central part of the head of a steam-cylinder, G being the stuffing-box and D the piston-rod. The stuffing-box is of ordinary construction, and to it I add a longitudinal extension F for the purpose of holding additional packing for the rod. The extension F is secured to the stuffing-box by means of ordinary stud-bolts *a*, and is preferably about the same length as the stuffing-box, having internal and external diameters the same as the corresponding diameters of the stuffing-box. A packing-ring *t* may be placed between the parts F and G, as shown, or those parts may be, if desired, ground together to form a steam-tight joint between them. The inner end *p* of the part F is made inclined or conical to correspond with the form of the surface *r* of the bottom of the stuffing-box, the latter and the part F being filled with strips or rings *k* of packing material for the rod. Thus constructed the inclosure around the rod in which to receive the packing material is continuous between the conical ends *p* and *r*.

At the junction of the parts F and G are inserted two annular plates *i* and *h*, Figs. 1, 3, and 4, to divide the masses of packing in the

stuffing-box and the extension F, respectively. These plates are formed with separators, which insure at all times a space *l* between them. The separators shown consist of concentric rings *o*, projecting from the face of one plate, and a concentric ring *n*, projecting from the face of the other plate, the ring *n* occupying the space between the rings *o*, as shown. A steam-pipe *g*, leading from the live-steam space between the throttle-valve and the cylinder of the engine, is made to communicate with the space *l*. Now the pressure of the steam introduced into the space *l* will tend to force the plates in opposite directions against the two masses of packing and thus pack the piston-rod against the leakage of steam from the cylinder.

The form of the outer faces of the plates *h* *i* in contact with the packing material on either side is not essential. These faces may be plain, as shown in Fig. 1, or conical, as shown in Fig. 5, the latter form, however, being preferred. When formed conical, there are practically two stuffing-boxes for the rod, both ends of each being conical. That is to say, there are four inclined end surfaces of the space for holding the packing material, tending to deflect the latter, when under pressure, against the rod.

In using this invention steam under pressure is admitted into the space *l* for a minute or two upon starting the engine, when it is shut off from said space by a simple valve of common construction (not shown) for controlling the passage through the pipe *g*. This brief pressure of steam sets the plates firmly against the two masses of packing, and, as the space *l* is practically steam-tight, the pressure continues for a long time after the passage in the pipe is closed. Thus the packing is held continuously against the rod during an indefinite period. When a leak of steam around the rod is again observed, the pressure of steam is again turned into the space *l* for a minute or two and again shut off, as before. Thus only during brief periods, separated by days or weeks, is it necessary to have communication with the space *l* open through the pipe *g*. When the engine is stopped, as for the night, and becomes cold, the steam in the space *l* condenses; but when the engine

is started again the heat from within the cylinder and from the rod reheats the whole body of packing material, including the plates, which reconverts into steam the water in the  
5 space *l*, and a pressure is again exerted upon the plates sufficient to pack the rod.

The part *F*, being secured to the stuffing-box by ordinary stud-bolts *a*, is removable therefrom.

10 What I claim as my invention is—

In a piston-rod packing, the combination, with a stuffing-box, of an extension of substantially the same interior diameter secured to the outer end thereof and each having its  
15 bottom conically inclined, two annular plates within the same, the inner face of one of the

plates being provided with two rings and the face of the other plate being provided with one ring which lies between the two rings, packing material between each plate and the  
20 conical portion, and a pipe through the extension and communicating with the space between the adjacent faces of the plates, substantially as set forth.

In witness whereof I have hereunto set my  
25 hand, this 28th day of August, 1896, in the presence of two subscribing witnesses.

OLIN J. GARLOCK.

Witnesses:

ENOS B. WHITMORE,  
M. L. WINSTON.