

No. 611,698.

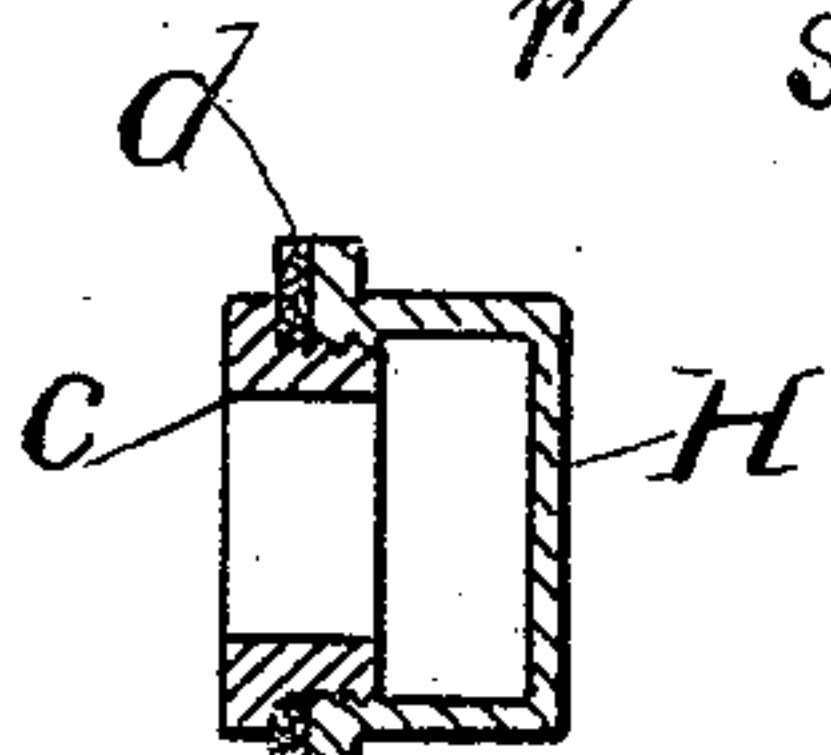
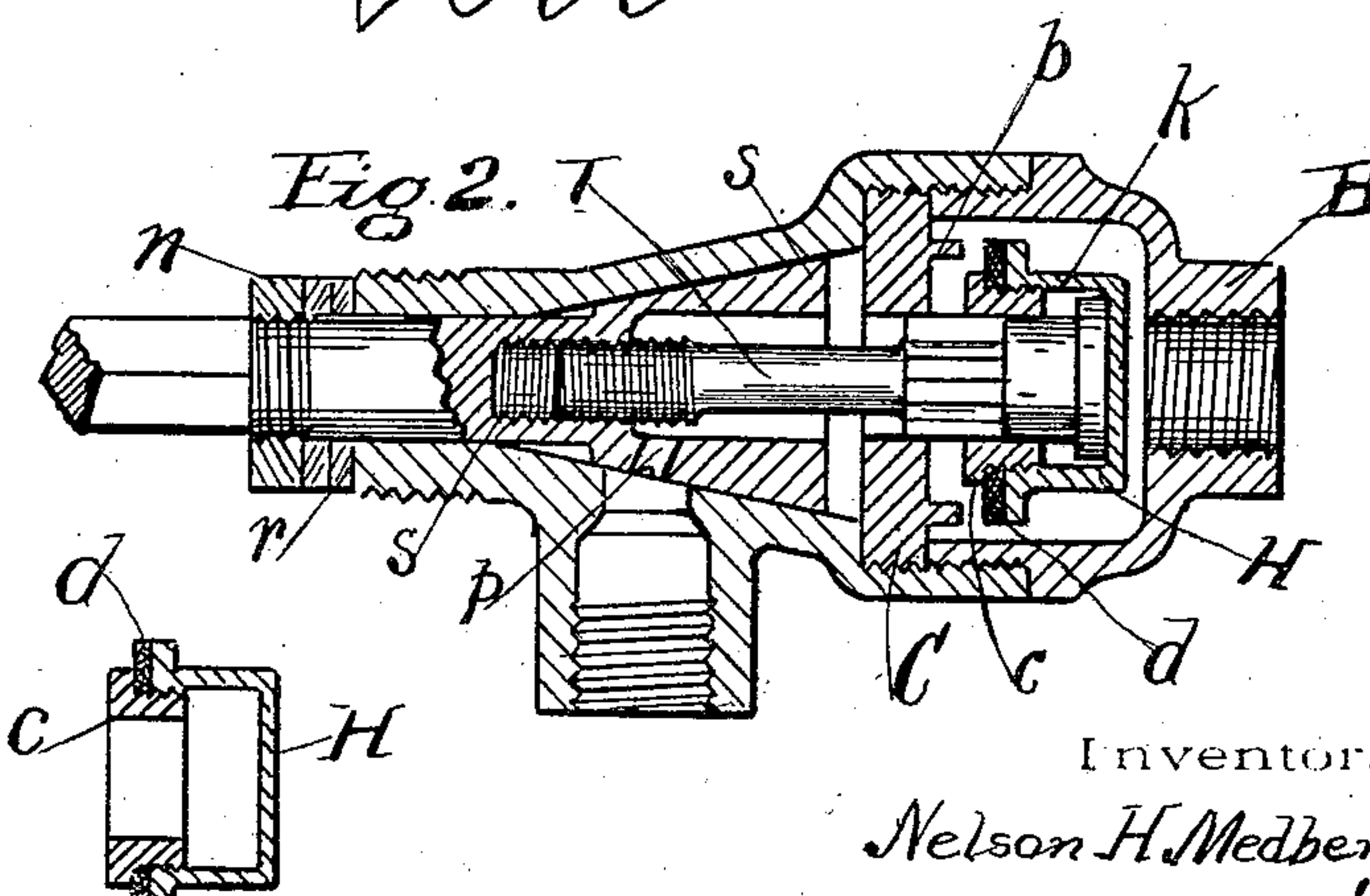
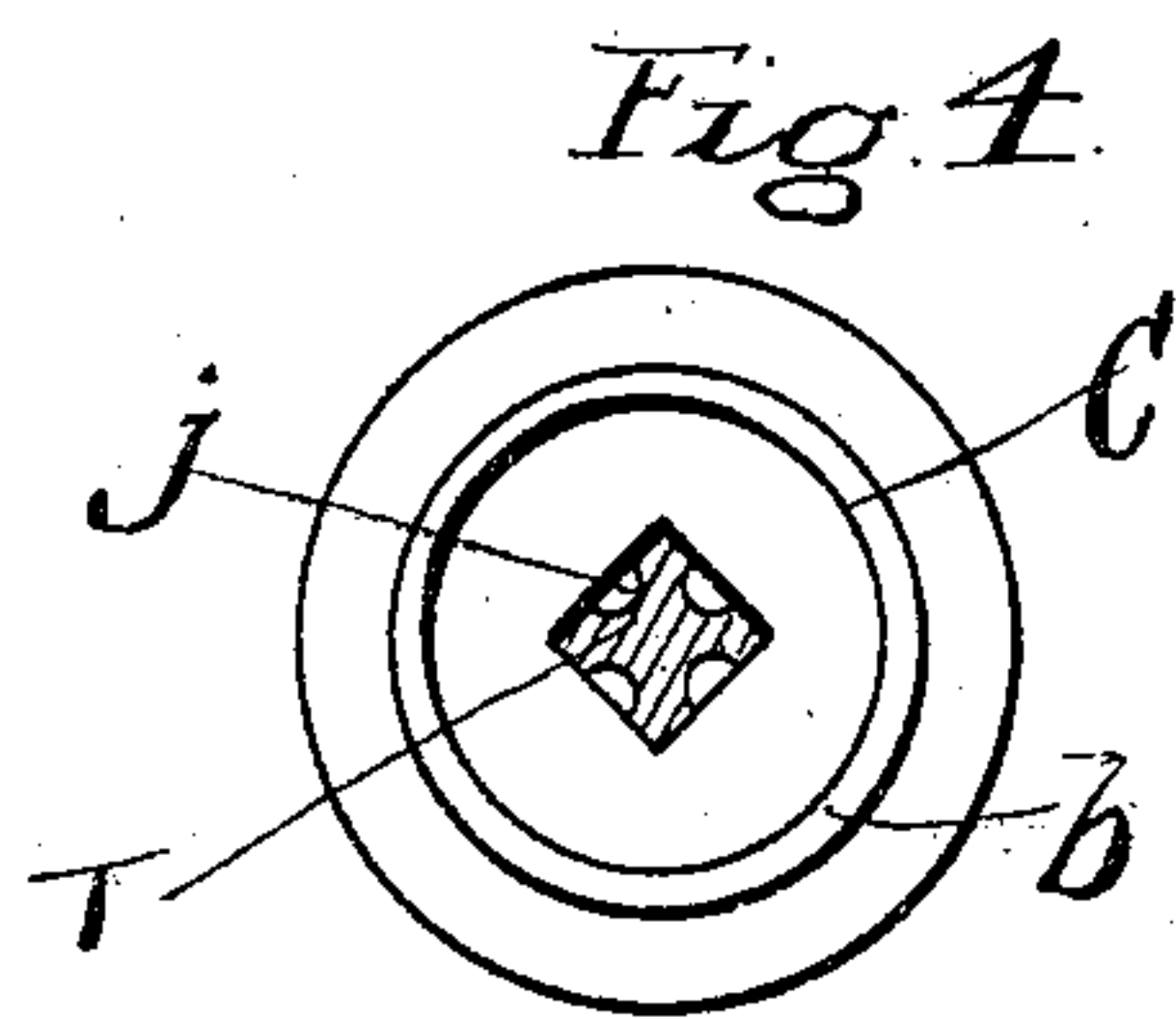
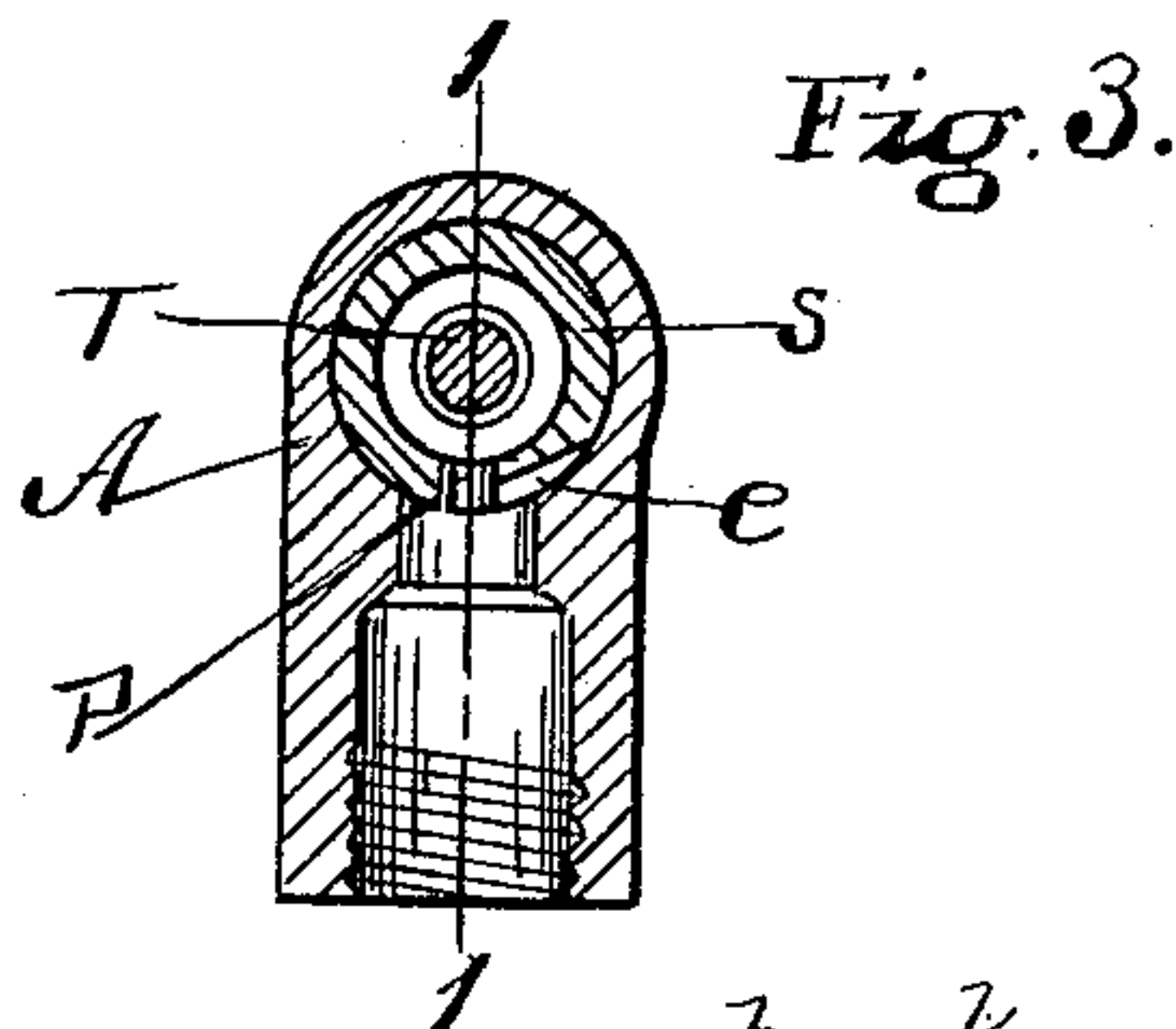
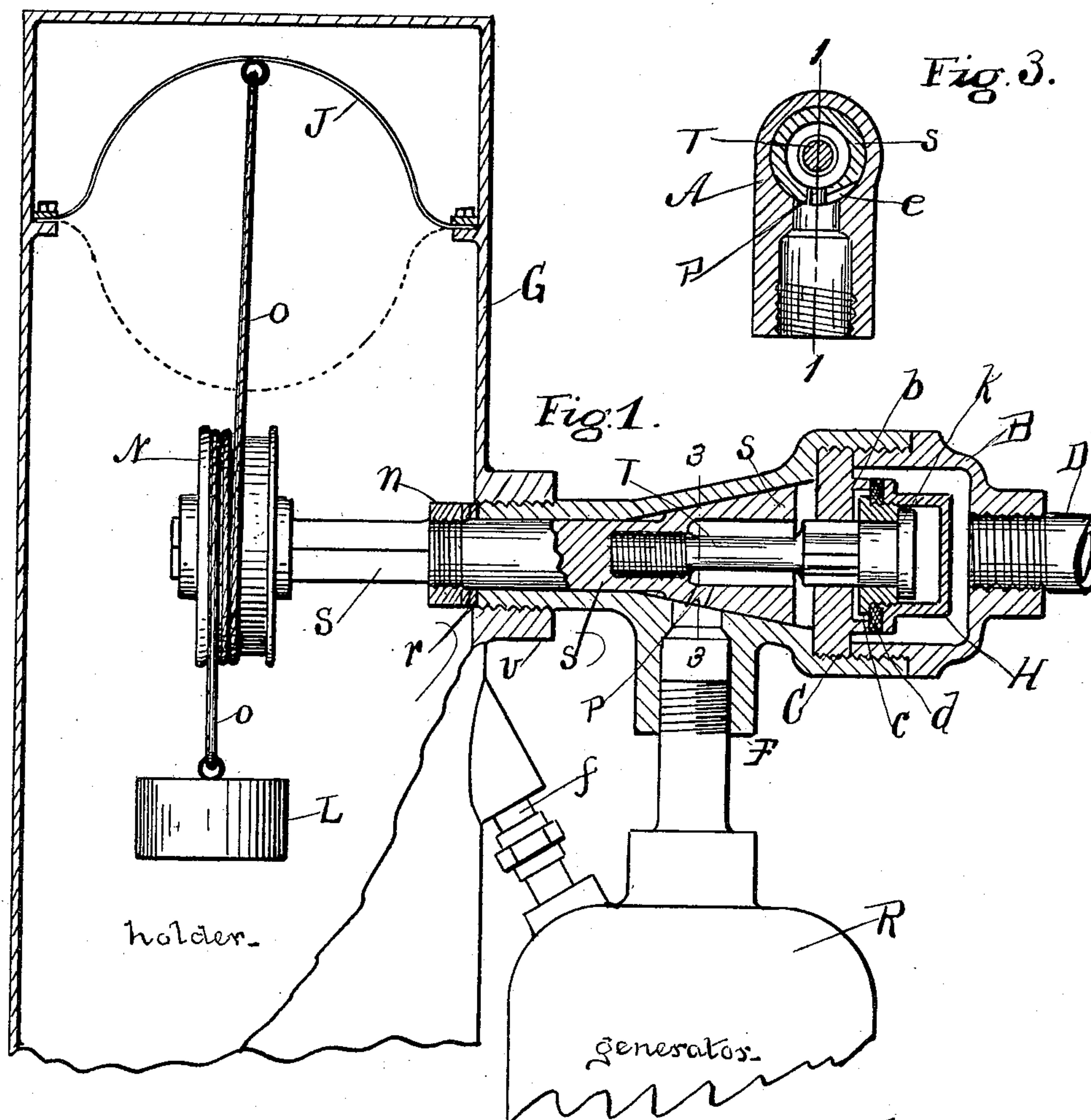
Patented Oct. 4, 1898.

N. H. MEDBERY.

REGULATING COCK FOR ACETYLENE GAS GENERATORS.

(Application filed Nov. 15, 1897.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

NELSON H. MEDBERY, OF EAST PROVIDENCE, RHODE ISLAND.

## REGULATING-COCK FOR ACETYLENE-GAS GENERATORS.

SPECIFICATION forming part of Letters Patent No. 611,698, dated October 4, 1898.

Application filed November 15, 1897. Serial No. 658,524. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON H. MEDBERY, of East Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Regulating-Cocks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the class of regulating valves or cocks used for opening and closing passages for fluids or gases, as their use may require.

The object of the invention is to automatically open and close a passage for the admission of a fluid to a receptacle containing material for generating gas when the amount of gas produced indicates a necessity for more or for less of the fluid. It is more especially intended to regulate the admission of water to the carbide of calcium in generating acetylene gas. It is fully explained and illustrated in this specification and the accompanying drawings.

Figure 1 shows a vertical section through the center of the cock lengthwise on line 1 1 in Fig. 3. It also shows a section of part of the material-holder and of the gasometer. Fig. 2 represents the same view of the cock as Fig. 1, excepting that the passage through it is open instead of being closed. Fig. 3 shows a vertical cross-section of the cock, taken on line 3 3 in Fig. 1. Fig. 4 is a face view of a collar on which the valve rests with a section of the bolt inside. Fig. 5 shows the valve in section as in Fig. 1, but separate.

Its construction is as follows:

A indicates the body of the cock, made hollow throughout its length.

B is a cover fitted to screw into the open end of the body A, and has a socket made on it to receive the supply-pipe D. A collar C is also fitted to screw into the open end of the body A, and has a projecting ring *b* made on its face to serve as a seat for the valve H, and also has a square hole in its center.

The valve H (shown separate in Fig. 5 in section) consists of a cap, with a flanged ring *c* fitted to screw into its open end and hold a packing-ring *d*, of rubber or other suitable

material, between its flange and the edge of the ring. A plug S is fitted with a tapering portion at one end to turn snugly in the taper part of the cock-chamber by grinding in the usual way, and the part beyond the taper is extended out beyond the body of the cock to receive a grooved pulley N, which is made fast to turn with the plug, and has a nut *n* and a spring *r* fitted on it to bear against the end of the body A and draw the taper portion of the plug in tight. The plug S is made hollow at one end, and has an opening P, made through one side on its tapering part, to open into the branch socket F, communicating with the receptacle R, when the plug S is turned into the right position. A bolt T is placed in the chamber of the plug S, one end of which is fitted to screw into a thread made in a reduced part of the chamber in the plug. The other end of the bolt has a head K, fitting easily into the valve-head H. The bolt is made square where it passes through the collar C, so that the collar will prevent it from turning, but will allow it to slide freely endwise. The sides of the square part of the bolt T have flutes or grooves *j* made in them (see Fig. 4) to allow a fluid to pass through.

The cock has a screw-thread made on one end to screw into a socket *v* on the side of a gasometer G, so as to bring the wheel N in the middle of the tank. A diaphragm J is held across the upper part of the tank, with a chain *o* attached to its center, that passes down around the wheel N two or three turns, and then has a weight L made fast to its lower end, so that the rising of the diaphragm by the pressure of the gas will turn the pulley N and the plug S in one direction. The exhaustion of the gas and descent of the diaphragm will allow the weight L to turn the pulley and plug in the opposite direction.

The operation of the cock and valve is this: In Fig. 1 the diaphragm J is represented as being clear up, and the valve H is drawn in, so that its packing is tight on the ring *b*. As the gas is used from the gasometer the pressure is lessened, and the diaphragm will descend and allow the weight L to turn the wheel N and plug S and screw the bolt T, which is held from turning by the square part in the collar C, out until its head *k* pushes the valve H away from the ring *b* (see Fig.



2) and allows the water from the supply-pipe D in the chamber to pass between the packing *d* and the ring *b* and through the flutes *j* into the chamber in the plug T, from  
 5 whence it passes by the hole P into the case R when the hole is in the right position. As the gas is generated in the case R it passes through the pipe *f* into the gasometer G and raises the diaphragm J, which, as before  
 10 stated, will cause the plug S to begin to turn the bolt T and allow the valve H to be closed down on the ring *b* by the pressure of the water from the pipe D and cut off the supply of water to the case R. But as the gas  
 15 will continue to make after the water is cut off, from the water absorbed by the carbide through capillary attraction, the head K of the bolt is allowed considerable room in the valve that the diaphragm can continue to rise  
 20 without increasing the pressure in the gasometer. The hole P in the plug S is represented with a tapering groove *e* at one side, the purpose of which is to regulate the amount of water to pass down to a very small quantity by the turning of the plug, so that the  
 25 hole proper will pass the opening in the case and gradually diminish or increase the flow, according to the size of that part of the groove uncovered by the opening in the case as the  
 30 diaphragm rises or falls, and so regulate the flow of water to make the gas only as fast as it is consumed. This makes a perfectly tight closure, for where a cock by turning will in time leak the valve, with its rubber packing,  
 35 is likely from its position in closing to remain perfectly tight until the other parts of the machine are worn out.

Having thus described my improvements, I claim as my invention and desire to secure  
 40 by Letters Patent—

1. In a regulating-cock, the combination of a case having an opening in its side, a plug fitting in said case and having a chamber provided with a hole in one side registering when turned with said opening in the case, 45 and a valve covering the inlet to said chamber-plug, substantially as described.

2. The combination of a rotating cock and a valve, a case fitted to receive the cock and valve, a connection between said cock and 50 valve to open and close the valve by turning the cock, with means for turning the cock, substantially as described.

3. In a regulating cock or valve the combination of a hollow case, a cover for one end 55 of it, a hollow plug made to fit said case and having a hole in one side registering when turned with an opening in said case, a valve covering the open end of said plug, a bolt connecting said plug and valve, substantially 60 as described.

4. A regulating cock or valve consisting of a hollow case, a cover for one end of the case, a plug made tapering in part and fitted in said case and having a hole in one side registering when turned with an opening in the 65 side of the case, said plug having a chamber in one end, a valve covering said end, and the other end of the plug extended out beyond the end of the case, a pulley made fast on 70 said extension of the plug, in combination with a bolt connecting said valve and plug, substantially as described.

In testimony whereof I have hereunto set my hand this 10th day of November, A. D. 75 1897.

NELSON H. MEDBERY.

In presence of—

H. E. BARLOW,  
 M. E. LAWTON.