

(No Model.)

J. CUMMING.  
TUYERE.

No. 386,528.

Patented July 24, 1888.

FIG. 3.

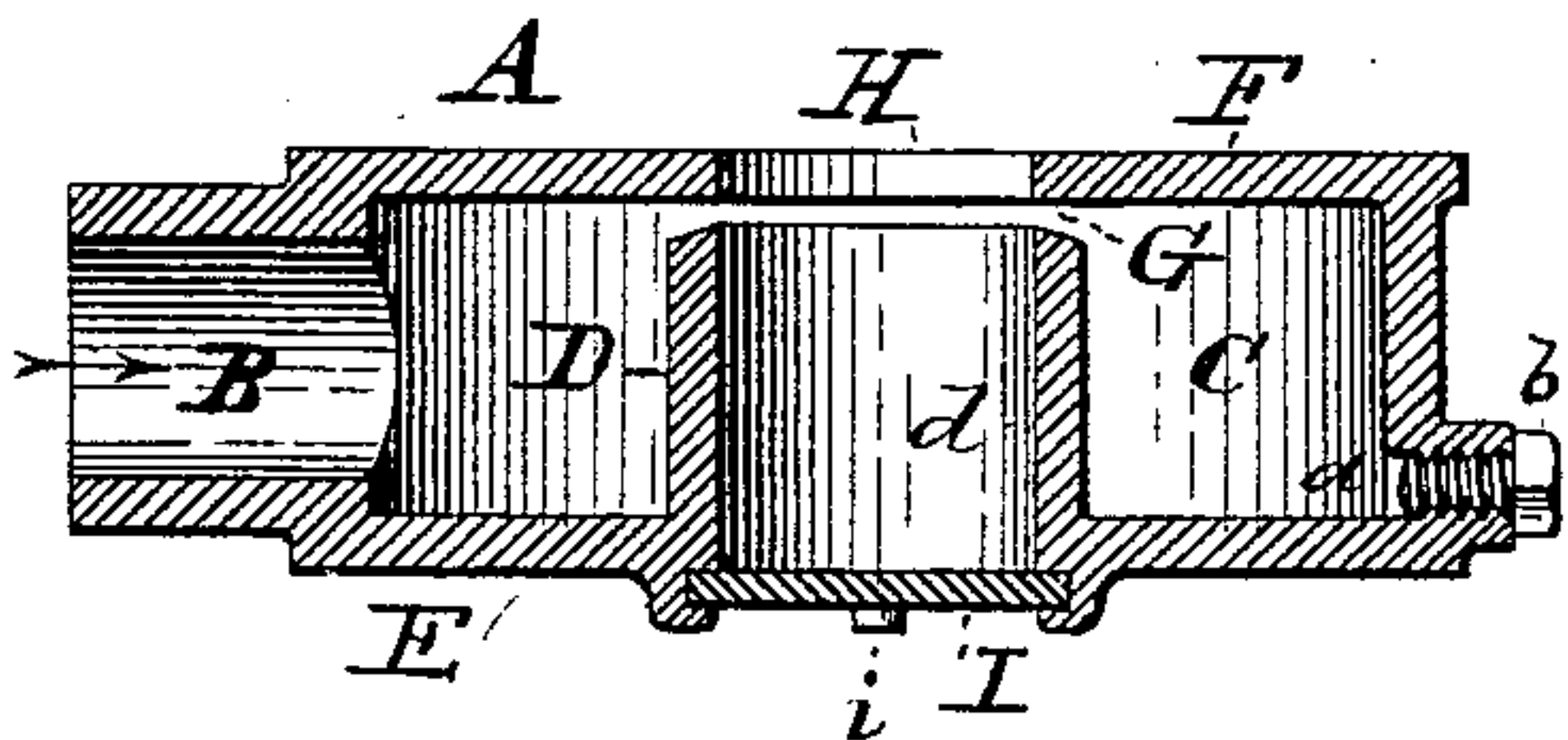


FIG. 4.

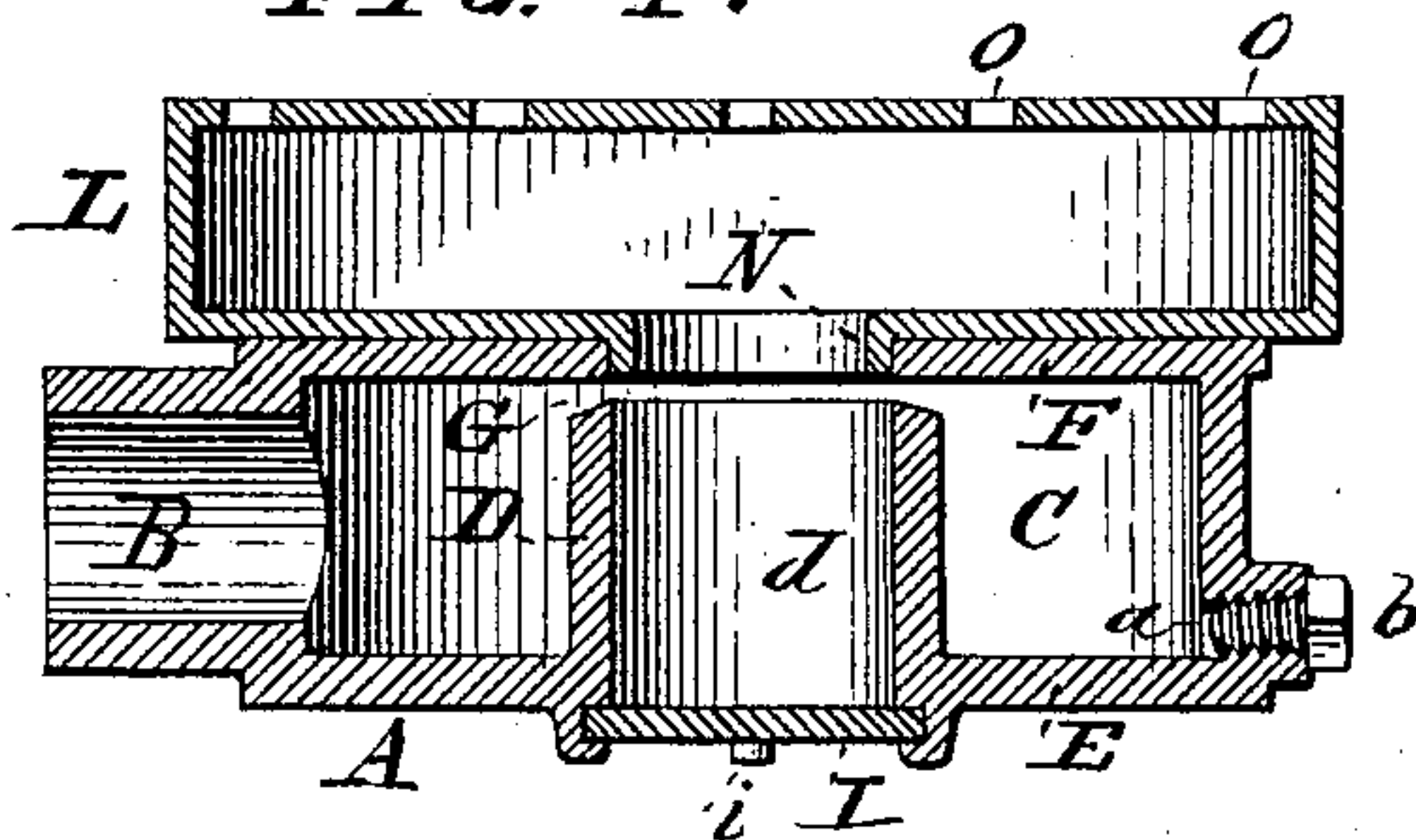


FIG. 1.

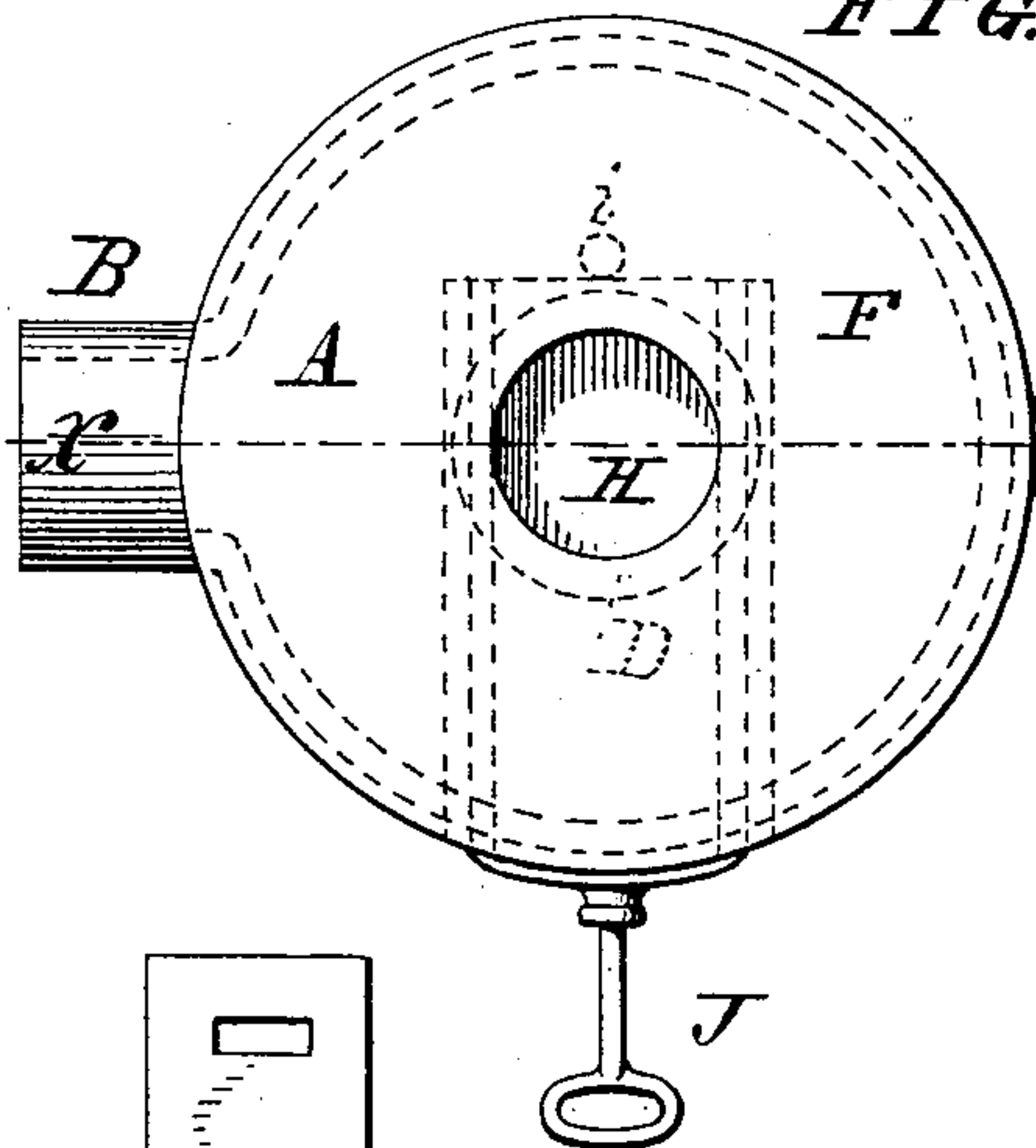


FIG. 2.

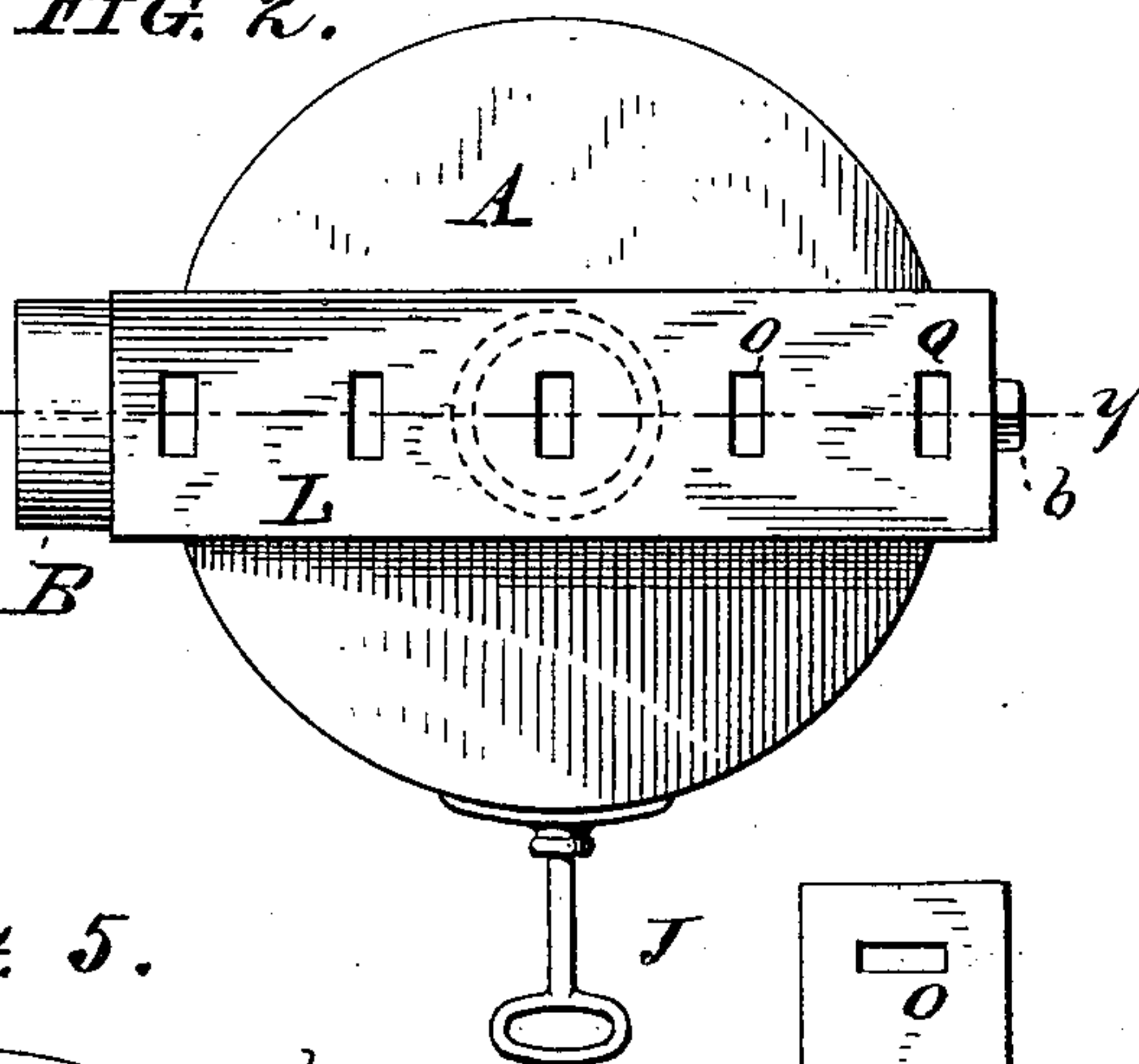


FIG. 5.

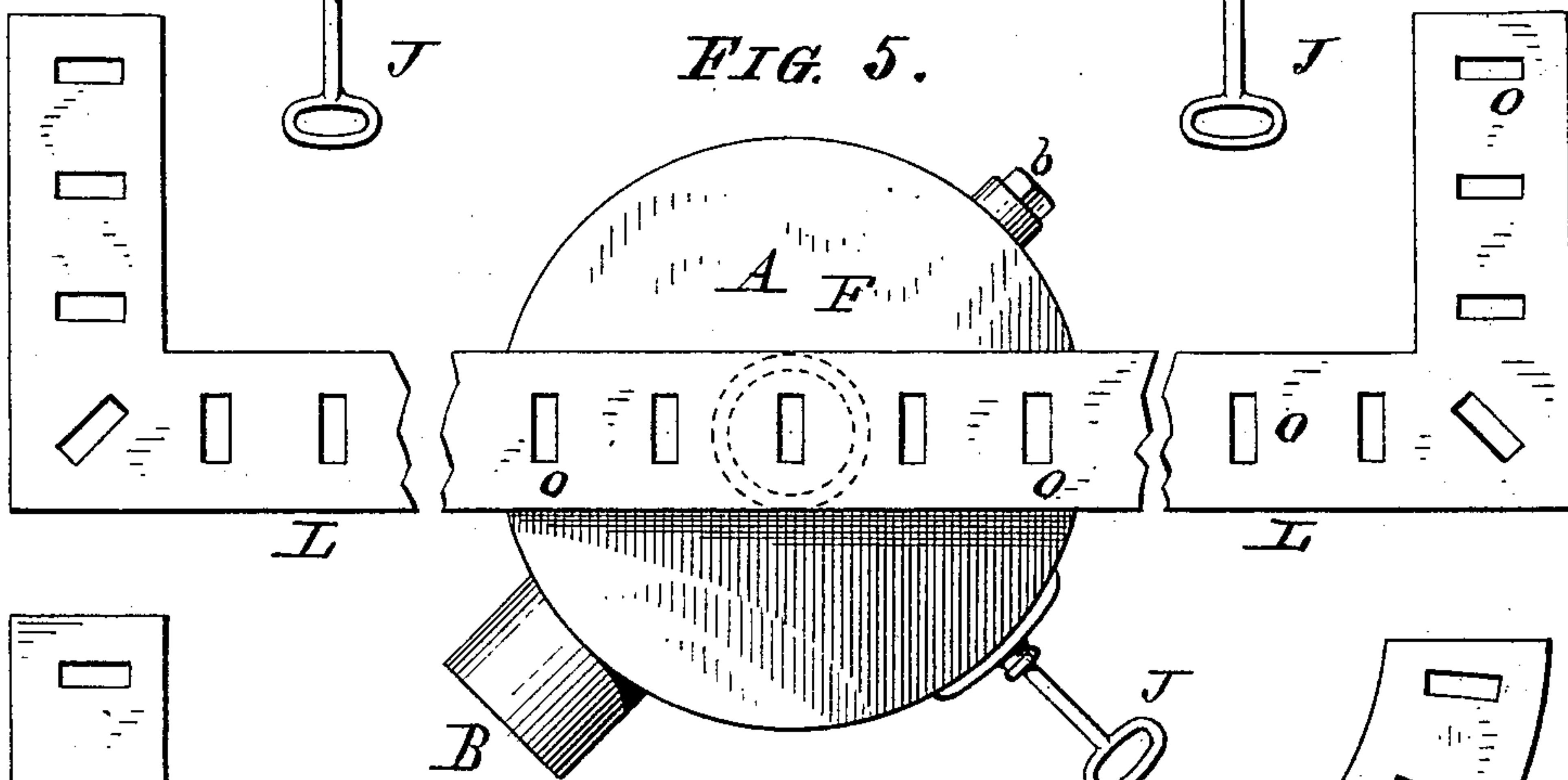


FIG. 6.

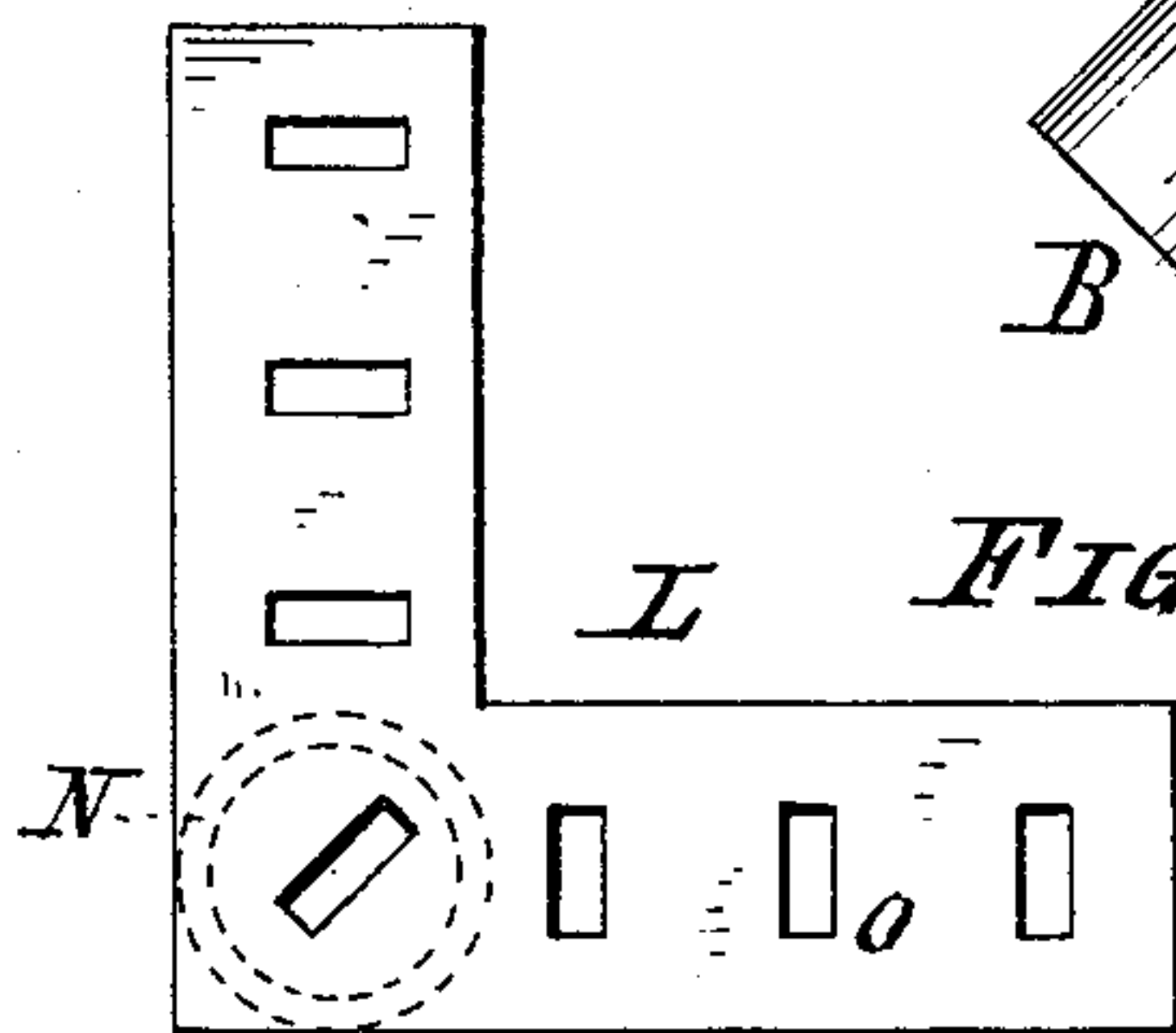
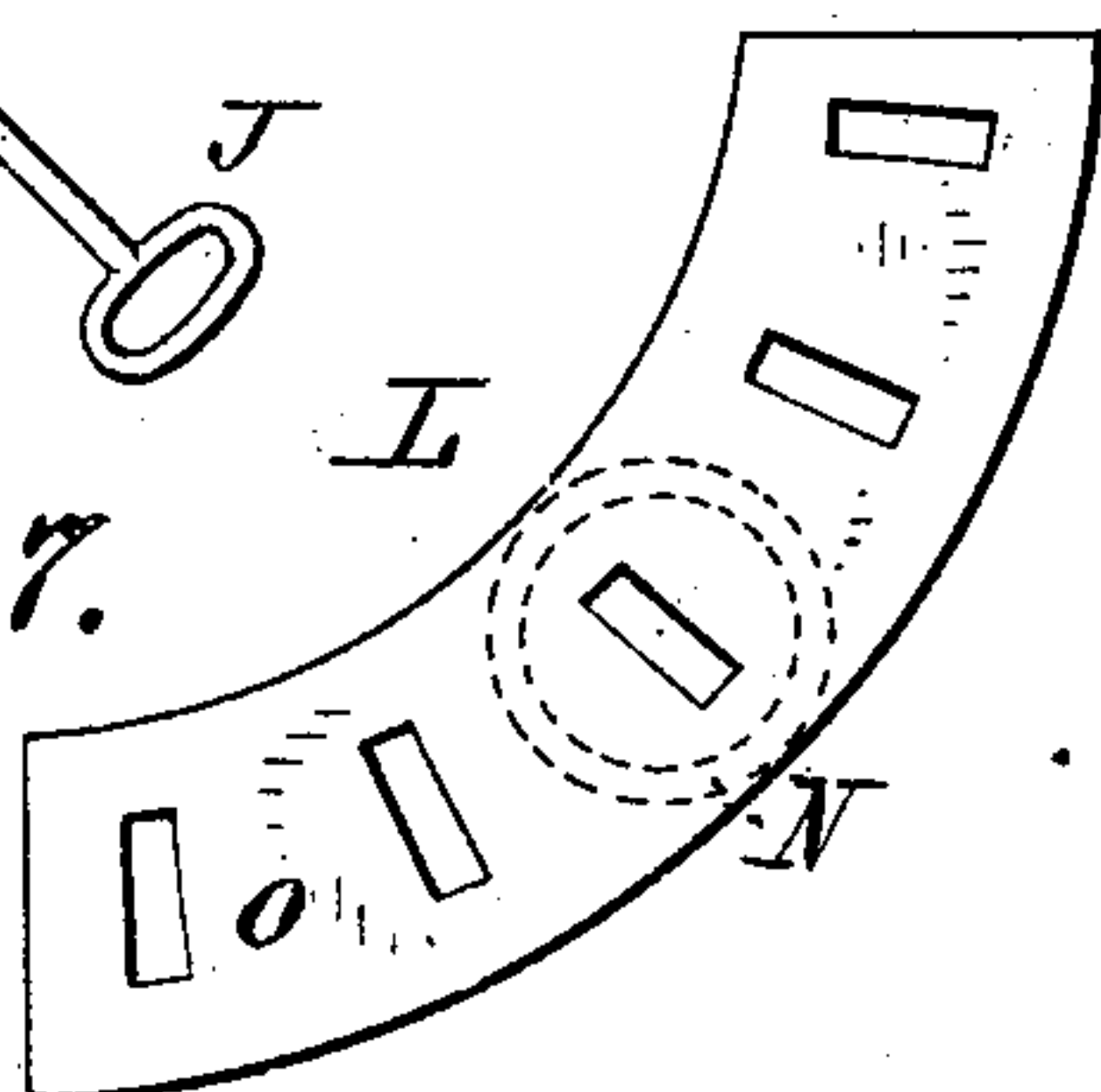


FIG. 7.



Wm O. Stark.  
Gentl S. Stark.

{ Witnesses,

Inventor,  
James Cumming.  
by Michael Stark, Attorney.



# UNITED STATES PATENT OFFICE.

JAMES CUMMING, OF BUFFALO, NEW YORK.

## TUYERE.

SPECIFICATION forming part of Letters Patent No. 336,528, dated July 24, 1888.

Application filed January 24, 1888. Serial No. 261,720. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES CUMMING, of Buffalo, in the county of Erie and State of New York, have invented certain new and  
5 useful Improvements on Blacksmiths' Tuyeres; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the  
10 art to which it appertains to make and use the same.

My present invention has general reference to blacksmiths' tuyeres; and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as  
15 hereinafter first fully set forth and described, and then pointed out in the claim.

In the drawings, Figure 1 is a plan of my  
20 improved tuyere. Fig. 2 is a similar view showing my improved blast-extensions in position. Fig. 3 is a transverse sectional elevation in line *xx* of Fig. 1. Fig. 4 is a similar  
25 view in line *yy* of Fig. 2. Figs. 5, 6, and 7 are plans showing various modifications of my improved tuyere and blast extensions.

Like parts are designated by corresponding letters of reference in all the figures.

The object of my present invention is the  
30 production of a very simple, convenient, efficient, and durable tuyere-iron for blacksmiths' fires. To obtain this result, I construct my tuyere-iron proper of an annular case, A, having on one side a branch or nozzle, B, through which an air-blast enters the  
35 interior or air chamber, C, of said case A. In the interior of this chamber is a tube, D, formed, preferably, in one piece with the bottom E, said tube extending upward to within  
40 a short distance of the top F of the case A, so as to produce an annular passage, G, Figs. 3 and 4, through which the air-blast entering the chamber C escapes into the blast-opening H, formed in the top F of the case A, as shown  
45 in Figs. 1 and 3, and thence into a blacksmith's fire when built upon the tuyere.

On the bottom of the case A are formed two grooves, in which a slide operates so as to close the passage *d* in the tube D on the bottom, a handle, J, being provided for to operate

the said slide I in a manner readily comprehended, and a stop, *i*, Figs. 1, 3, and 4, being formed on the bottom E to limit the movement of said slide.

Opposite the nozzle B, or in any other convenient place in the chamber C, I form an  
55 exit-opening, *a*, closed by a suitable plug, *b*, for the purpose hereinafter to be referred to.

The tuyere-iron thus far described, except the slide I and plug *b*, is formed entire—*i. e.*,  
60 in one piece of casting—in gray or malleable iron or steel, thus combining strength with cheapness, it being a matter of fact that this tuyere can be produced for less money  
65 than any other tuyere-iron with which I am acquainted. It is capable of being used successfully in any blacksmith's forge, and will produce a very strong fire, while by pulling  
70 the slide I an opening is made through which the cinders accumulating on the top of the tuyere can be readily discharged down into the usual pit of the forge. By withdrawing the  
75 plug *b* an escape-opening is afforded, through which ashes, dust, &c., accumulating in the air-chamber C can be discharged.

In many cases it is desirable to build peculiarly-shaped fires to adapt them to particular  
80 forgings on hand. To provide for such cases, I provide my tuyere with a number of detached conduits—such as shown in Figs. 2, 4, 5, 6, and 7—consisting of tubes L, having an  
85 angular transverse section, and on their bottom side an annular rim, N, fitting the opening H in the top of the tuyere, and provided in their top surface with a series of slots or  
90 escape-openings, O, as clearly shown in the drawings. These conduits have different forms, being either angular, as shown in Figs. 5 and 6; straight, as shown in Fig. 2; circular, as indicated by the shading of the same in  
95 Fig. 4, or curved, as illustrated in Fig. 7, adapted to the different requirements of a job on hand. These conduits can be instantly inserted into the tuyere and a peculiarly-shaped fire started that will answer the purpose desired.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

The annular casing A, having the nozzle B 100

and the upright tube D cast therewith, and  
having also a central opening, H, above said  
tube, in combination with an auxiliary con-  
duit having a central opening, and a down-  
5 wardly-extending flange, N, surrounding said  
opening and fitting into the said opening H,  
this auxiliary conduit being shaped to con-  
form to the work required and provided with  
discharge-openings o in its top, substantially  
10 as set forth.

In testimony that I claim the foregoing as  
my invention I have hereto set my hand in the  
presence of two subscribing witnesses.

JAMES CUMMING.

Attest:

MINNIE HEIM,  
WM. ASPDIN.