

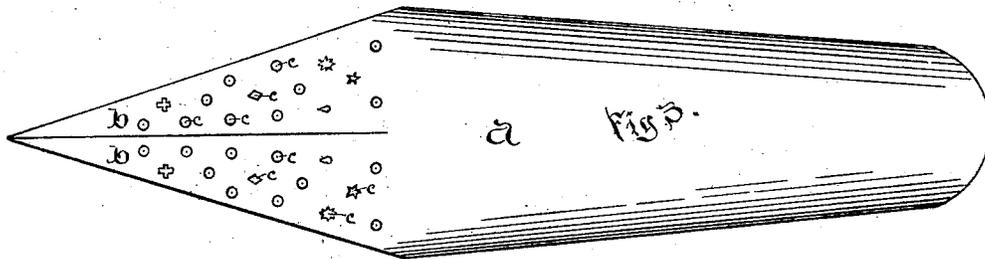
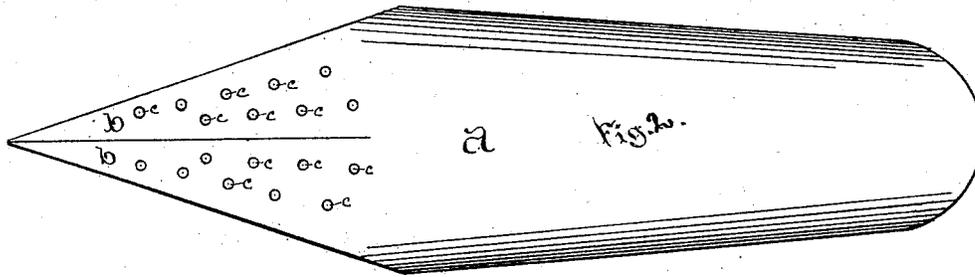
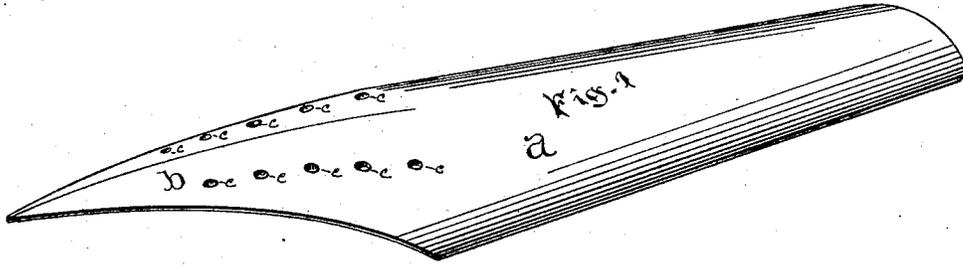
(No Model.)

E. S. JOHNSON.

PEN.

No. 302,257.

Patented July 22, 1884.



Witnesses:

J. C. Turner
M. V. Smith

Inventor:

E. S. Johnson
By his Attorneys
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UNITED STATES PATENT OFFICE.

EPHRAIM S. JOHNSON, OF JERSEY CITY, NEW JERSEY.

PEN.

SPECIFICATION forming part of Letters Patent No. 302,257, dated July 22, 1884.

Application filed June 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM S. JOHNSON, of Jersey City, Hudson county, in the State of New Jersey, have invented new and useful
5 Improvements in Pens; and I do hereby declare that the following is a full and accurate description of the same.

This improvement relates to a method of graduating the elasticity of the nib of a pen
10 without changing the thickness of the metal sheet composing the nib. Heretofore the elasticity has been graduated by grinding away and reducing the thickness of the sheet. In steel pens said grinding is upon the outer side.
15 In gold pens it is commonly upon the inner side, and is at best an inefficient and objectionable method. I propose to grade the elasticity by punching out and removing parts of the metal of the nib, so that without reducing
20 the thickness the quantity of metal is reduced, and there is incidentally obtained better capillary cohesion of the fluid ink and more intimate connection between the body of ink
25 beneath the pen with the film on the back of the same, and thereby a larger quantity of ink may be retained by the pen and a better and more uniform flow from the pen to the paper. The pen so made is peculiarly adapted for use with fountain-holders, because of the great
30 capillary power.

That others may fully understand my invention, I will particularly describe it, having reference to the accompanying drawings, wherein—

35 Figure 1 is a perspective view of my pen enlarged. Figs. 2 and 3 show modifications of arrangement of the perforations.

The pen is made from a sheet of metal, and this can always be rolled, approximately, of the same thickness and density, and therefore in
40 making pens of various grades it will not be necessary to provide a corresponding variety

in stock. The exterior form of the pen may be such as is preferred. I make the body *a* solid, as usual, and slit the nib *b*, as heretofore; but instead of reducing the thickness of the metal, as heretofore, I reduce the quantity
45 of it by punching out and removing portions, as at *c c*. These holes *c c* may be disposed in lines or groups, as may be necessary or desirable to produce the desired elasticity, and may vary in form as fancy may direct. The arrangement of the holes to produce any particular effect of elasticity may be determined
50 by experiment and experience; but the general effect of modifying elasticity in the way described is not uncertain.

I am aware that holes of various forms and in various arrangements have been made in the bodies of pens heretofore; but such holes
60 have always been in connection with and prolongations of slits running in from the edge, and without power to modify the elasticity; or they have been put in the pen for ornamental purposes, and in positions where they could
65 not modify the elasticity of the nib. Therefore no pen has been heretofore made with graded elasticity produced by orifices grouped and disposed in a way adapted to regulate and modify the elasticity of the nib.

70 Having described my improvement, I claim as new—

1. A pen provided with holes *c c* in the nib *b*, arranged in lines or groups adapted to modify the elasticity of said nib, as set forth. 75

2. A pen, *a b*, provided with holes *c c* in the nib, arranged in lines or groups independent of the nib-slits, whereby the elasticity of the pen may be graded and its capillary power augmented, as set forth.

EPHRAIM S. JOHNSON.

Witnesses:

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