

F. V. SCHILLING.
Breech-Loading Ordnance.

No. 40,295.

Patented Oct 13, 1863.

Fig. 1.

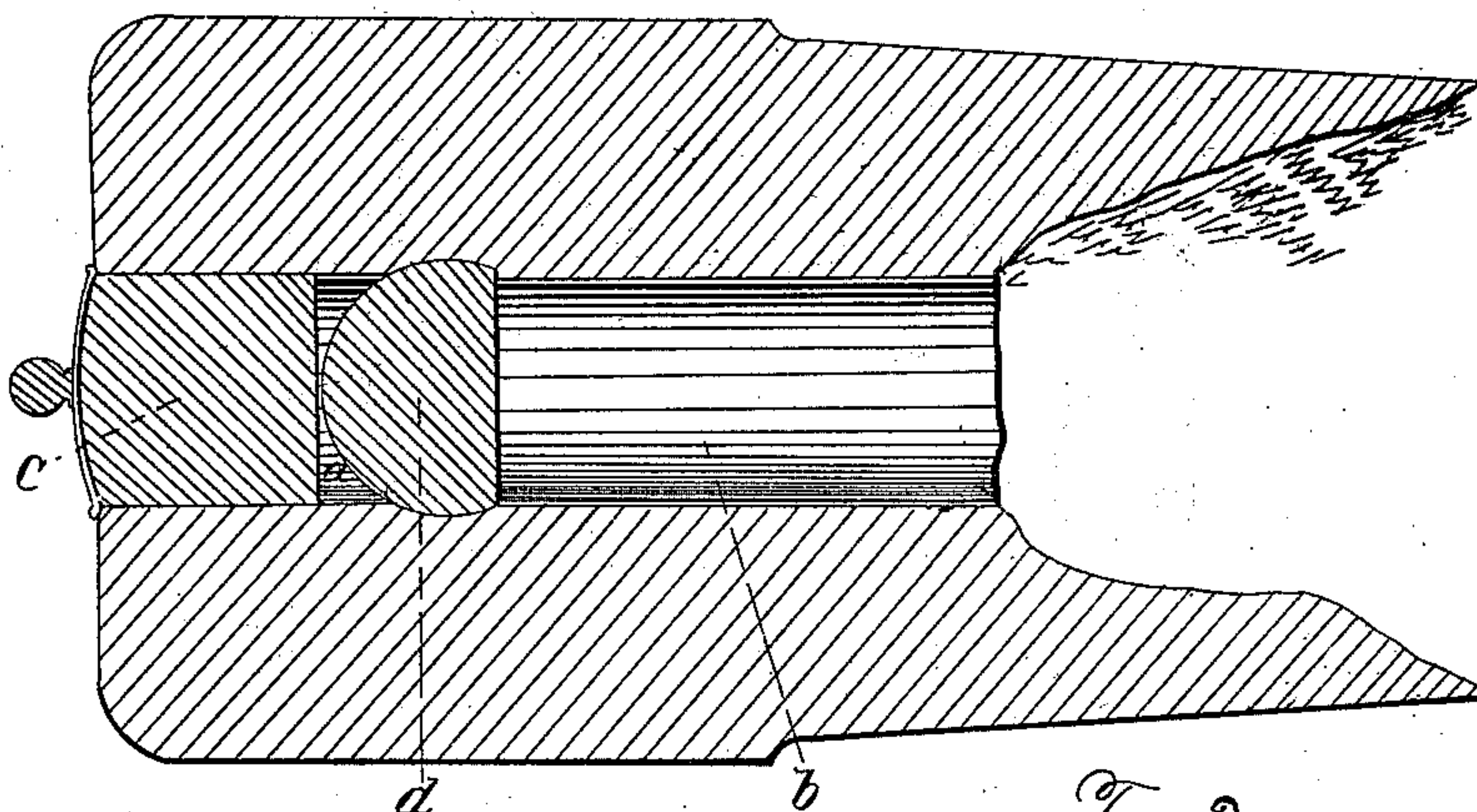


Fig. 2.

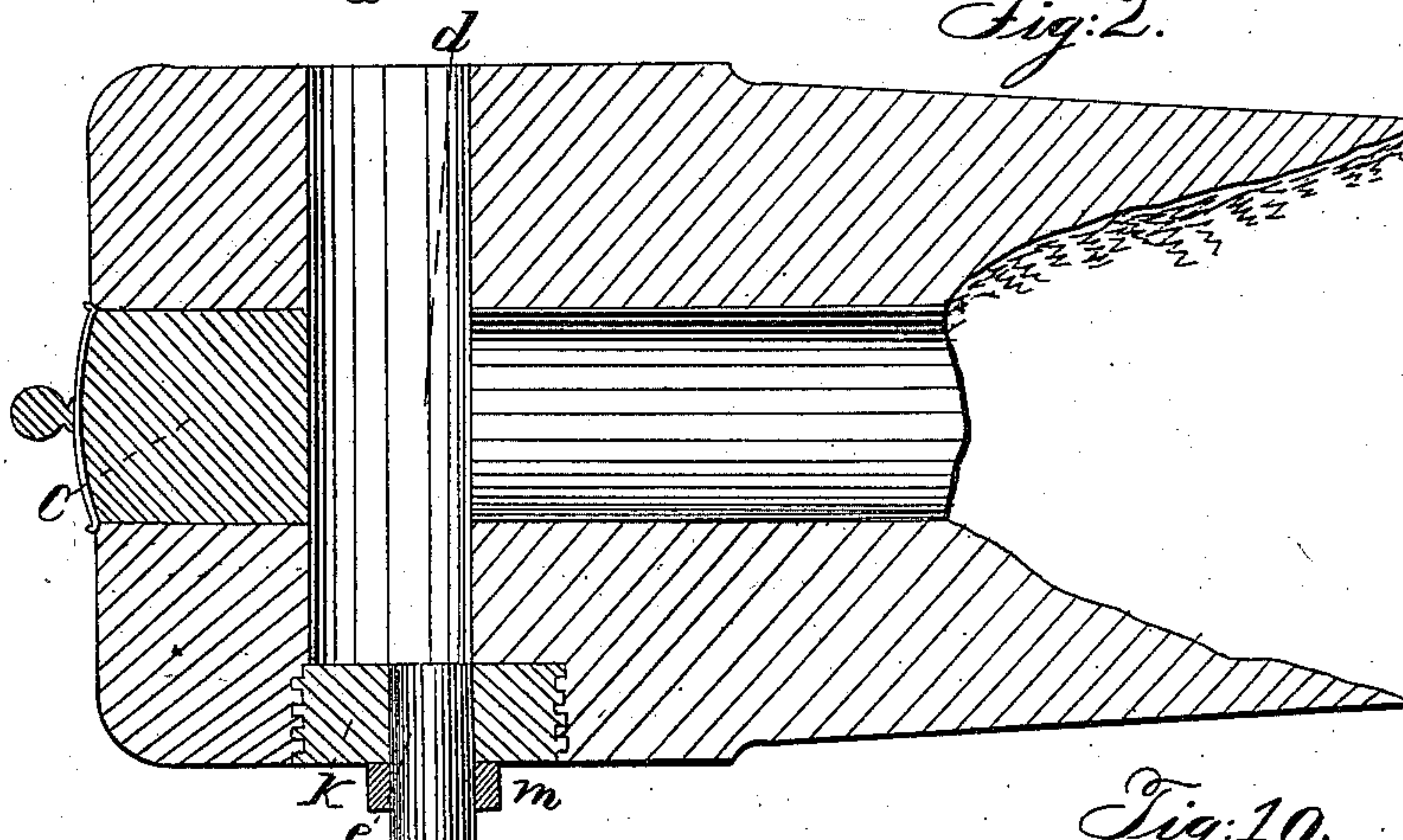
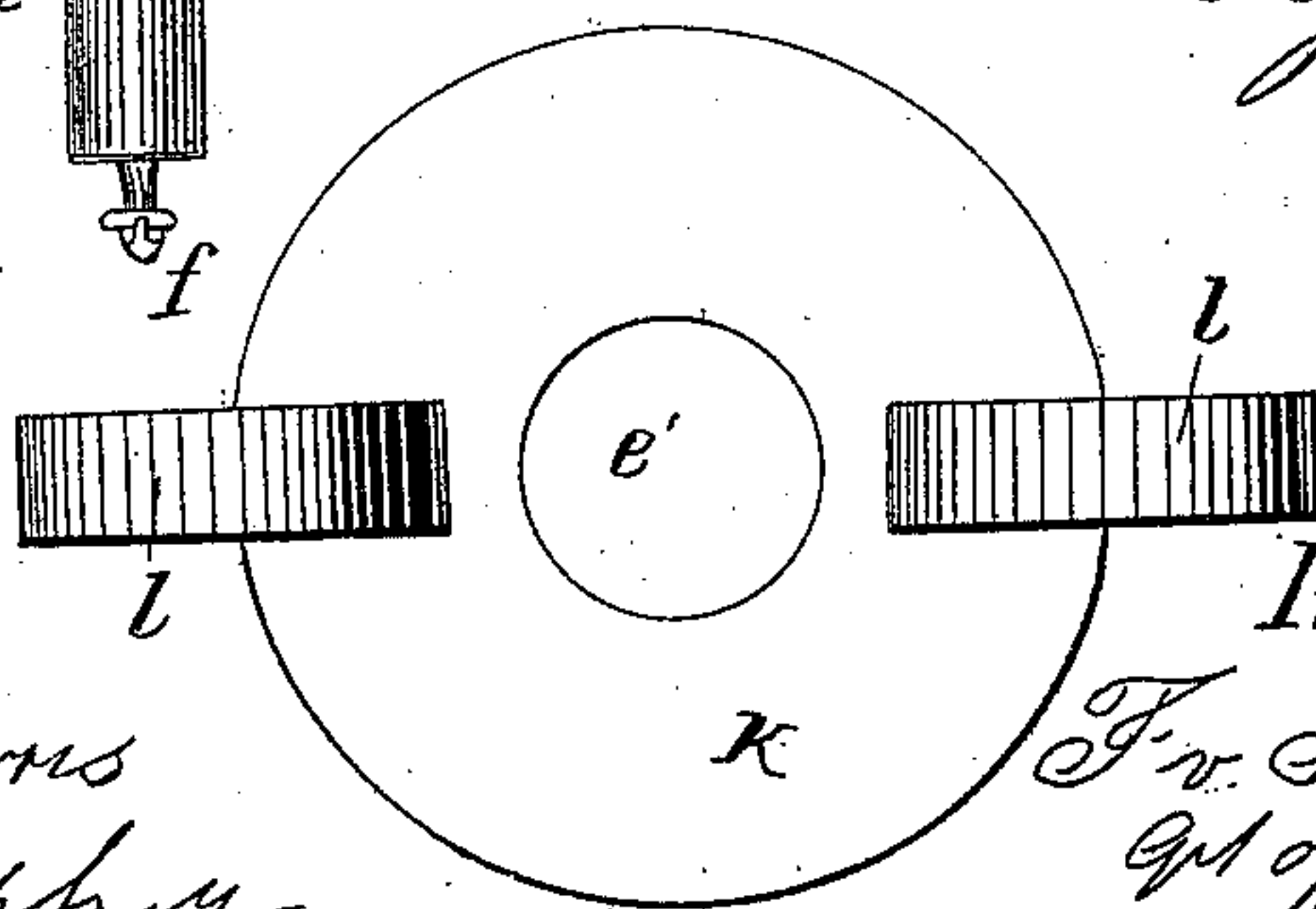


Fig. 10.



Witnesses.

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P. V.

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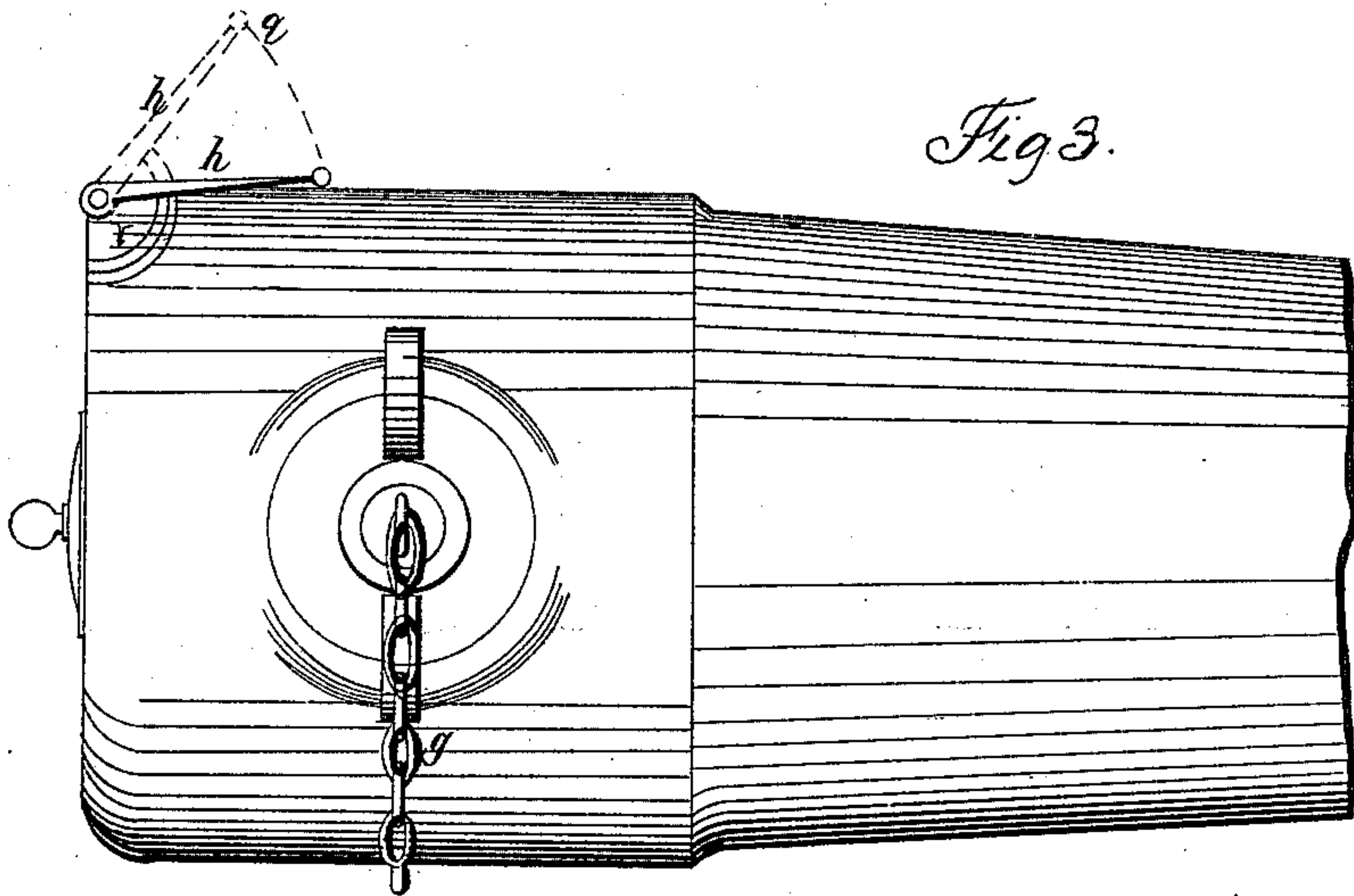


Fig. 3.

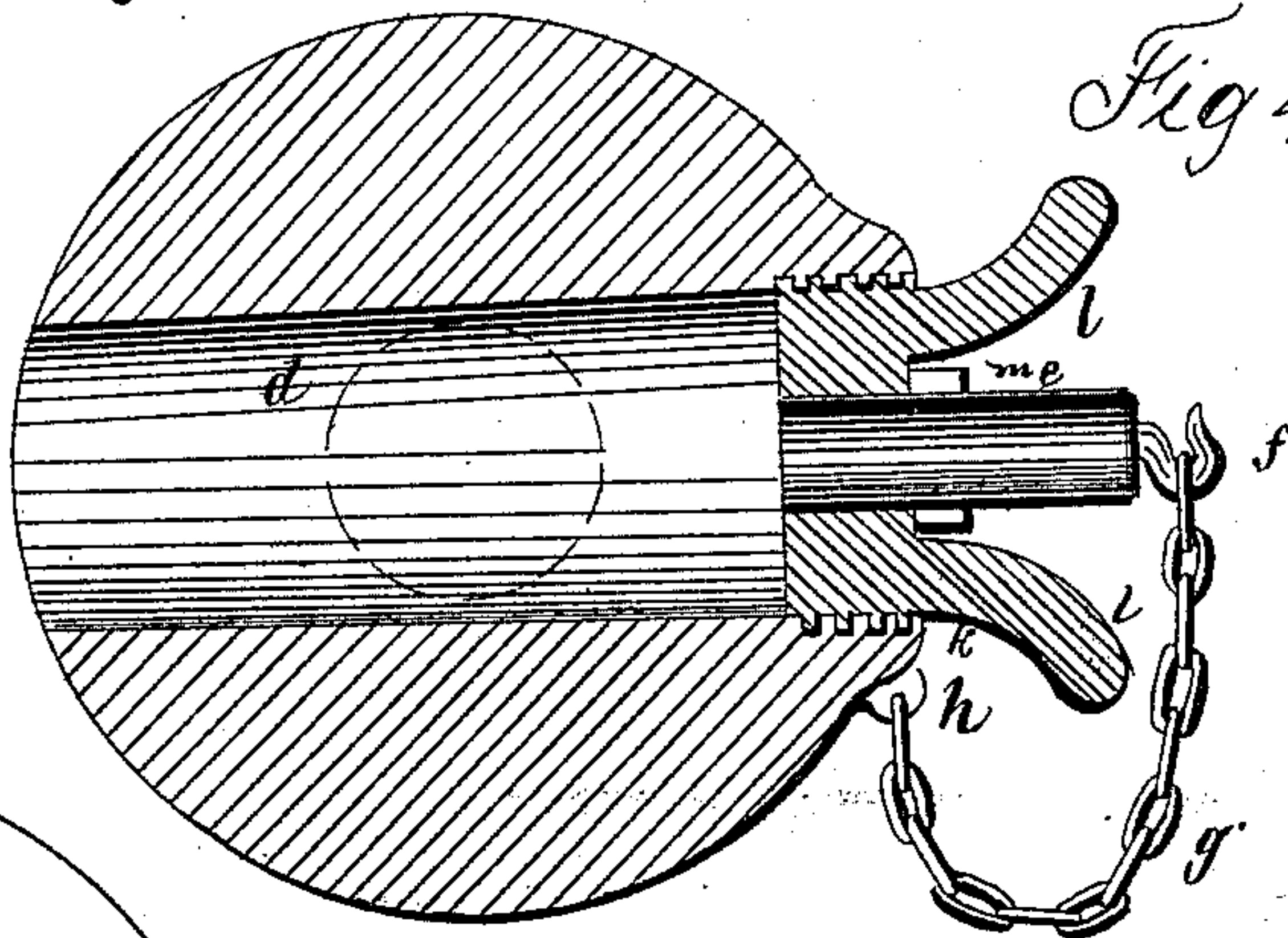


Fig. 4

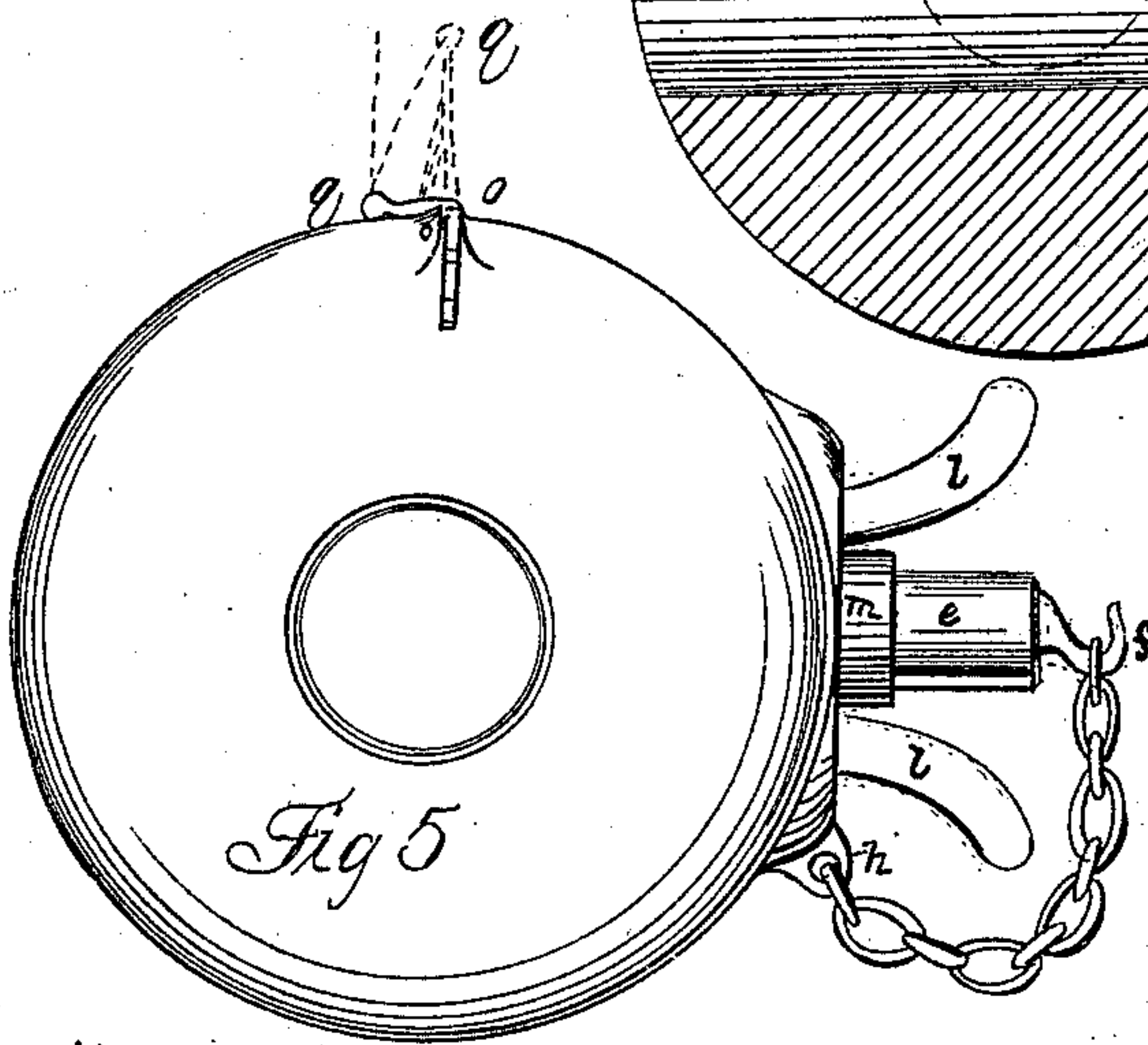


Fig. 5

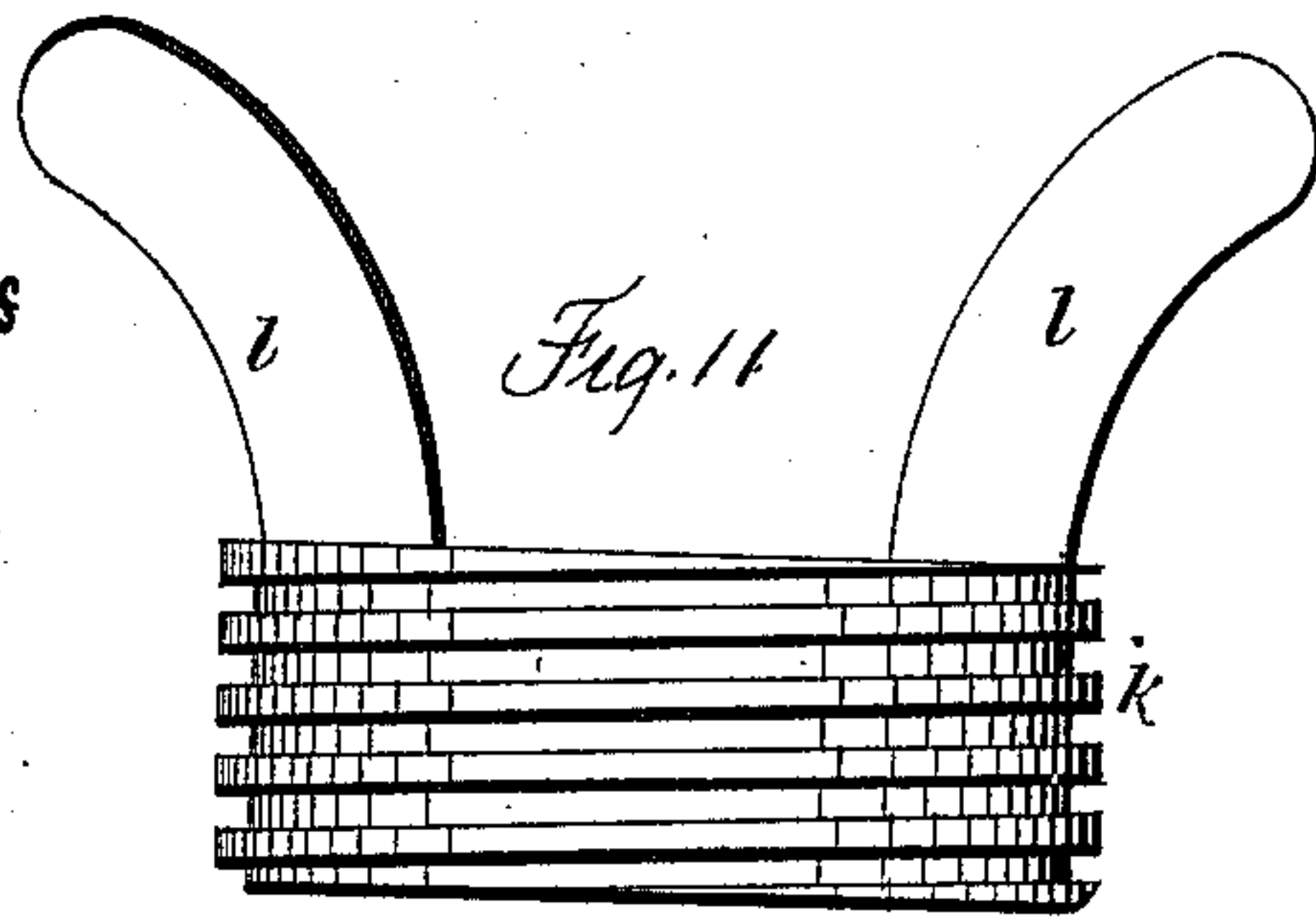


Fig. 11

Witnesses

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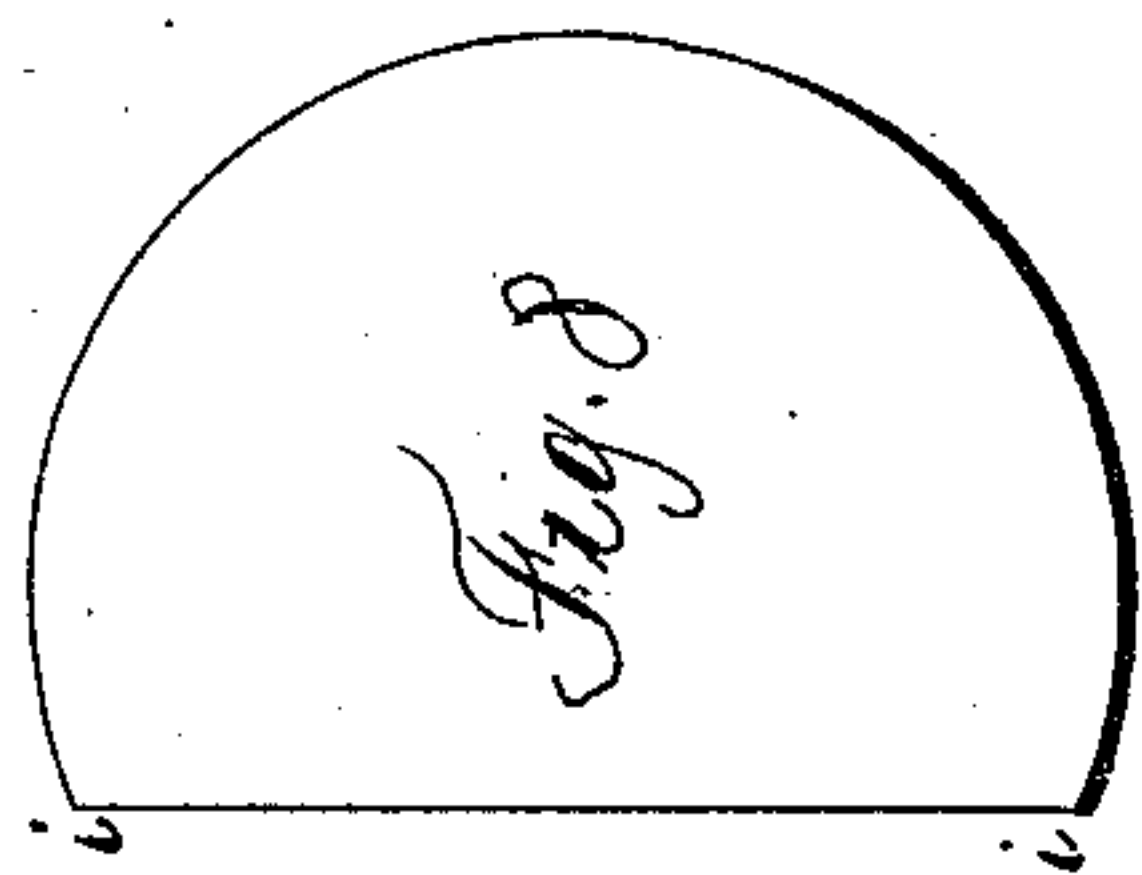


Fig. 9

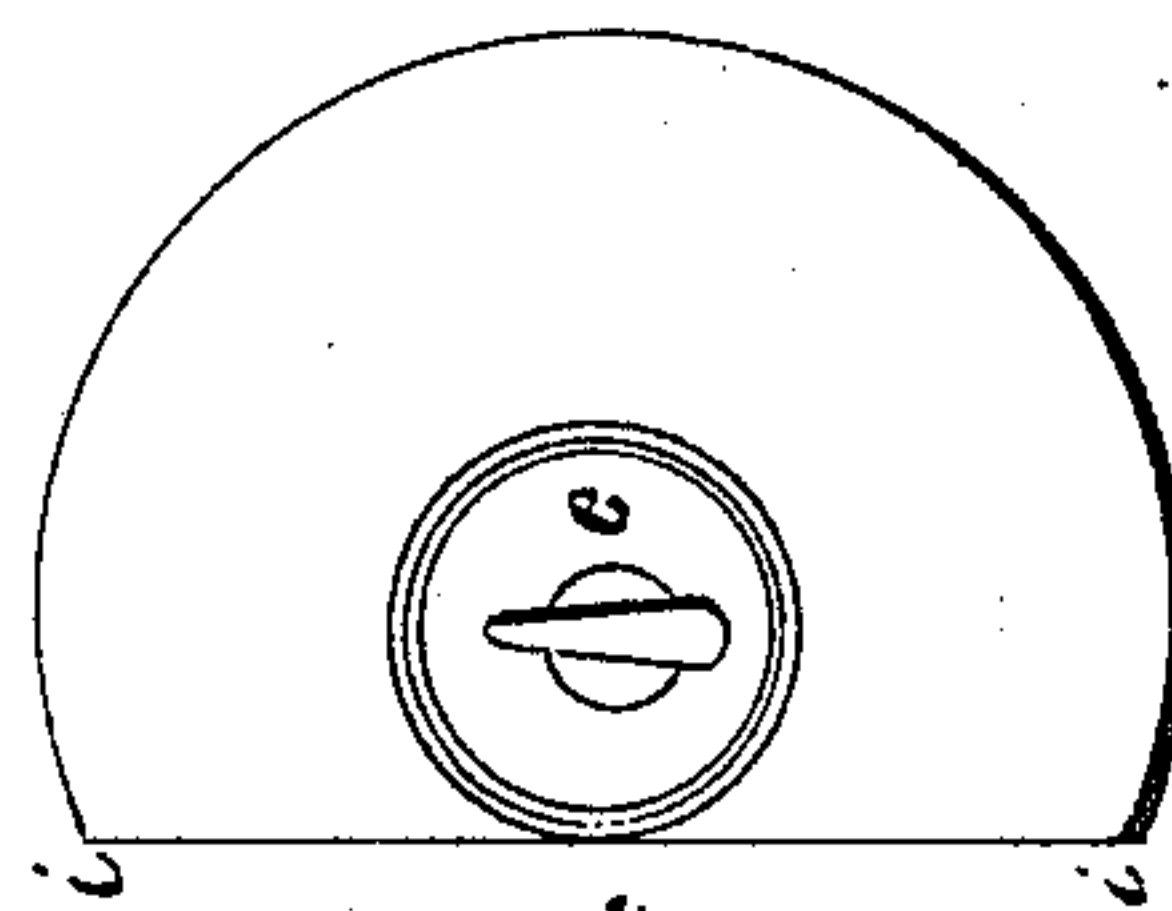


Fig. 6

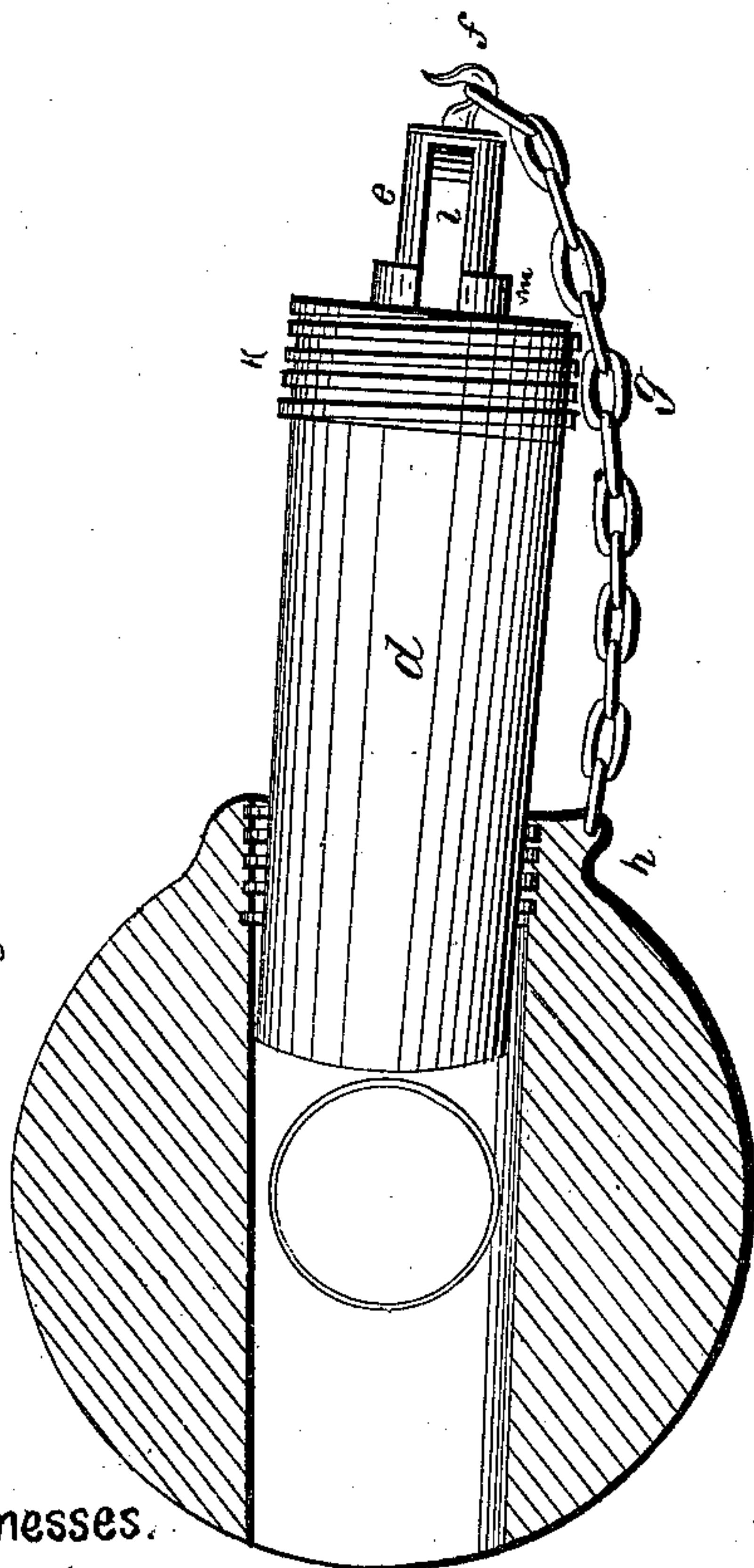
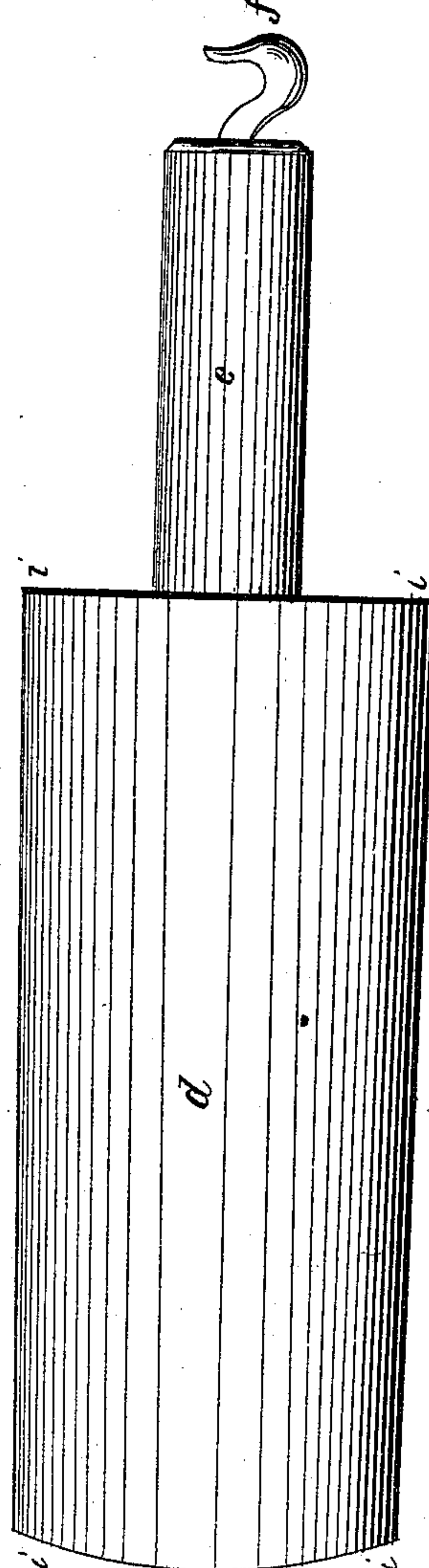


Fig. 7



Witnesses.

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UNITED STATES PATENT OFFICE.

FRANZ FREIHERR SCHILLING VON CANNSTATT, OF FORT DELAWARE, DEL.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. 40,295, dated October 13, 1863.

To all whom it may concern:

Be it known that I, FRANZ FREIHERR SCHILLING VON CANNSTATT, of Fort Delaware, in the State of Delaware, have invented a new and useful Improvement in Breech-Loading Rifled Ordnance; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a vertical section of breech taken through axis of gun. Fig. 2 shows a horizontal section of breech, taken also through axis of gun. Fig. 3 is a side view of the breech, showing arrangement of sight and closing-piece. Fig. 4 represents a cross-section of breech through axis of closing-piece, which is shown full. Fig. 5 denotes an end view of breech. Fig. 6 is another cross-section of breech through axis of closing-piece, the latter being represented as drawn out to admit the insertion of the cartridge. Fig. 7 represents a front view of the closing-piece without appendages, drawn in a larger scale. Figs. 8 and 9 are end views of this closing-piece. Fig. 10 shows a top view, and Fig. 11 a side view, of the fastening-screw of the closing-piece.

Similar letters of reference in each of the several figures indicate corresponding parts.

This invention relates to certain new and useful improvements in breech-loading rifled ordnance, whereby the operation of loading is greatly facilitated and also rendered more perfect, the construction simplified, and the weight diminished, and whereby the piece may be aimed with the utmost accuracy.

The nature of my invention consists in the peculiar construction of the closing-piece, the fastening, and drawing out arrangement.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The bore of the gun is continued throughout the entire length of the axis, like in similar cannon, and may be rifled in any approved manner to within about four calibers from rear end, (end of breech,) where it is to be smooth. This smooth part of the bore is to be of a larger diameter than the grooved part, according to the depth of those grooves, and is by the closing-piece divided in two parts,

a and *b*, of which the former (part *a*) serves as an opening for the introduction of the cartridge into the second part, (part *b*,) which serves as chamber of the gun after the closing-piece has been brought to its proper place.

The part *a* or "loading-opening" is always, when not in use, shut up by the wooden plug *c*, to keep it clean and uninjured. This plug *c* is on the outside provided with a projecting metallic cover having on its center a knob or handle for the convenient handling of said plug.

Perpendicular to the axis of the gun, and at a proper distance from the end of the breech, the side walls of the gun are provided with holes to receive the closing-piece *d*. The shape of these holes has to correspond exactly with the shape of those parts of the closing-piece for the reception of which they are provided. The closing-piece *d*, as represented in Figs. 1, 2, 4, 6, 7, 8, and 9, consists of a truncated cone tapering but little, and cut parallel to its axis (or height) by a plane. The surface of the smaller end of this truncated cone is cylindrical, and corresponds with the curvature of the breech. The base or surface of the larger end is formed by a plane having the shape shown in Fig. 9. From this base or larger end projects a cylindrical arm, *e*, whose axis is a continuation of the axis of the truncated cone. The end of this arm is provided with a hook, *f*, for the reception of a chain, *g*, fastened with the other end to the breech of the gun at *h*. The radius of the curved surface of the conical closing-piece in the middle between base and the smaller end is to be larger than the radius of the bore of the smooth part *b*. The exact proportion depends on the thickness of metal around the bore, the kind of metal, the caliber, and the maximum charge, and may be determined for every case by calculation. The even or front surface of the closing-piece *d*, (marked with *iii*, Fig. 7,) has to be perpendicular to the axis of gun, and forms the bottom of the chamber *b*. Its width in the middle must exceed a little the diameter of the chamber. This closing-piece, inserted with its smaller end into the holes hereinbefore described, will reach the extreme outer surface of the breech, and, having the same curvature at the smaller end, will fill out the opening at that side, while the larger end should go into the side wall at the gun so

far as to leave about two inches of metal between this end and the exterior of the breech. In ordnance of small caliber it will be good to strengthen this side of the breech by adding a proper projection. This space of about two inches is required for the reception of a male screw, *k*, provided with two projecting ears, *l l*, and a cylindrical smooth hole, *e'*, Fig. 10, in the center, for the passage of the arm *e* of the closing-piece. The screw *k* serves, as will be easily understood, to screw in, secure, and fasten perfectly air-tight the closing-piece into the holes prepared for it; but to facilitate the removal of the closing-piece, respectively the drawing out of the same, it is necessary to fasten to the arm *e* a collar, *m*, close to the screw *k*, as represented on the drawings. By these means the closing-piece will be driven in air-tight by turning screw *k* one way, and loosened and drawn out by turning the same screw the other way. To enable the insertion of the cartridge, it is only necessary that the small end of the closing-piece clears

the bore. The chain *g* is employed for the purpose to allow this movement, but to prevent the drawing out entirely or the falling out of the closing-piece, as will be understood by examining Fig. 6.

The operation of this part of my invention is as follows: Remove plug *c*, unscrew screw *k*, and draw out the closing-piece *d* as far as the chain *g* admits, insert the cartridge through the open breech by *a* into chamber *b*, put the closing-piece *d* in again, and screw it tight by means of screw *k*, then fire, &c. The simplicity of this manipulation is evident.

What I claim as my invention, and desire to secure by Letters Patent, is—

The closing-piece *d*, of the shape specified, with arm *e*, screw *k*, collar *m*, in connection with chain *g*, substantially as herein described.

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Witnesses:

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JOHN E. NORRIS.