

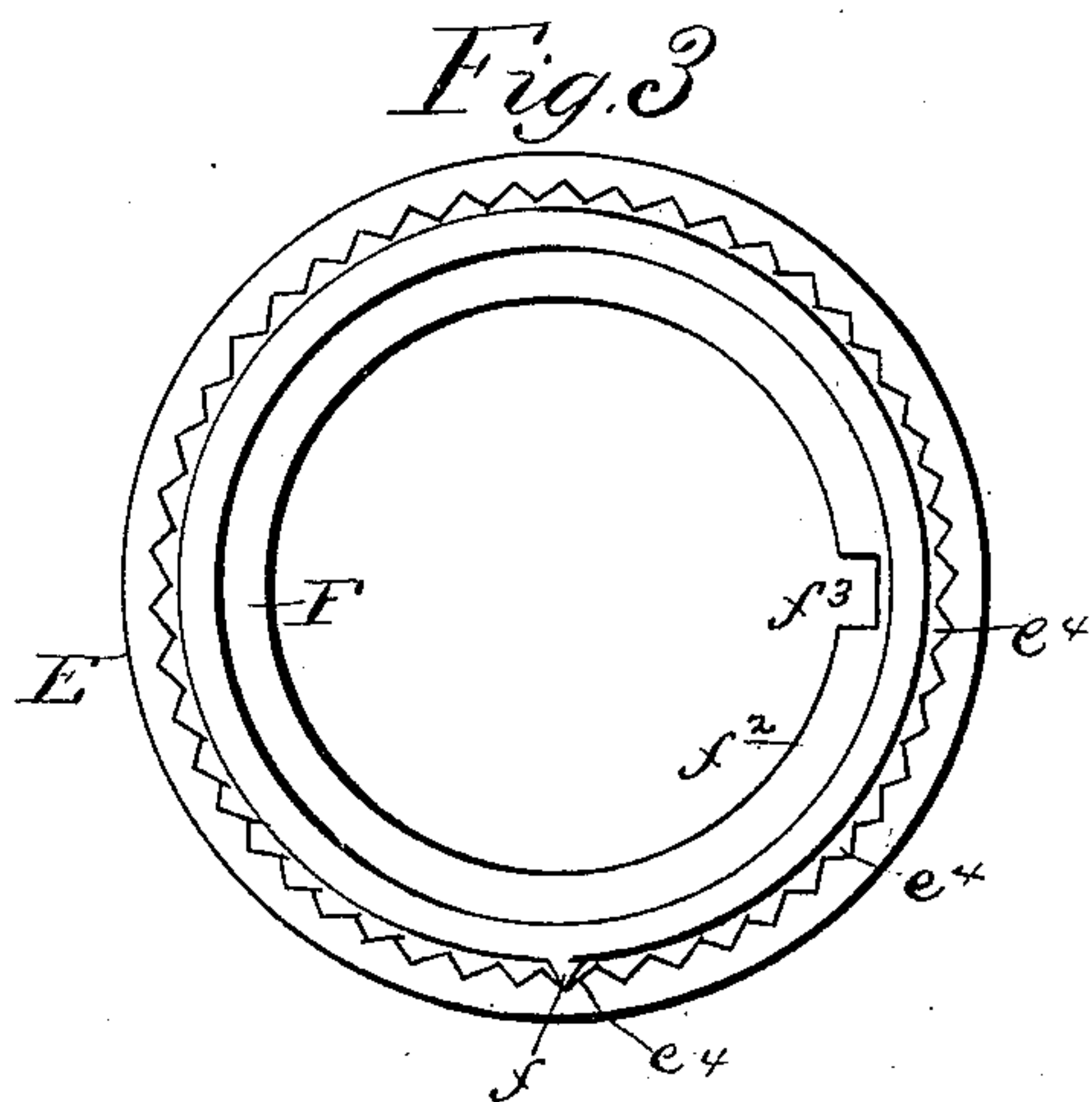
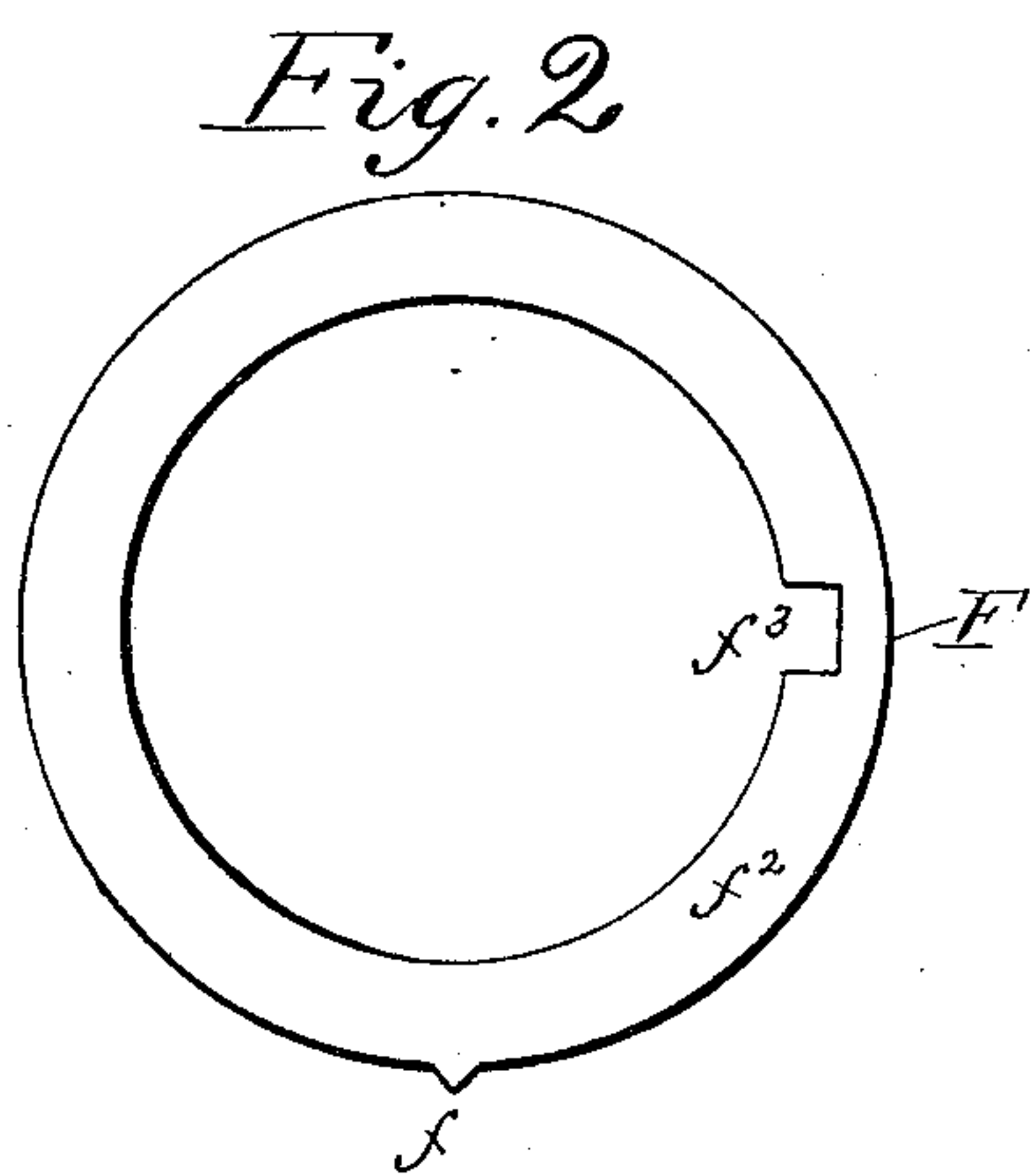
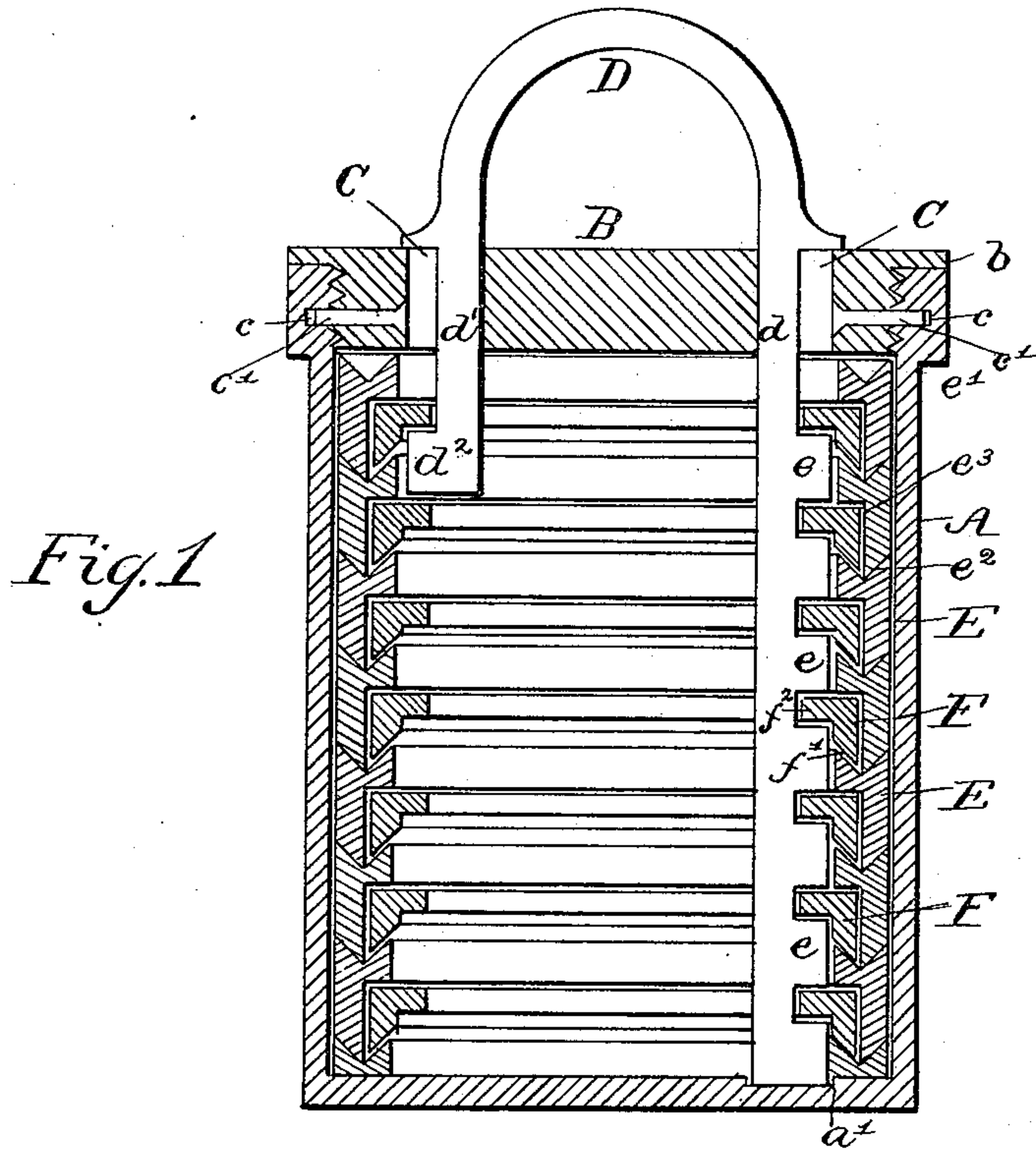
(No Model.)

2 Sheets—Sheet 1.

E. KAUFFELD.
COMBINATION PADLOCK.

No. 366,588.

Patented July 12, 1887.



WITNESSES:

N. C. Evert
E. S. Steel

INVENTOR

Elias Kauffeld.

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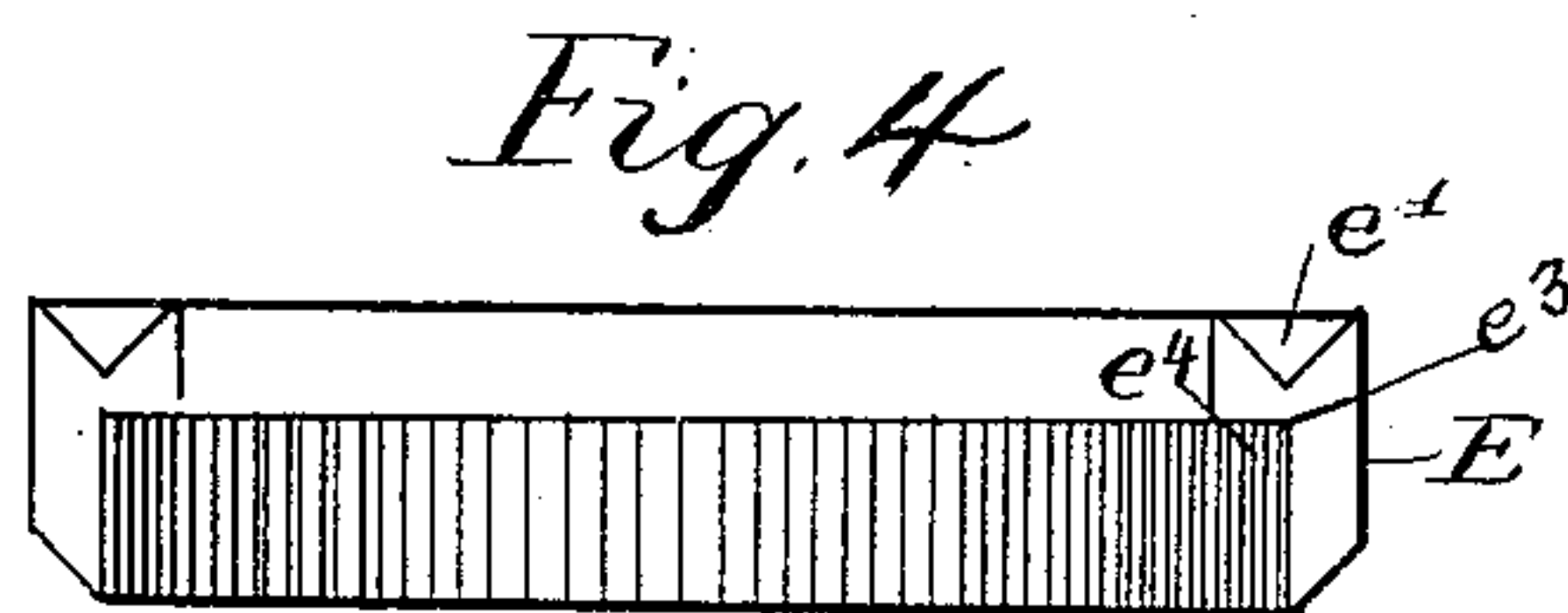
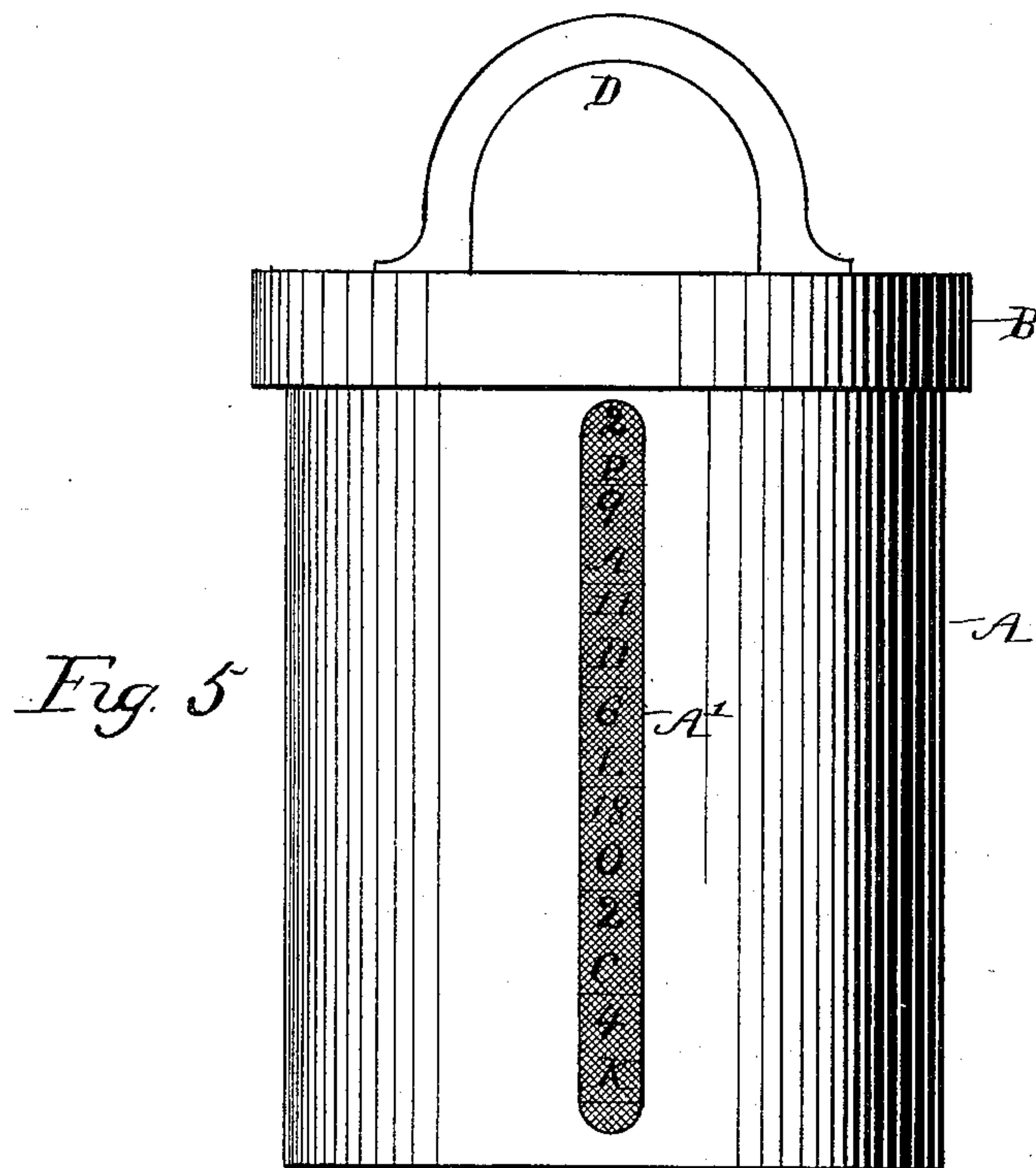
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2 Sheets—Sheet 2.

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WITNESSES:

H. C. Ewert,
E. D. Steele

INVENTOR

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UNITED STATES PATENT OFFICE.

ELIAS KAUFFELD, OF PITTSBURG, PENNSYLVANIA.

COMBINATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 366,538, dated July 12, 1887.

Application filed April 26, 1887. Serial No. 236,226. (No model.)

To all whom it may concern:

Be it known that I, ELIAS KAUFFELD, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Combination-Padlocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

My invention has relation to combination-padlocks, and has for its object the provision of a padlock constructed and operating upon the principle of combination-locks, and which shall be as free from complication of parts as possible, while capable of an almost infinite variety of combinations.

In carrying out my invention I provide a strong circular metallic casing having a screw-top, which may be removed when the hasp is out of the padlock, but which when the hasp is in position is absolutely immovable. Within the casing I arrange a series of peculiarly-shaped rings of metal, each marked on the outside with symbols, figures, letters, or other characters, and provided on the inside with a succession of grooves or notches; and within the said series of rings I arrange another series of rings, each of which has an exterior tooth or lug, which fits into one of the notches or grooves of one of the exterior rings, and each of which has an interior notch through which one leg of the hasp passes when the latter is in position. The hasp is of substantially U shape, has one leg considerably longer than the other and formed with a series of notches corresponding to the number of rings in the casing, and is held in position by turning the rings around in these notches, so that the notches in the rings may not register.

My invention consists in the novel form of the casing and the manner of securing the top thereon; in the novel form and arrangement of the rings bearing the numbers or other symbols for the establishment of the combination; in the novel form and arrangement of the interior rings and the hasp, and in the novel construction, combination, and arrangement of parts hereinafter described and specifically claimed.

Referring to the accompanying drawings, Figure 1 is a vertical sectional view of a padlock constructed according to my improvements; Fig. 2, a top view of one of the inner rings, and Fig. 3 a bottom view of one inner and one outer ring fitted together; Fig. 4, a sectional view of one of the outer rings; and Fig. 5, an elevation of the padlock, showing the slot through which the combination is established when it is desired to open the same.

A designates the exterior casing, which is made of any desired size and of suitable material—as brass, iron, or steel—and preferably in a single piece.

B designates the top or cap of the casing A, said top being screwed into the casing, as shown, and having a horizontal flange, *b*, around its edge, and holes C C for the passage of the two legs of the hasp. Lateral holes *c c* are formed in the top B, extending from the holes C C into the walls of the casing A, but not through the latter, and in these holes are placed pins *c' c'*, whose function is to prevent the top from turning and thereby screwing off the casing.

D designates the hasp, which is substantially U shaped, and has two depending legs, *d d'*, of uneven length, the leg *d'* extending only a short distance through the top B when the hasp is in position, while the leg *d* extends completely down to the bottom of the casing, where its end fits into a shallow depression, *a'*. The leg *d* has a series of lugs, *e e e*, upon its outside, and the leg *d'* has a single lug, *d''*, and with these lugs the movable rings or tumblers of the lock engage, as will be presently described. These rings or tumblers are arranged in two sets—inner and outer—and as the several rings of each set are duplicates it will be sufficient to describe one ring of each set.

E E E designate the rings of the outer set, and F F F those of the inner set. The rings E E E are each formed with a V-shaped notch, *e'*, on top, and have their lower edges beveled, as at *e''*, so that they nest together, and they extend from top to bottom of the casing A, being of such size as to fit nicely and turn easily within the same. Upon the inside the rings E are cut out, as at *e'''*, so as to receive the inner rings, F, and the vertical wall of the cut-away portion is formed with a series of grooves,

$e^4 e^4$, in one of which rests a tooth, f , upon the outside of ring F , as shown in Fig. 3 of the drawings. The inner rings, F , are formed with a beveled lower edge, f' , which fits into the V-shaped groove on the top of the next lowest outer ring, and are formed each with an annular flange, f^2 , in which is a notch or open slot, f^3 , for the passage of the leg d of the hasp D . The uppermost ring of the inner set of rings is furnished with two notches, f^3 , one for the reception of the leg d of the hasp and the other for the leg d' , which latter passes through only this one ring, as shown.

The outer rings, $E E$, are each marked with a series of letters, figures, or other appropriate symbols extending all around, and may have their outer surface milled or roughened so as to be readily turned in the casing, and the latter has a long slot, A' , through which a figure or letter upon each of the rings may be observed, and through which it may be turned around from the outside of the casing to set the combination when desired.

Operation: When in the condition shown in the drawings, the padlock is closed and may only be opened by turning the outer rings, E , from without the casing, and thereby turning the inner rings, F , until the notches f^3 in the latter all are in alignment with the leg d of the hasp, and this of course can only be accomplished by one who knows the combination. When the notches are in alignment, the hasp may be withdrawn. To set the lock on a new combination, the hasp is withdrawn and the pins $c c$ are drawn back until they are out of the holes in the casing A . The top B is then

unscrewed and the rings are lifted out. The rings are now replaced in the casing, with the tooth on each of the inner rings in any one of the grooves in the outer rings, the cap B having been replaced, and it having been noted what combination of letters or symbols is displayed through the slot A' . When the notches in the inner ring all coincide with the hole C in the cap B , the hasp D is replaced, and by turning the rings $F F$ irregularly, so as to disturb the alignment of the notches in the inner rings, the hasp is again secured.

Having described my invention, I claim—

1. In a combination padlock, the casing A , the cap B , screwing into the same and having holes $C C$ for the reception of the hasp, lateral holes extending from the holes $C C$ into the walls of the casing, and pins $c c$, fitted in said holes, substantially as described.

2. In a combination padlock, the combination, with the casing A , the hasp D , having lugs $e e e$, and the rings $F F$, formed with annular flange f^2 and beveled lower edge, and having slots for the passage of said lugs, of the rings $E E$, cut away at e^3 , for the reception of the rings F , grooved on top at e' , and beveled on the bottom at e^2 , all being constructed, arranged, and operating substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of April, 1887.

ELIAS KAUFFELD.

Witnesses:

JOHN F. ATCHESON,
JOS. B. CONNOLLY.