

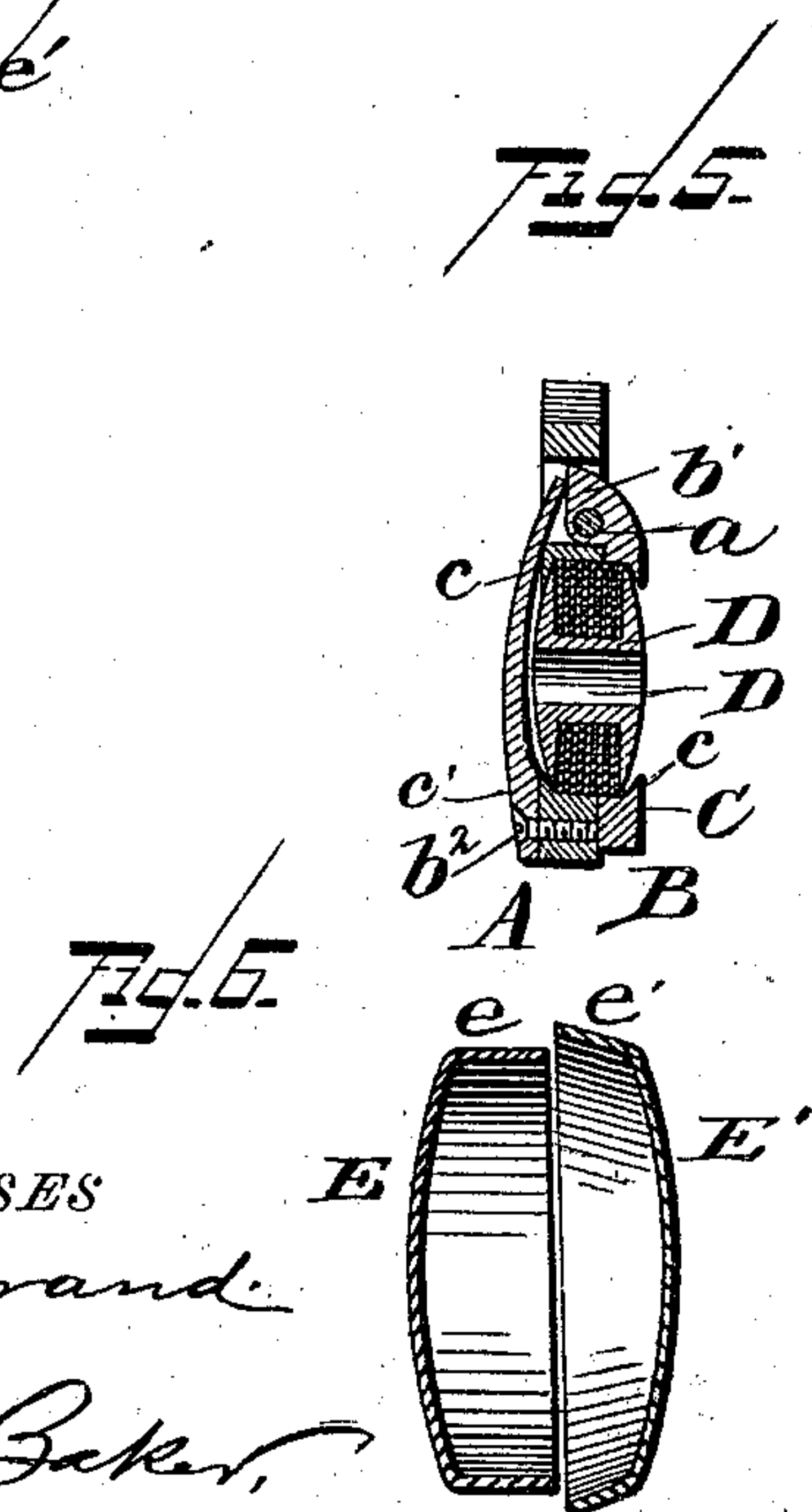
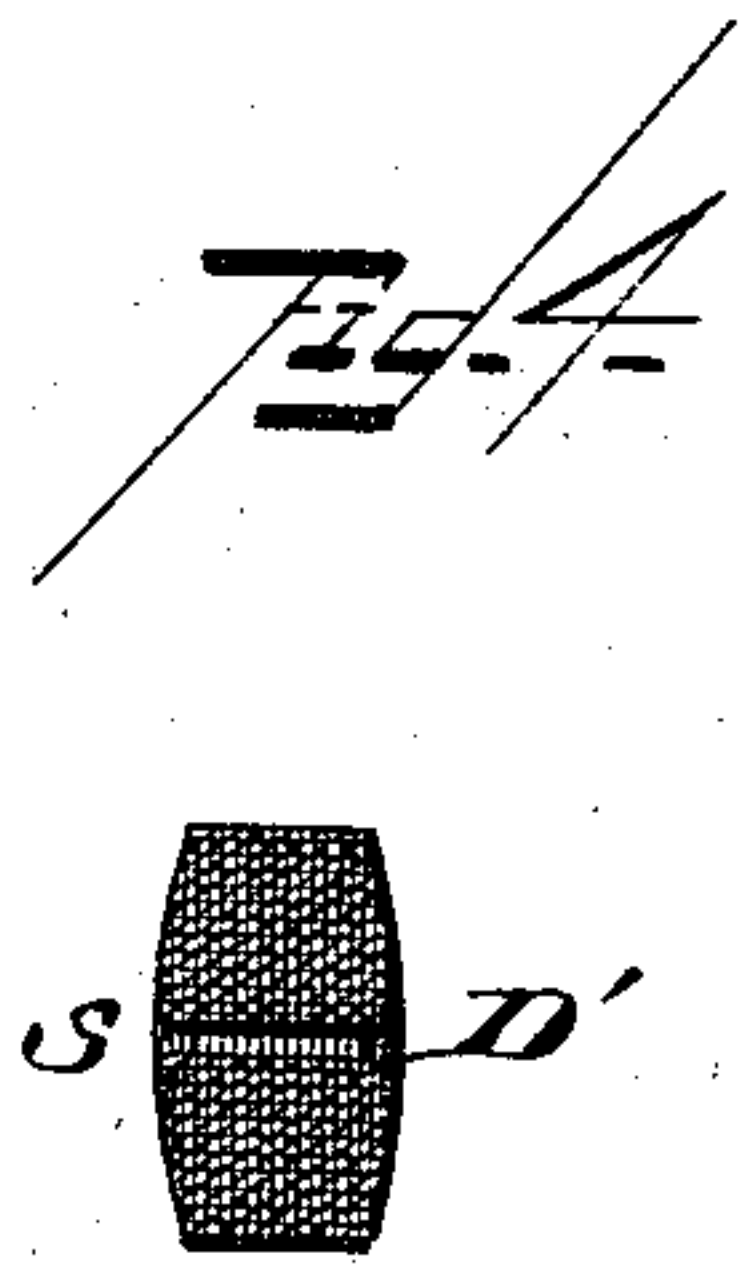
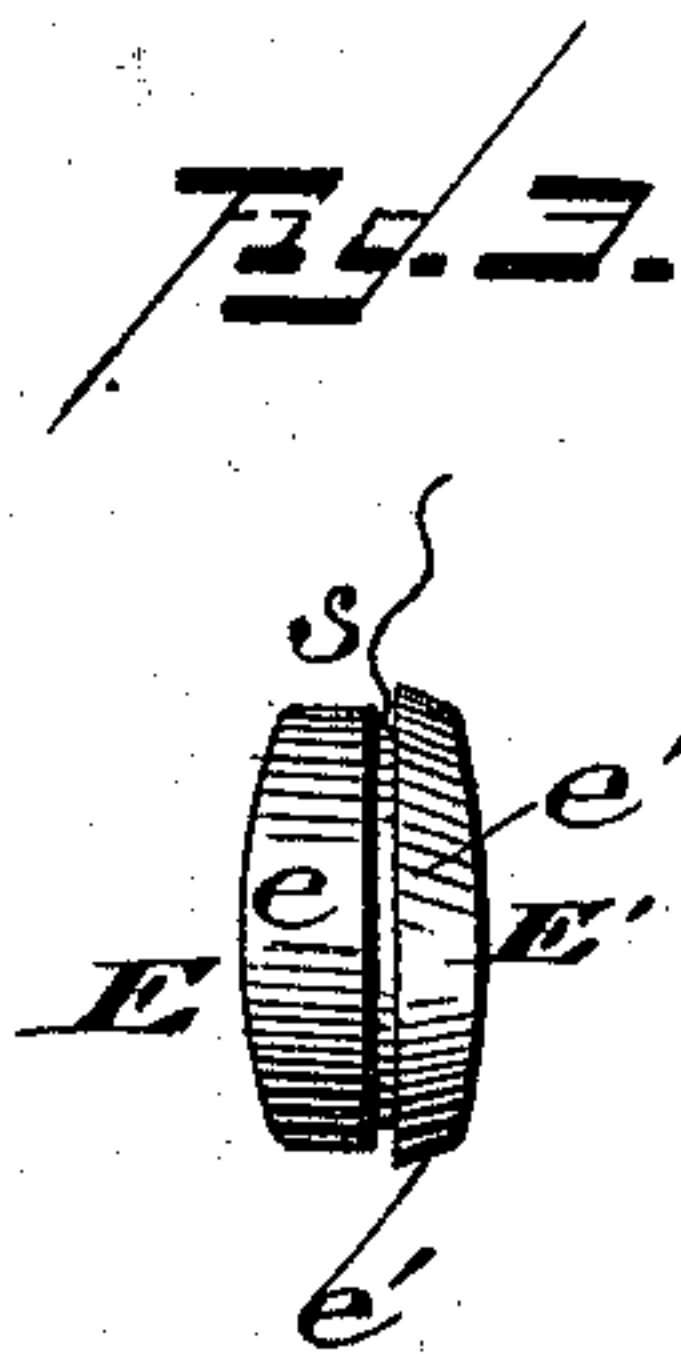
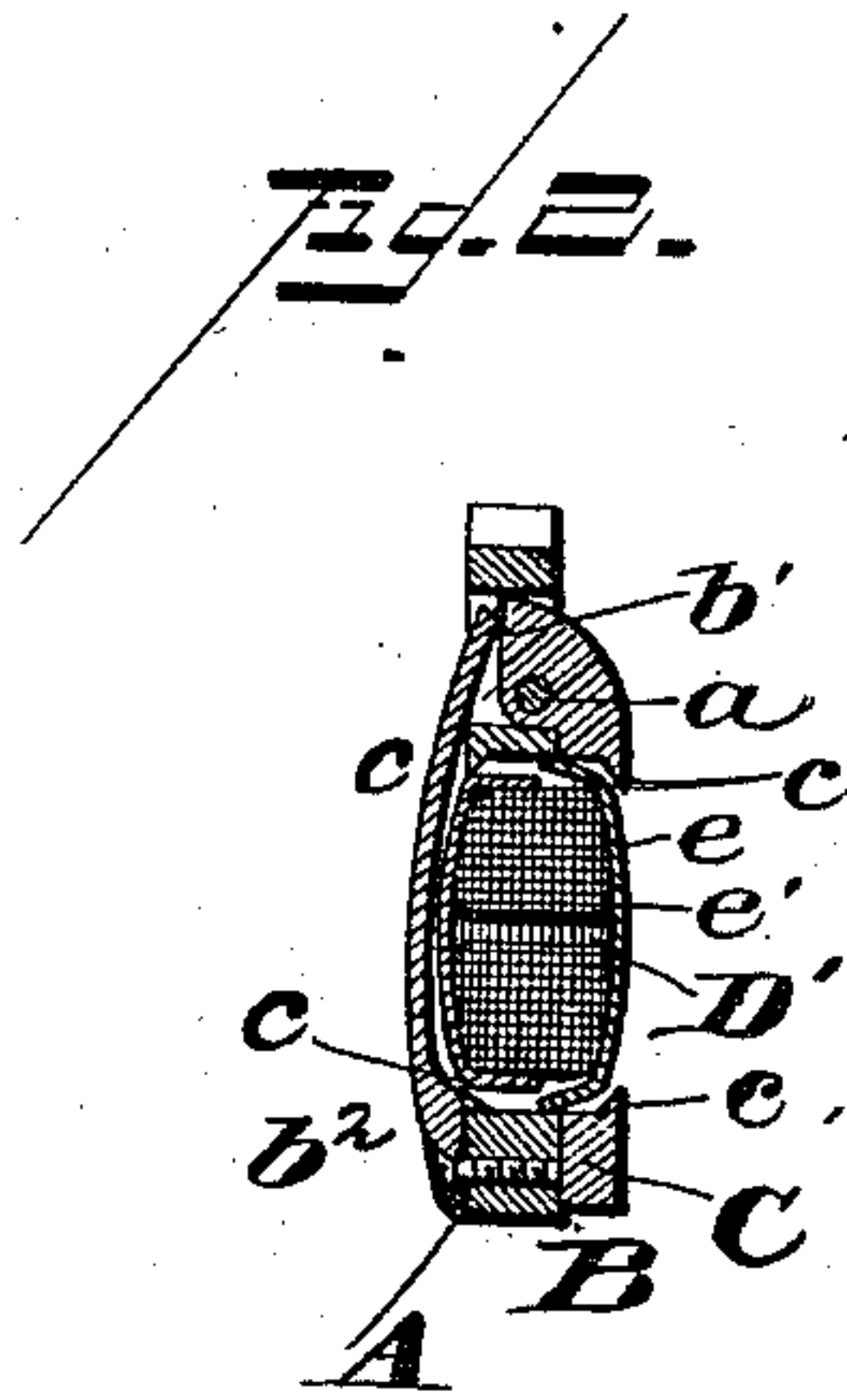
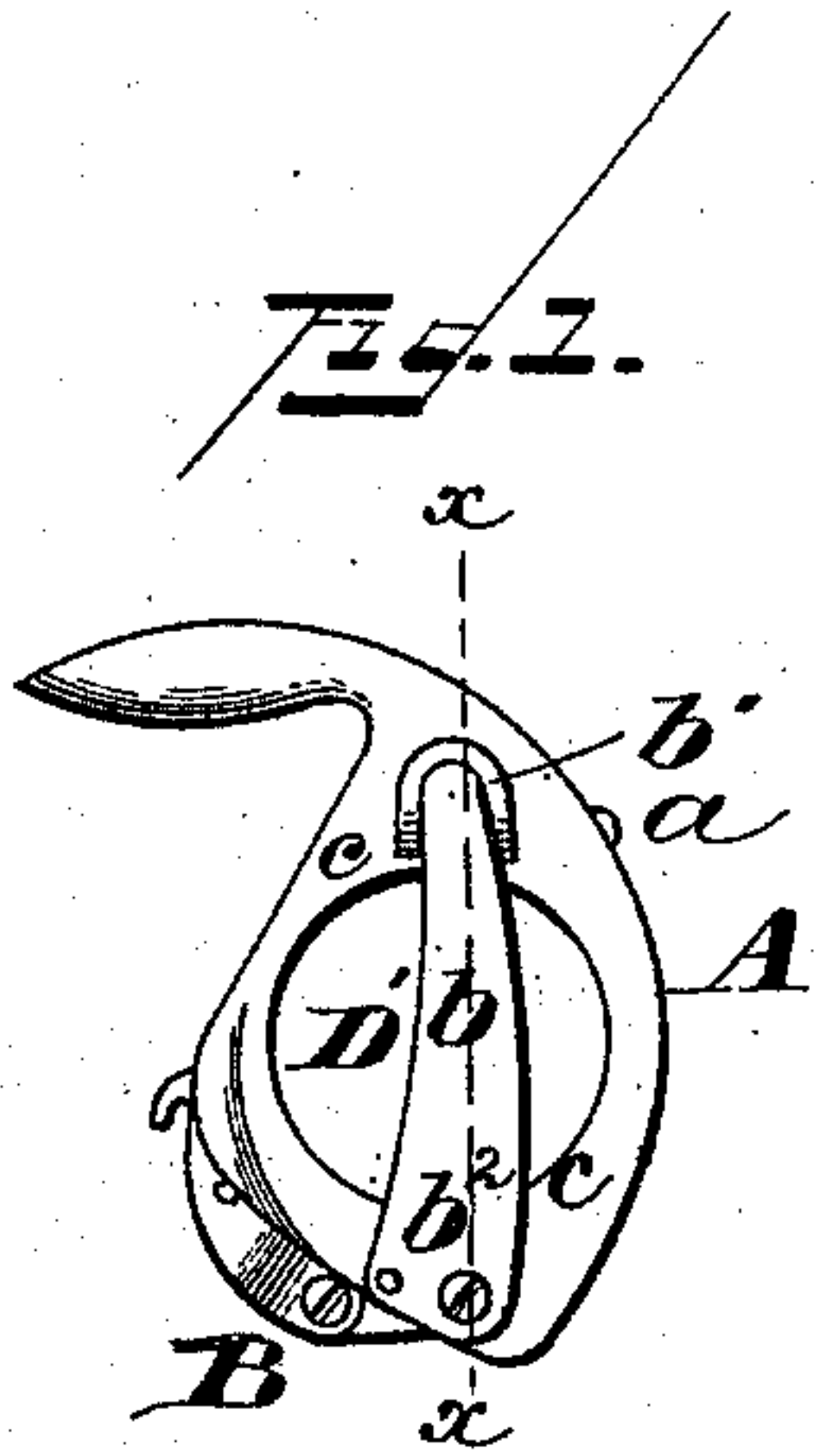
(Model.)

A. H. FANGBONER.

COP HOLDER FOR SEWING MACHINE SHUTTLES.

No. 412,377.

Patented Oct. 8, 1889.



WITNESSES  
F. L. Ourand.  
Chas. H. Baker.

INVENTOR  
Albert H. Fangboner  
Henry J. Brown  
Attorney,  
per Edm. Finckel Assoc.



# UNITED STATES PATENT OFFICE.

ALBERT H. FANGBONER, OF YONKERS, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WILLIMANTIC LINEN COMPANY, OF HARTFORD, CONNECTICUT.

## COP-HOLDER FOR SEWING-MACHINE SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 412,377, dated October 8, 1889.

Application filed October 31, 1887. Serial No. 253,930. (Model.)

*To all whom it may concern:*

Be it known that I, ALBERT H. FANGBONER, of Yonkers, in the county of Westchester and State of New York, have invented a new and useful Improvement in Cop-Holders for Sewing-Machine Shuttles, of which the following is a specification.

My invention relates to cop-holders for the shuttle or bobbin case which carries the under thread in a two-thread sewing-machine, and which in the operation of the machine has a rapid oscillating or rotary motion.

In illustrating my invention I have shown the hook-shuttle which is employed in the Singer sewing-machine for carrying the under thread. This shuttle is composed of two parts, which are hinged together in a direction transversely to the axis of the shuttle, and these two parts form between them an opening for the reception of a bobbin or cop. One of the parts has a slight inwardly-projecting flange at the edge of the opening, and across the opposite side of the opening on the other part extends a spring, which serves to retain the two parts closed together, and which offers a resistance to opening them or springing them apart. Ordinarily there has been employed in a shuttle of this character a metal bobbin, which is by the operator wound with thread and put in the shuttle; but a strong attempt is at present being made to utilize in such shuttles already-wound cops of thread which may be purchased in the market, and which unwind from the center, like a ball of twine; and the object of my invention is to provide a cop-holder which may be applied to such an already-wound cop, and which will enable either it or an ordinary metal bobbin to be used with equal facility in the same shuttle.

To this end my invention consists in a cop-holder, hereinafter described, consisting of two heads or disks to be applied on opposite sides of a cop, one head or disk having a substantially cylindric flange lapping on a part of the width of the cop, and the other head or disk having a flange of lesser width, which is flared outward slightly from the periphery of the cop to permit of the passage of thread from the cop.

In the accompanying drawings, Figure 1 represents a Singer sewing-machine shuttle of ordinary form. Fig. 2 is a sectional view thereof on the plane of the dotted line  $x x$ , Fig. 1, and showing within the shuttle-cavity a cop contained in my improved holder. Fig. 3 is an exterior view of a cop-holder embodying my invention with a cop contained therein. Fig. 4 is a sectional view of a ready-wound cop for use with the cop-holder; and Fig. 5 is a sectional view similar to Fig. 2, but showing the shuttle ready for use with a metal bobbin. Fig. 6 is an axial section of a cop-holder on a larger scale than Figs. 1, 2, 3, 4, and 5.

Similar letters of reference designate corresponding parts in all the figures.

For illustrating my invention I have shown a Singer sewing-machine shuttle, which in itself is a fac-simile of those now used, and which needs but a brief description. This shuttle is composed of two ring-shaped parts A B, which are pivoted or hinged together at the point  $a$ , and to which a spring  $b$  is applied for holding them closed. The part B has a nose or projection  $b'$ , on which the spring  $b$  bears, and this spring is secured at the point  $b^2$  to the part A by a screw, as here represented. The line of the pivot or hinge pin  $a$  is transverse to the axis and parallel with the plane of movement of the shuttle, and such spring resists the opening of the shuttle or the swinging of the parts A B, one relatively to the other upon the pin. The two parts A B of the shuttle have formed between them a substantially circular cavity C, which is closed in neither of the parts A B. One side of this cavity has the spring  $b$  extending across it, and the other side thereof has a slight inwardly-projecting flange  $c$ .

Ordinarily a bobbin D, made of metal, and which must be wound by the operator, is to be employed in the shuttle-cavity, as represented in Fig. 5, and it is held in place by the slight inwardly-projecting flanges  $c$  at opposite sides of the cavity C, and the thread unwinds from the exterior of this bobbin in the usual way, the bobbin meanwhile turning on the edges of its flanges or heads.

In place of a bobbin within the cavity C, I



employ an already-wound cop of thread D', such as is represented in section in Fig. 4, and such as are sold already wound by the manufacturers of sewing-thread. It will be  
5 obvious that such a cop of thread could not be used in the shuttle here represented, because the opposite sides of its cavity C are entirely open, and even if the cavity in the shuttle were closed by forming the two parts  
10 A B of the shuttle closed on their opposite sides, the cop D' could not be successfully used, because after it had unwound, so as to leave but little thickness of periphery, it would hammer itself to pieces within the cavity, owing to the rocking of the shuttle, and  
15 the thread would become broken down and tangled. I find, however, that by the use of a very simple cop-holder, applied to the cop D', it may be successfully used in a shuttle  
20 of the present form and like that here represented, even where the cavity C is open at opposite sides. This cop-holder is composed of two parts E E'. (Shown best in Fig. 3, but also in Fig. 2.) They consist of  
25 heads or disks E E', which fit against opposite sides of the cop D', and the two parts have flanges e e', which pass over and partly embrace the periphery of the cop. The flange e upon the part E is substantially cylindric,  
30 and extends partly across the width of the cop, while the flange e' upon the part E' is of less width, and is made with a slight flare away from the periphery of the cop, so as to permit of the thread end s being drawn from  
35 the center opening of the cop across the exterior thereof, and thence out between the

flange e' and the periphery of the cop, and when it is thus conducted through the proper tension-guide of the shuttle the thread will have just about the proper resistance against  
40 its withdrawal.

If at any time the operator gets out of wound cops D', she has only to wind one or two of the bobbins D which she has purchased with her machine, and use such wound bobbins in the cavity of the shuttle without the  
45 cop-holder E E'.

I am aware that it has been proposed to employ in a shuttle, and in connection with the already-wound cop of thread, a cop-holder  
50 consisting of a cup of sheet metal struck up into circular form, so as to produce a head or disk having at its edge a cylindric rim of sufficient width to extend entirely across the width of the cop, but leaving the thread of  
55 the cop exposed on the other side.

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

The cop-holder herein described, consisting of heads or disks E E', to be applied on  
60 opposite sides of a cop, the head or disk E, having a substantially cylindric flange e, fitting on a part of the width of the cop, and the head or disk E', having a flange of lesser width, which is flared outward slightly from  
65 the periphery of the cop to permit of the passage of thread from the cop, substantially as herein set forth.

ALBERT H. FANGBONER.

Witnesses:

C. HALL,

W. H. BERRY.