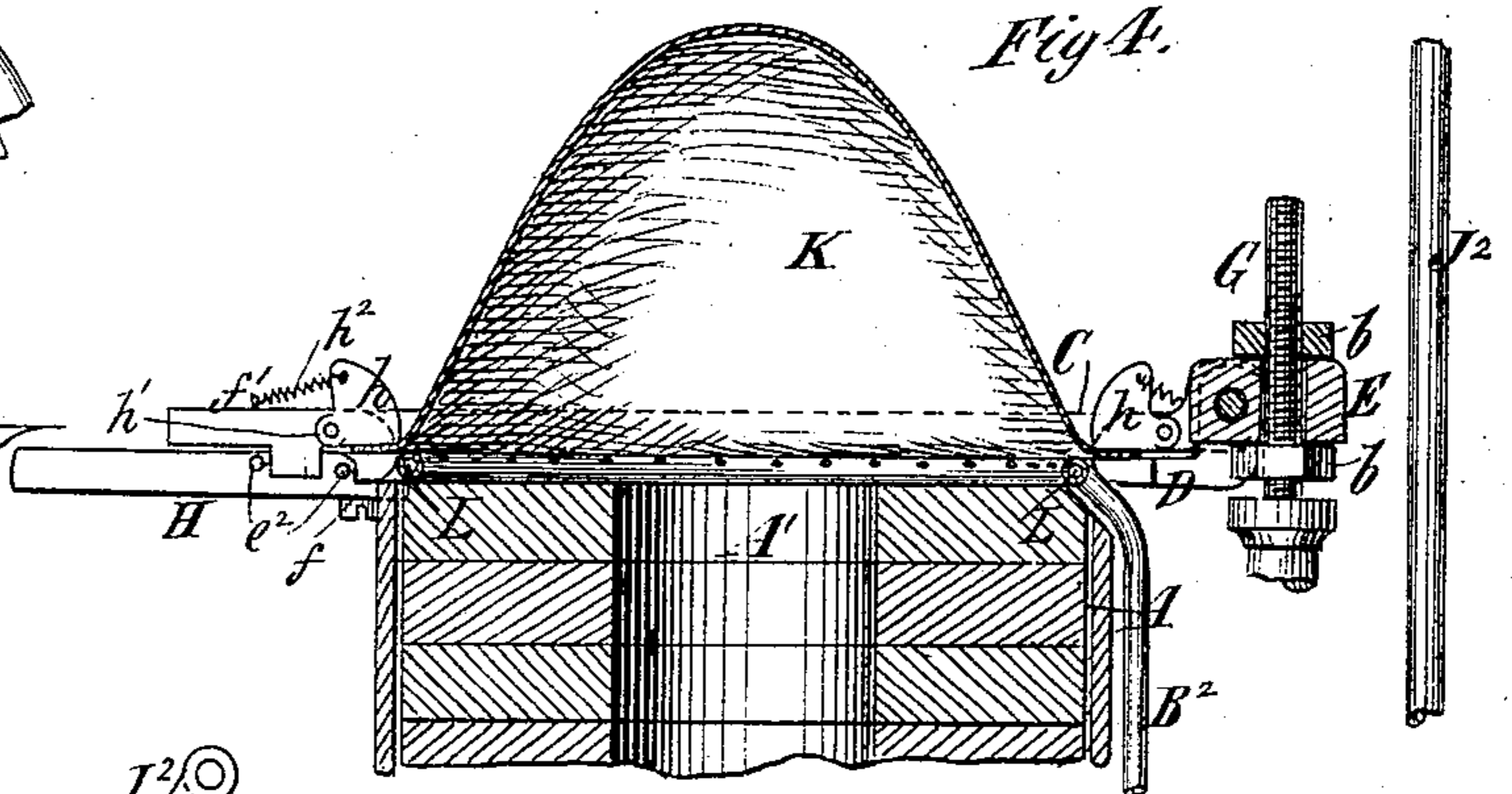
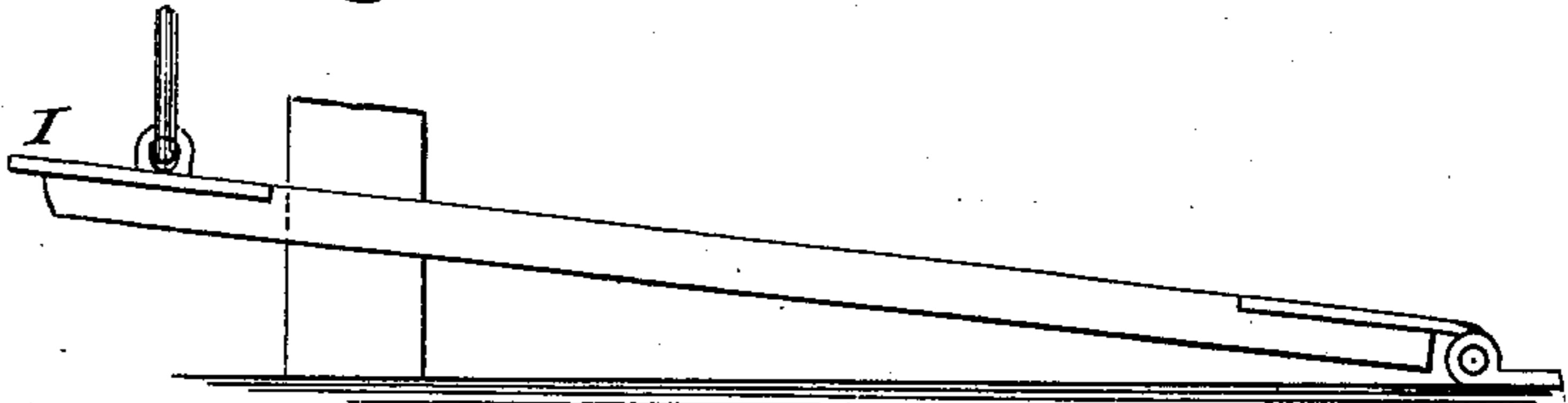
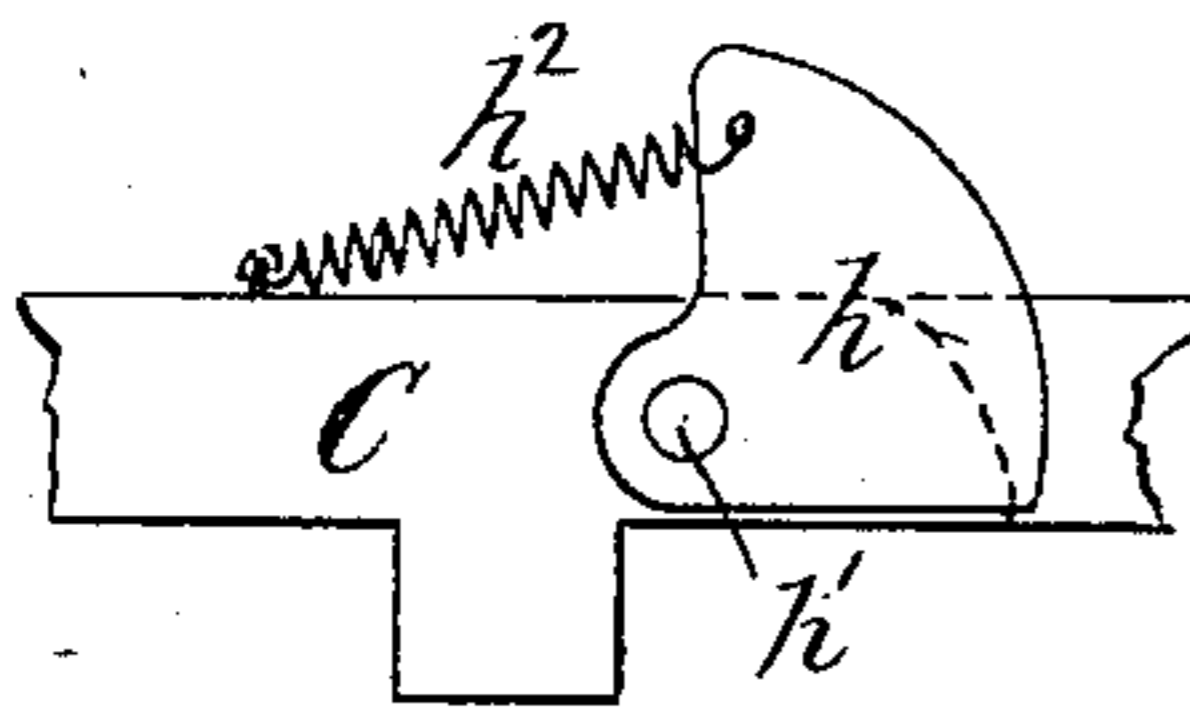
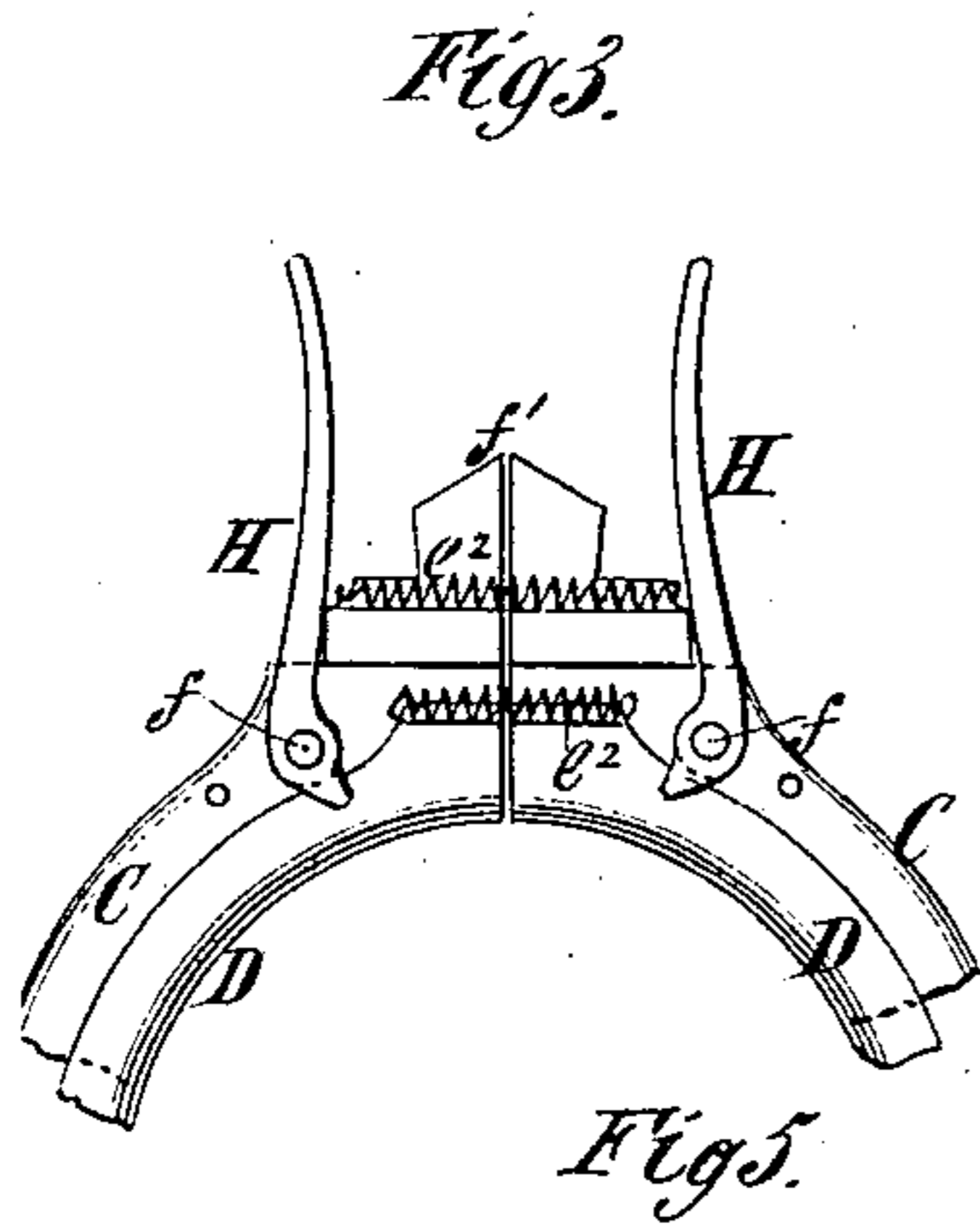
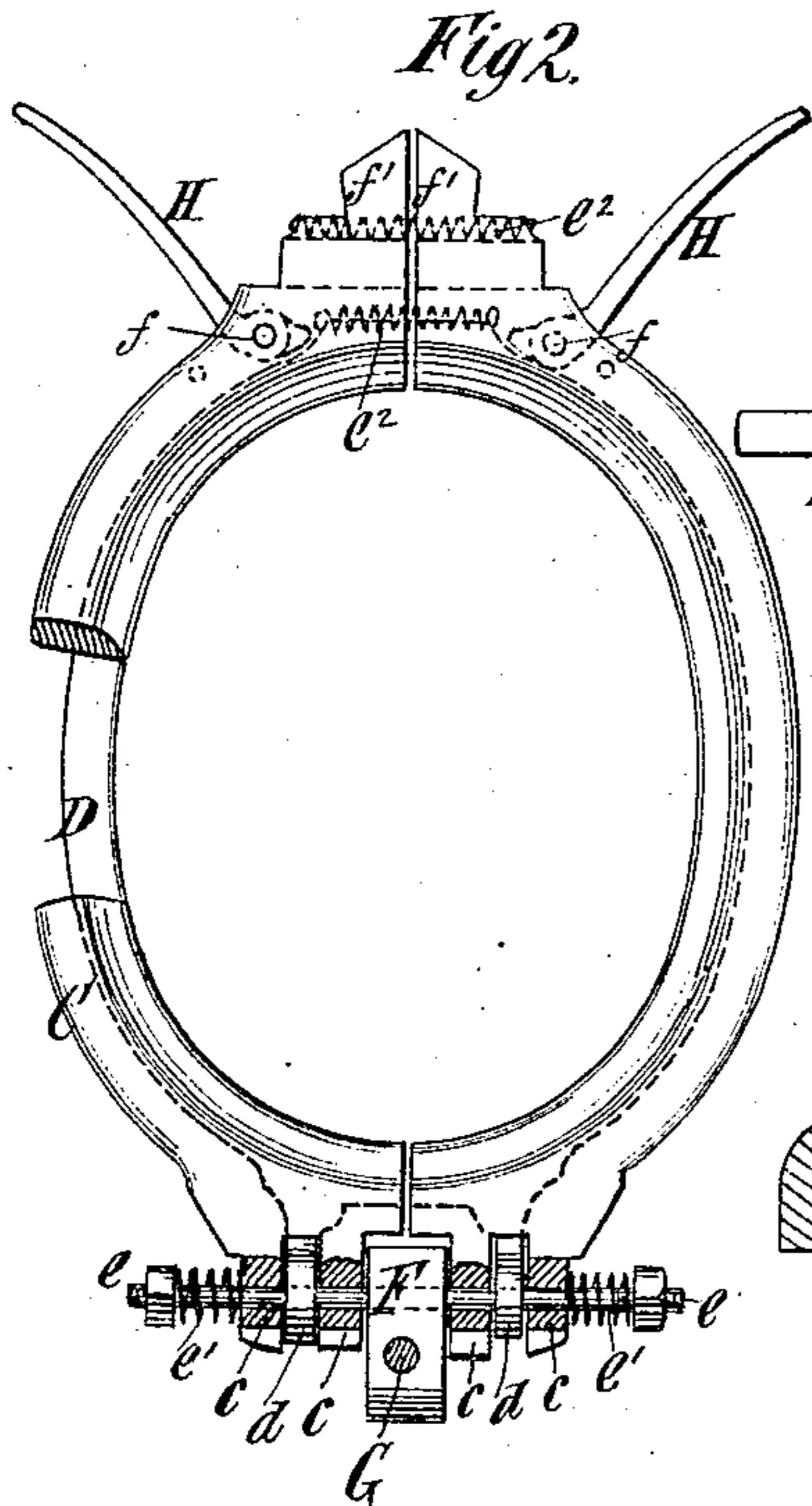
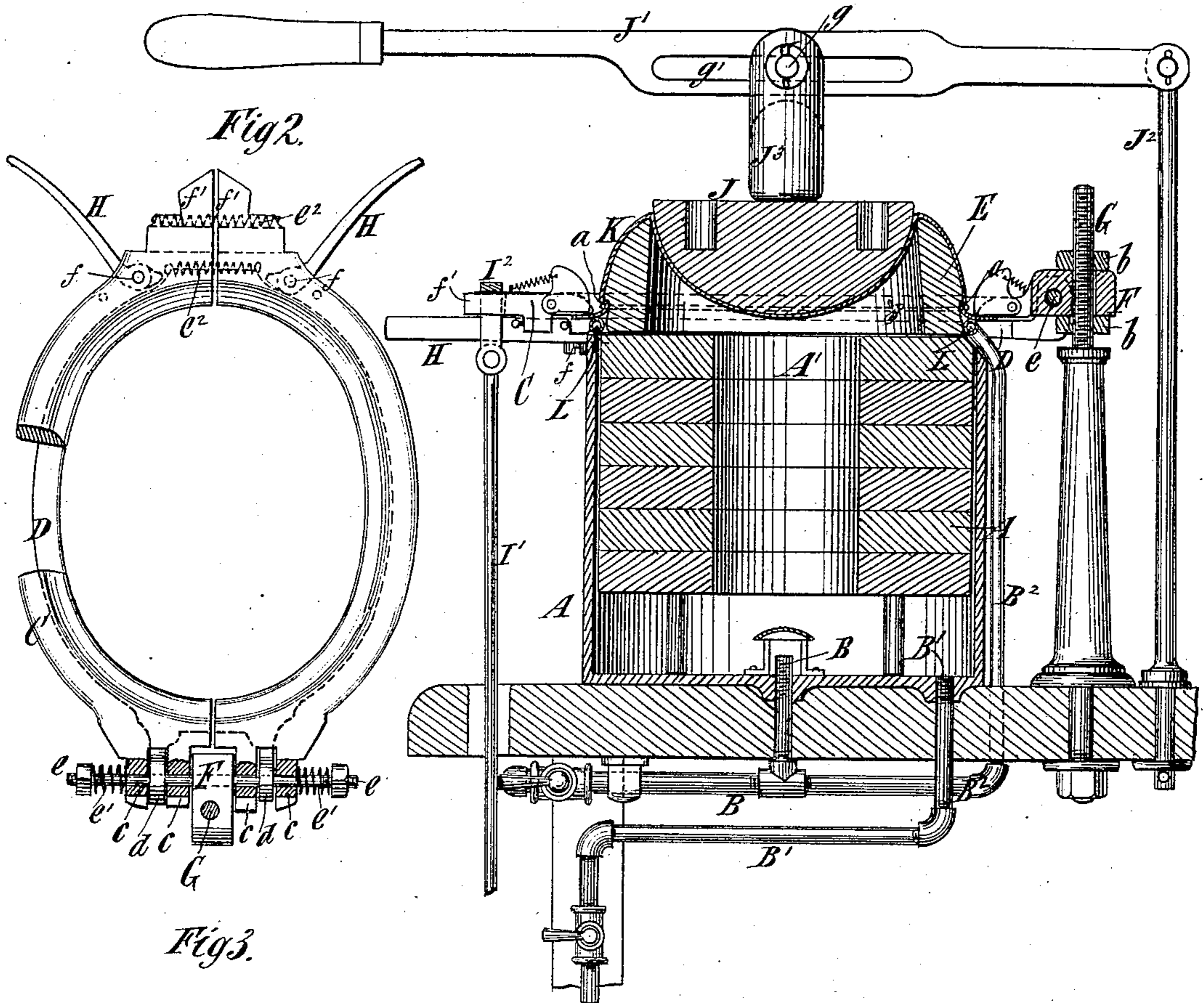


(No Model.)

W. A. BATE.  
MACHINE FOR FLANGING HATS.

No. 284,711.

Patented Sept. 11, 1883.  
*Fig 1.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM A. BATE, OF YONKERS, NEW YORK, ASSIGNOR OF ONE-THIRD, BY  
MESNE ASSIGNMENTS, TO ELIZABETH P. BALDWIN, OF SAME PLACE.

## MACHINE FOR FLANGING HATS.

SPECIFICATION forming part of Letters Patent No. 284,711, dated September 11, 1883.

Application filed November 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. BATE, of Yonkers, in the county of Westchester and State of New York, have invented a new and  
5 useful Improvement in Machines for Flanging Hats, of which the following is a specification.

In flanging hat-bodies the hat-body is steamed, turned wrong side out and drawn down  
10 over a flange, upon which it is corded, and a block is forced into the hat-body and flange. Where the operation of flanging is done by hand, skilled labor is required, and it is necessary to repeatedly move the hat-body to and  
15 from the steam-box. My invention relates to the class of machines in which the hat-body is clamped around the edge and drawn down over the flange, and in which provision is made for steaming the hat-body while it is  
20 so clamped.

The invention comprises an improvement in the art of flanging hats, consisting in turning the hat-body wrong side out and clamping it around its edge, then steaming the hat-body  
25 while its edge is clamped, then drawing the hat-body down over the flange, then cording it on the flange, and finally pressing a block downward into the hat-body and within the flange while the edge of the hat-body is held  
30 by the clamping devices.

The invention also comprises a machine of novel construction, which consists, generally, of two clamping-rings arranged one above and bearing upon the other, and adapted for clamp-  
35 ing the edge of the hat-body between them, a steam-box, above and outside of which said rings are arranged, a flange over which the hat-body is drawn down by the clamping-rings, and a block and means for forcing the  
40 same downward into the flange to shape the crown and brim of the hat simultaneously.

The invention also consists in various details of construction and other combinations of parts in a machine of the kind above described, and which are hereinafter described,  
45 and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical section of a machine or apparatus embodying my invention. Fig. 2  
50 represents a partly-sectional plan of the clamp-

ing-rings. Fig. 3 represents an inverted plan of a portion of said rings. Fig. 4 represents a vertical section of certain of the parts shown in Fig. 1 and a hat-body which is about to be flanged; and Fig. 5 represents a detail view,  
55 upon a larger scale, of the end of one of the expansible ring-sections, showing one of the knives or blades employed to cut the edge of the hat-body to prevent its tearing when said ring expands.

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

A designates a steam-box, to which steam may be supplied through a pipe, B, and from which the steam and water of condensation  
65 may escape through pipe B'. In the steam-box A is arranged a bed or rest, A', which is or may be made of wood, and the upper surface of which is about level with the top of the steam-box.

C D represent upper and lower clamping-rings, whereby the hat-body is held during the operation of flanging. Each of these rings might be solid for hats of ordinary sizes; but  
75 to better adapt them for operating on hats of the larger sizes I may make each of them of two sections, as here shown, so that they will expand to a considerable extent. The clamping-rings C D are arranged above and entirely  
80 outside of the steam-box A, so that they may be easily manipulated.

E designates the flange, which does not differ materially, if at all, from those ordinarily used, and which is provided with the usual  
85 cord-mark, *a*.

F designates a fulcrum piece or block which is fitted loosely upon a screw-threaded post, G, and is retained in vertical position thereon by nuts *b*. By this construction I provide for  
90 adjusting the piece or block F up or down, for a purpose hereinafter stated. The two sections of the upper ring, C, are each provided with a pair of lugs, *c*, and each section of the lower ring, D, is provided with a single lug, *d*, which fits between the lugs *c* of the corre-  
95 sponding section of the ring C. The two rings are fulcrumed or hinged to the piece or block F by a pin or bolt, *e*, as best shown in Fig. 2, and to the pin or bolt, outside the lugs *c*, are applied springs *e'*, which tend to keep the sec- 100

tions of the ring C together and return them after separation. Inasmuch as the lugs *d* of the ring D enter between the pairs of lugs *c* of the ring C, the same springs *e'* also tend to keep the sections of the ring D together and to return them after separation. To the opposite ends of the ring-sections C D are applied springs *e''*, which tend to keep the sections together and return them after separation. The upper ring, C, may be swung or turned up in a vertical plane upon the pin *e* as a center without the ring D, but both rings may be swung up together when desired.

H designates catch-levers, which are pivoted at *f* to the under side of the upper ring, C, and are adapted to be turned so that their points will pass under the ring D, thus securing the two rings closely together and enabling them to securely clamp any article placed between them. The two ring-sections C are provided opposite the fulcrum-pin *e* with projections *f'*, and a downward pressure upon the rings may be exerted by a treadle, I, and a rod, I', having at its upper end a stirrup, I<sup>2</sup>, adapted to be swung over the projections *f'*, as shown in Fig. 1, or away from them, as shown in Fig. 4.

J designates a block of the kind usually employed in flanging hats, and a downward pressure may be exerted upon it by a lever, J', fulcrumed to a post, J<sup>2</sup>, and provided with a presser, J<sup>3</sup>. The presser J<sup>3</sup> is connected with the lever by a pin, *g*, passing through a slot, *g'*, and while the lever is controlled with one hand the presser may be shifted with the other hand and adjusted so as to press upon any desired part of the block, and so force it down true. The hinge-connection of the lever J' with the post J<sup>2</sup> is so loose that the lever may be shifted laterally, as may be desired, to press upon different parts of the block.

Where the hat is to have a curved brim the flange E, as well as the rings C D, would be curved more or less relatively to a horizontal plane.

The operation of the apparatus is as follows: K, Fig. 4, designates a hat-body which is to be operated upon. I first raise the upper ring, C, and place the hat-body wrong side out, with its edge overlapping the lower ring, D, after which the upper ring is moved down upon the lower ring, and the catch-levers H are adjusted to hold the two rings securely together and clamp the hat-body between them. The two rings, with the hat-body, are then raised, and the flange E is placed upon the bed or rest A', after which the rings are lowered to draw the hat-body K down over the flange E, and the stirrup I<sup>2</sup> is applied to the projection *f'* and the treadle I is operated. The ring-sections C D may expand if the hat is very large, and in order to prevent such expansion from tearing the hat-body from the edge inward, I may provide one of the ring-sections C with a knife or blade, *h*, at each end, as shown in Fig. 4, and more clearly in Fig. 5. Such knife or blade *h* may be pivoted at *h'*,

and may have a spring, *h''*, applied to it for raising it. When it is desired to slit the body from the edge inward, the blades or knives *h* may be tapped with a hammer, and will be made to cut the hat-body. After the hat-body is drawn down over the flange I cord the hat-body around the cord-mark *a* in the flange, and then place on the hat-body the block J and force it down with the lever J' and presser J<sup>3</sup> in a well-understood manner. During the whole operation the hat is kept thoroughly steamed, and does not have to be repeatedly removed from the steam-box and restreamed, as is the case where the flanging is done by hand. The fulcrum piece or block F, being vertically adjustable on the post G, affords provision for adjusting the rings C D so that they will be in proper position relatively to the cord-mark *a* on the flange E.

In order to take out the flanged hat, all that is necessary is to loosen the catch-lever H to free the ring C from the ring D and then draw out the hat, flange, and block all together through the upper ring. The edge of the brim is then trimmed off and the hat finished in the usual way.

In lieu of having the two clamping-rings hinged, as shown, the lower ring may be stationary and the upper ring movable up and down bodily. The flange would then be supported on a vertically-movable carrier and would be pushed upward into the body.

When the flange E is pressed down upon the bed or rest, by drawing the hat-body over it the steam cannot freely reach the brim outside the flange, and in order to enable the body to be thoroughly steamed at that point I may arrange a perforated pipe-ring, L, above the steam-box and supply it with steam from an extension, B<sup>2</sup>, of the pipe B. The brim portion can then be steamed thoroughly outside the flange E.

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

1. The combination of a steam-box, upper and lower clamping-rings arranged above and outside the same for clamping the edge of a hat-body, a flange over which the hat-body may be drawn by the clamping-rings, a block, and devices for forcing the block downward into the flange to form the crown and brim of the hat simultaneously, substantially as and for the purpose herein described.

2. The combination of a steam-box, clamping-rings arranged above the same and hinged at one end, so that they may be swung upward, a flange over which the hat-body may be drawn by the clamping-rings, a block, and devices for forcing it into the flange to form the crown and brim of the hat simultaneously, substantially as herein described.

3. The combination of a steam-box, upper and lower clamping-rings adapted to clamp the edge of a hat-body between them, arranged above and outside the steam-box, and adapted to be raised and lowered bodily and together, and a flange supported upon a bed or rest over

the steam-box, and over which the hat-body may be drawn by the clamping-rings, substantially as and for the purpose described.

4. The combination of two clamping-rings adapted to clamp the edge of the hat-body, and hinged upon a common center, a flange over which the hat-body may be drawn by said rings, a bed or rest for supporting said flange, catch-levers or devices whereby the upper clamping-ring may be locked to the lower ring, a block, and devices for forcing the block into the flange to form the crown and brim of the hat simultaneously, substantially as herein described.

5. The combination of the upper and lower clamping-rings, C D, each composed of two or more sections, the flange E, the bed or rest A', and the knife or knives h, all adapted to operate substantially as and for the purpose described.

6. The combination of the ring-sections C,

provided with lugs c, the ring-sections D, provided with lugs d, fitting between the lugs c, the hinge-pin e, passing through all said lugs, and the springs e', applied to said pin, substantially as and for the purpose herein described.

7. The combination of the steam-box A, the rest or bed A', the clamping-rings C D, the flange E, and the perforated pipe L, surrounding the flange, substantially as herein described.

8. The combination of the upper and lower clamping-rings, C D, the steam-box A, the bed or rest A', the operating-lever J', and the presser J<sup>3</sup>, capable of movement along said lever toward and from its fulcrum, substantially as and for the purpose described.

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Witnesses:

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ED. L. MORAN.