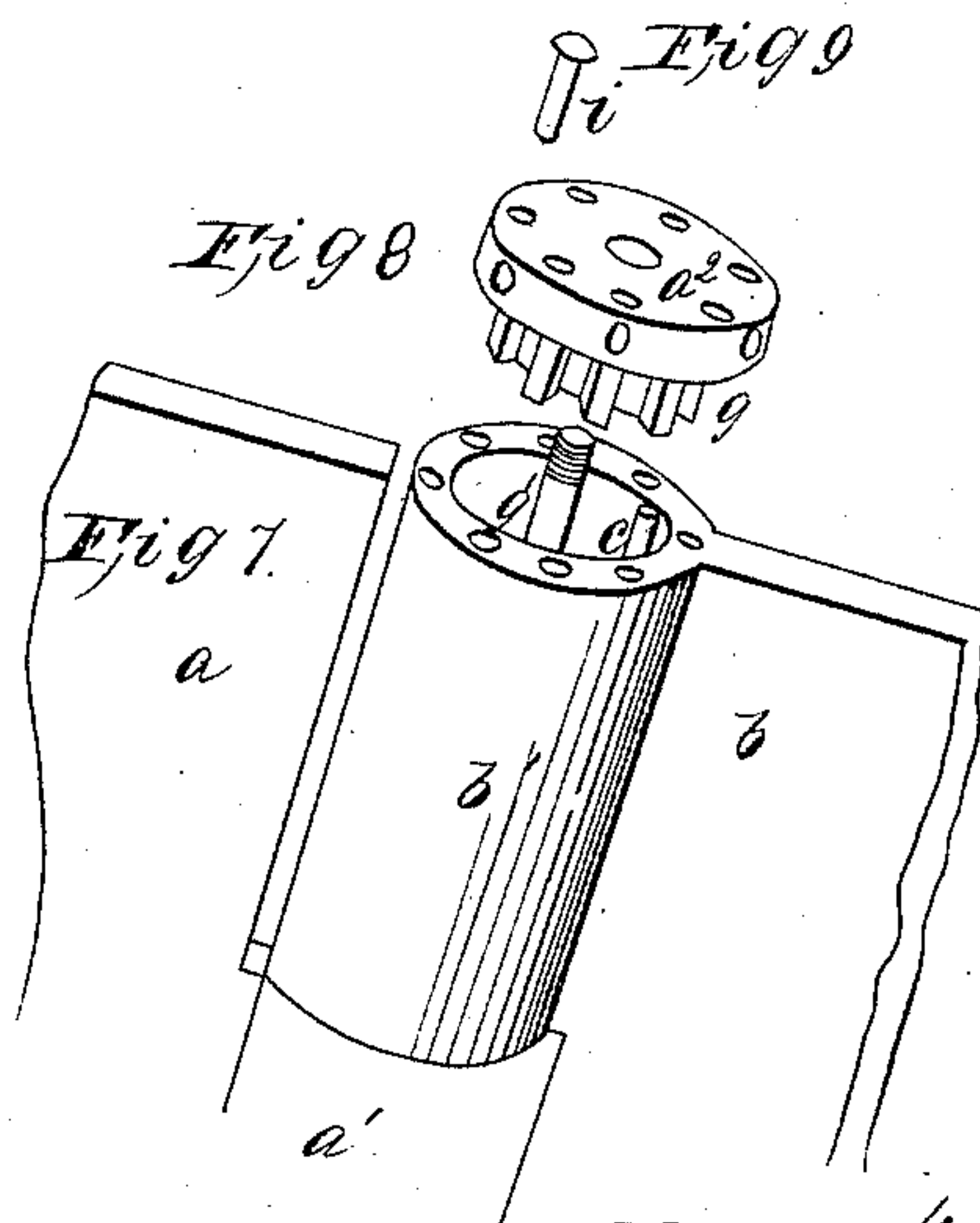
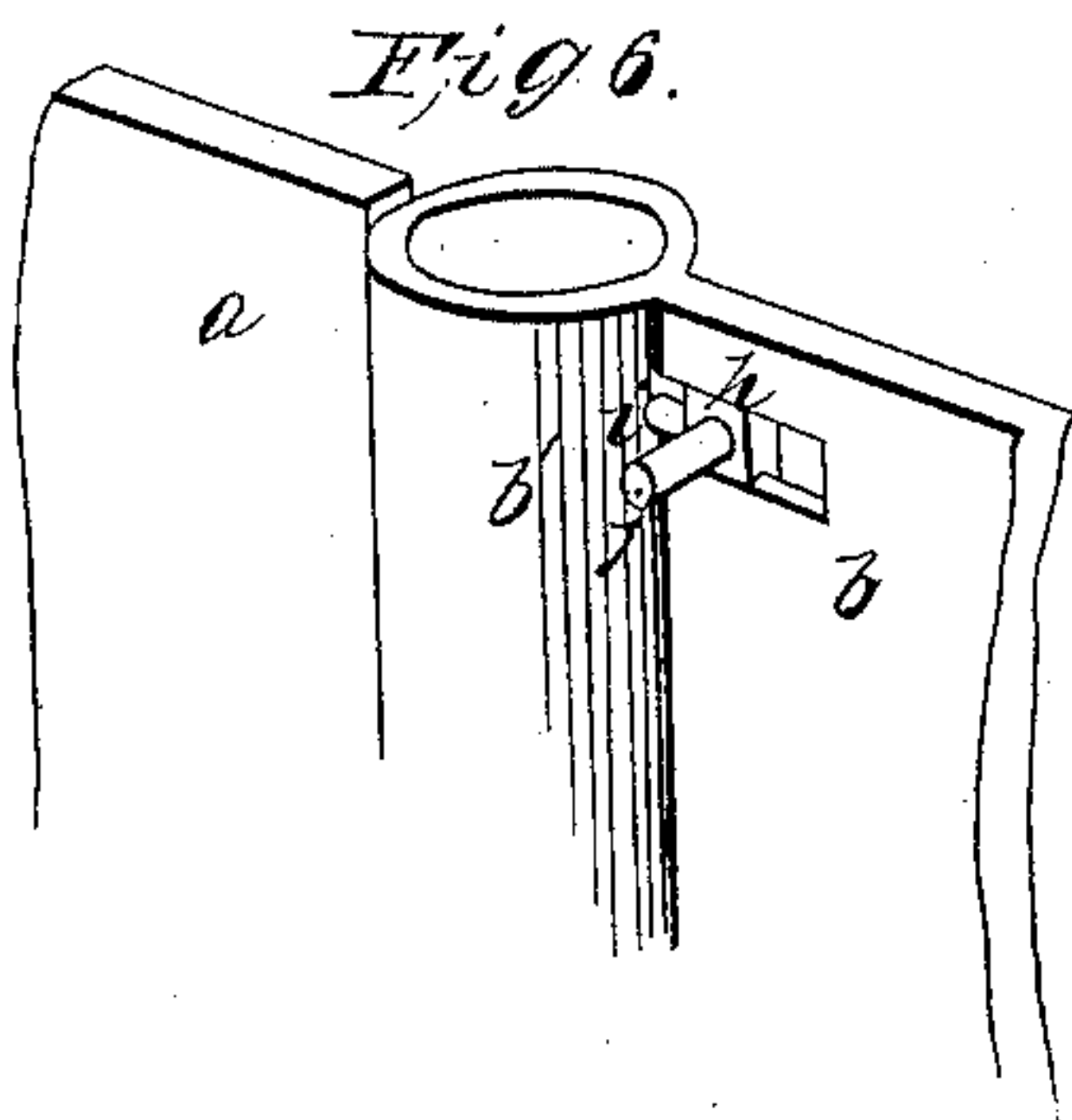
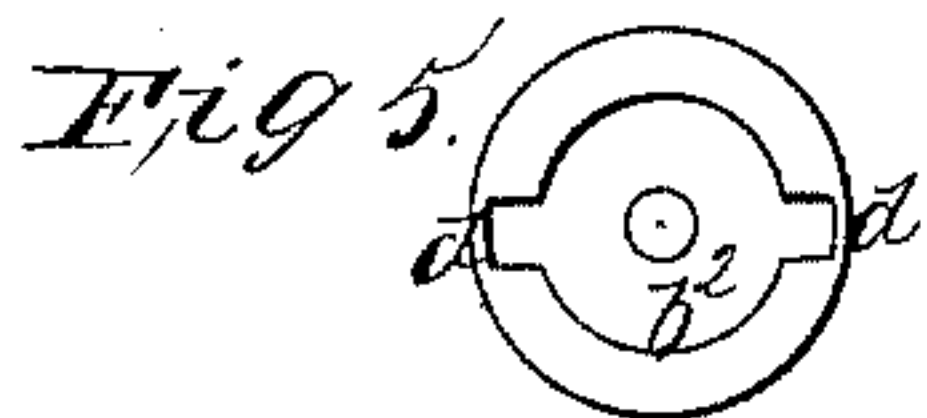
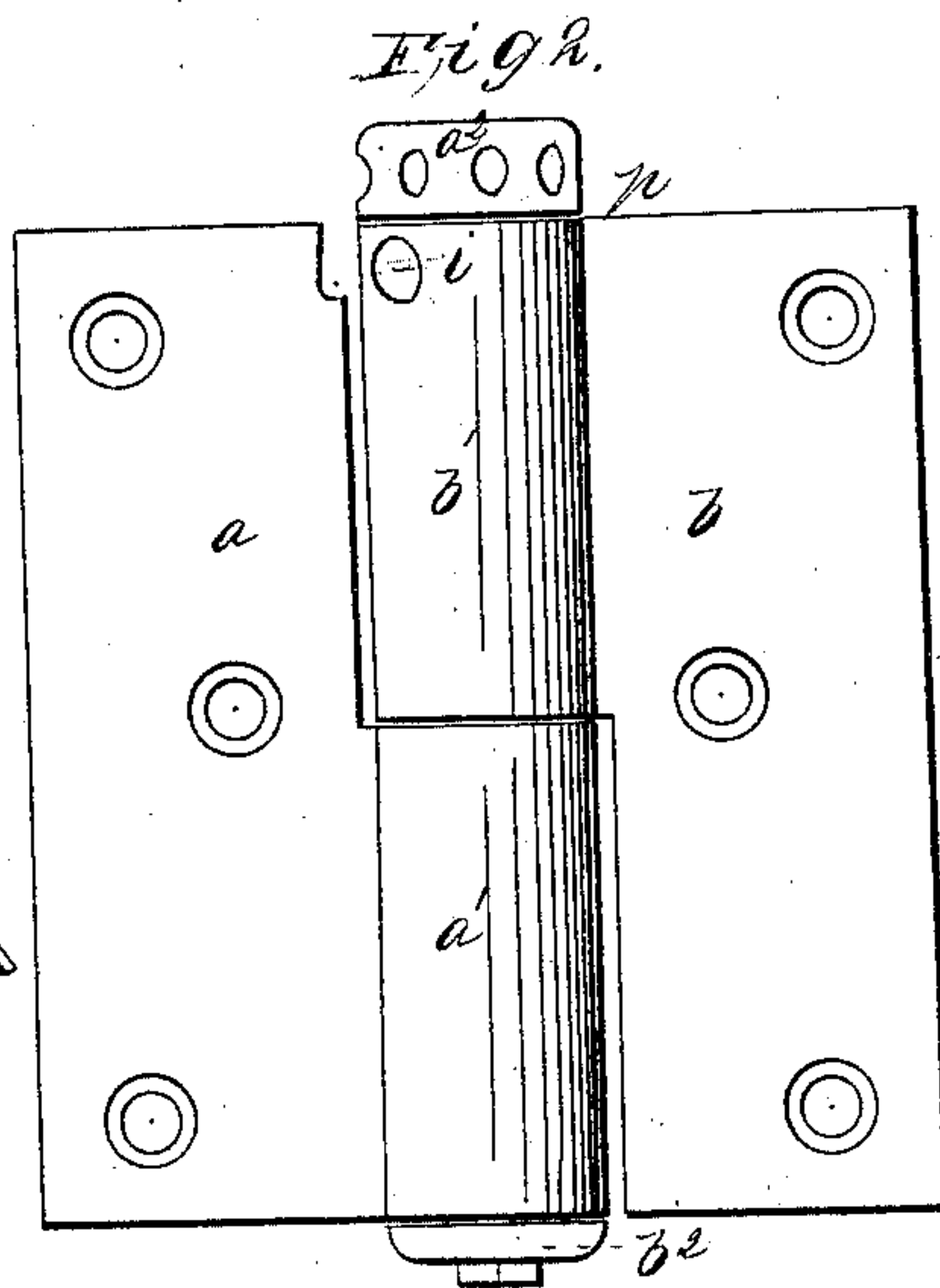
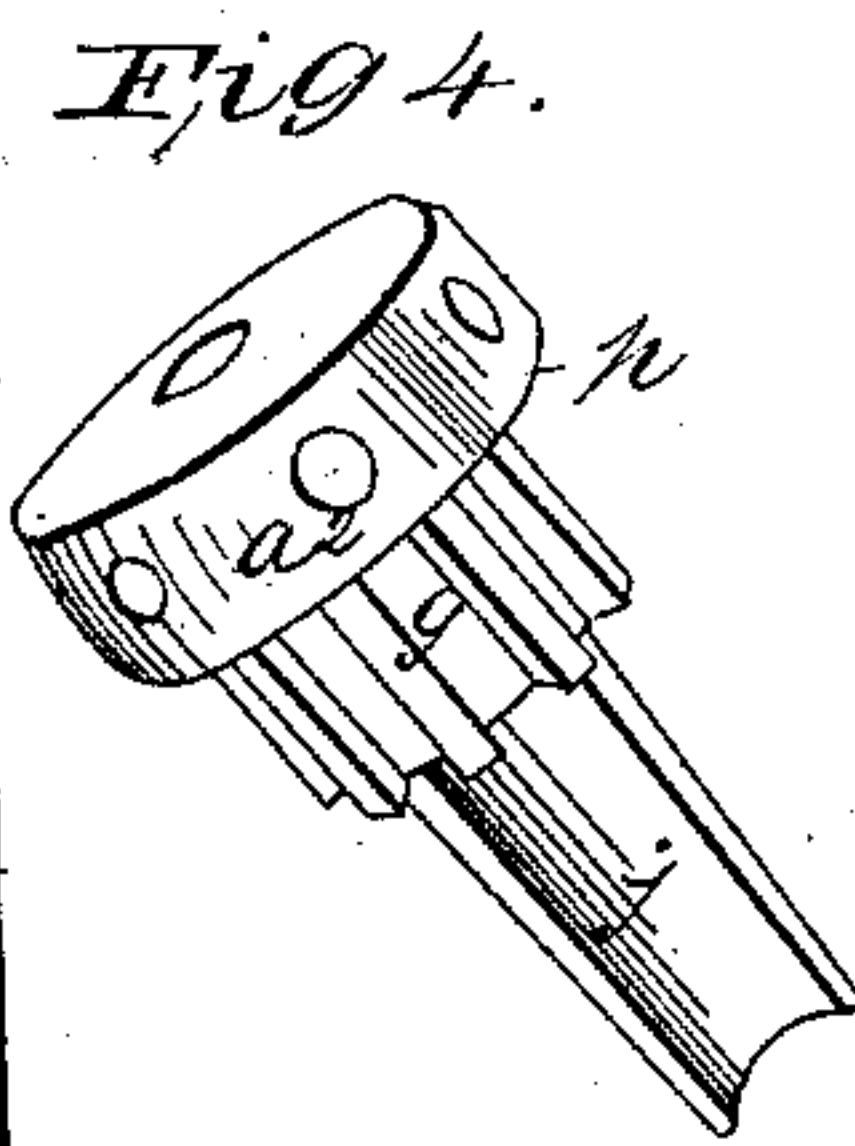
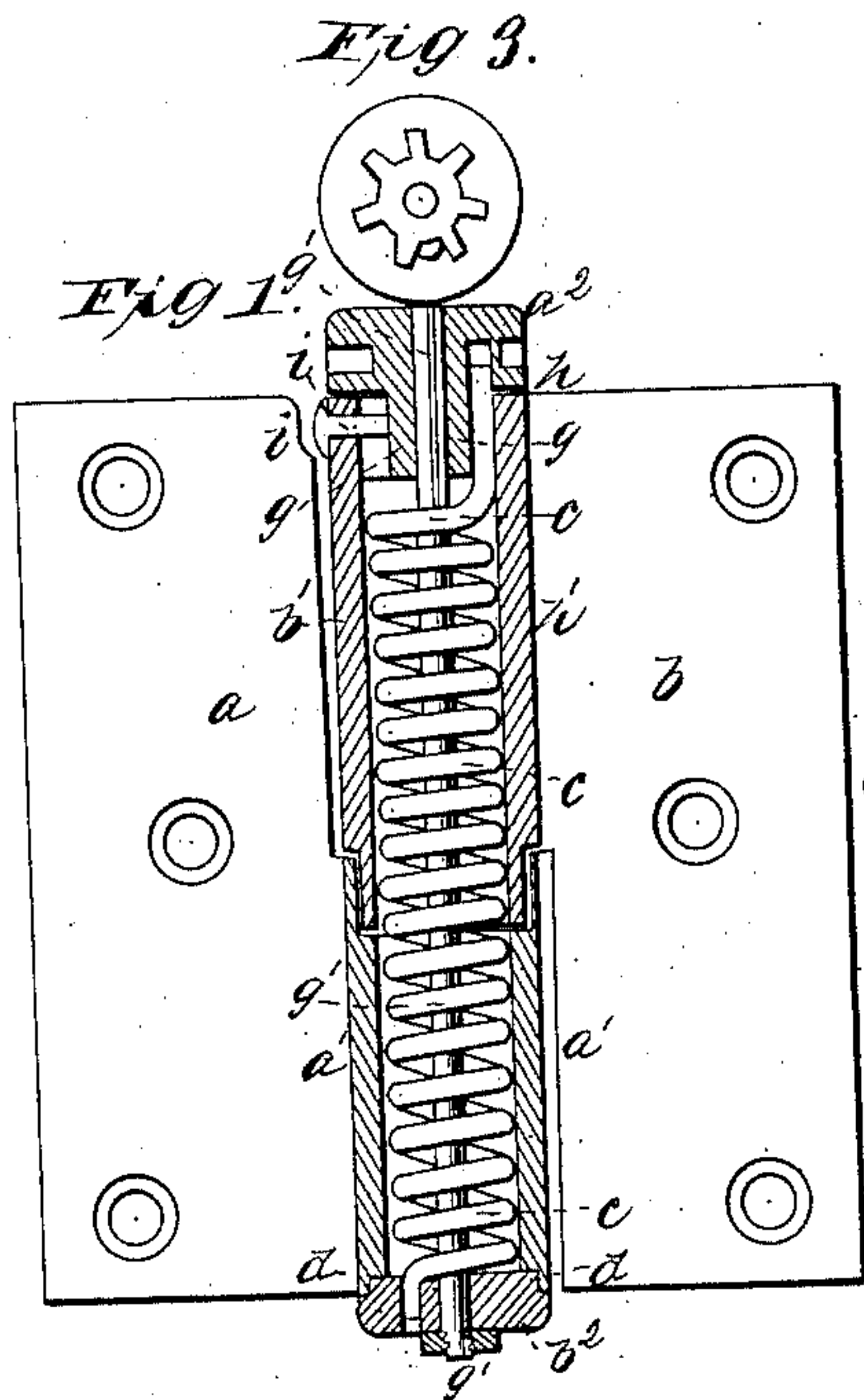


A. Acker, Spring Hinge.

No 36,976.

Patented Nov. 18, 1862.



Witnesses.
Julia Campbell
James Aiken

Inventor.
Abram Acker
By his atty R. T. Campbell

UNITED STATES PATENT OFFICE.

ABRAM ACKER, OF RAMPO, NEW YORK, ASSIGNOR TO J. S. WANAMAKER & CO., OF HOHOKUS, NEW JERSEY.

IMPROVEMENT IN SPRING BUTT-HINGES.

Specification forming part of Letters Patent No. 36,976, dated November 18, 1862.

To all whom it may concern:

Be it known that I, ABRAM ACKER, of Rambo, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Spring Butt-Hinges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a diametrical section through the eyes of the improved hinge, showing the connection of the spiral spring to the head and foot caps and the manner of attaching the head-cap to the eye of the hinge. Fig. 2 is an exterior view of the hinge of Fig. 1 with the rings open. Fig. 3 is a bottom view of the toothed cap. Fig. 4 is a perspective view of Fig. 3. Fig. 5 is a top view of the foot-cap. Fig. 6 shows a modification of the fastenings of Figs. 1 and 2. Figs. 7 and 8 show another modification of the fastening of Figs. 1 and 2. Fig. 9. is the fastening-pin of Figs. 7 and 8.

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

This invention relates to certain new and useful improvements on the patented springs butt-hinge No. 29,212, wherein a peculiar ring and nut fastening is used to secure the upper end of the spring to the top leaf of the hinge for the purpose of adjusting, regulating, and reversing the action of said spring upon the leaves of the hinge.

The object of the present invention is to effect the same ends mentioned above in a more perfect, inexpensive, and durable manner, as will be hereinafter described, represented, and specified.

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

In the annexed drawings, a b are the two leaves of the hinge; and a' b' are the eyes of the same, which are cast quite large in diameter, with male and female portions on their abutting ends, forming what is commonly termed a "sleeve-joint." (Shown in Fig. 1 of the drawings.) This sleeve-joint keeps the two wings of the hinge in their proper place during their movement. The eyes a' b' are equal in diameter, and receive, when put together, a strong and properly-tempered spring, c , the ends of which are bent out straight and are

passed into holes or recesses which are made in the head and foot caps a^2 b^2 when the parts of the hinge are put together. The foot or bottom cap, b^2 , is cast with a short neck and two lugs, d d , (shown in Figs. 1 and 5,) which latter fit into corresponding recesses made in the bottom of the eye a' . The lugs d d prevent the cap b^2 , and consequently the lower end of the spring c , from turning in the operation of the hinge. The top portion or cap a^2 is intended to turn loosely on the top of the eye portion b' , and to this cap a^2 the straight portion of the upper end of spring c is attached, as will be hereinafter described. Cap a^2 consists of a cylindrical head, which is perforated around its circumference to receive a lever which is used to adjust this cap in regulating or reversing the action of the spring c , and also a toothed neck, g , which serves the twofold purpose of receiving and holding the upper end of the spring c and of receiving the coupling-pin i , which connects the cap a^2 and spring c with the upper portion, b' , of the hinge. The portion f , which is shown in Fig. 4 projecting from the toothed neck of cap a^2 , is intended for stiffening spring c , and is fully described in the patent aforementioned. The diameter of the perforated head of cap a^2 is about equal to the exterior diameter of the eye of the hinge, and the diameter of the toothed neck g of this cap is a little less than the interior diameter of the eye of the hinge. The neck of the cap a^2 being thus reduced, a shoulder, p , is formed, which serves as a bearing for the cap a^2 on the extreme end of the eye of the hinge. Now, when the pintle is passed through the center of the cap a^2 , and the parts are all secured together by the nut n , the cap a^2 may be rotated and the adjustments effected without loosening or removing the nut n . The neck g of the cap a^2 must be made quite short, so that the spring c may be nearly, if not quite, as long as the eye of the hinge itself. A good strong spring may thus be introduced into the eye of the hinge. The cap a^2 will thus turn freely, and its bearing-surfaces should be kept well oiled to prevent any unnecessary wear of the parts.

g' is the pintle, which passes through the axis of the hinge through the caps a^2 and b^2 , and which is secured at its ends by nuts or ornamental portions. (Not shown in the drawings.)

The ends of the pintle g' pass loosely through the caps a^2 and b^2 , and the object of the pintle is merely to hold the wings a and b and the caps a^2 b^2 together and to keep the latter in their places.

Now, it will be seen from the above description that I dispense entirely with the octagonal ring which is described in the Patent No. 29,212, and thus avoid the objections attending the use of said ring, and the additional expense of applying it to the hinges.

The operation of my invention is as follows: The two wings a b are put together by slipping the male into the female portion of the eye. Spring c is now introduced in the eye. The bottom cap b^2 is put into its place so as to cover the lower end of eye a' , the lugs d d' fitting into the corresponding recesses in the end of this eye. Cap b^2 is held in its place until the lower end of spring c is inserted into the hole through this cap b^2 , as shown in Fig. 1. Cap a^2 is now put on by introducing the toothed neck g into the upper end of the eye b' , the upper end of spring c passing between two of the teeth of this neck g . The whole are now held in place by inserting the pintle g' through the axis of the hinge and using nuts on its ends. Now, before the coupling-pin i is inserted in its place the hinge will work freely, like any ordinary hinge of this description. To apply the action of the spring c to the leaves of the hinge, one end of a short lever (a short rod, nail, or anything of the kind most convenient) is inserted into one of the holes in the periphery of the head of cap a^2 , and this cap is thereby turned around the required number

of times, which operation coils up the spring c . The pin i now introduced in its place through the upper end of eye b' and between two of the teeth of neck g , the action of the spring c (its recoil) will now force the leaves of the hinge together, thereby removing pin i and reversing the action of the spring c upon the leaves a b , and introducing the pin again the leaves a b will be forced back, and the spring c will tend to keep them in this open state. Should either the opening or the closing action of the spring c be too great, it can be diminished by removing pin i and setting the cap a^2 back the distance of several teeth. In this way the force of the spring c , whether it be to close or to open the leaves of the hinge, can be quickly and easily regulated, and by removing pin i the action of the spring c can be taken off altogether, and the hinge made to work like any ordinary butt-hinge. These manipulations can all be gone through with while the hinge is on a door, gate, or shutter, to either or all of which my hinges are applicable.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The device for adjusting the spring c , consisting of the enlarged cap a^2 , reduced toothed or perforated portion g , pin i , and shoulder p , arranged as and for the purposes herein set forth.

ABRAM ACKER.

Witnesses:

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L. BOMMER.