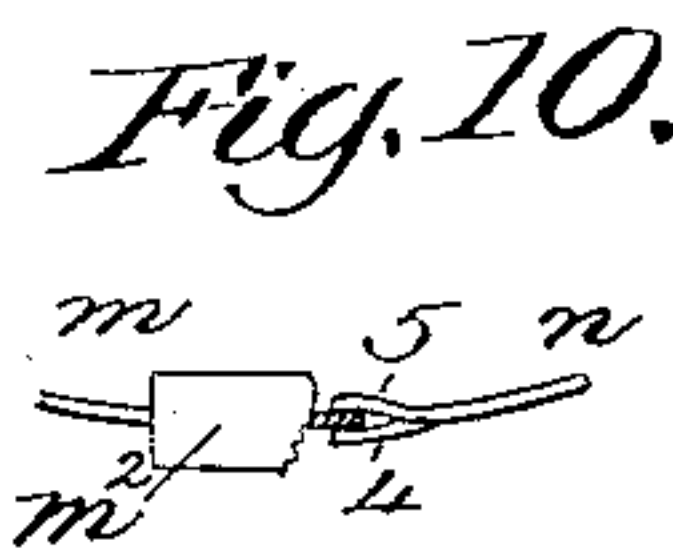
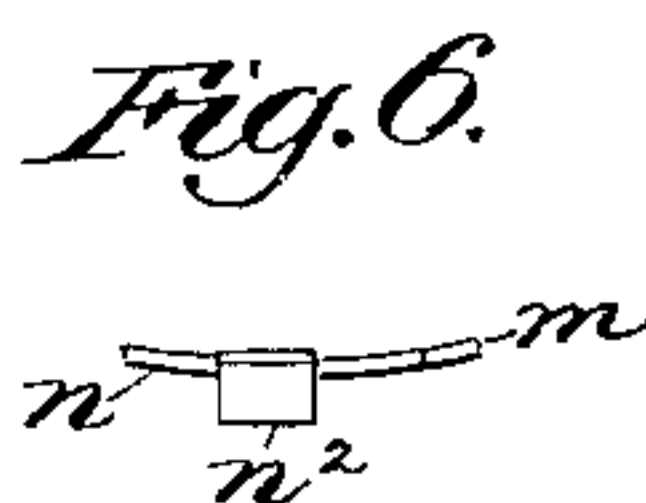
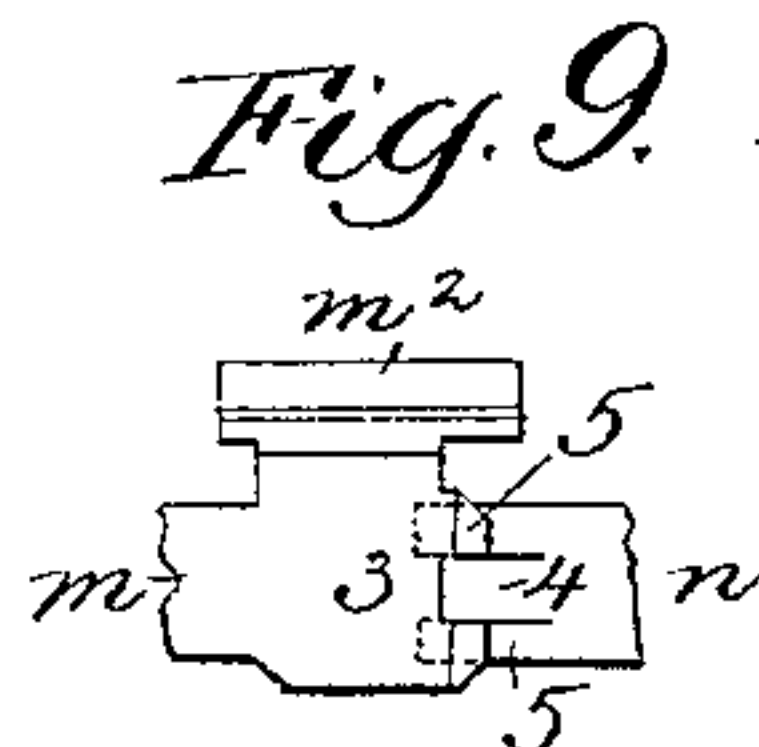
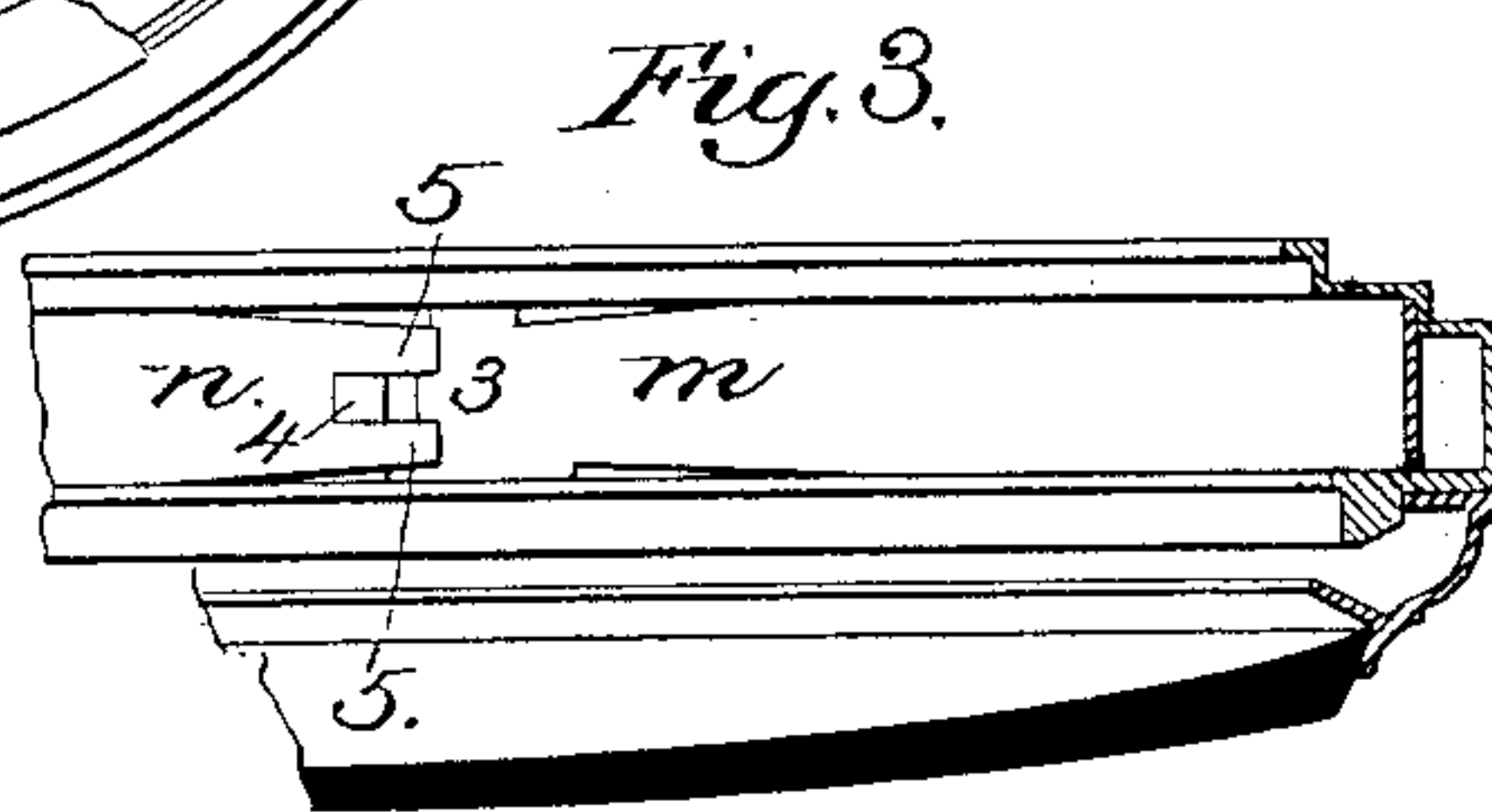
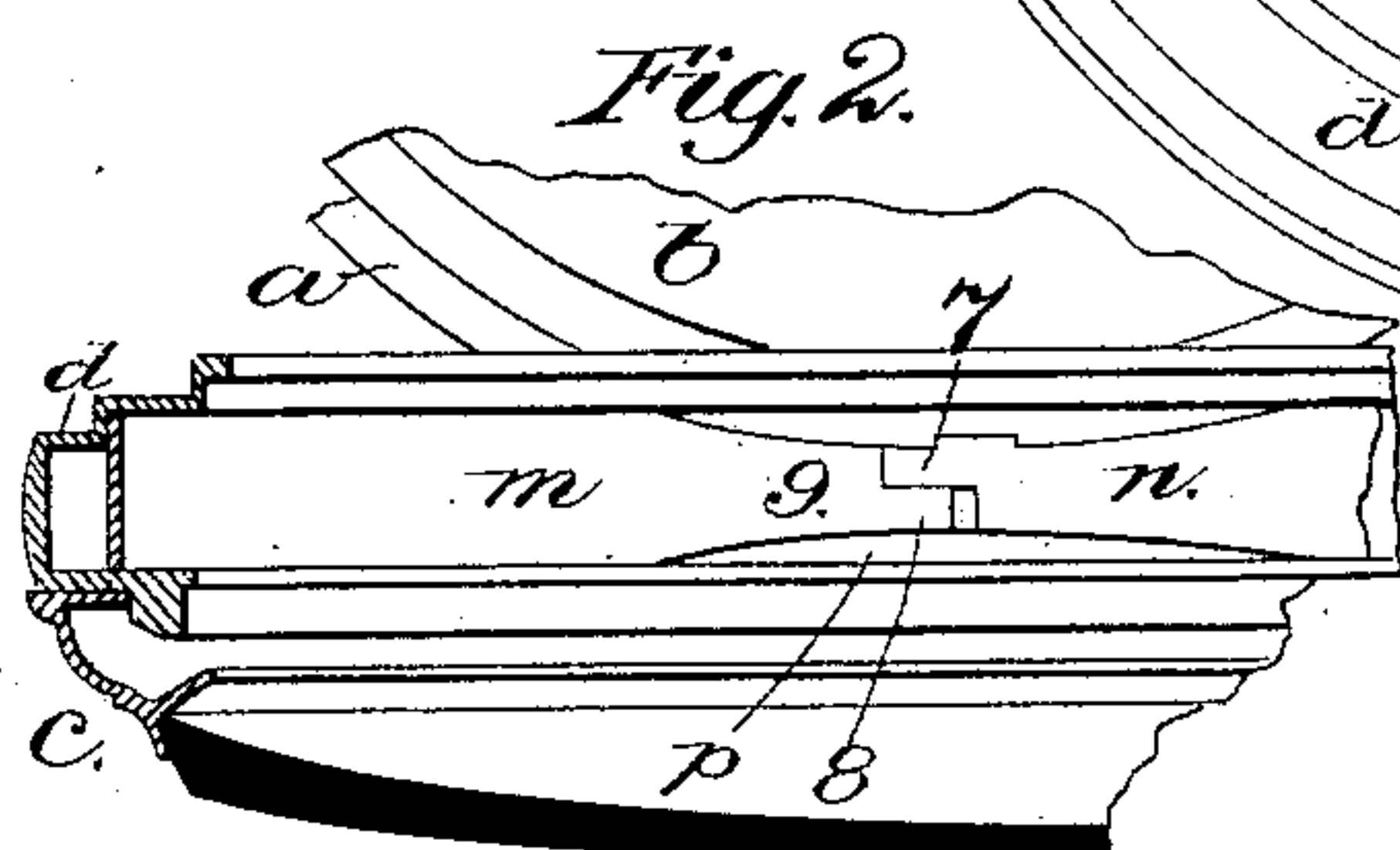
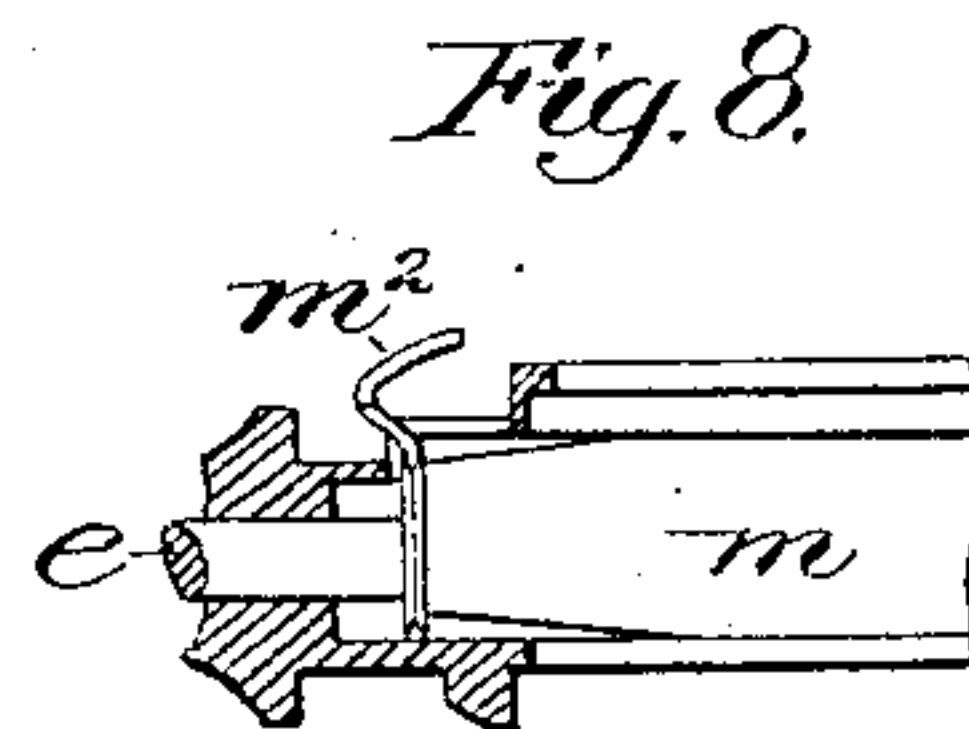
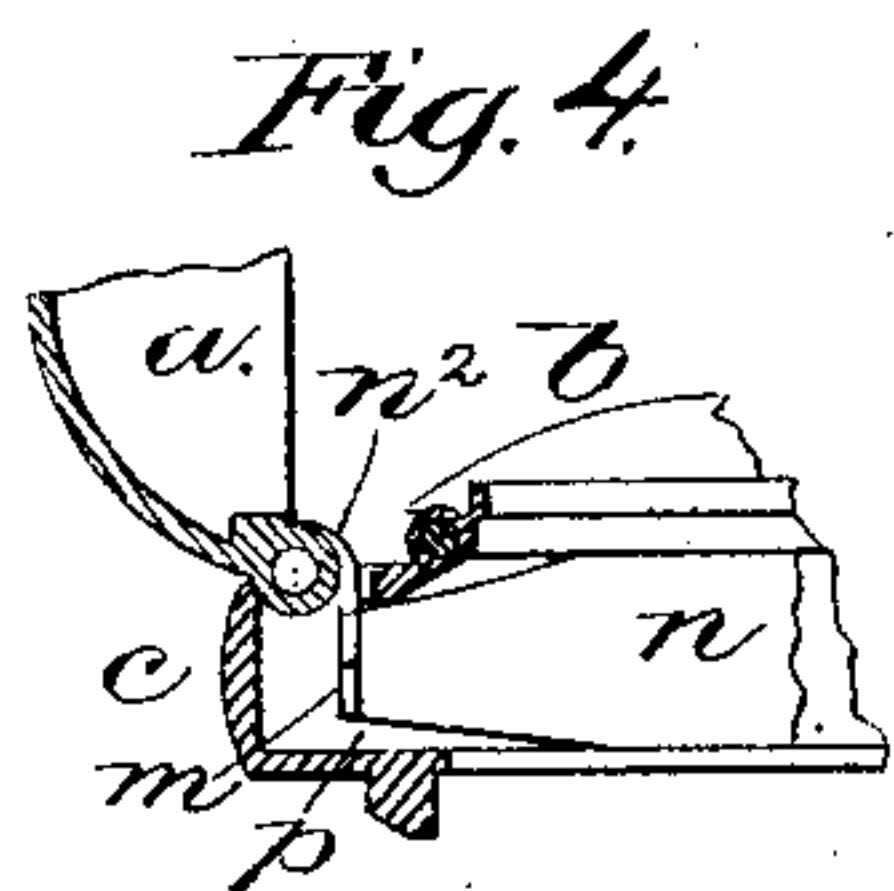
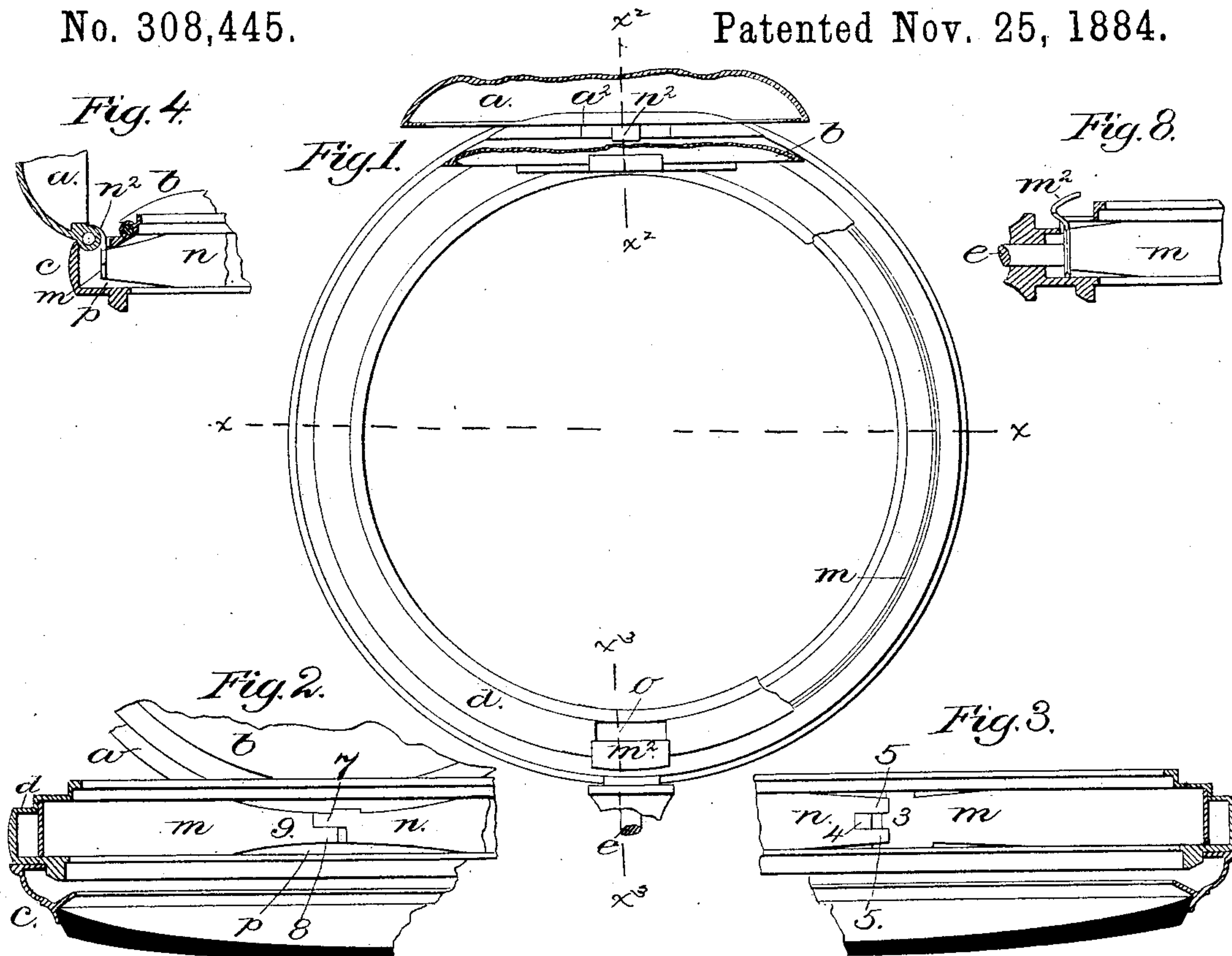


(Model.)

C. W. THIERY.  
WATCH CASE SPRING.

No. 308,445.

Patented Nov. 25, 1884.



Witnesses:  
John F. C. Prinkert  
B. J. Noyes.

Inventor:  
Charles W. Thiery  
by Crosby & Gregory Attys.



# UNITED STATES PATENT OFFICE.

CHARLES W. THIERY, OF BOSTON, MASSACHUSETTS.

## WATCH-CASE SPRING.

SPECIFICATION forming part of Letters Patent No. 308,445, dated November 25, 1884.

Application filed February 2, 1882. Renewed June 11, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. THIERY, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Watch-Cases, of which the following description, in connection with the accompanying drawings, is a specification.

This invention in watch-cases relates to the so-called "throw-spring" and "catch-spring," and has for its object to simplify the construction and efficiency of these parts, to dispense with screws to retain them in the case, and to insure a quick steady action of the throw-head to open the cover quickly and by a single impulse.

In this my invention I employ two springs, one of which contains the throw-head, and the other the catch. These two springs inserted within the center or rim of the watch-case act to support the throw-head and catch each side of the line or point where the strain comes upon them, so that they work uniformly, and each spring is made effectual in keeping the other in place.

When the throw-head is connected with a spring unsupported at its free end, or at each side of the acting-point of the throw-head, the latter, as it acts to open the cover, will at times move the said cover in a spasmodic manner, or fail to throw it open with a uniform steady movement.

Figure 1 represents in top view the center or rim of a watch-case broken out at its right-hand side to show one of my improved springs located in the grooved interior of the center or rim, the two covers being broken off near the center or rim. Fig. 2 is an enlarged sectional detail on the line  $\bar{x}x$ , Fig. 1, of a sufficient portion of the interior of the case to show the throw-spring for opening the cover and its connection with the end of the catch-spring. Fig. 3 is a similar sectional detail of the opposite portion of the interior of the watch-case to show the acting end of the catch-spring and its connection with the end of the throw-spring. Fig. 4 is a sectional detail on the dotted line  $x^2x^2$  of Fig. 1, to show the head of the throw-spring in position against the cover near its usual hinge. Figs. 5, 6, and 7 are details showing the shape of the head of the throw-spring and the method of locking or joining the abutting ends of the throw and

catch springs. Fig. 8 is a sectional detail on the dotted line  $x^3x^3$ , showing the catch-spring against the usual push-pin, and Figs. 9, 10, and 11 are details of the ends of the catch and throw springs viewed from different positions to show how they are locked together to mutually support and hold each other in position.

I have selected an open-faced case with which to show my improved springs; but it will be understood that they may be applied to hunting-cases as well as to open-faced cases.

The main cover  $a$ , the inner cover,  $b$ , the glass-holding cover  $c$ , and the center or rim,  $d$ , and push-pin  $e$  are and may be all as usual.

The catch-spring  $m$  and the throw-spring  $n$ , curved in an arc of a circle of greater radius than the inner diameter of the center or rim,  $d$ , are each sprung into, as herein shown, an annular groove in the said center or rim. The spring  $m$ , near one end, has projecting from one edge the catch  $m^2$ , of usual shape. The end of the catch-spring just below the catch is made broad, as at 3, to afford ample space and strength for the action of the end of the push-pin  $e$  against it, and the end of the spring immediately below the catch is reduced in thickness to be embraced by the forked rear end of the throw-spring  $n$ , which, as clearly shown in Figs. 3, 9, 10, and 11, is slotted to form three forks or prongs, two of which (marked 5) rest against the front side of the end of the catch-spring, while the third fork, 4, passes behind the said end. (See Figs. 10 and 11.) This connection of the rear end of the throw-spring, so as to embrace the end of the catch-spring, enables the effective stiffness or strength of the catch-spring to be augmented by the stiffness or strength of the throw-spring, and the ends of the two springs so matched or locked together mutually aid each to keep the other in place. The throw-spring has the usual throw-head,  $n^2$ , extended from one edge of it near its front end, as in Figs. 2, 4, 5, 6, and 7, and the said head is extended up through a suitable opening in the center or rim,  $d$ , and acts upon the cover  $a$  near its hinge  $a^2$ , so as to lift the cover quickly as soon as the catch  $m^2$  is moved by the push-pin to release the cover. The front end of the throw-spring is cut to form a square end just beyond the throw-head for substantially half the width of the end of the throw-spring, which end is nar-



rower than the central part of the throw-spring, as is shown in Fig. 4, and at its lower edge the end of the throw-spring is notched to leave the end of the said spring at its upper 5 edge with a projection, 7. The rear end of the catch-spring is notched or cut away at its upper edge to form a square shoulder, 9, with a projection, 8, beyond and below it, which projection will overlap the front end of the 10 throw-spring at that side of it exposed within the center or rim, as in Fig. 2, the portion of the throw-spring so overlapped by the prong 8 being beveled or reduced in thickness to insure smooth contact. The end of the part 7 15 and shoulder 9 are left of full thickness, so as to abut together squarely. A space, *p*, (see Figs. 2 and 4,) is left between the lower edge of the front end of the throw-spring *n* and the rear end of the catch-spring *m*, so that the 20 throw-head may descend with the front end of the throw-spring, and the rear end of the catch-spring locked and abutted together, as described; and with the part 7 of the throw-spring supported at its lower edge directly 25 upon the prong 8 at the rear end of the catch-spring I am enabled to greatly increase the strength and effective stiffness of the throw-spring, reduce its liability of being broken off just back of the throw-head, and each spring 30 is made to assist in holding the other in place within the center or rim.

In operation the throw-spring will be first inserted in place in the center or rim, and 35 then the rear end of the catch-spring will be passed down through the opening *o*, and its front end will be passed between the forks 4

5 of the rear end of the throw-spring, and then the prong 8 at the rear end of the catch-spring will be placed under the projection 40 part 7 of the front end of the throw-spring.

I claim—

1. The catch-spring *m*, provided with catch 45 *m*<sup>2</sup>, combined with the throw-spring having the forks 5 4 5 at its rear end to embrace and hold the front end of the catch-spring, as shown, whereby its effective stiffness is augmented, substantially as described.

2. The throw-spring *n*, provided with a throw-head, *n*<sup>2</sup>, and the projecting end 7, combined with the catch-spring *m*, having the pro- 50 jection 8 at its rear end to engage the end 7 of the throw-spring, as shown, to thereby support the throw-spring and augment its effective stiffness, substantially as described.

3. The catch-spring provided with the catch 55 and with a projection, 8, at its rear end, to overlap and sustain the notched front end of the throw-spring, combined with the throw-spring forked at its rear end to embrace the front end of the catch-spring, whereby the 60 said springs are interlocked and supported at their ends, assisting in holding each other in place, each spring augmenting the effective stiffness of the other, substantially as described.

In testimony whereof I have signed my name 65 to this specification in the presence of two subscribing witnesses.

CHARLES W. THIERY.

Witnesses:

G. W. GREGORY,  
W. H. SIGSTON.