

(No Model.)

C. B. CLARK.

SPRING HINGE.

No. 255,938.

Patented Apr. 4, 1882.

FIG. 1.

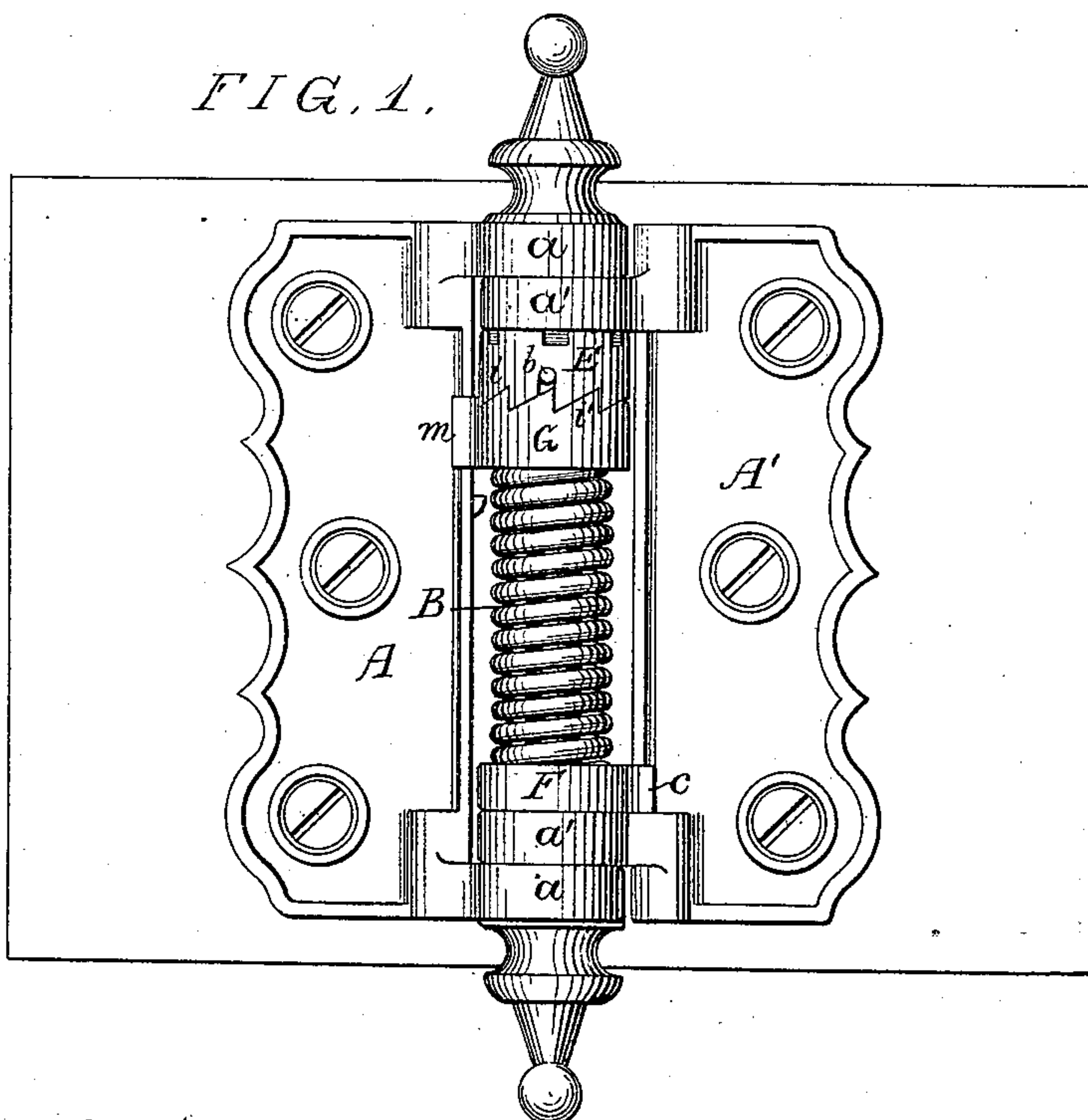


FIG. 3.

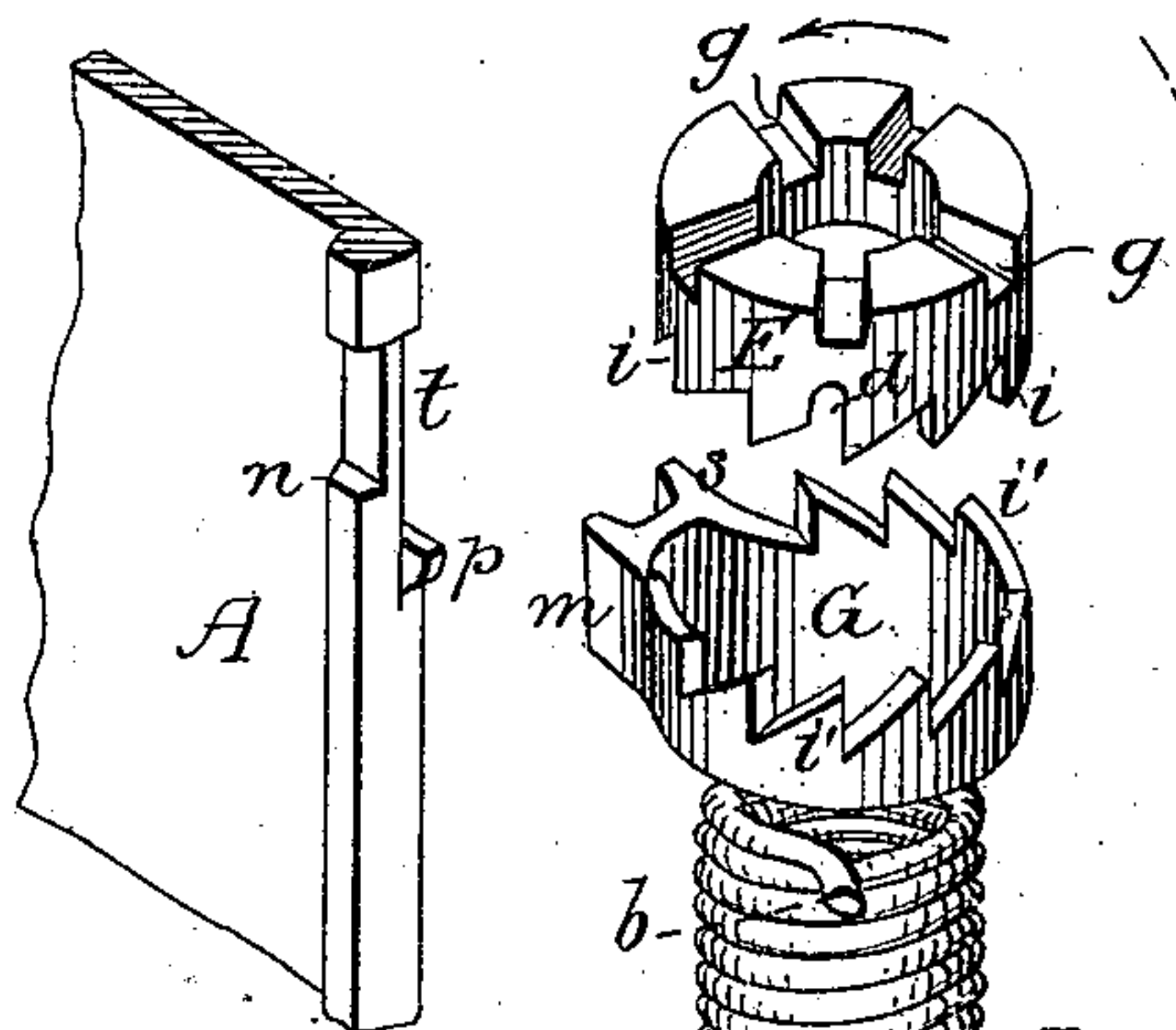
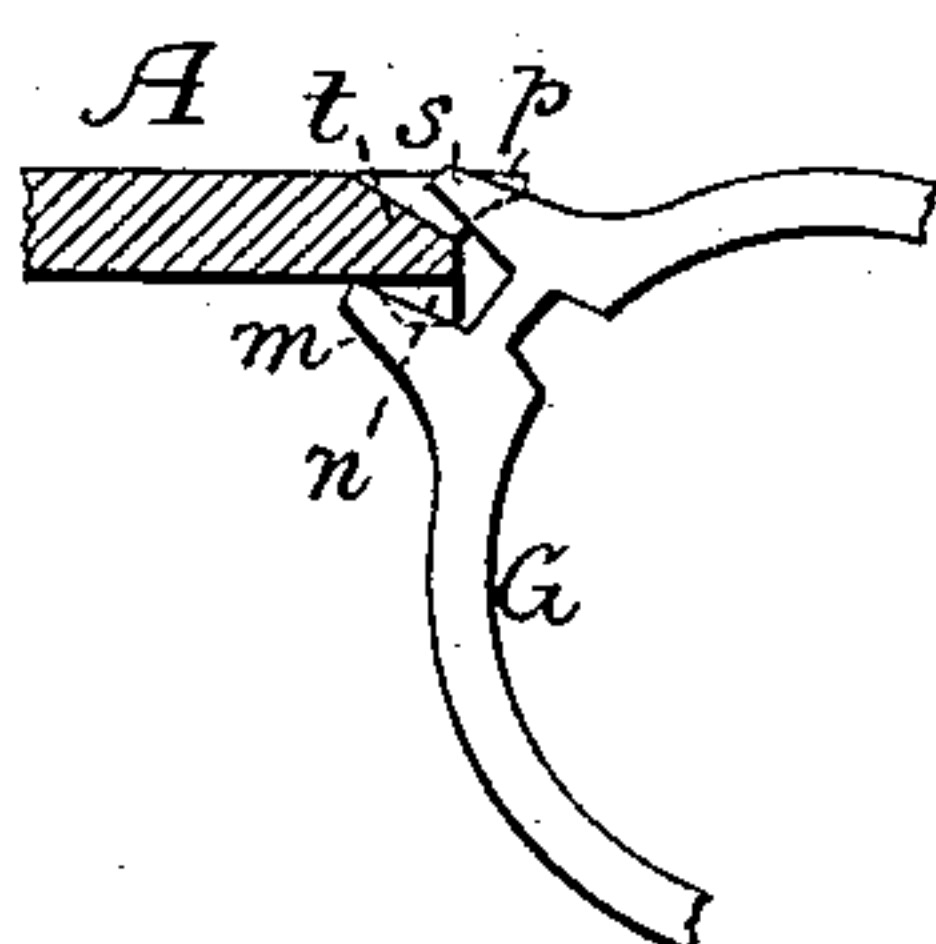
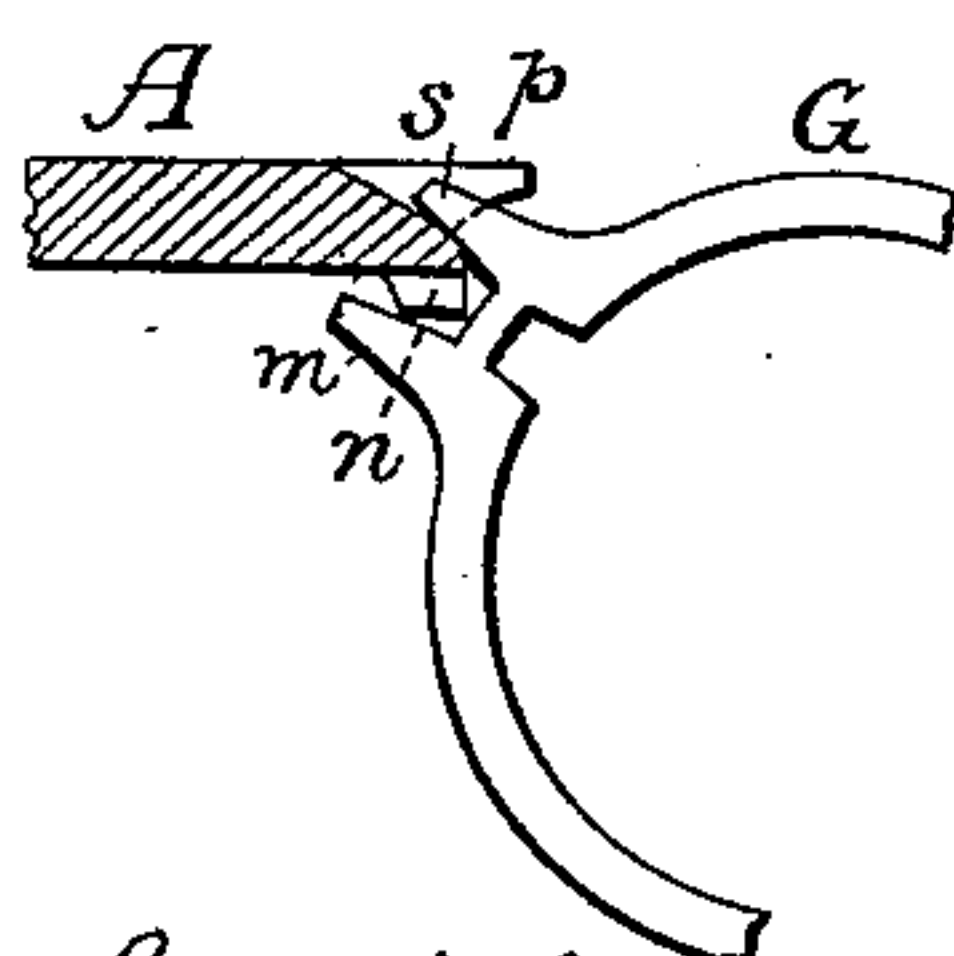


FIG. 2.

FIG. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 255,938, dated April 4, 1882.

Application filed December 22, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. CLARK, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Spring-Hinges, of which the following is a specification.

The main object of my invention is to so construct a spring-hinge that the tension of the spring can be readily regulated or the hinge  
10 released from the control of the spring when desired, a further object being to prevent the breaking of the spring at the end owing to the strain exerted upon the projecting end of the coil. These objects I attain in the manner  
15 which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of my improved spring-hinge; Fig. 2, a perspective view of  
20 parts of the hinge detached from each other, and Figs. 3 and 4 diagrams illustrating one of the features of my invention.

A and A' are the opposite leaves of the hinge, having ears *a* *a'*, respectively, through which  
25 and through the spiral spring B passes the pintle D. The upper end of the coil of the spring B is bent so as to form a projection, *b*, which is adapted to a recess, *d*, in a cap, E, and the lower end of the coil of the spring has a  
30 similar projection, *e*, which is adapted to a recess, *f*, in a cap, F. The upper cap, E, bears against the upper ear, *a'*, of the leaf A' of the hinge, and has formed in its upper edge a series of notches *g* for the reception of a suitable  
35 instrument, whereby said cap can be turned. The lower cap, F, rests upon the lower ear of the leaf A', and is furnished with a lug, *c*, which bears upon the said leaf A'. The lower  
40 end of the spring being thus held by the cap F, it will be evident that the tension of the spring can be increased or diminished as desired by turning the upper cap, E, in one direction or the other.

In order to retain the cap E in any position  
45 to which it may have been adjusted, I form in the bottom of said cap teeth *i*, adapted to engage with teeth *i'* on a ring, G, which embraces the spring B, and has at one side a lug, *m*, adapted to bear upon the leaf A of the hinge.  
50 The ring G is free to move vertically to a lim-

ited extent in order to free the cap E from its control when it is desired to turn said cap to tighten or loosen the spring B. When the ring G is elevated so as to engage with and hold the cap E, the lug *m* of the ring rests upon a shoulder, *n*, formed by recessing the  
55 flanged inner edge of the leaf A of the hinge, the tension of the spring tending to keep the lug *m* pressed firmly against the leaf. When it is desired to free the cap E, however, said cap is  
60 turned in the direction of the arrow, Fig. 2, so as to relieve the ring G from tension, and the latter is then free to turn in the same direction until the lug *m* clears the shoulder *n*, when the ring will fall, the limit of its downward movement being determined by a pro-  
65 jection, *p*, on the inner edge of the leaf A. The cap E is then turned in one direction or the other, according as it is desired to tighten or loosen the spring, and the ring G is finally  
70 elevated, so as to again engage with the cap and retain the same, the lug *m* resting on the shoulder *n*, as before.

To limit the turning movement of the ring G a lug, *s*, on the latter is brought into contact  
75 with the leaf A, the latter being reduced in thickness at the inner edge, as shown at *t*, so that the device is rendered compact and the cutting away of any part of the door or door-frame is prevented. Other means, however, may be  
80 adopted for limiting the turning movement of the ring G. For instance, a pin or lug on the ring may come into contact with the leaf A' of the hinge, in order to effect such a result.

By adapting the projection *e* of the lower  
85 end of the coil of the spring B to a recess in a cap, F, and providing the latter with a lug for bearing on the leaf of the hinge, I am enabled to hold the lower end of the spring much more firmly than usual, owing to the fact that  
90 the cap F retains the projection *e* close up to the coil. In an ordinary spring-hinge the projection *e* is made of such a length as to bear upon the leaf of the hinge, and there is great risk of fracturing the spring at this point, owing to the leverage exerted upon it.

I have shown ratchet-teeth on the cap E and ring G for the purpose of causing the engagement of these parts; but it will be evident that any arrangement of projections on one part  
100



and corresponding recesses on the other may be substituted for these ratchet-teeth, if desired.

When it is not desired to impart any tension to the hinge, the ring G may be allowed to remain free from engagement with the cap E, in which case the spring B exercises no control over the hinge.

Although I have shown the cap E and retaining-ring G at the upper end of the spring B, it will be evident that the arrangement may be reversed and the said cap and ring placed at the lower end of the spring, in which case the shoulder *n* and projection *p* on the leaf A are not absolutely necessary, although the use of the shoulder *n* is preferred even in this case, in order to prevent the accidental disengaging of the ring and cap. It is advisable, also, when the hinge is constructed in this manner, to provide a lug for supporting the ring when it is lifted from the cap and the hinge is freed from the control of the spring, as above set forth.

I claim as my invention—

1. The combination of the spring B and leaves A A' of the hinge with a cap, E, carried by the spring, and a retaining-ring, G, fitting around the coils of the spring and adapted to

engage with and to be disengaged from the cap E and prevented from turning under the action of the spring B, as set forth.

2. The combination of the spring and leaves of the hinge with the cap E, carried by the spring and adapted to engage with a retaining-ring, G, the latter embracing the coils of the spring and being capable of a limited turning and vertical movement, and having a lug, *m*, adapted to a shoulder, *n*, on one of the leaves of the hinge, as set forth.

3. The combination of the spring and leaves of the hinge, the cap E, the retaining-ring G, and a projection, *p*, on the leaf A of the hinge, to limit the vertical movement of the ring, as set forth.

4. The combination of the spring of the hinge, the cap E, the retaining-ring G, having lugs *m* and *s*, and the leaf A, having a shoulder, *n*, and a reduced portion, *t*, as set forth.

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

CHARLES B. CLARK.

Witnesses:

HARRY DRURY,  
HARRY SMITH.