

L. E. BROWN.  
 SPRING HINGE FOR JEWELRY CASES.  
 APPLICATION FILED OCT. 3, 1913.

1,120,370.

Patented Dec. 8, 1914.

Fig.1.

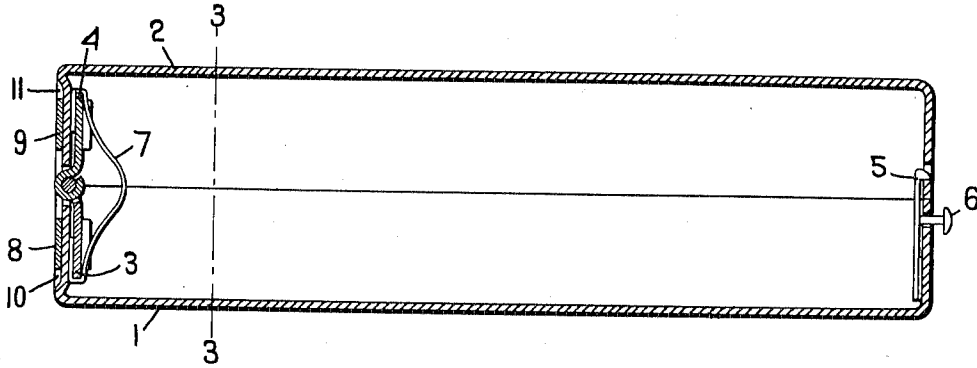


Fig.2.

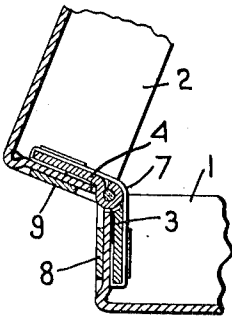
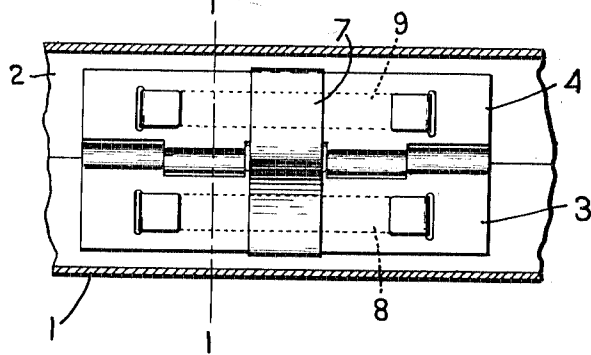


Fig.3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## SPRING-HINGE FOR JEWELRY-CASES.

1,120,370.

Specification of Letters Patent.

Patented Dec. 8, 1914.

Application filed October 3, 1913. Serial No. 793,087.

### *To all whom it may concern:*

Be it known that I, LOUIS E. BROWN, a citizen of the United States, residing at Roxbury, county of Suffolk, State of Massachusetts, have invented an Improvement in Spring-Hinges for Jewelry-Cases, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to jewelry boxes and the like, and more particularly to springs for such boxes.

The object of the present invention is to provide a new and improved spring for such boxes, one which may be cheaply manufactured, easily applied, and conveniently secured in position, and one which will be durable and reliable in use.

In accordance with my invention I provide a spring having its body extending transversely to the axis of the hinge and having one or both ends bent inwardly along the hinge members and cooperating therewith, the spring and hinge members being so arranged that when the box member is in closed position the body of the spring will be bent forwardly under tension away from the axis of the hinge and the body of the spring will be bent away from the end or ends cooperating with the hinge member or members. In my preferred form the hinge is made separate from the box, the spring embraces the hinge and both ends extend inwardly toward the hinge axis and are clamped between the hinge straps and the backs of the base and cover respectively to which the hinge straps are secured.

The novel features of my invention will be fully disclosed in the following specification and the accompanying drawing and will be particularly pointed out in the claims.

Referring to the drawings in which a preferred form of my invention is illustrated, Figure 1 is a sectional view of a jewelry box taken on the line 1—1, Fig. 3. Fig. 2 is a similar sectional view, parts being broken away showing the box as open, and Fig. 3 is a sectional view on the line 3—3, Fig. 1.

Referring to the drawings in detail the base of the box is indicated at 1 and the

cover at 2. The cover is connected to the box by a hinge having its lower strap 3 connected to the base of the box and its upper strap 4 connected to the top or cover. A spring catch 5 is provided to hold the cover in closed position and this is operated by a push button 6.

In the embodiment illustrated the spring 7 is shaped to form hooks to embrace the hinge members, the ends being positioned between the hinge and the back of the base and cover. A clamp 8 extends along the back of the base and through holes in the base and hinge thus securing the hinge to the base with the end of the spring firmly clamped between. A similar clamp 9 secures the cover and the hinge together, clamping the other end of the spring therebetween. The back portions of the base and cover are recessed exteriorly as illustrated at 10 and 11 to receive the clamps so that when the clamps are in position a substantially plane surface will be presented to receive covering material such as is usually applied to boxes of this type. The spring is normally of the shape shown in Fig. 2. When the box is closed the spring yields so as to take the form shown in Fig. 1, that is, the body portion of the spring bends forwardly away from the axis of the hinge to permit the ends to lie in the same plane and the spring is under tension. The spring is made of such a size that when the cover is in open position as shown in Fig. 2 the spring will embrace the outer edges of the hinge and the body of the spring will engage the knuckle of the hinge to predetermine the open position of the box.

When the hinge members are rotated relatively to each other about the pivot from the position in which the box is open to the closed position the ends of the spring swing backwardly bending the body of the spring, and also the outer edges of the hinge are moved apart thus forcing the hooks of the spring to move farther from each other. Accordingly the spring may properly be described as exerting two forces upon the hinge, one a bending moment due to the bending of the body and ends whereby the ends exert a bending stress upon the hinge, and the other a force of compression whereby the outer edges of the hinge members are

pressed toward each other. The bending moment is greatest when the cover is in fully closed position and diminishes as the cover opens returning the spring toward its normal shape.

5 The force of compression exerted by the body of the spring whereby the outer edges of the hinge are pressed toward each other will not tend to open the box when fully  
10 closed since the line of pressure is on the wrong side of the axis of the hinge, but as the box opens the position of the line of compression changes and this compressive force becomes operative to continue the  
15 opening movement. The function of initiating the opening movement of the cover is thus accomplished by the inturned ends of the spring. It will of course be understood that the compressive force is in fact due to  
20 a certain bending of the body of the spring and in this sense is a bending stress but for the purposes of this specification and to make the operation of the preferred form of spring clear the respective forces may prop-  
25 erly be described as a bending force exerted by the ends of the spring and a compressive force exerted by the body of the spring.

I have described this spring as having both ends extending inwardly toward the  
30 axis of the hinge and have shown these ends clamped in position against the hinge. This particular construction however is not essential it being only necessary that a part of the spring should act upon the hinge to  
35 press the knuckle of the hinge forwardly especially at the beginning of the opening movement in order to initiate the action of the spring and that the bending of the body of the spring acting against the face  
40 of the hinge members should bring the hinge members into open position.

As will be clear from the foregoing description I provide a spring which can be cheaply manufactured from a strip of  
45 spring metal by cutting the same into lengths and bending to the necessary shape. The spring has the advantage also that it can be easily applied during the assembling of the parts of the box. The hinge is opened  
50 to an angle corresponding to that of the spring and the spring is slipped over the end of the hinge and moved to the desired position. After being placed in position in this manner it gives no further trouble  
55 during the process of assembling since it remains in position on the hinge and is not thereafter separately handled. The trouble of flexing the spring and slipping it into the box is thus avoided.

60 I have illustrated one form of my improved spring and have described it as applied to a jewelry box. It will be obvious that springs constructed in accordance with the principles of my invention may be made  
65 in a variety of shapes and that such springs

are capable of numerous other uses than that illustrated. Accordingly the claims are to be interpreted as contemplating such variations in form and manner of use.

Having fully described my invention 70 what I claim as new and desire to secure by Letters Patent is;

1. In a box the combination with a base and a cover having hinge members pivoted together, of a spring extending transversely 75 of the hinge axis and arranged to be extended under tension when the cover moves from open to closed position and having its ends extending toward each other and connected to the hinge members to be bent 80 backwardly thereby under tension when the cover moves from open to closed position.

2. In a box the combination of a base and a cover, a hinge, a spring extending transversely of the axis of the hinge having its 85 ends bent inwardly toward the axis of the hinge and engaging against the respective straps of the hinge and having its central portion bent forwardly away from said hinge under tension when the cover is in 90 closed position, means rigidly connecting the base, one strap of the hinge and one end of the spring together and means rigidly connecting the cover, the other strap of the hinge, and the other end of said 95 spring together.

3. In a box the combination with a base and a cover having hinge members pivoted together, of a spring having its body extending transversely to the axis of the hinge 100 and acting against the hinge members at its ends with one end bent back to form a hook extending toward the axis of and engaging the rear face of the hinge, the parts being 105 so constructed and arranged that when the cover is in closed position the body of the spring will be bent away from the axis of the hinge under tension and the said hook end will be sprung away from the body under tension whereby the said hook end 110 will act to swing the hinge members rearwardly about the pivot and the body of the spring will act to continue such movement.

4. A box comprising a base and a cover having back portions extending toward each 115 other and presenting exterior recesses, a hinge positioned inside of said box and parallel to said back portions, a spring embracing said hinge and having its ends extending inwardly toward the axis of the 120 hinge between the hinge straps and the said back portions, fastening clamps positioned in said recesses and extending through holes in the base and cover respectively and through holes in the hinge and bent over 125 to secure the hinge to the base and cover thereby clamping the ends of the spring between the hinge and the base and cover.

5. In a box, the combination with a base and a cover having hinge members con- 130

nected together, of a spring extending transversely to the hinge axis and connected at its opposite ends to the base and cover respectively, one end extending along one  
5 of the hinge members and being rigidly connected thereto.

In testimony whereof, I have signed my

name to this specification, in the presence of two subscribing witnesses.

LOUIS E. BROWN.

Witnesses:

EBER JORDAN,

H. J. FARRINGTON.