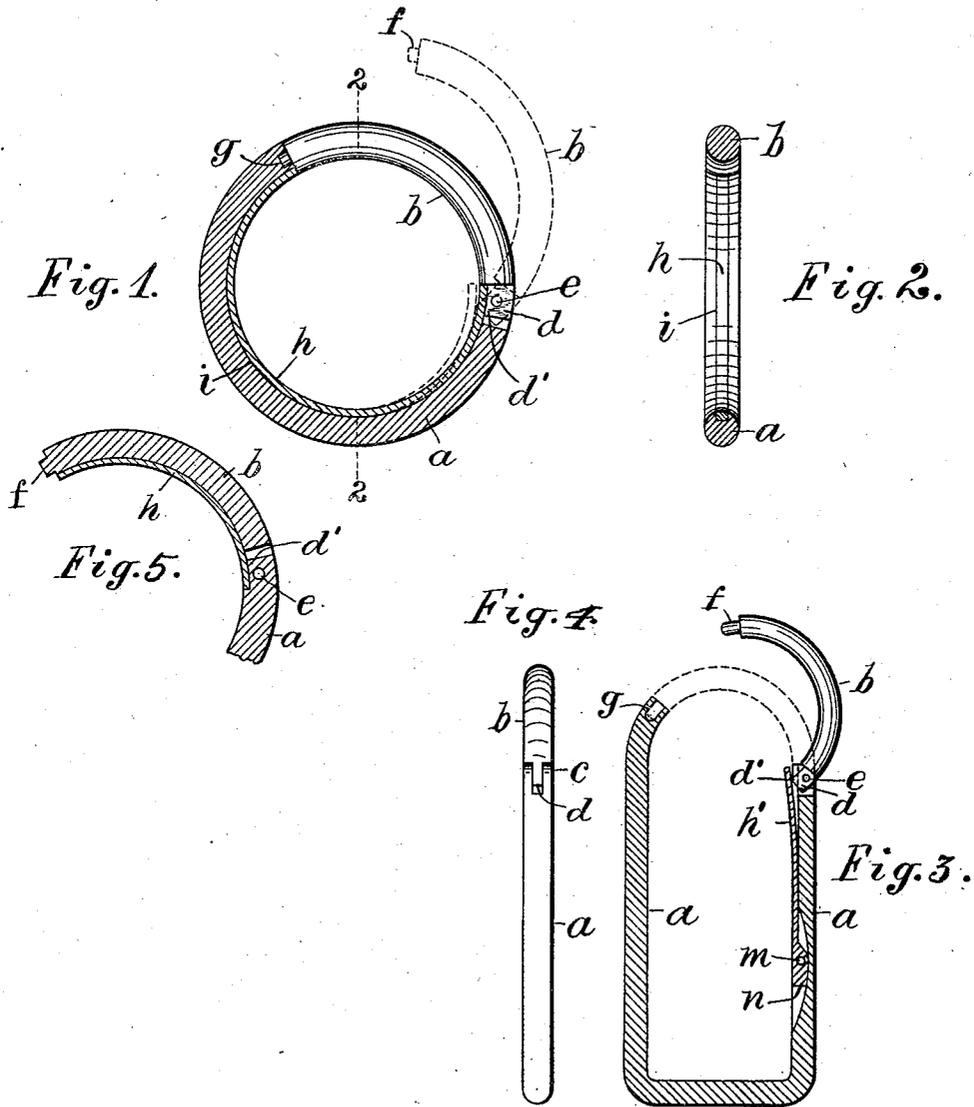


No. 841,706.

PATENTED JAN. 22, 1907.

L. M. MORDEN.
BOOK RING WITH SPRING HINGED JOINT.

APPLICATION FILED MAY 5, 1904.



Attest:
L. Lee.
Arthur F. Heaton.

Inventor.
Lucy M. Morden, per
Thomas S. Crane, Atty.

UNITED STATES PATENT OFFICE.

LUCENA M. MORDEN, OF WATERBURY, CONNECTICUT.

BOOK-RING WITH SPRING-HINGED JOINT.

No. 841,706.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed May 5, 1904. Serial No. 206,490

To all whom it may concern:

Be it known that I, LUCENA M. MORDEN, a citizen of the United States, residing at 59 Grand street, Waterbury, county of New Haven, State of Connecticut, (whose post-office address is also the same,) have invented certain new and useful Improvements in Book-Rings with Spring-Hinged Joints, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention relates to that class of so-called "book-rings" which are used for holding perforated leaves detachably, so that leaves can be inserted in and removed from the ring at pleasure, and particularly to that class which has an opening in which a movable section is hinged to turn in the plane of the ring.

In the present invention the movable section is connected by a tongue with a fork upon the body of the ring and a groove is formed inside the ring upon a line with the tongue and with a projecting corner upon the same.

A spring is fitted in the groove flush with its surface, with one end secured therein and the free end movable opposite to the corner of the tongue, so that when the movable section is open the said corner presses the spring inward and the resilience of the spring operates, when the movable section is closed, to hold it in elastic engagement with the body. By locating the spring in a groove within the ring the spring is wholly concealed, and all projections from the surface of the ring are avoided which might furnish obstructions to the free movement of the perforated leaves.

The annexed drawings show the spring applied in two different ways and to two different forms of ring.

Figure 1 shows a circular ring with the spring fitted to a groove upon its inner side, the body of the ring being in section on a center plane. Fig. 2 is a section of the complete ring on line 2-2 in Fig. 1. Fig. 3 shows a similarly-shaped ring with the body portion in section at the central plane and a leaf-spring applied to the tongue of the hinge. Fig. 4 is an edge view of the ring shown in Fig. 3, exhibiting the fork and tongue at the hinge; and Fig. 5 shows an alternative construction for the spring and hinge represented in Fig. 1, the view showing only the movable

section and the parts adjacent to the hinge and in section at the center plane of the ring.

In all the views, *a* designates the body of the ring, and *b* the movable section. In all of the figures excepting Fig. 5 the body is shown with a fork *c*, and the section *b* is shown with a tongue *d* fitted into such fork and hinged thereto by pivot *e*. The opposite end of the movable section is shown provided with a dowel-pin *f*, and the corresponding end of the body *a* is provided with a socket *g*. Such dowel-pin and socket form complementary locking devices upon the adjacent faces of the free end of the movable section and of the body portion.

In Figs. 1 and 2 a curved leaf-spring *h*, shown as a square-wire, is sunk in a groove *i* of suitable size upon the inner side of the ring and presses upon the tongue *d*, which is shaped to form a corner *d'* below its pivot.

The spring *h* is secured in the groove by solder or other suitable means at the middle of its length, leaving its free end to bend adjacent to the hinge-tongue. The movable section *b* is shown closed in Fig. 1 and the free end of the spring in close contact with the inner side of the tongue *d*, and the section *b* is also shown, by dotted lines, turned in a partially-open position, so that the corner *d'* upon the tongue presses the spring inwardly, as shown in dotted lines.

It is apparent that if the section *b* were turned still farther open the spring would press upon the bottom end of the tongue and hold such section in an open position. The spring also operates by pressure upon the side and corner of the tongue to hold the section closed when turned in a closed position, as shown in full lines in Fig. 1.

In Fig. 3 the body of the ring is shown with two parallel sides, forming an oblong link with a movable section at the top. The movable section is formed with a hinge and tongue similar to that shown in Fig. 1, and a straight leaf-spring *h'* is shown sunk in a groove upon the inner face of the body and extended past the tongue *d* upon the movable section. The tongue, like that shown in Fig. 1, is made upon its extremity at right angles to the inner side of the ring, and the corner *d'* operates when the movable section is turned at its hinge to press the spring inwardly until the extremity of the tongue bears upon the spring, when the pressure operates to hold the section open. The spring

is held in place by a rivet *m* and a heel *n* fitted to a recess in the body, and the free end of the leaf operates upon the tongue *d* of the movable section the same as the curved leaf-spring shown in Fig. 1.

In Figs. 1 to 3 the spring is applied to the body portion of the ring; but the reverse arrangement is equally feasible, as shown in Fig. 5, where the spring *h* is sunk within a groove in the movable section and secured by solder near the movable end of said section, the tongue being formed upon the body instead of upon the movable section.

The constructions both operate to produce a spring-pressure upon the hinge-tongue to hold the movable section closed or open, as may be required.

All parts of this construction are adapted to be formed of square or round wire and the parts shaped or otherwise fitted for assembling together by the operation of suitable tools, so that very little hand-labor is required in their manufacture.

The chief function of the spring is to hold the movable section closed; but it may also serve, when the extremity of the tongue is formed at right angles to the inner side of the ring, as described above, to hold the movable section open, and thus out of the way when applying the perforated leaves to the ring. Such rings are frequently secured to a base or to fixtures adapted to hold them at a definite distance apart between the covers of a book or upon a file-board, and the invention may be used for all of the classes of rings. Springs have been applied to such joints to hold a movable member open or closed, and I do not, therefore, claim the mere application of a spring to the tongue of the movable section *b*; but my invention consists in disposing the spring in a groove upon the inner side of the ring, where it is entirely concealed

from view and where its operation does not produce any projections upon the inner side of the ring, which form an obstruction to the free movement of the perforated leaves when the movable section is closed.

Having thus set forth the nature of the invention, what is claimed herein is—

1. A book-ring having body *a* with opening in one side, and the movable section *b* hinged upon the body at one side of the opening, the hinge being formed with a tongue and fork, a groove upon the inner side of the ring extending past the said tongue, the tongue having a corner *d'* alining with the groove, and the leaf-spring concealed wholly within the groove and having a free end pressed normally upon the said tongue, and its opposite end secured in the groove to retain it in an operative position.

2. A book-ring having body *a* with opening in one side, and the movable section *b* hinged upon the body at one side of the opening, by a tongue and fork pivoted together, the groove *i* extended around the entire inner side of the body *a* and past the tongue upon the movable section *b*, the leaf-spring *h* fitted to the groove and just filling the same upon the entire inner side of the body, and having a free end pressed normally upon the said tongue, and its opposite end secured in the groove to retain it in an operative position, the spring being wholly concealed and the ring free from projecting portions of any description, whereby the perforated leaves may be turned thereon without obstruction.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LUCENA M. MORDEN.

Witnesses:

L. LEE,
THOMAS S. CRANE.