F. M. SWARTZ.

SPRING HINGE.

APPLICATION FILED SEPT. 11, 1913.

1,102,556. Patented July 7, 1914.

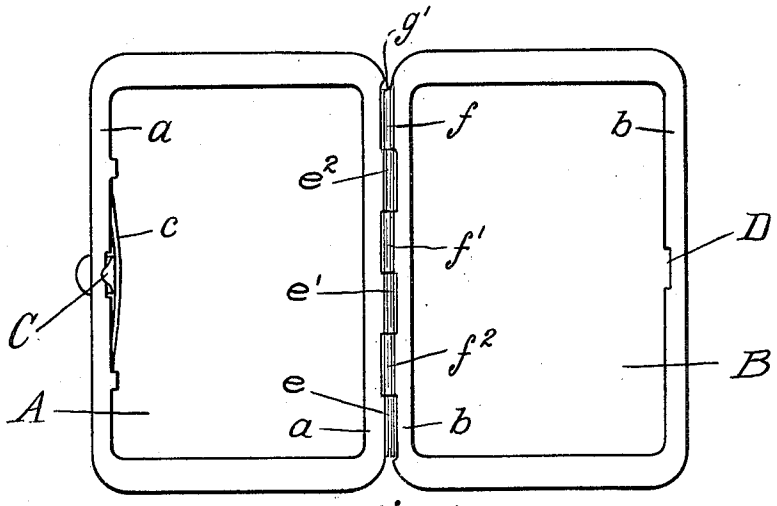


Fig. 1

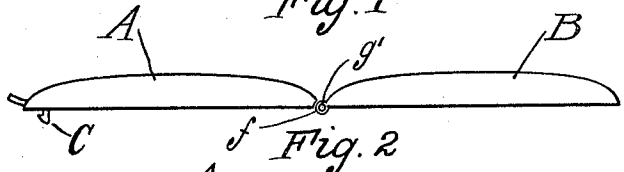


Fig. 2

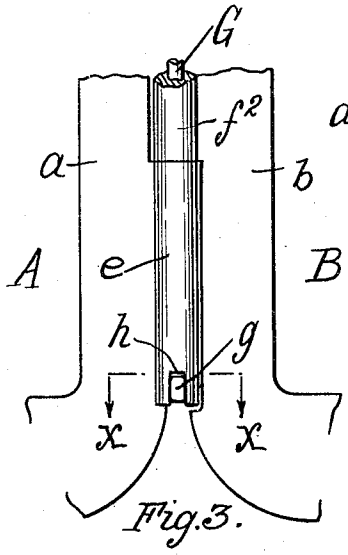


Fig. 3.

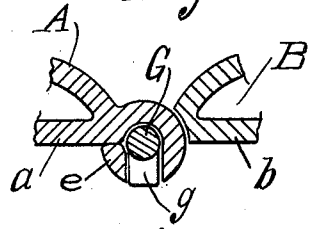


Fig. 4



Fig. 5.

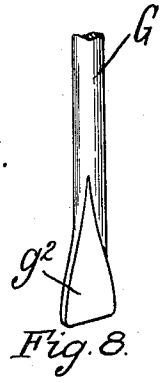


Fig. 8.

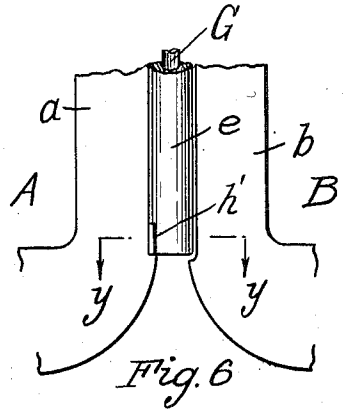


Fig. 6

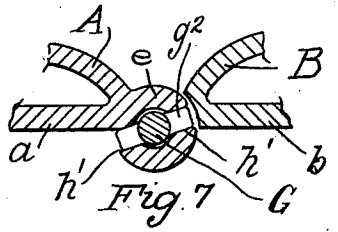


Fig. 7

Witnesses.

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UNITED STATES PATENT OFFICE.

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SPRING-HINGE.

1,102,556. Specification of Letters Patent. **Patented July 7, 1914.**

Application filed September 11, 1913. Serial No. 789,245.

To all whom it may concern:

Be it known that I, FRED M. SWARTZ, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Spring-Hinges, of which the following is a specification.

My invention relates to spring hinges.

The particular pivotal connection which characterizes my invention is to provide a practically non-conspicuous means for normally expanding the hinge members; to insure the torsional action without the contact of the ends of the torsional member with either of the faces of the hinge members, thus avoiding the defacing effects common; and to attain these ends in a simple and inexpensive structure which is both strong and inconspicuous.

To the above ends essentially my invention consists in such parts and combinations of parts as fall within the scope of the appended claim.

In the accompanying drawings which form a part of this specification, Figure 1 is a front elevation of a box embodying my invention showing the parts in open position, Fig. 2, an end view of the same, Fig. 3, an enlarged view similar to Fig. 1 of the lower central portion of the box, Fig. 4, a section of the same on line $x\ x$ of Fig. 3, Fig. 5, an enlarged detailed view of one end of the pivotal member, Fig. 6, a view corresponding to Fig. 3 of a modified form of my invention. Fig. 7, a section on line $y\ y$ of Fig. 6, and Fig. 8, an elevation of a modified form of pivot member.

Like reference characters indicate like parts throughout the views.

In the drawings A and B represent hinge members provided respectively with the usual inwardly directed peripheral flanges a and b respectively.

C is the usual catch with its coöperating spring c, and D the marginal cavity in the rim b adapted to receive the catch C.

It is in conjunction with the above or other preferred familiar elements that my invention is preferably embodied.

Integral with the rim, a, are one or more knuckles, in the present instance three in number, identified from bottom to top respectively by the reference characters e, e' and e^2. Integral with the rim b are the projecting knuckles identified from top to bottom by the reference characters f, f' and f^2. Each of the last mentioned knuckles alternate with the first mentioned knuckles and are located in axial alinement with each other. Extending through all the knuckles is a pintle G provided at its lower end with a flat hook portion g which extends into an opening h extending longitudinally of the knuckle e at the lower end of the latter. The upper end of the pintle G is fixed by solder or otherwise to the inner face of the knuckle f. The pintle G has its end g' soldered at such an axial angle in the knuckle f as to create a circular tension upon the hook g when the latter is located in the opening h.

It will be understood that in place of the hook g the pintle G may have its laterally extending member g^2 substantially triangular in outline, as shown in Fig. 8; furthermore, the slot or cavity may be increased in number and be advantageously located as at h' in Figs. 6 and 7. In Fig. 7 is shown the member g^2 located in the openings or cavities h'.

The pintle G, which is of resilient material acts upon a torsional principle as already indicated, and no portion of the parts G or g contact with the portions a, b, of the wing members, nor project from the hinge knuckles. The integral extension g avoids the necessity of additional fastening members and the structure of the member G, g, lends itself to the easy assemblage. The attachment of the pintle G to the uppermost of the members f affords a maximum of spring energy, but the device is operative if the pintle is fixed to intermediate

member of the series *f*. The latter construction, however, is much more expensive and considerably weaker.

What I claim is;—

Two members, spaced knuckles upon one member, one of said knuckles being provided with a slot, spaced knuckles upon the other member alternating with the first-named knuckles, a resilient, torsional pintle traversing all of the knuckles and fixed in one of the knuckles of the second member with an end concealed within one of said knuckles, and a lateral extension upon said pintle extending into said slot.

In testimony whereof I affix my signature in presence of two witnesses.

FRED M. SWARTZ.

Witnesses:

CLIFFORD S. TOWER,

HORATIO E. BELLOWS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."