No. 702,888. Patented June 17, 1902.

W. A. SKINNER.

SPRING HINGE.

(Application filed Mar. 7, 1902.)

(No Model.)

Fig. 1.

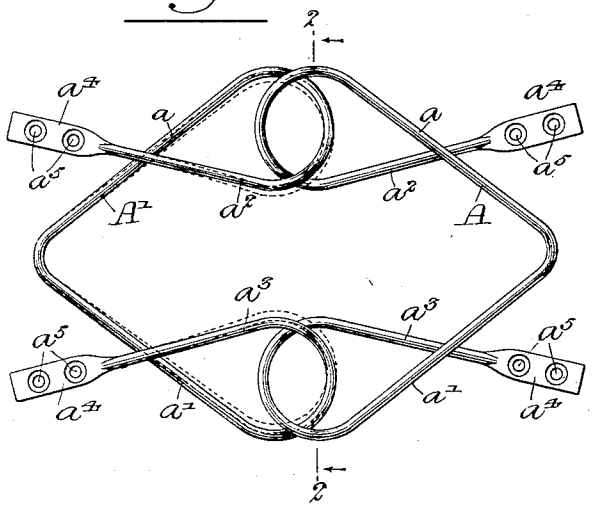


Fig. 2.

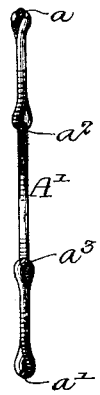


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM A. SKINNER, OF GLOUCESTER CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO WILLIAM F. MACLENNAN, OF GLOUCESTER CITY, NEW JERSEY.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 702,888, dated June 17, 1902.

Application filed March 7, 1902. Serial No. 97,096. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. SKINNER, a citizen of the United States, residing in Gloucester City, New Jersey, have invented certain Improvements in Spring-Hinges, of which the following is a specification.

My invention relates to certain improvements in hinges, and more particularly to an improved spring-hinge whose members normally tend to remain in relatively fixed positions, said members also tending to return to these positions whenever they have been moved therefrom.

The object of my invention is to provide a double-acting spring-hinge which while being simple and reliable in action will not be complicated or expensive in construction. This object I attain as hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of one form of my improved hinge. Fig. 2 is a sectional view taken on the line 2 2, Fig. 1; and Fig. 3 is a view of my improved hinge, showing its free ends slightly modified in form to fit a retaining-piece bent to objects which it is desired to hinge together.

In the above drawings it will be seen that my improved hinge consists of two similar members A and A′, and each of these may be described as consisting of a single piece of wire or bar material of circular section bent at its middle, so as to form two halves a and a', each of these halves being bent back and over the respective portions a and a', so as to form two loops. Each of these loops is intermeshed with the corresponding and similar loop of the second member of the hinge in the manner indicated in Fig. 1.

It is to be understood that the members of the hinge are made of spring material, so that the loops of each member may be moved toward or from one another when the hinge is turned in operation. The two loops of each member lie substantially in the same plane, and the ends a^4 of the bar or wire of which the hinge is made may be formed into any desired shape for attachment to the door, lid, or other object which it is desired to hinge to a fixed support. In Fig. 1 the ends a^4 are shown as flattened and provided with countersunk screw-holes a^5, while in Fig. 3 it will be seen that the ends are offset from the plane of the loops and the main body of the hinge proper, being designed to enter openings in small castings fixed to a door and its jamb. Where the loops of one of the members of the hinge engage or cross over those of the other, I preferably offset them, said offset portions serving to cause the respective loops to engage one another and to prevent downward motion of the hinge member, upon which is carried the weight of a door, shutter, lid, &c. These offsets also prevent the two members from moving either nearer together or farther apart under the influence of a side strain caused also by the weight of the object carried by one of the members.

In operation when one of the members of the hinge is turned out of the plane of the other it will be seen that the upper loop of the part A, for instance, will ride upon the upper loop of the other member A′, bending to turn the portion a inwardly. Similarly, also, the loop of the portion A slides up on the lower loop of the member A′, also forcing it inwardly, as indicated in dotted lines in Fig. 1, this action also tending to separate the members a and a' of the part A. Owing to the springy nature of the material from which the hinge is made, both the halves a and a' of each member tend to return to their original positions, and, further, since the opposing force is removed the member which has been turned immediately revolves to its original position—that is, into substantially the plane of the fixed member of the hinge. Should the employed member A be turned in the opposite direction, the action of its two loops upon the corresponding loops of the fixed member is the opposite from that shown in dotted lines in Fig. 1, the effect of the springiness of the material being the same, however, and always tending to restore the movable member to the plane of the fixed member.

In the drawings herewith I have illustrated the simplest form of my improved hinge, although it will be understood that it may be modified as regards the shape and relation of the parts a and a' to each other, as well as

the form and position of the ends a^4, without materially departing from the essential features of my invention.

I claim as my invention—

1. A spring-hinge having two members, each of the same consisting of a piece of material formed with a plurality of loops, the loops of one member being in engagement with the loops of the other, substantially as described.

2. A spring-hinge consisting of two members each made of a piece of material bent to form a plurality of loops, the loops of each member being in engagement with those of the other and having curved portions at their points of engagement, said portions being offset and thereby retaining the members of the hinge in proper operative relation to one another, substantially as described.

3. A spring-hinge consisting of two similar members each made of a piece of flexible material bent to form a plurality of loops, said loops lying in substantially the same plane, the loops of each member being meshed with those of the other and each pair of intermeshed loops being free to move toward or from each other when one of the members is moved from its normal position, substantially as described.

4. A spring-hinge consisting of two similar members, each of said members consisting of a single piece of flexible material bent at its middle portion so that its two halves extend at an angle to one another, the ends of each of these halves being curved toward each other and back so as to form two loops, the loops of each member being intermeshed with the corresponding loops of the other member, substantially as described.

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

WILLIAM A. SKINNER.

Witnesses:
ROY RAUDENBUSH,
JOS. H. KLEIN.