(Model.)

D. NICKEL & C. ZATTAU.

SPRING HINGE.

No. 456,497. Patented July 21, 1891.

Fig. 1.

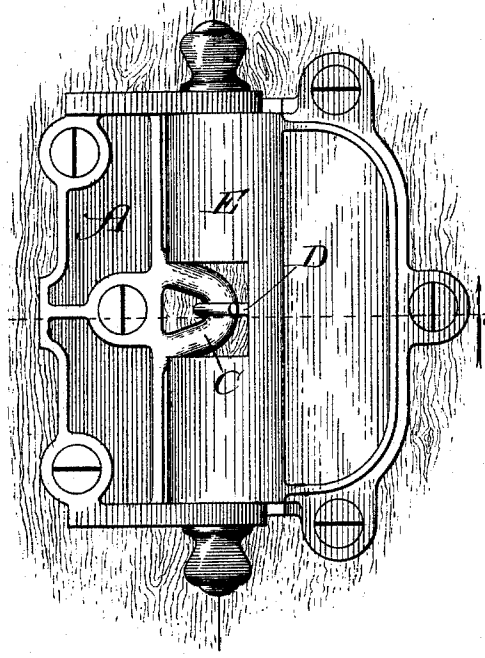


Fig. 2.

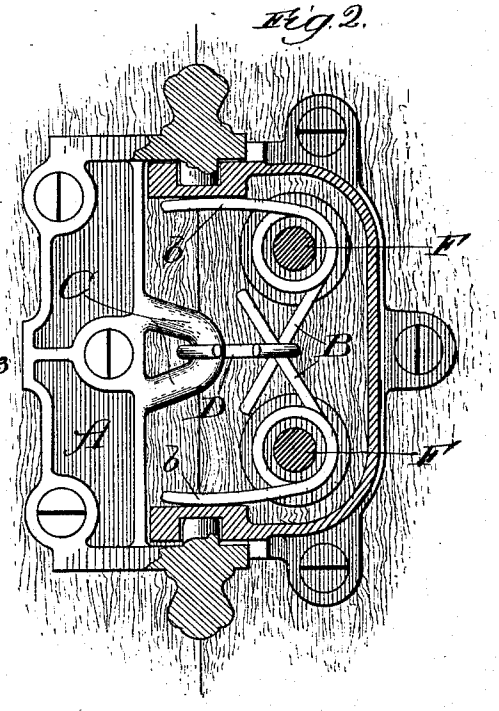


Fig. 5.

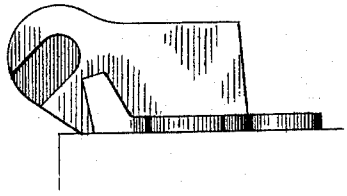


Fig. 4.

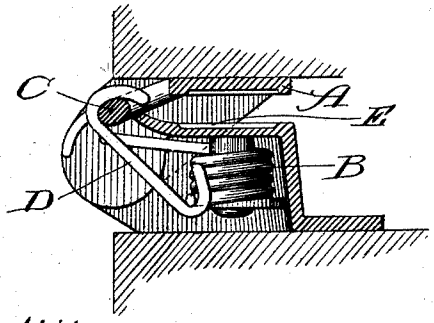
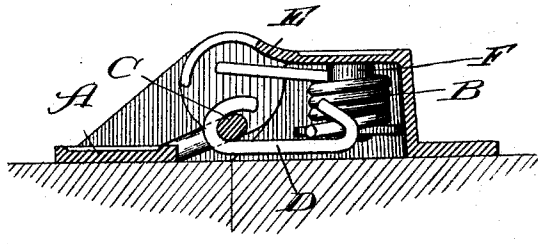


Fig. 3.



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UNITED STATES PATENT OFFICE.

DAVID NICKEL AND CHARLES ZATTAU, OF MORRIS, ASSIGNORS TO THE COLEMAN HARDWARE COMPANY, OF CHICAGO, ILLINOIS.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 456,497, dated July 21, 1891.

Application filed September 20, 1890. Serial No. 365,623. (Model.)

To all whom it may concern:

Be it known that we, DAVID NICKEL and CHARLES ZATTAU, citizens of the United States, residing at Morris, Grundy county, Illinois, have invented certain new and useful Improvements in Spring-Hinges, of which the following is a specification.

The object of this invention is to improve Letters Patent No. 421,342, issued February 11, 1890, to the Coleman Hardware Company as the assignee of Charles Zattau; and our invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of our improved spring-hinge. Fig. 2 is a plan view of the same with the top portion inclosing the springs removed. Fig. 3 is a transverse section taken in line 3 of Fig. 1 with the leaves of the hinge open, looking in the direction of the arrow. Fig. 4 is the same with the hinge-leaves closed, and Fig. 5 is an elevation of one of the hinge-leaves.

In making our improvement we preferably follow the construction shown and described in the said Letters Patent No. 421,342 as to location, coiling, and arrangement of the spring-wires, except that instead of extending the springs B on one side of the leaves A far enough to permit their ends to loosely engage with the opposite leaf we make them only of a length to cross each other and remain crossed in the different positions to which the hinge-leaves may be turned. We also extend the ends *b* enough to permit them to rest against the inside of the ears of the leaf on which the spring-wires are coiled, as shown in Fig. 2. We provide the other hinge-leaf with a hook or loop C, which may be cast integral with it, and connect such hook to the free ends of the spring-wires B by means of a link D. This link is arranged opposite the point where the spring-wires cross, so that it falls, in the construction shown in the drawings, at the center of the length of the hinge. As the hinge-leaves are turned in opening the door or gate to which the spring-hinge is attached, the free ends of the spring-wires B are drawn by the link so as to further coil the wires and increase the tension. It will be understood, of course, that the leaves are pivotally connected at their ears or lugs and outside of the plane of the hinge-leaves, so that the hinge may be opened and closed. In order to protect the spring-wires from the weather and prevent them from becoming rusted or impaired, we provide the leaf on which they are arranged with an inclosing cover or barrel E, which may be cast integral with the hinge-leaf. The position and arrangement of this cover will be understood from an inspection of the drawings, particularly Figs. 1, 3, and 4. The hinge-leaf on which the springs are coiled is also provided with studs F beneath the cover E, around which the wire is coiled to the desired extent. In the drawings we have shown several turns of the wires around the studs, although a less number may be employed, if desired, and even less than a single coil.

What we regard as new, and desire to secure by Letters Patent, is—

In a spring-hinge, the combination of two leaves of suitable form having their ears or lugs pivotally connected together at a point outside of the point of the hinge-leaves, spring-wires arranged on one of the hinge-leaves and having their free ends extended to cross each other, a hook or loop on the other of the hinge-leaves, and a link connecting such hook and the free ends of the spring-wires, substantially as described.

DAVID NICKEL.
CHARLES ZATTAU.

Witnesses:
E. WAINWRIGHT,
W. D. HITCHCOCK.

Correction in Letters Patent No. 456,497.

It is hereby certified that in Letters Patent No. 456,497, granted July 21, 1891, upon the application of David Nickel and Charles Zattau, of Morris, Illinois, for an improvement in "Spring-Hinges," an error appears in the printed specification requiring the following correction: In line 76 the word "point" should read *plane;* and that the Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 28th day of July, A. D. 1891.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

NATHANIEL L. FROTHINGHAM,
Acting Commissioner of Patents.