(No Model.)

C. EIFLÄNDER.

SPRING HINGE.

No. 466,031. Patented Dec. 29, 1891.

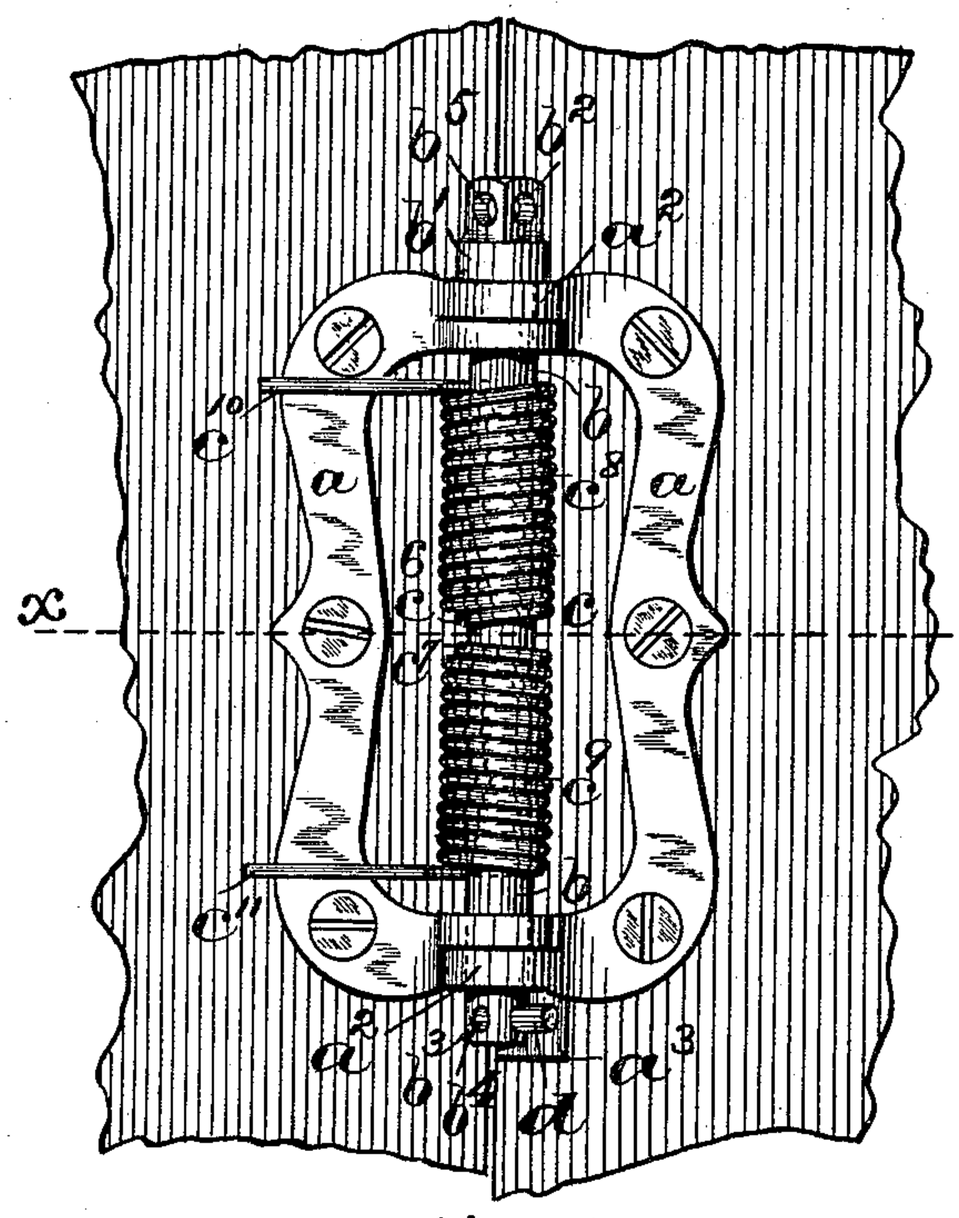

Fig. 1

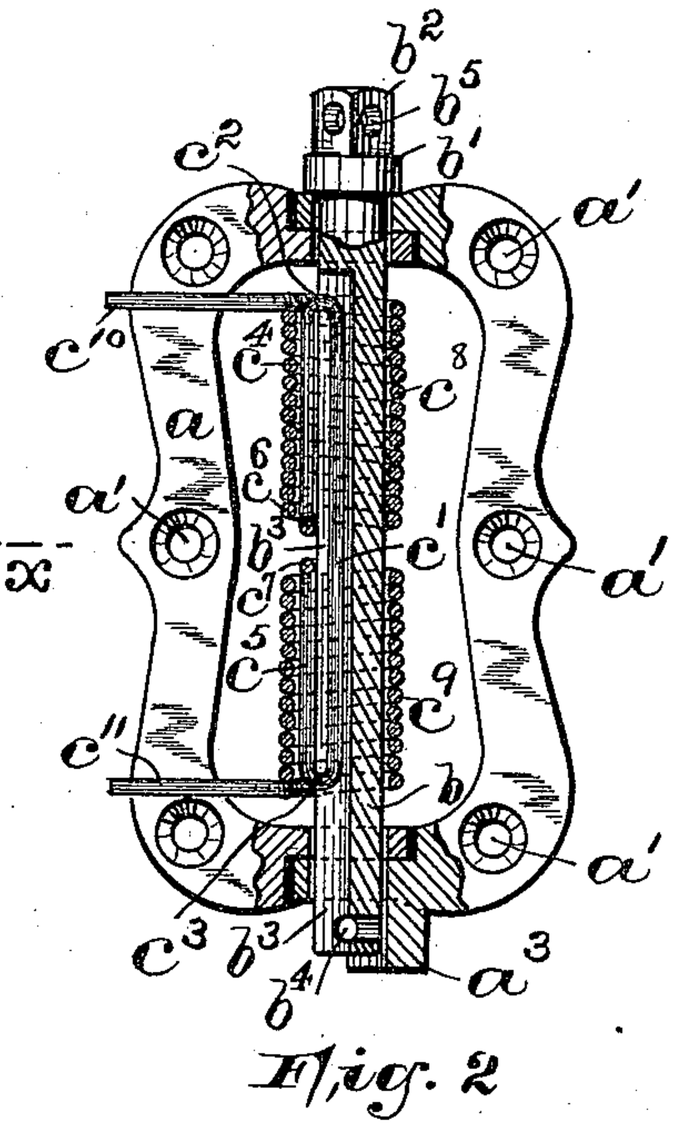

Fig. 2

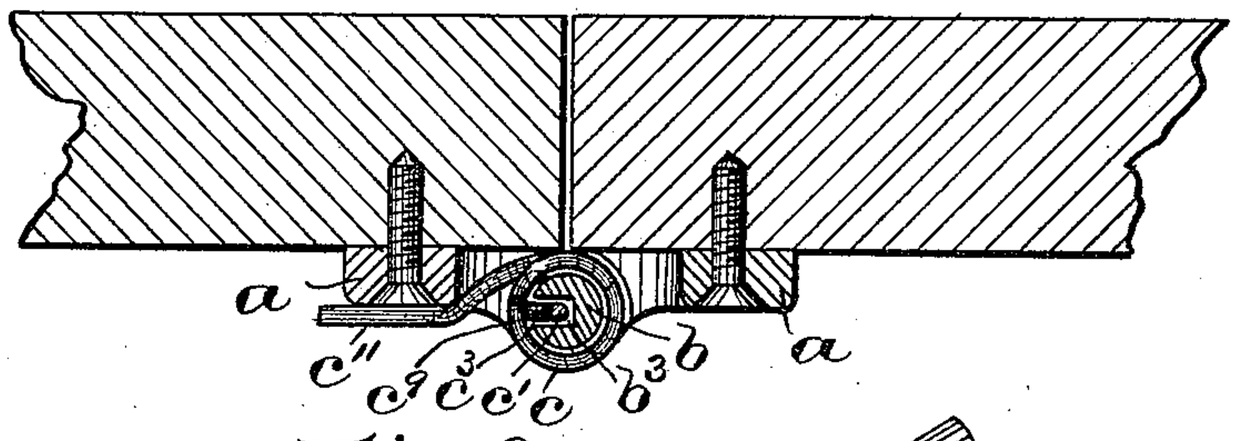

Fig. 3

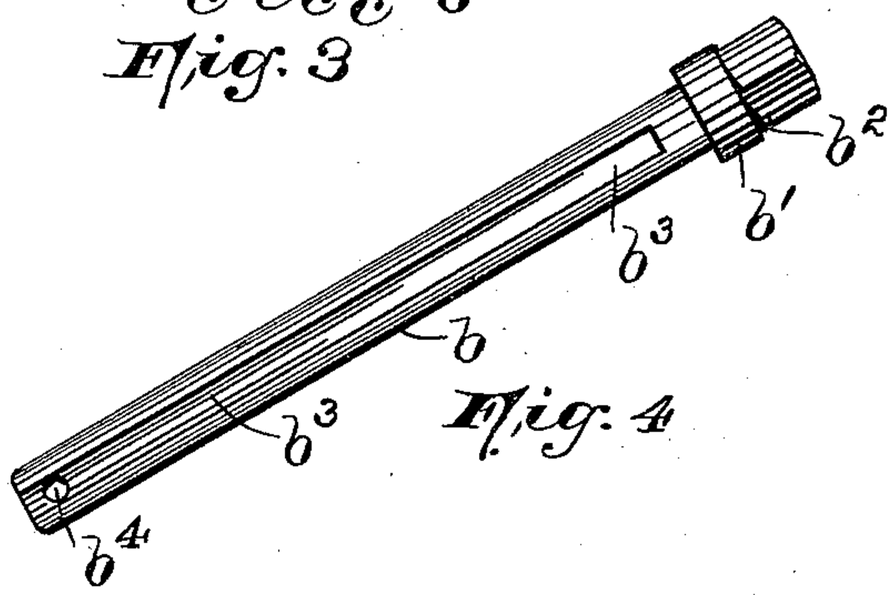

Fig. 4

WITNESSES:

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UNITED STATES PATENT OFFICE.

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SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 466,031, dated December 29, 1891.

Application filed September 12, 1891. Serial No. 405,474. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EIFLÄNDER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Spring-Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in spring-hinges, and more particularly to the novel arrangement and construction of the spring, whereby a greater tension is secured in order to more effectually close the door.

The invention therefore consists in the features and details of construction and combinations of parts hereinafter described, and finally embodied in the claim.

In the accompanying sheet of drawings, in which similar letters of reference are employed to indicate corresponding parts in each of the several views, Figure 1 is a plan view of my improved spring-hinge. Fig. 2 is a similar view of the hinge, the spring and the pintle, however, being represented in section to more clearly illustrate the construction and the arrangement of these parts. Fig. 3 is a horizontal section taken on line x in Fig. 1, and Fig. 4 is a perspective view of a slotted pintle used in connection with my improved form of spring-hinge.

In the drawings, a a represent the hinge-leaves provided with any desirable number of screw-holes a' for attaching the leaves to a door and its frame. These hinge-leaves may be of any suitable form provided with ears or lugs a^2 a^2, rising above the plane of the leaves and adapted to embrace each other in the usual manner. Said lugs are pivoted together by means of a pintle b, extending from one end of the hinge to the other, said pintle being preferably provided at one end with a collar or flange b' and a head b^2 for the placing of a wrench thereon. Said pintle is also provided with a longitudinal slot b^3, and at the end where it projects through the lower ears of the hinge-leaves there are a number of holes or perforations b^4, the purpose of which will be described farther on.

The spring c, employed in connection with the hinge for securing the greatest tension, is of a novel construction. It is made from a continuous piece of spring-wire, the center portion c' of which is doubled at c^2 and c^3 to form the strands c^4 and c^5, which are approximately parallel with the portion c', and at the points c^6 and c^7 of each strand the wire is formed into two oppositely-extending coils c^8 and c^9, encircling the strands c^4 and c^5 and the portion c', as will be clearly seen from Fig. 2, the coil c^8 terminating in an arm or end c^{10} and the second coil c^9 in the arm or end c^{11}.

In order to secure the several parts of my improved hinge together, the pintle b is inserted through the perforated ears at the top of the hinge-leaves and forced down into the lower ears, so that the portion c' of the spring c is caused to rest within the slot or groove b^3 in the pintle, and the arms or ends c^{10} and c^{11} rest upon the upper surface of one of the hinge-leaves, as shown in the drawings. In order to bring the proper tension upon the spring, the pintle is turned in a direction toward the arms c^{10} and c^{11} by the placing of a wrench on the head b^2 of the pintle or by the insertion of a pointed tool or nail in a hole b^5 in the top of the pintle, as will be clearly evident. By turning the pintle in this manner a pressure is exerted on the part c' of the spring, which rests in the longitudinal groove b^3, and consequently the coils c^8 and c^9 are tightened.

To prevent the unwinding of the coils of the spring, a pin d is inserted into one of the holes b^4 in the lower end of the pintle, and said pin is thus normally forced against a projection or stop a^3 on the hinge-leaf opposite to the one against which the free ends of the coils bear, as will be clearly evident from Fig. 1.

The operation of the device is as follows: Before the hinge-leaves are secured to a door and its frame said coils may or may not be adjusted, as has just been stated, according to the normal tension of the spring; but when in position on the door or shutter or gate which is being opened the stop a^4, by bearing upon the pin d, causes the rotation of the pintle b about its vertical axis in the perfo-

rated ears a^2 and an extra tension is put upon the coils c^8 and c^9, and when the door or gate is released by the person entering said coils tend to return to their normal inoperative positions and thereby firmly and securely close the door or gate. By this construction a neat and cheap spring-hinge for doors, &c., is the result, which is very simple in construction, and in which, should the spring become broken, it can readily be replaced by a new spring with comparatively little labor. If the normal tension of the spring is too great and thereby causes the door to close with a slam, a simple turn on the head of the pintle will enable the removal of the pin d, which can then be inserted into another hole b^4 in the end of the pintle.

Having thus described my invention, what I claim is—

A spring-hinge composed of two leaves and a slotted or grooved pintle, in combination with a spring made from a continuous piece of spring-wire having a central portion c' fitting into said slotted pintle and bent at c^2 and c^3 to form strands c^4 and c^5 approximately parallel with said portion c' and provided with oppositely-extending coils c^8 and c^9, encircling said strands c^4 and c^5, said portion c' and said pintle, and said strands terminating in arms or ends c^{10} and c^{11} in engagement with the face of one of the hinge-leaves, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 7th day of September, 1891.

CHARLES EIFLÄNDER.

Witnesses:
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EUGEN EIFLÄNDER.