

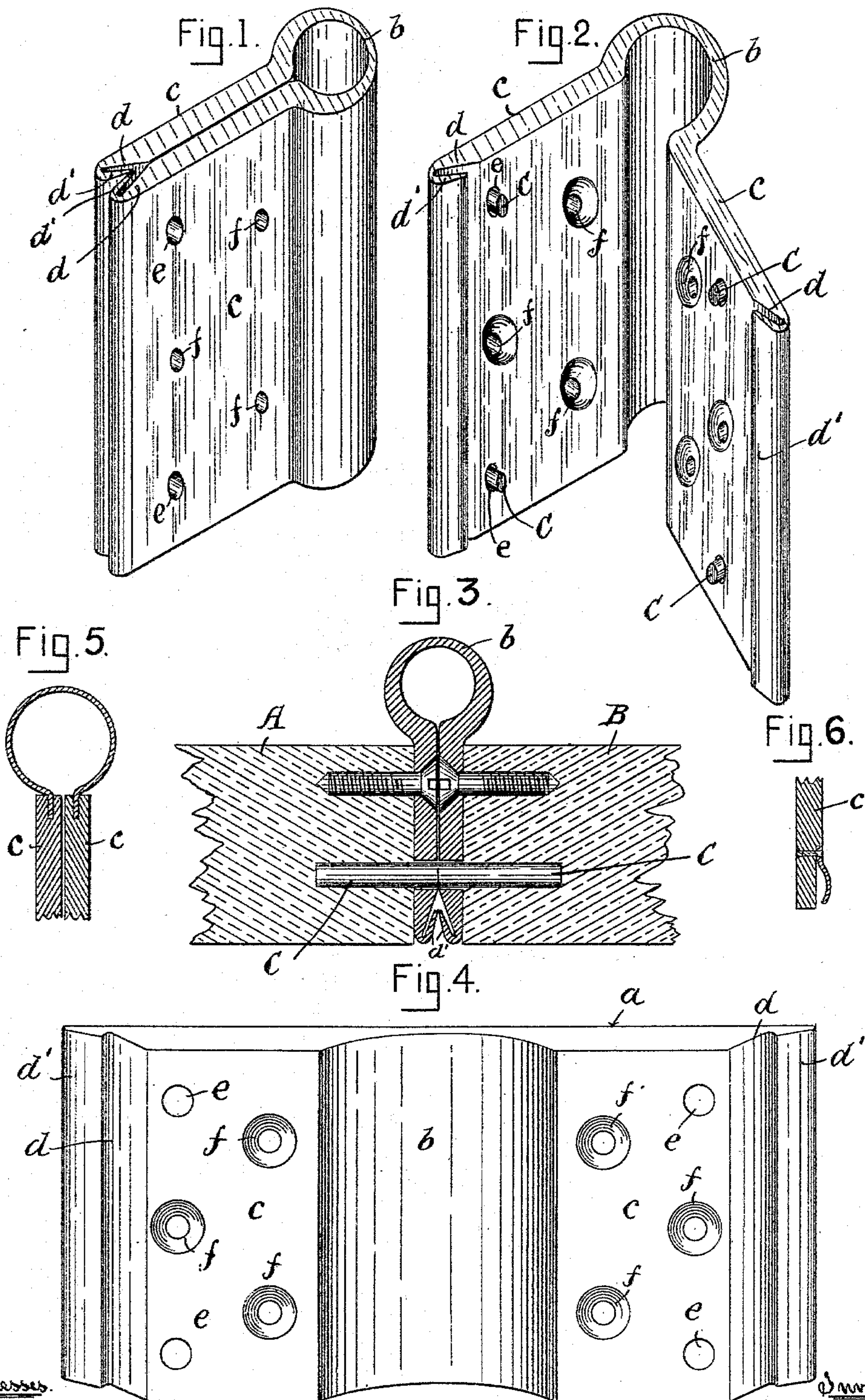
(No Model.)

H. W. LIBBEY.

COMBINED SPRING HINGE AND DOOR CHECK.

No. 494,988.

Patented Apr. 4, 1893.



Witnesses.

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UNITED STATES PATENT OFFICE.

HOSEA W. LIBBEY, OF BOSTON, MASSACHUSETTS.

COMBINED SPRING-HINGE AND DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 494,988, dated April 4, 1893.

Application filed May 16, 1892. Serial No. 433,102. (No model.)

To all whom it may concern:

Be it known that I, HOSEA W. LIBBEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in a Combined Hinge and Door-Check, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce a spring hinge that will also act as a door check so that the door will be moved quickly until nearly closed when it will meet with a slight resistance so as to prevent its being closed with a bang.

The invention consists in the peculiar construction of the hinge, as hereinafter fully described and pointed out in the claims.

Figure 1—represents a perspective view of a hinge embodying my invention when in the closed position. Fig. 2—represents the hinge in its open position. Fig. 3—is a horizontal section through the hinge, door and jamb. Fig. 4—is a view of a blank for forming the hinge after it has been rolled and punched, but before it has been bent and tempered. Figs. 5 and 6—are detail views of modifications.

In constructing a hinge according to my invention. I first roll a piece of metal to the form shown in Fig. 4, that is flat on one side *a*, from end to end, and with a central curved depression *b*, on the other side, the portions *c*, *c*, that form the leaves being of equal thickness, and the ends being of about the form shown at *d*, *d'*; holes *e*, *f*, are then punched in the leaves *c*, and the holes *f* countersunk on the inner side, the metal is then bent so that the central portion *b*, forms a circle, and the ends *d'* are bent so as to lap over the portions *d*, as shown in Fig. 1; the metal is then tempered so that the back portion *b* forms a very strong spring, and the portions *d'* springs of less resistance to form cushions when the door is being closed.

When the hinge is applied to a door one of the leaves *c*, is secured to the door jamb *A*, and the other leaf to the edge of the door *B*, a hole having first been bored both in the jamb and door opposite to the holes *e*, into each of which holes is fitted cushions consisting of a piece of rubber or other elastic material *C*, the ends of which project slightly beyond the inner face of the leaves *c* as shown in Fig. 2. The hinge thus applied will in its

normal position be as shown in Fig. 3. Now, if the door be opened the hinge will stand as in Fig. 2, and as soon as the door is released the spring portion *b*, will cause the door to be moved quickly until rubbers *C* and the two edges *d'*, come into contact which will cause a slight rebound, but the power of the spring portion *b*, being much greater than that of the portions *d'*, and rubbers *C*, immediately after the rebound said spring portion *b*, will overcome the resistance of the portion *d'*, and rubbers *C*, and cause them to be compressed, and close the door gently.

Although I prefer to employ both the end pieces *d'*, and the rubbers *C*, it is obvious that either of them might be dispensed with, providing the ones employed were made sufficiently strong to cause a slight resistance and rebound when the door is nearly closed.

Although I prefer to bend the central portion *b* into a circular form it is obvious that it might be bent into any form that would form a strong spring, or a spring piece might be attached to the leaves as shown in Fig. 5, and the springs for resistance and rebound might also be secured to the leaves as shown in Fig. 6.

What I claim is—

1. A hinge formed of one piece of metal and consisting of two leaves and curved back, said back portion forming a spring substantially as set forth.

2. A hinge formed of one piece of metal, and consisting of two leaves, a central curved back and ends tapered and bent over; said curved back and ends being tempered to form springs substantially as set forth.

3. A hinge of the character described wherein the outer edges of the leaves are tapered, bent over and tempered to form a spring and act as a resistance and rebound when the door is nearly closed substantially as set forth.

4. In a hinge, springs arranged at the outer edges of the leaves to form a resistance and rebound when the door is nearly closed, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 30th day of March, A. D. 1892.

HOSEA W. LIBBEY.

Witnesses:

CHAS. STEERE,
EDWIN PLANTA.