

S. P. STEVENSON.
 SPRING FOR DOOR FASTENERS.
 APPLICATION FILED OCT. 31, 1906.

965,418.

Patented July 26, 1910.

FIG. I.

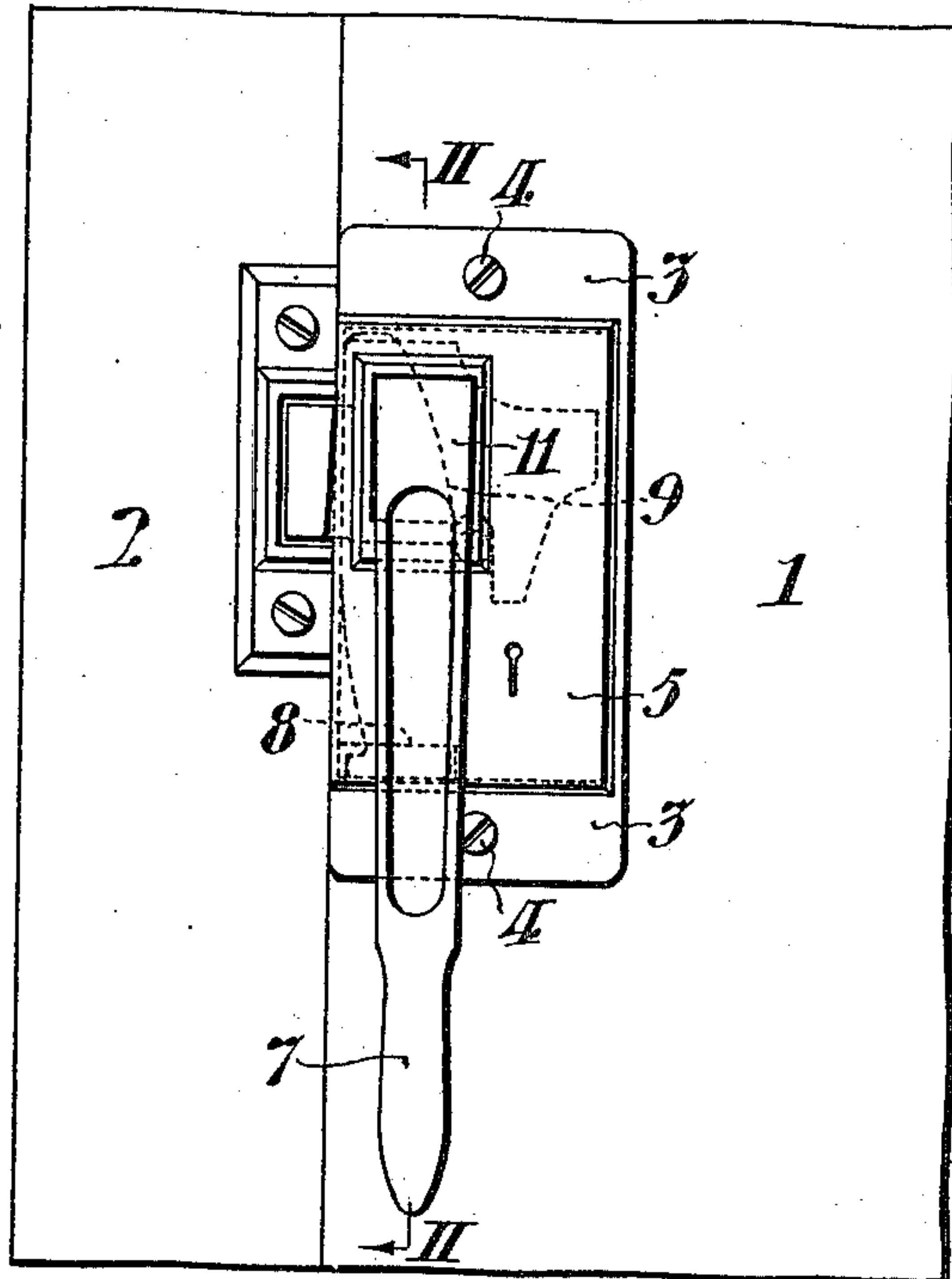


FIG. II.

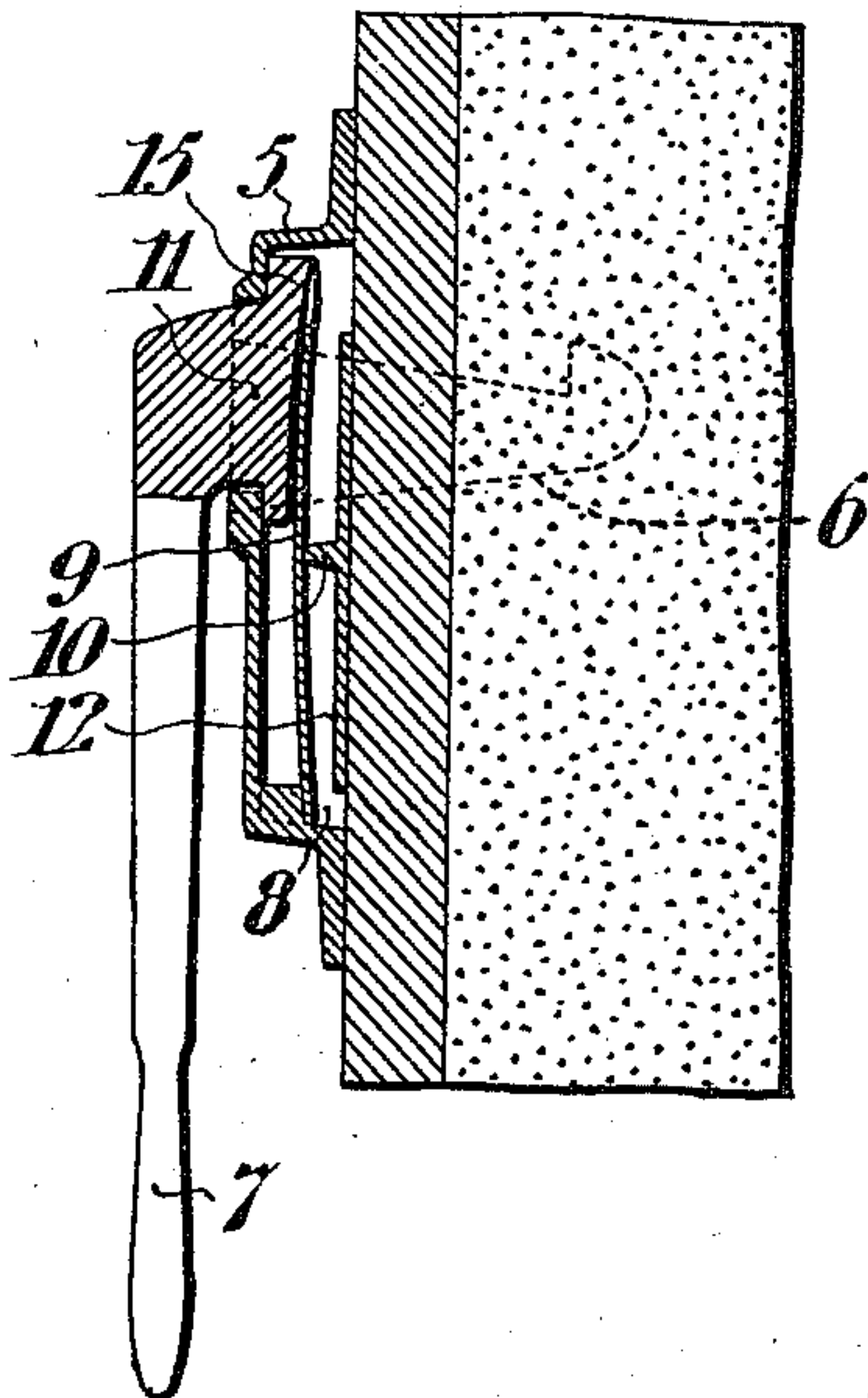
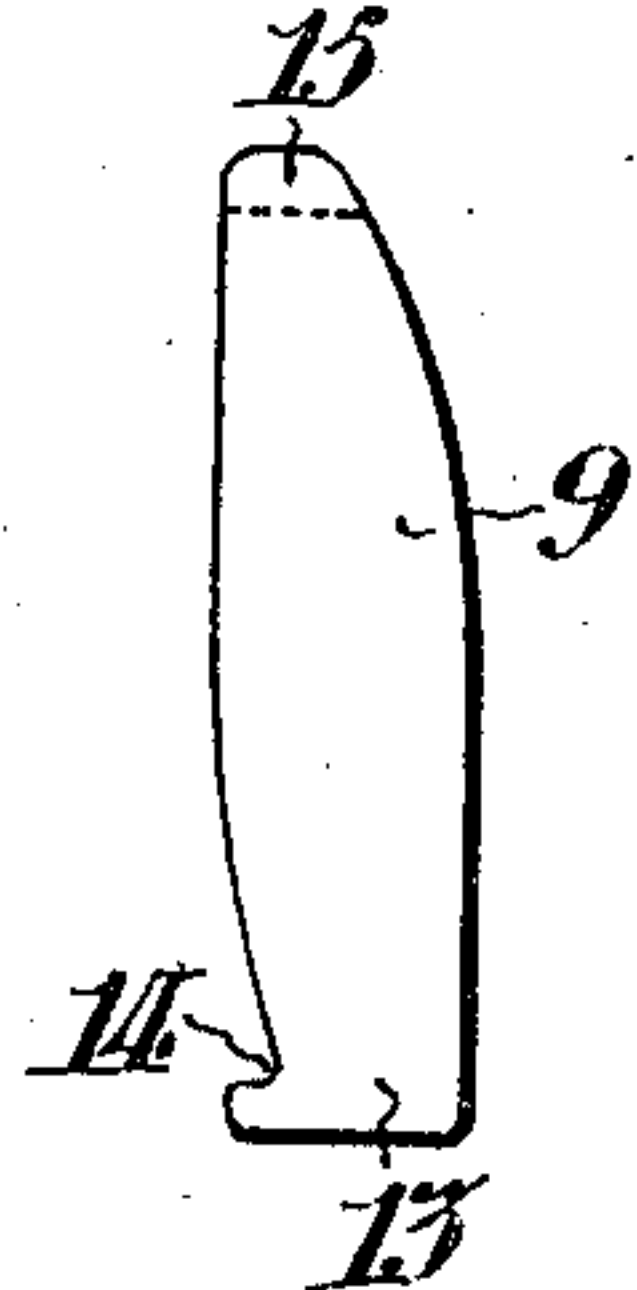


FIG. III.



Witnesses:
 John C. Berghes
 Wm. J. Spink

Inventor:
 SAMUEL PRICE STEVENSON,
 by J. J. & Paul
 his Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL PRICE STEVENSON, OF CHESTER, PENNSYLVANIA.

SPRING FOR DOOR-FASTENERS.

965,418.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed October 31, 1906. Serial No. 341,371.

To all whom it may concern:

Be it known that I, SAMUEL PRICE STEVENSON, of Chester, in the county of Delaware and State of Pennsylvania, have
5 invented certain new and useful Improvements in Springs for Door-Fasteners, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to latch fasteners of
10 the type heretofore invented and patented by me in United States Letters Patent No. 633,536, dated September 19th, 1899, and especially adapted for use in fastening the
15 doors of refrigerator compartments where-in a very firm and close fit and fastening of the door is required. In the construction of these fasteners it is important to have a strong and durable spring not affected by
20 rusting due to moisture, or by wear, and capable of maintaining with the proper degree of firmness, the engagement of the latch with its keeper. For this purpose as shown in said patent, a strong flat rectangular
25 spring has hitherto been employed by me, arranged so as to constitute a lever of the first class with a fulcrum in the middle, a bearing point at the lower end, and a pressure point at the upper end. But I have
30 experienced difficulty owing to the tendency of such a spring, when rectangular in shape as shown in said patent, to eventually break or become permanently set at or near the
35 center where it passes over the fulcrum point. This is because in a flat spring of uniform width the greatest strain is experienced at that point, so that the bending
40 action takes place chiefly there, and my present invention relates to means for so shaping a spring adapted for this purpose, as to distribute the strain, and therefore the
45 bending action, evenly along the whole length of the spring, thus preventing it from being bent. I thus have secured a spring having a much greater life than those
50 heretofore used without increasing the length or thickness of the spring, and therefore without increasing the size of the casing provided for my device. This is accomplished by tapering the edges of the
55 spring toward its ends, with provision upon the lower end of an offset whereby the tapering is prevented from interfering with the proper support of the bearing end of the
spring.

In order to secure the maximum effective

length of spring in the minimum size of casing, I find it desirable to taper one end of the spring upon one side, and the other end upon the other side, so that the extreme
length of the spring is a diagonal one. 60

In the drawings, Figure I, is a front elevation of my improved door fastener containing a spring embodying my present invention. Fig. II, is a section along the line II, II, in Fig. I. Fig. III, is a detail view of
65 my improved spring.

In explanation of the construction shown in the drawings, the door 1, abutting against the door casing 2, is provided with a fastener contained within a casing 3, secured to the
70 door by means of screws 4. Extending through the enlarged portion 5, of this casing is the latch 6, provided with an exterior handle 7, operated as a lever from the outside of the door, to move the latch 6, to
75 which it is attached. The inside of the casing is provided with a recess 8, which receives and holds firmly in place the lower or bearing end of the flat spring 9, the central portion of which rests against a ledge
80 10, forming a fulcrum for the spring action, while the upper end of the spring resists the under side of the enlarged portion 11, of the latch operating handle. The ledge 10, is formed upon a plate 12, secured within the
85 casing.

The peculiar shape of the spring 9, upon which my present invention depends is most clearly exhibited in Fig. III, where it will be noted that the central portion of the
90 spring, where it bears against its fulcrum, is of the full width of the ordinary flat spring hitherto employed by me. Toward the lower end 13, the spring is diminished in width or tapered, the diminution being
95 effected altogether upon one side with provision of an offset 14, at the extreme end, the purpose of which will be hereafter explained. The upper end of the spring is similarly tapered, the diminution in width
100 being effected entirely upon the opposite side from that which is narrowed to form the taper of the lower end. The offset 14, enables the base of the spring to be maintained of full width, so as to afford a firm
105 engagement for its lower end with the recess 8, provided for it in the casing. This is important because the proper seating of the spring without the creation of sidewise or
110 torsional strains can only be thus secured.

The taper of the spring toward its ends has the result of spreading the bending action evenly over the length of the spring thus distributing the strains which otherwise would occur chiefly along the line of the fulcrum 10. This result is accomplished without weakening the power of the spring, without enlarging the spring, and therefore within the limits of the usual sized casing, and without any other objectionable modification of the device. In other words, by cutting away certain specific portions of the flat spring heretofore employed by me, I have secured a much better and more lasting device, lengthening the life of the spring and avoiding the danger of permanent set.

Having thus described my invention, I claim:—

1. In a fastening device, a flat spring fulcrumed at its center and tapered toward either end, one end of the spring being fixedly seated and the other forming a point

of resistance for the latch operating members.

2. In a spring controlled latch fastener, the combination of a casing provided with a seat; a fulcrum bridge; a flat spring resting at its lower end in the seat, abutting midway against the fulcrum ledge, and with its upper and free end resisting the latch operating mechanism, said spring being tapered toward both ends, and with an offset at its lower end whereby the portion which engages the seat is maintained at full width.

In testimony whereof, I have hereunto signed my name, at Philadelphia, in the State of Pennsylvania, this twenty-ninth day of October, 1906.

SAMUEL PRICE STEVENSON.

Witnesses:

JAMES H. BELL,
E. L. FULLERTON.