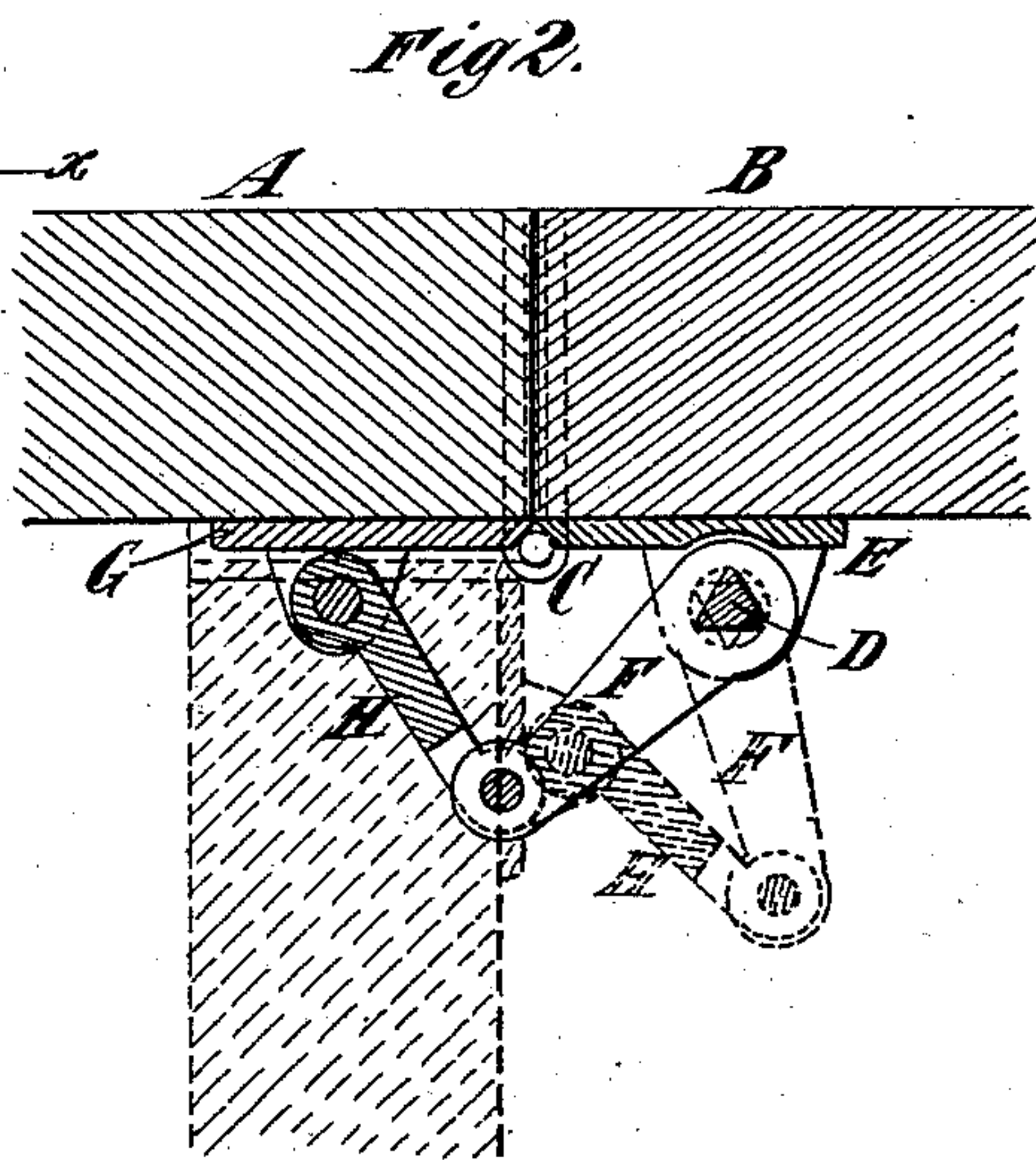
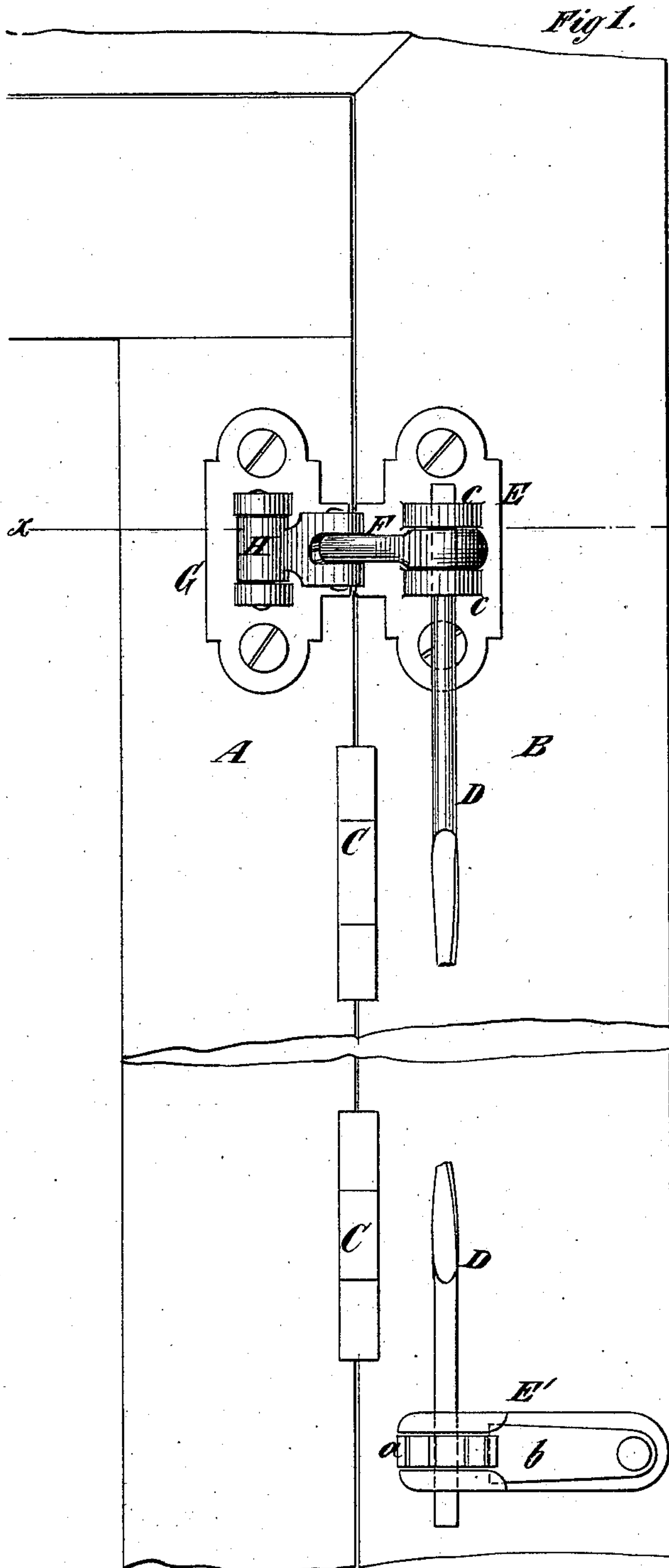


(No Model.)

J. BROUGHTON.
DOOR AND GATE SPRING.

No. 304,778.

Patented Sept. 9, 1884.



Witnesses
John Becker
Jas. Haynes

Inventor
John Broughton
by his Attorney
Brown & Brown

UNITED STATES PATENT OFFICE.

JOHN BROUGHTON, OF BROOKLYN, NEW YORK, ASSIGNOR TO DANIEL H. FITZGERALD, OF READING, PENNSYLVANIA.

DOOR AND GATE SPRING.

SPECIFICATION forming part of Letters Patent No. 304,778, dated September 9, 1884.

Application filed June 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN BROUGHTON, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and
5 useful Improvement in Door and Gate Springs, of which the following is a specification.

My invention relates to an arrangement of torsional door-springs in which the spring is attached at both ends to the door or to the
10 jamb, so as to be approximately parallel with the edge of the door, and has at one end an arm which is connected by a link with the door or jamb, according as the spring is attached to the jamb or door. This arrange-
15 ment is very desirable, both because it is more sightly than a spring extending diagonally across the opening between a door and its jamb, and also because where the spring is applied as first described it makes no difference whether the hinge-pivots of the door
20 are offset more or less from the face of the door.

The invention consists in certain novel details in the construction and arrangement of the arm which is attached to the spring, and
25 the plates whereby the spring is attached to the door, as fully hereinafter explained.

In the accompanying drawings, Figure 1 represents portions of a door and jamb and
30 a spring applied thereto according to my invention, certain parts being broken away to reduce the length; and Fig. 2 represents a horizontal section upon the dotted line *x x*, Fig. 1.

Similar letters of reference designate corresponding parts in both the figures.

A and B designate, respectively, a portion of a door and jamb, and C designates the hinges upon which the door is hung.

40 D designates a spring, attached to the jamb at its two ends by the usual plates or devices, E E', one of which—in this instance the lower one, E'—is provided with the usual notched hub, *a*, and stop or catch *b*, whereby the spring
45 may be twisted to increase its force, and then held in position. The spring D has its end portions of triangular or other angular transverse section. At the upper end the spring is provided with an arm, F, projecting trans-
50 versely therefrom and secured thereto, so that

it cannot turn independently. The top plate, E, is furnished with two lugs, *c*, through which the spring is inserted loosely, and the arm F is held between them against longitudinal movement, and is locked to the spring by
55 making the hole through which the spring projects either triangular or square, to suit the transverse section of the spring.

G designates a plate adapted to be secured to the door when the spring is on the jamb, 60 and to the jamb when the spring is on the door; and H designates a link, one end of which is pivoted in or to the plate G, and the other end of which is pivoted to the end of the arm F, as clearly shown, the said arm 65 forming a connection between the spring and link.

A spring applied as here shown possesses many advantages over one applied in the ordinary way and extending diagonally across
70 from door to jamb. It is much more sightly than as ordinarily applied, and may be used whether the pintles of the hinges are close to the face of the door, as here shown, or offset considerably therefrom, while as ordi- 75 narily applied care must be taken that the pintles are not offset from the face of the door. It will also be seen that the spring is turned only about half as much as the door, as shown in dotted outline in Fig. 2, where it is clearly 80 shown that the turning of the door ninety degrees, or a quarter of a turn, has only twisted the spring an eighth of a turn. The movement of the spring being therefore only about half what it is where applied in the ordinary 85 way, the force exerted by it is more nearly uniform.

Though here shown and described as applied to a door, the spring is equally applicable to a gate.

I am aware that it is not new to attach both 90 ends of a torsion-spring to a door or to a jamb, and to connect one end of the spring by an arm and link with the jamb or door, according as the spring is attached to the door 95 or jamb, and I only desire to cover such a combination when one of the plates whereby the spring is attached has a pair of lugs through which the angular end portion of the spring passes loosely, and when the arm which 100

is applied to the spring is arranged between
 said lugs so as to be held in place thereby in
 a direction lengthwise of the spring. This
 novel combination is advantageous, as it af-
 5 fords a very simple and inexpensive means of
 connecting the spring, its plate, and its arm,
 and as any one of said parts, in case of break-
 age, may be very readily replaced by another.

What I claim as my invention, and desire to
 10 secure by Letters Patent, is—

The combination of the torsion-spring D,
 having angular formations at the ends, the
 plates E E,' applied to the ends of the spring,
 the plate E being constructed with a pair of

lugs, *c c*, through which the spring passes 15
 loosely, the arm F, fitting the angular end
 portion of the spring, and held between the
 lugs *c c*, whereby it is prevented from moving
 longitudinally on the spring, and the link H,
 whereby the arm F may be connected with a 20
 door or jamb, substantially as herein described.

This specification signed this 15th day of
 July, 1880.

JOHN BROUGHTON.

Witnesses:

FREDK. HAYNES,
 ARTHUR C. WEBB.