

(No Model.)

P. McALEER.

DOOR SPRING.

No. 299,080.

Patented May 20, 1884.

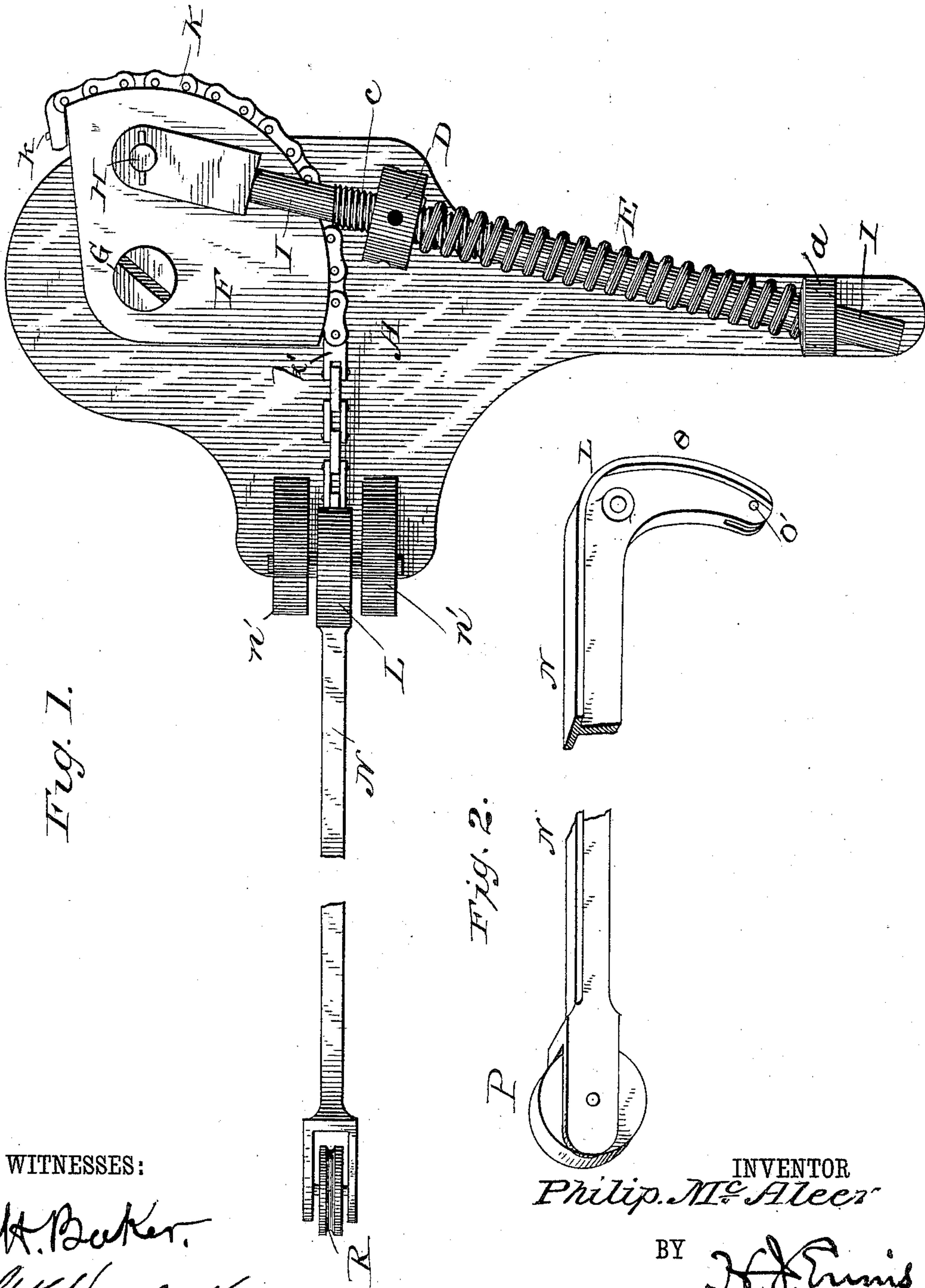


Fig. 1.

Fig. 2.

WITNESSES:

C. H. Baker.
G. E. Hendricks

INVENTOR

Philip McAleer

BY

H. J. Ennis
ATTORNEY

UNITED STATES PATENT OFFICE.

PHILIP McALEER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF
ONE-HALF TO ELISHA H. BRADFORD, OF SAME PLACE.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 299,080, dated May 20, 1884.

Application filed January 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, PHILIP McALEER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Door-Springs, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to door-springs; and the object of the device is to provide a simple, reliable, and effective spring for doors, so constructed that the strongest pressure will be brought to bear on the door in the immediate act of closing, and when the door is being opened the pressure will decrease in proportion to the distance the door is opened; and to these ends the novelty consists in the construction of the same as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same letters of reference indicate the same parts of the invention.

Figure 1 shows the spring as it is applied to very light doors, and Fig. 2 is a view of the closing-arm detached from the bed-plate.

A is the bed plate or frame, and it is provided with an ear, *a*, which forms a guide for the pitman I and a support for the lower end of the spring E. This pitman I is screw-threaded for a portion of its length at *c*, to receive the nut D, which regulates the tension of the spring E.

F is a quadrant pivoted to the bed-plate A by the screw G, and to its face is secured a stud or pin, H, to which is attached by the pin *h* the pitman I.

K is a chain, one end of which is secured to the pin *k* on the quadrant F, and extending around its circumference, and thence onto and around the face of the cam L. A cross-link, *k'*, is connected in the chain, to allow it to bend to correspond to the motion of the quadrant F and the cam L. The cam L is mounted with the closing-arm N upon a short shaft, *n*, journaled in the ears *n' n'*, which are integral with the bed-plate. The chain K passes around the cam, and its end is secured to the pin *o'*.

The closing-arm N may be of any suitable length, and its outer end is provided with a

roller, P, having a groove, R, which runs over a piece of wire secured to the door by a couple of staples, forming a track for said roller and preventing any injury to the door.

As shown in Fig. 1, the spring is represented in position when the door is closed, and as the pressure of the spring is communicated to the pin H by the pitman I the maximum effect is exerted, because the said pin is at a right angle to the pivot-screw G, and as the door is opened the arm N is swung around, which brings the tension-point of the cam nearer to the center or fulcrum, and at the same time, as the spring is compressed, the pin H swings into the center, or in line with the fulcrum G, and though the spring is being compressed by this motion, its effect upon the arm N is being diminished through the medium of the quadrant F and cam L.

So far as I am aware, all door-springs have to be adjusted to the closed door with sufficient tension to keep the door shut, and this tension is increased the moment the door is opened, and constantly increases in proportion to the width the door is opened, and when it is open to its full extent the spring is at its point of maximum strength, so that when the door is released it flies to with great rapidity and unnecessary jar, which is very objectionable, as well as detrimental to the door. These objections are all overcome by my invention, and the door shuts almost noiselessly and without the usual jar or "bang."

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. The bed-plate A, having lugs *a n' n'*, in combination with the pitman I, spring E, quadrant F, chain K, and arm N, as set forth.

2. The bed-plate A, having lugs *a* and *n' n'*, in combination with the pitman having adjustable nut D and spring E, and the chain K and arm N, having cam portion L, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP McALEER.

Witnesses:

H. J. ENNIS,
C. A. NEALE.