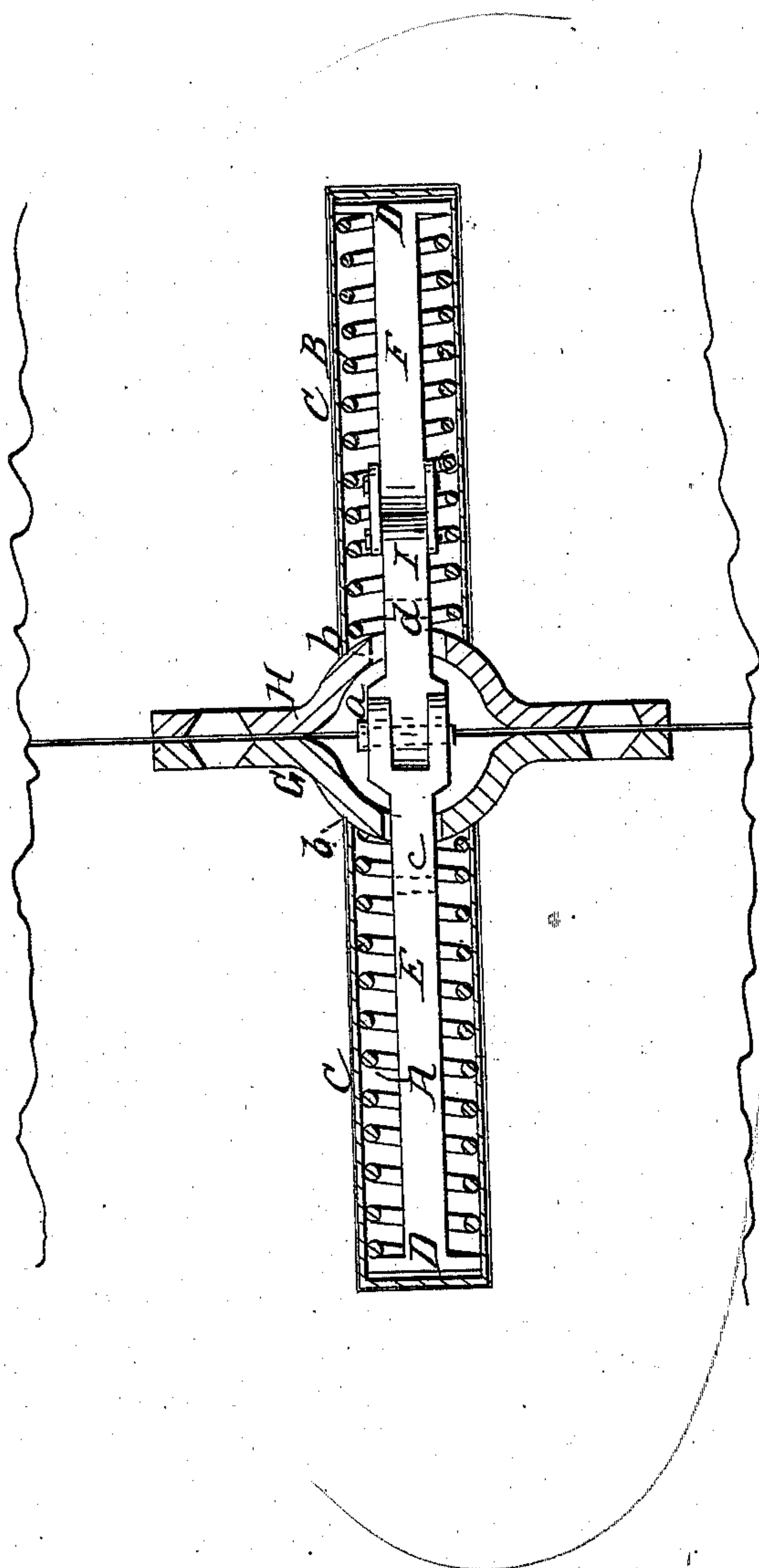


*C. Ellis,*  
*Door Spring.*  
*N<sup>o</sup> 3,376.      Patented Dec. 15, 1843*



# UNITED STATES PATENT OFFICE.

CHARLES ELLIS, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN THE DOOR-SPRING FOR CLOSING DOORS.

Specification forming part of Letters Patent No. 3,376, dated December 15, 1843.

*To all whom it may concern:*

Be it known that I, CHARLES ELLIS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Door-Springs; and I do hereby declare that the following description and accompanying drawing, taken together, constitute a full and exact specification of the construction and operation of the same.

The drawing above mentioned represents a vertical section of my improved door-spring as applied to a door and the frame thereof.

A B are two helical springs, each of which is arranged within a cylindrical box or case, C. One spring—viz, A—with its case is inserted in a suitable mortise or cylindrical cavity bored or formed in that edge of the door-frame to which one leaf of each of the hinges or butts upon which the door turns is usually screwed, the other spring and its case entering within a similar cavity formed within the edge of the door to which the other leaf of each of the hinges is screwed. The outer end of each spring rests against a shoulder or button, D, formed upon the outer end of one of two rods, E F, which are arranged within the springs, and are jointed or hinged together at their inner ends, (in contact,) as seen in the drawing, the pin *a* of the hinge-joint standing vertically. The inner end of each spring A B rests or abuts against a shoulder, *b*, of one of two plates, G H, which are respectively screwed to the door-frame and door. A suitable cavity for the reception of the joint by which the rods E and F are connected is formed in front of each shoulder *b*, and the rod F, or both of the rods, may, if desirable, be separated into two parts and united by a joint, as seen at I, the said joint permitting the parts of the rod to be turned at a horizontal angle to each other when the rod is drawn to a sufficient distance out of the door.

When the door is opened, the leverage on the hinges thereof is opposed by the rods E F and the springs A B, the springs being drawn together, and the rods drawn out of the door and frame to distances in proportion to the angle to which the door is opened. If the door is opened beyond a right angle, or it is

desirable to swing it upon its hinges to about one hundred and eighty degrees, the joint at I of the rod F will be drawn out of the socket of the door and will permit the door to be turned around into the required position.

By having two rods, E F, and two springs, each rod is drawn a like or suitable distance out of its socket in the door or frame as the door is opened, thereby permitting a spring of this peculiar kind to be arranged upon the door, and in such a position as to be entirely out of sight when the door is closed. In order to connect and disconnect the joint of the two rods or to remove or insert at any time its pin *a* for the purpose of relieving the door from the action of the spring, or to fit the spring to the door, each of the rods E F may have a small hole, *c* or *d*, drilled vertically through it at a short distance in rear of the joint of the two rods or pin *a* thereof. When the door is thrown open, a piece of wire or a pin may be passed through each of these holes so as to confine the rods in their extended position until the pin *a* is removed, when, on drawing out the wires from the holes *c d*, the rods will be retracted by the action of the springs, and thus the door may be relieved at any time from the force of the spring. By afterward drawing out each rod E or F and inserting its wire through its hole *c* or *d*, the door may be moved so as to bring the ends of the rods E F into contact for the insertion of the pin *a* through them, thereby connecting the rods and springs together.

What I claim as my improvement on the door-spring is—

Making it of two springs, A and B, (instead of one, as heretofore,) in combination with the two rods E and F, jointed together, as described, the said door-spring being arranged within the door and door-frame, and operating substantially as above set forth.

In testimony that the above is a correct specification I have hereto set my signature—this 2d day of December, A. D. 1843.

CHARLES ELLIS.

Witnesses:

R. H. EDDY,  
J. CUTTS SMITH.