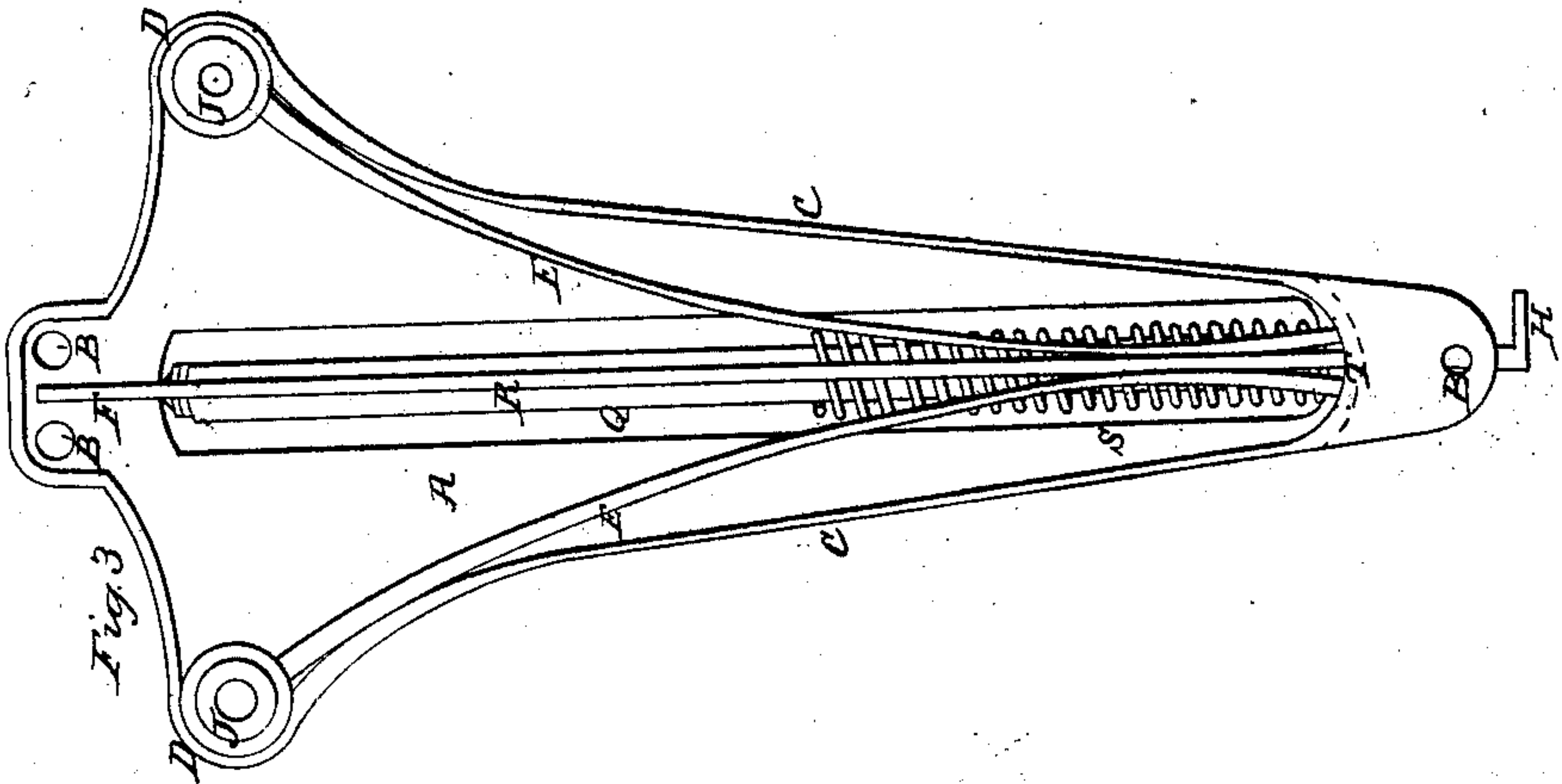
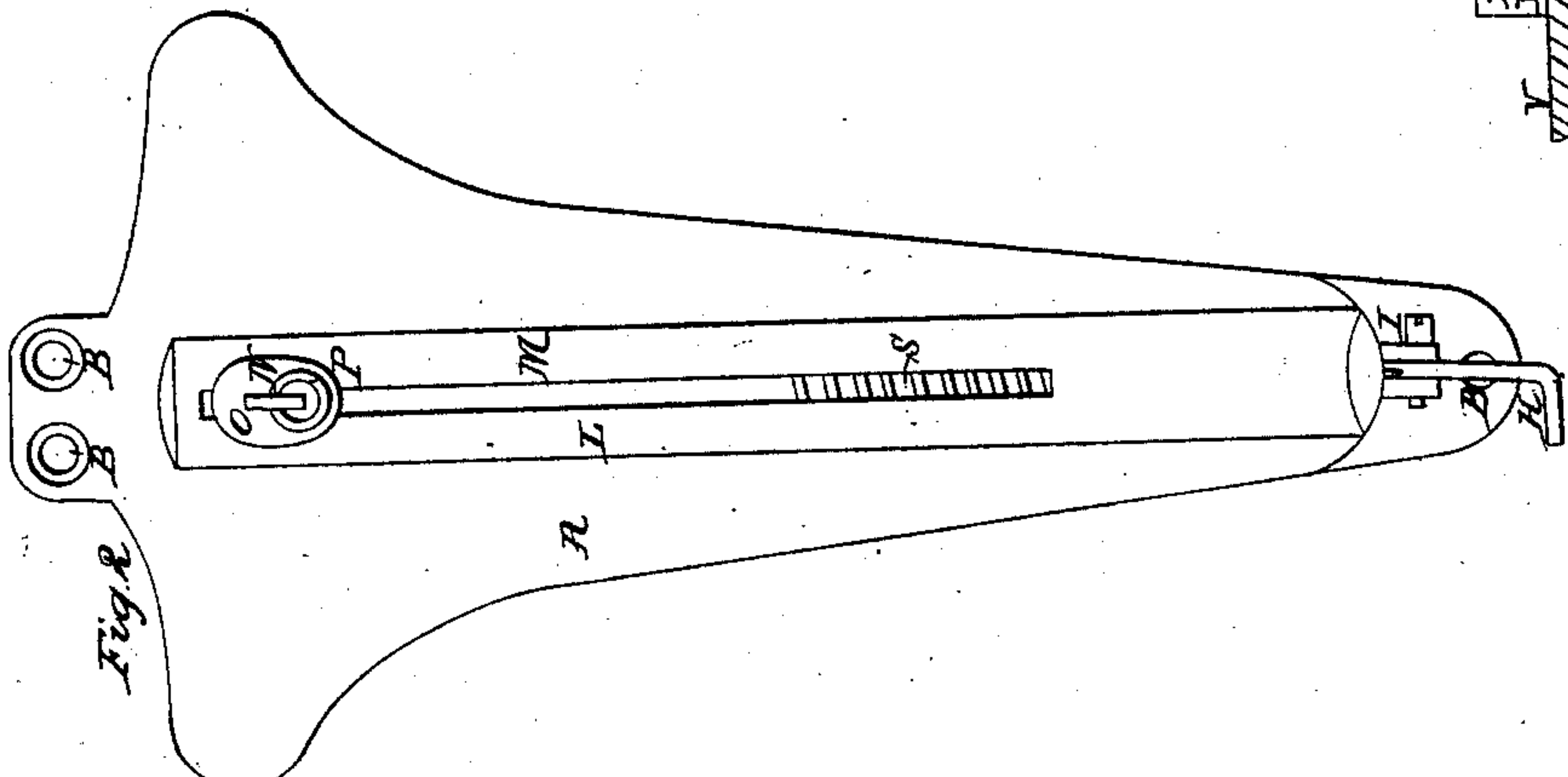
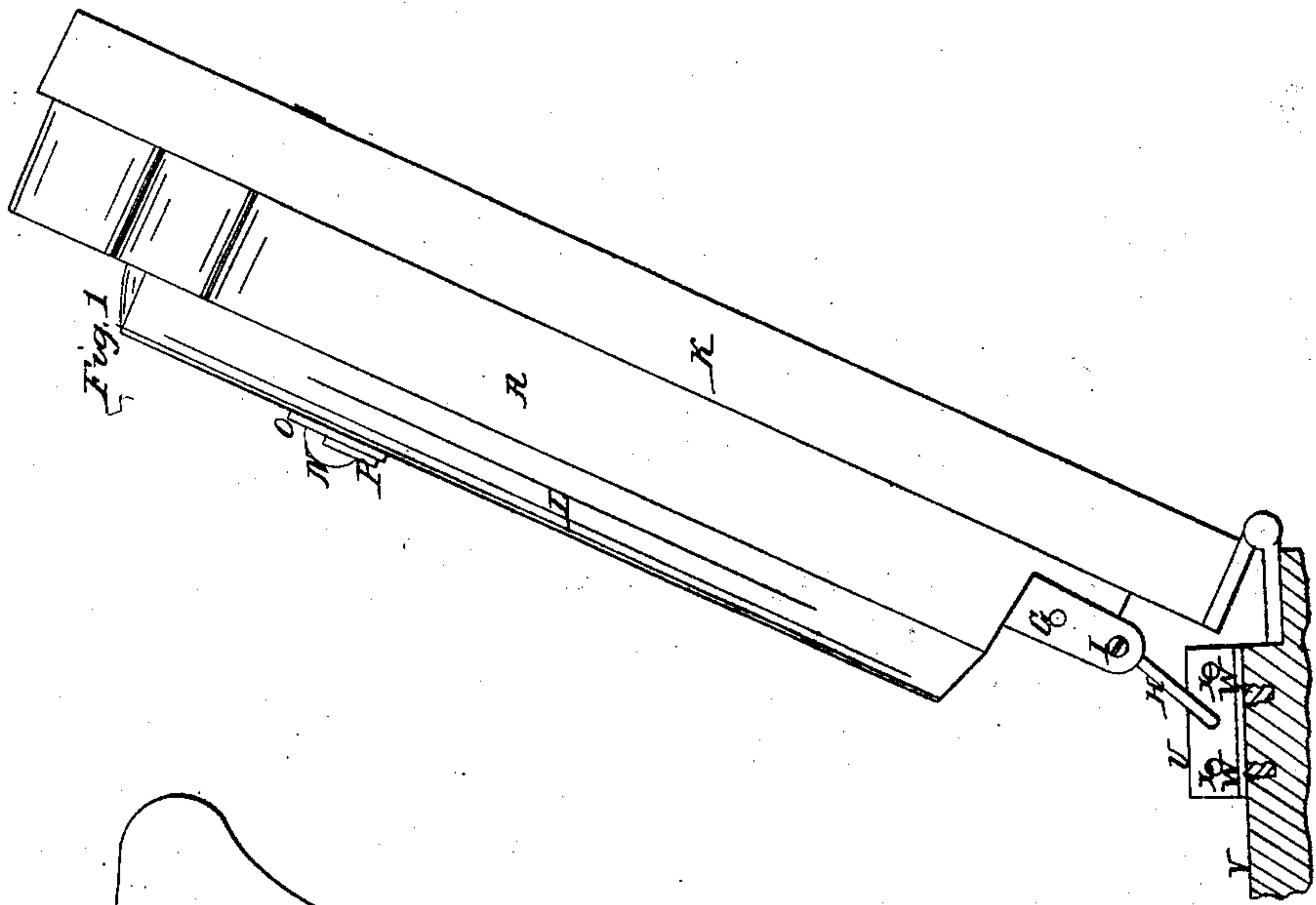


*J. Maxson,
Door Spring.*

N^o 18,593.

Patented Nov. 10, 1867.



UNITED STATES PATENT OFFICE.

JOHN MAXSON, OF DE RUYTER, NEW YORK.

SPRING-HINGE.

Specification of Letters Patent No. 18,593, dated November 10, 1857.

To all whom it may concern:

Be it known that I, JOHN MAXSON, of De Ruyter, in the county of Madison and State of New York, have invented certain new and useful Improvements in Spring-Hinges or Door-Springs; and I do hereby declare that the same are described and represented in the following specifications and drawings.

To enable others skilled in the art to make and use my improvements I will proceed to describe their construction and operation, referring to the drawings, in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan of a hinge with my improvements applied to a door which is represented partly open. Fig. 2, is an elevation of the same. Fig. 3, is an elevation of the back side.

The nature of my invention or improvements in spring hinges or door springs, consists in one or more springs acting against an incline, curved or otherwise, with a recess at the end of the incline, so arranged as to close and hold a door to after it is closed. Also in arranging a coiled spring, so as to assist the spring acting against the incline in closing the door.

In the accompanying drawings, A, is a case of metal which may be made in the form represented, or of such other form as will answer the purpose, and provided with three or more holes B, B, B, for the screws by which it is to be fastened to the door or jamb of a door. The sides C, C, of the case A, are inclined from each other at an angle of about thirteen degrees each side terminating in a curve with a recess D, at the extremity as shown in Fig. 3.

E, E, are two curved steel springs connected to the central plate F, by the rivet G, Fig. 1, and to the hook H, by the screw I, which passes through one of the springs and screws into the other, so as to adjust the force of the springs to the service to be performed. Each of the springs E, E, are provided with a friction roller J, at the end which roll on the inclined and curved sides C, C, to draw the door K, to, and pass into the recesses D, D, to hold it to when closed. There is a semicircular projection L, on the case A, with a slot M through it for the projection N, from the central plate F, to traverse in, which projection N, extends through the slot M, and receives the plate

O, and is held into the slot (but allowed to traverse) by the ring P. There is a recess Q, in the projection L, which is occupied by the rod R, and spring S, as shown in Fig. 3. The rod R, has a slot in it corresponding with the slot M, and the projection N, from the central plate passes through and traverses in it, and is acted upon by the coiled spring S, when the friction rollers are drawn into the narrow part of the case, so as to aid in starting the door and springs E, E, after the door is released, so as to be closed by the springs. There is an opening T, in the case shown by dotted lines in Fig. 3, through which the springs E, E, and central plate F, are drawn by the hook H, when the door K, is opened.

U, is a piece of plate metal bent at a right angle and fastened to the jamb V, by the screws W, W, as shown in the drawing and provided with several holes X, X, into either of which holes the hook H, may be hitched so as to act on the door K, with greater or less force as desired.

When the door to which this spring is applied is opened so far, as to draw the friction rollers into the narrow part of the case, the spring acts on the door with very little force; but as the door is closed the springs E, E, draw the door to, with a gradually and constantly increasing force until it is shut, and the friction rollers have passed into the recesses D, D, so as to hold the door to, until it is opened by a force sufficient to draw the rollers out of the recesses. By curving the sides of the case the springs are made to act upon the door to close it, with greater force or increasing power, at the same time that the power or force of the spring is constantly diminishing, and the friction rollers enter recesses when the springs are nearly exhausted, so as to hold the door to firmly.

The advantages of my improved spring may be enumerated as follows; 1st, it is cheaper in proportion to the power it exerts than any other,—2d, it is more simple in its construction, less liable to get out of order, and can be easily repaired or kept in order. 3d, it may be graduated so as to act with more or less force upon the door, 4th, it is very durable and calculated to wear well and last a long time.

I contemplate that door springs embracing any improvements may be modified in various ways which will readily suggest

themselves to competent artizans without departing from the merits of my invention. For instance the springs may be fastened to the door and the inclines which they act
5 against may traverse; and it may be arranged in such other ways, as will adapt it to the circumstances where it is to be used; also that a single feather spring may be used and a friction roller applied to the
10 central plate, or that the central plate may be dispensed with if preferred that way.

I believe I have described and represented my improvements in door springs so as to enable any person skilled in the art
15 to make and use them.

I will now state what I desire to secure by Letters Patent to wit:

1. I claim one or more springs acting against an inclined plane curved or otherwise with a recess at the end, so arranged
20 as to close and hold a door substantially as described.

2. I also claim in combination with the above a coiled spring so arranged as to assist the feather spring or springs substantially
25 in the manner described.

JOHN MAXSON.

Witnesses:

A. V. BENTLEY,
ALFRED MITCHELL.