

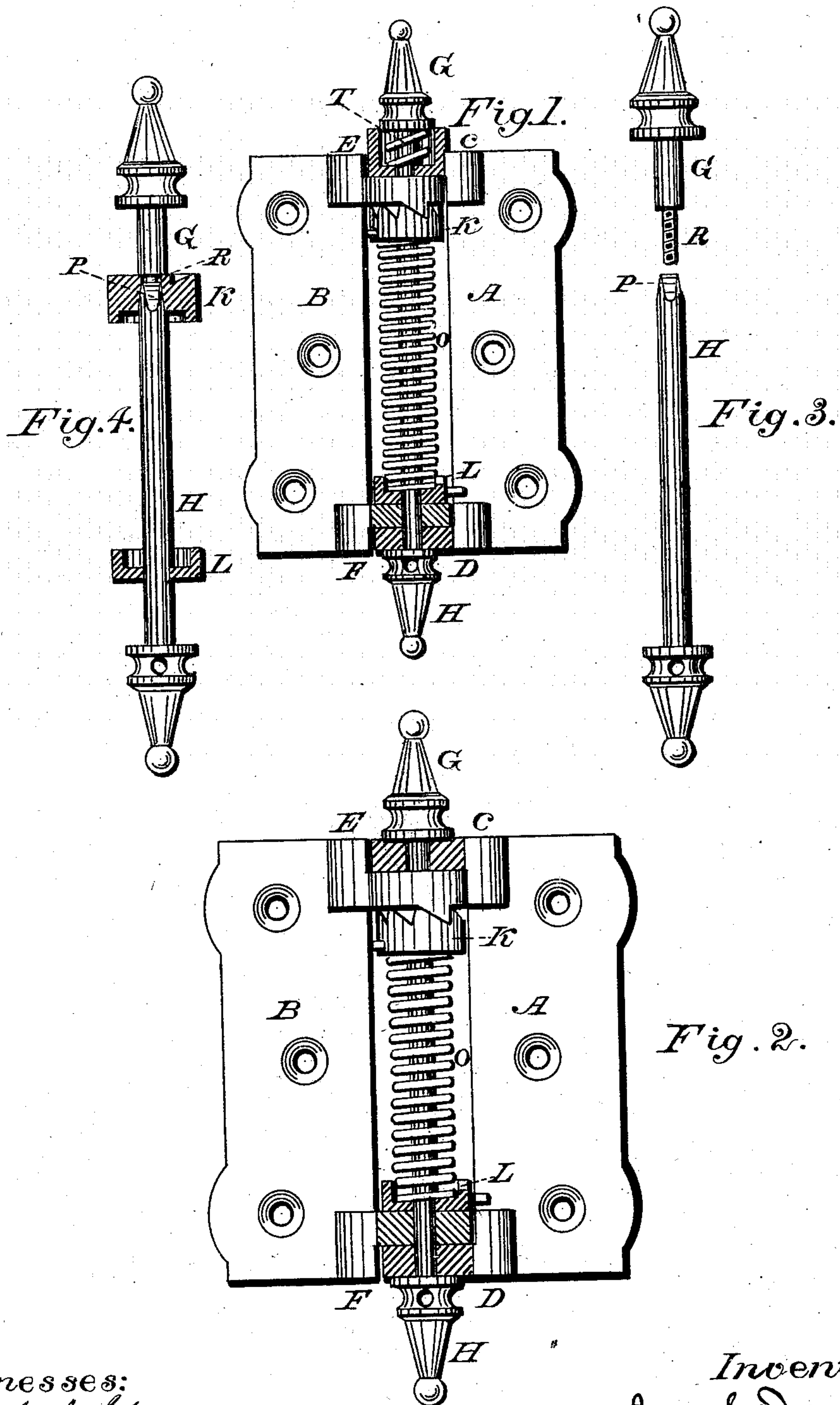
(No Model.)

I. S. DAVIS.

SPRING HINGE.

No. 255,257.

Patented Mar. 21, 1882.



Witnesses:

Saml. J. Shuck
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UNITED STATES PATENT OFFICE.

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SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 255,257, dated March 21, 1882.

Application filed December 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, IRA S. DAVIS, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Spring-Hinges, of which the following is a specification.

My invention consists in so connecting a drum having ratchet-teeth thereon with the two portions of the pintle which connects the leaves of a spring-hinge that the drum can neither slide nor turn on the pintle, and may be firmly locked in position, or can be loosened and rotated by turning one portion of the pintle to any desired position.

Figures 1 and 2 are elevations of a spring-hinge containing my invention. Fig. 3 is a detached view of the pintle taken apart. Fig. 4 is a detached view of the pintle put together, with a section of the upper lug, drum, and loose collar thereon.

A and B are the leaves of a hinge, having lugs C D E F thereon. On the under side of lug E is cast or formed one or more ratchet-teeth.

K is a regulating-drum, on one side of which are cast ratchet-teeth, adapted to interlock with the ratchet-teeth on lug E, the other side being cored to receive one end of a coiled metal spring.

O is a coiled metal spring, one end of which is fastened to the regulating-drum K, the other end resting in a loose collar, L, and being turned out so as to bear against leaf A. This spring O may be long enough to nearly or quite fill the space between drum K, when in the position shown in Figs. 1 and 2, and collar L, without being compressed longitudinally, but need not be long enough to keep the ratchet-teeth on drum K and lug E locked together when the hinge is in actual use.

G H is a pintle, which runs through the lugs on leaves A and B, holding said leaves together. This pintle is made in two pieces, the piece H being long enough to extend nearly to the upper side of drum K when in the position shown in Figs. 1 and 2, and the piece G being long enough to extend to the other side of drum K, and having at its end a screw-threaded rod, R. A longitudinal hole is tapped in the end of piece H, and a screw-thread cut therein, so that pieces G H can be screwed to-

gether. The end of piece H is beveled so as to form a square, which will fit into a square hole cut through the center of drum K, and piece G is too large to pass through the hole in drum K.

When spring O is too short to fill the space between drum K and collar L, I use a small spiral spring, T, Fig. 1, lying between the shoulder on piece G and the upper surface of lug C, said lug being extended a short distance above leaf A, and being cored out sufficiently to receive and conceal spring T.

L is a loose collar on pintle G H, to prevent wear on the end of spring O.

The principal defect in spring-hinges of the class in which the tension of the spring is regulated by rotating a drum fastened to one end of the spring and having ratchet-teeth thereon is the difficulty of releasing the tension of the spring. Another difficulty consists in the liability of the locking mechanism to open when it is held locked simply by the longitudinal elasticity of the spring which operates the hinge. These are entirely overcome by my invention.

When it is desired to increase the tension of the spring O the part G of pintle G H is unscrewed a little more than the depth of the ratchet-teeth on drum K. The ratchet-teeth on drum K and lug E are kept locked by spring T when spring O is too short to do so, and by spring O when long enough. Drum K is then rotated by turning the part H of pintle G H, which may be done by a wire or rod inserted in the hole through said pintle. (Shown in Fig. 3.) As soon as spring O has the desired tension the parts G H of the pintle are screwed together, thereby drawing drum K against lug E and holding the ratchet-teeth on said drum and lug firmly interlocked. To release the tension of spring O it is only necessary to unscrew the two parts of the pintle as before, and then press upon the portion G until drum K is pushed so far away from lug E as to unlock the ratchet-teeth on said drum and lug, when the elasticity of spring O will rotate drum K until the spring is relieved of the strain upon it.

I do not wish to confine myself to the precise manner of making connection between drum K and part H of pintle G H shown in the

drawings, as it is only necessary to so connect them that drum K cannot turn or slide on pintle G H.

When the small spring T is not used lug C may be made in the ordinary manner, flush with the upper edge of leaf A.

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

In a spring-hinge, the combination of the regulating-drum K, having ratchet-teeth there-

on, with the pintle G H, made in two parts adapted to screw together, the upper end of part H being made to fit into a hole in the center of drum K, whereby said pintle and drum cannot rotate independently of each other, substantially as shown and described.

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Witnesses:

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