

(No Model.)

E. F. BAUDE.
DOOR SPRING.

No. 414,367.

Patented Nov. 5, 1889.

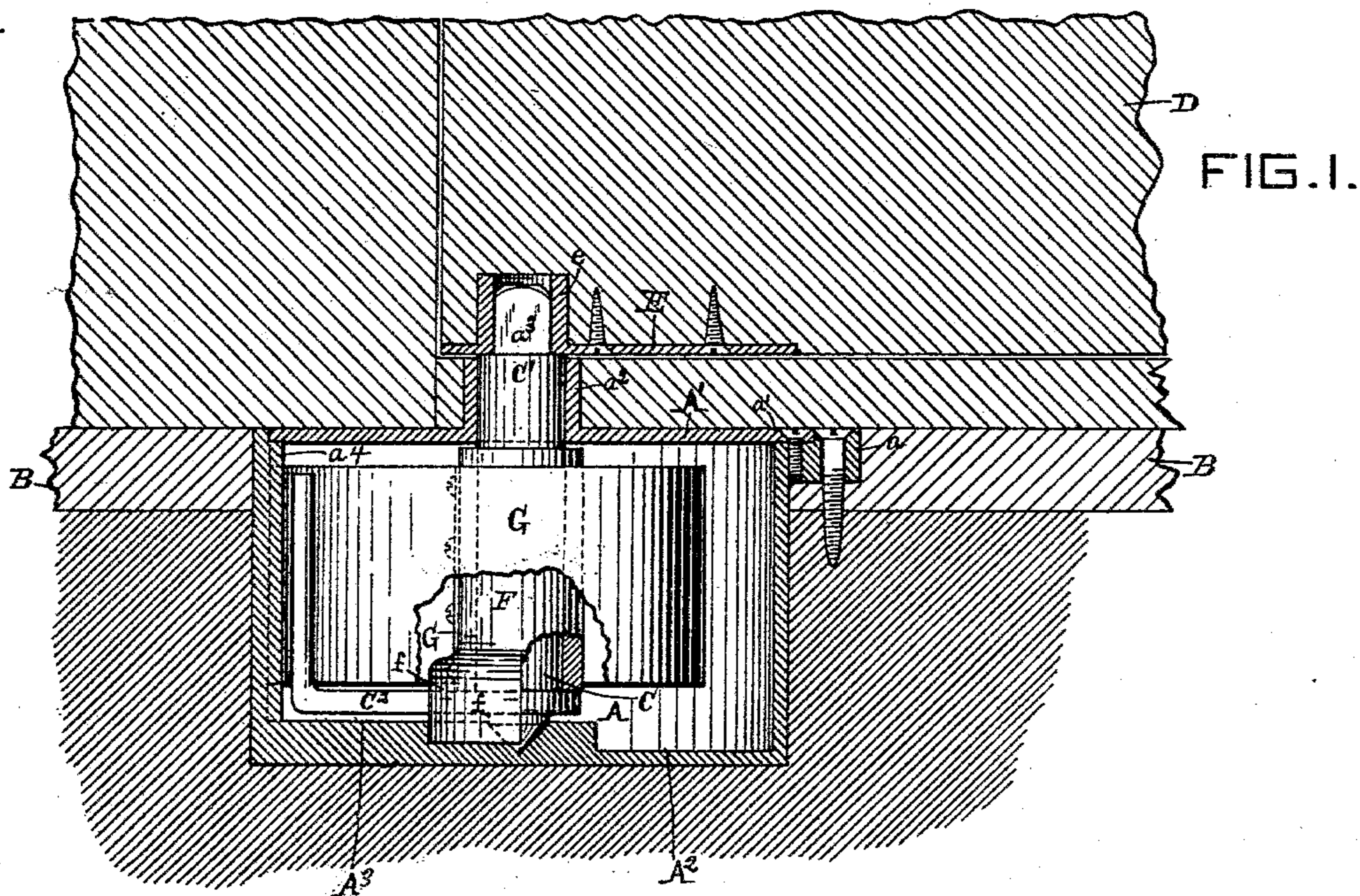
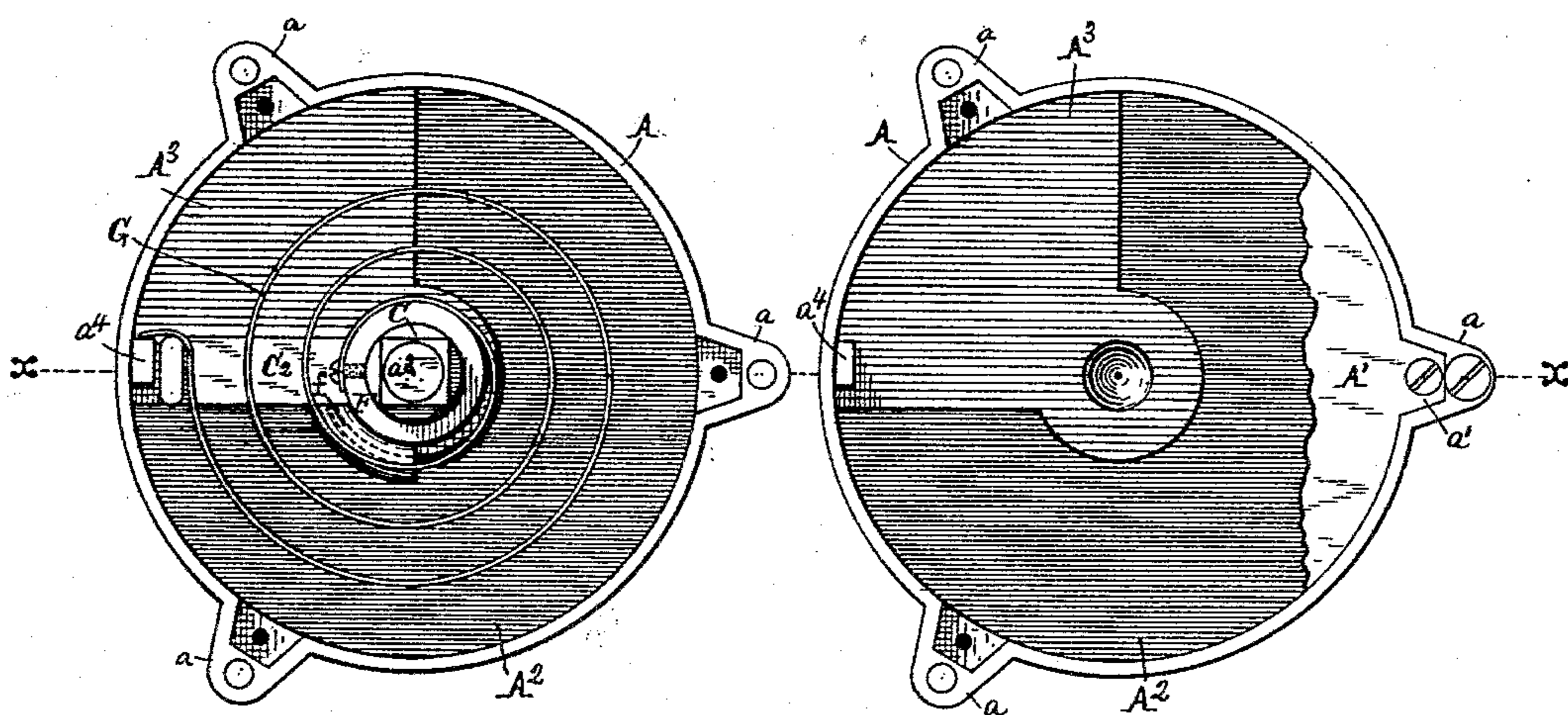


FIG. 2.

FIG. 3.



Witnesses

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EMIL F. BAUDE, OF CINCINNATI, OHIO.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 414,367, dated November 5, 1889.

Application filed June 5, 1889. Serial No. 313,134. (No model.)

To all whom it may concern:

Be it known that I, EMIL F. BAUDE, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in a Combined Check-Spring and Hinge for Doors, of which the following is a specification.

My invention relates to spring check-hinges for doors. Its object is a cheap compact check-spring and pivot for hinging doors, which, when in place, is wholly concealed and protected from injury.

The invention will be first fully described in connection with the accompanying drawings, and will then be particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is a view in axial section upon line xx of Figs. 2 and 3 of the case. The interior parts are in elevation, except the parts shown broken away. Fig. 2 is a plan view of the device with the top of the case removed. Fig. 3 is a similar view, but with the hinge-spring and connections removed and the top broken out, except a small portion which is left to show the manner of securing it to the box.

The box or case A is preferably molded in a single piece. It has outwardly-projecting lugs a to enter countersunk depressions in the floor B, which are formed around a circular opening in the floor to receive the box A. These lugs are countersunk on top to receive the lugs a' , which project from the top A'. The bottom of the box A has a segmental depression A² and a raised part A³. In the center of the bottom and in the raised part is a conical depression or step to receive the cone end of the spindle C, which is the lower pivot upon which the door D swings. The spindle C has a turned part C', which passes through a tubular projection a^2 on the top A', and a square or angular part a^3 , which enters a corresponding socket e in the socket-plate E, which plate is let into the lower edge of the door D. The pivot C has an angle-arm C² secured to it near its lower end, the horizontal part of which

extends out to near the perimeter of the case, and the vertical part of which extends up to near the top A'. The lever C² may be either a separate piece secured to the pivot C or it may be cast in one piece with it. The latter mode is preferable.

F is a tube, which is sleeved over the spindle C and has a downwardly-projecting segmental extension f , which extends into the depression A² in the bottom of case A. To this tube is riveted one end of the coiled spring G, which is formed, preferably, from a flat strip of steel, as shown. The opposite or outer end of this spring is turned into an outer bend to engage the upright arm of the angle-lever C², and also extends beyond the arm to engage an upright rib a^4 , formed on the inside of the case or box A. The rib a^4 acts as a stop for the outer end of the spring and prevents it from uncoiling.

To fit the parts together, the spring is first secured to the sleeve F, then coiled around the sleeve, and slipped over the spindle, which is first placed in the box A. The top A' is then secured in place by screws, which pass through lugs on the cap A' and are tapped into lugs a on the case. When applied for use, the box A is let through a circular opening in the floor or lower frame. The tubular extension a^2 passes up to a level with the carpet-strip, and the angular part a^3 of the spindle projects up above it to enter the socket e . The box A and its contents are wholly concealed and protected from dust or from any one tampering with the mechanism. When it is first inserted in place, I fill it with oil, so that it will not require any attention for an unlimited time.

To place the door in position, it is held in a slightly-inclined position and the socket e slipped over the angular end of the spindle C. The well-known lever-pivot is employed for the upper bearing.

It is obvious that the tension of the spring may be adjusted to suit any weight of door, and that the door will always be brought to rest at the closed position, no matter which way it is swung open. When swung in one direction, the lever-arm C² carries the outer end of the spring around, while the sleeve is

held stationary by its lower extension f bearing against the raised segmental part A^3 of the bottom of the case. When the door is turned open in the opposite direction, the sleeve F is partially revolved by the lever-arm C^2 , which engages the extension f of sleeve F . In either case the door is easily turned to open it and returned to its closed position without jar.

10 It is evident that mechanical changes might be made in the construction and relative arrangement of the parts without departing from the spirit of my invention. For instance, the lip or extension f of the sleeve F might be arranged to traverse a segmental groove in the bottom of the case A ; hence I do not confine myself to the exact construction shown and described, but consider all mere mechanical changes within the spirit
15 and scope of my invention.

What I claim is—

1. The combination, substantially as hereinbefore set forth, of the case, the spindle arranged to rotate therein and having the angular part a^3 extending through the top of
25 said case, the tube F , sleeved over said spin-

dle and having extension f to traverse a depression in the case-bottom, the angle-lever C^2 , actuated by said spindle, and the spring having one end secured to the sleeve and the opposite end engaging the vertical arm of the angle-lever C^2 , and a rib upon the inside of the case to stop said spring and prevent its uncoiling. 30

2. The combination, in a hinge and spring-check for doors, of the circular case A , having depression A^2 , raised part A^3 , and rib a^4 , the cover A' , having tubular extension a^2 , the spindle C , and angle-lever C^2 , formed in one piece, said spindle having the angular top a^3 extending through the top of the case and cone and resting in a similar depression in the bottom of the case, the sleeve F , fitting loosely over the spindle, and the spring G , secured to and coiled around the sleeve and having its outer end turned to engage the upright arm of the angle-lever and the rib on the case, substantially as specified. 35 40 45

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Witnesses:

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