

No. 671,434.

Patented Apr. 9, 1901.

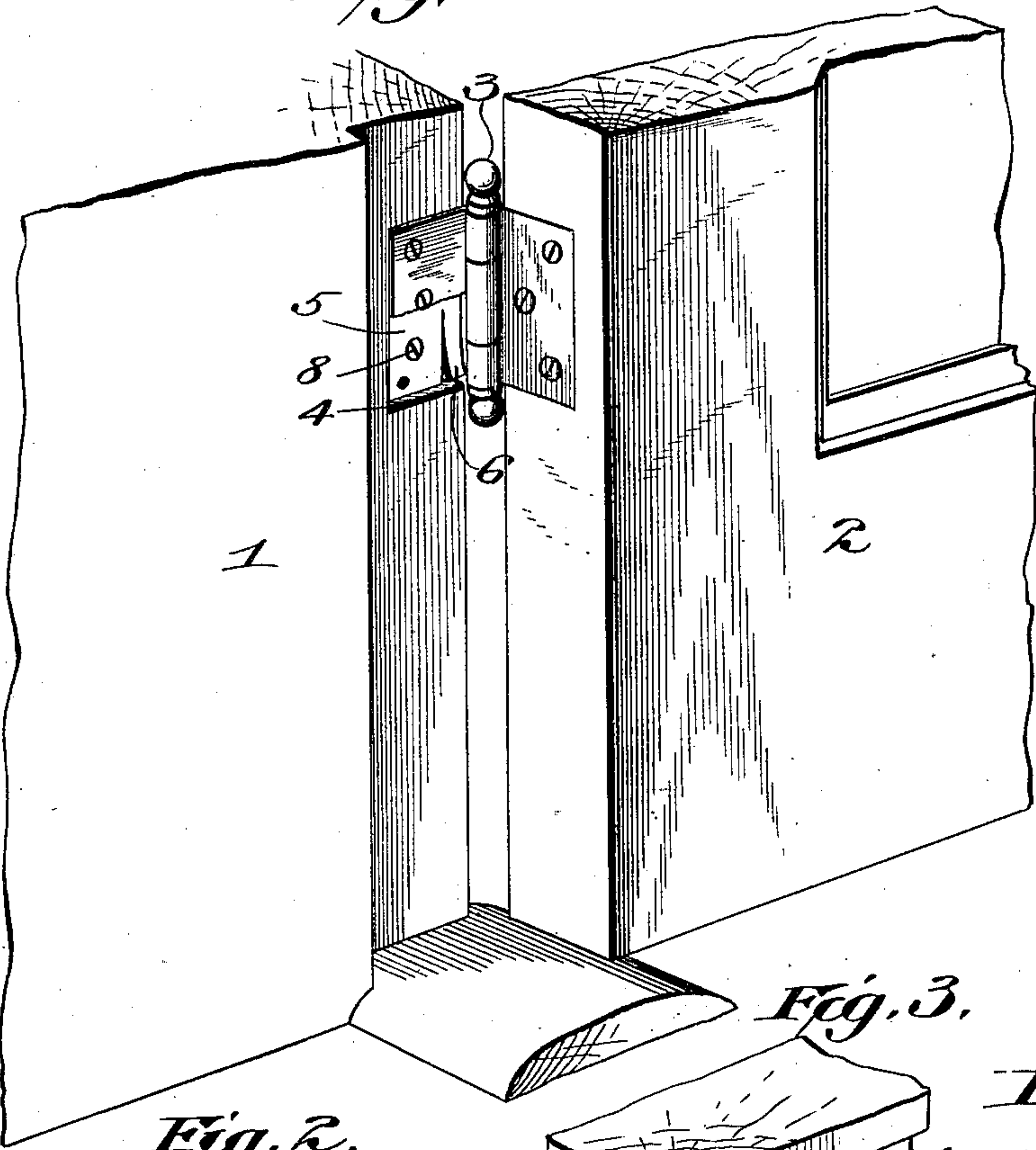
F. M. CHAMPION.

DOOR HINGE.

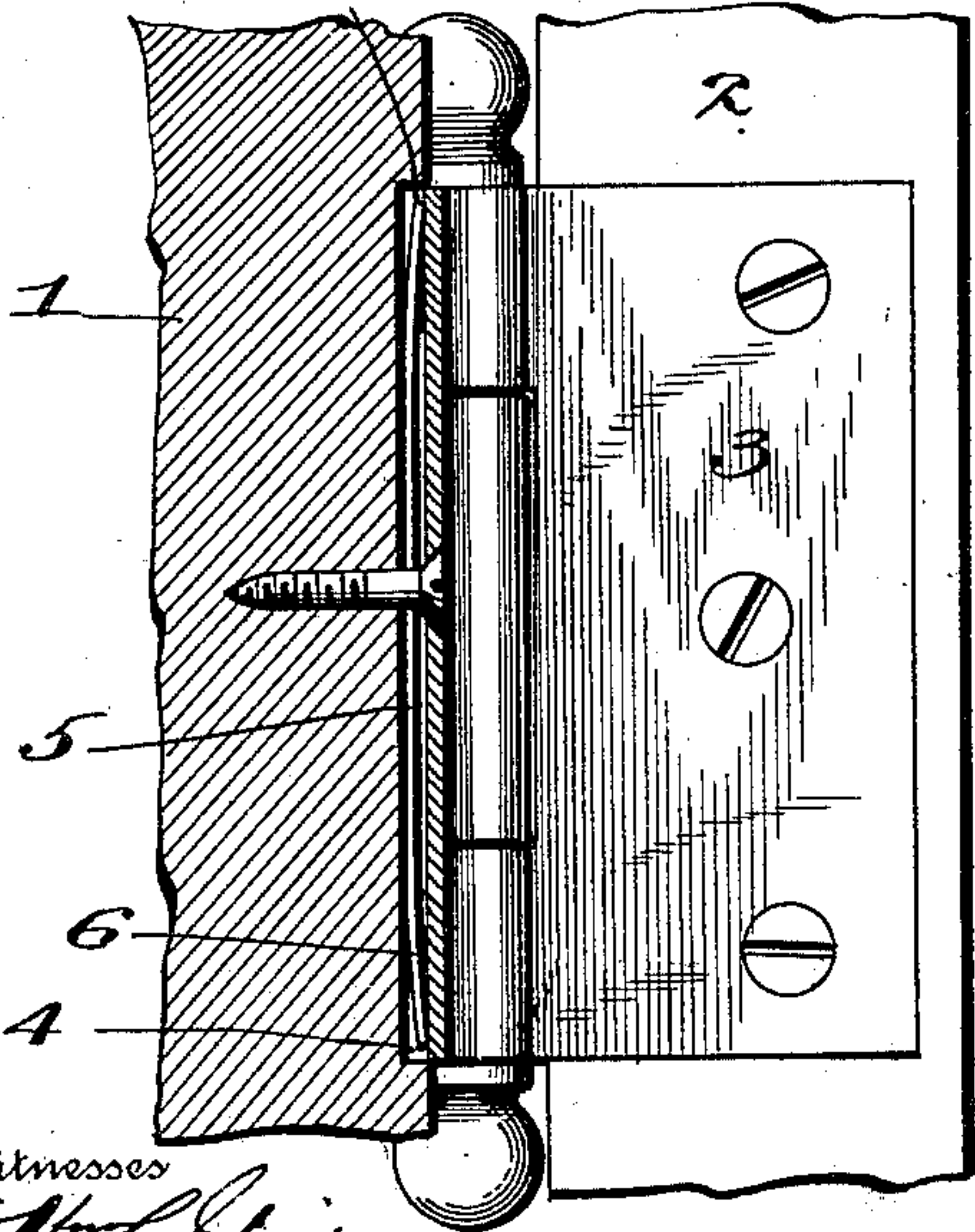
(Application filed June 2, 1900.)

(No Model.)

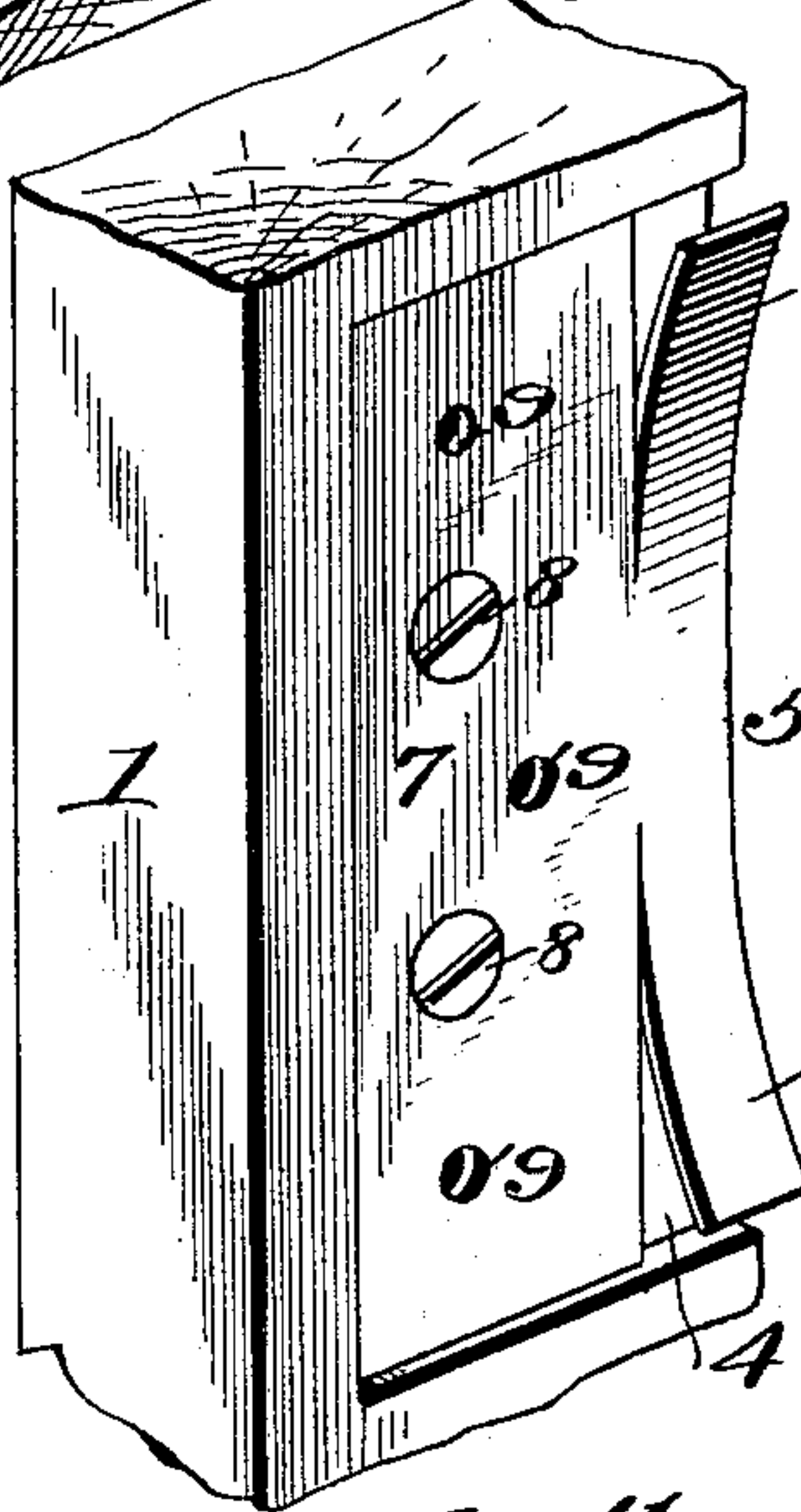
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

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By



# UNITED STATES PATENT OFFICE.

FRANCIS M. CHAMPION, OF CATLIN, ILLINOIS.

## DOOR-HINGE.

SPECIFICATION forming part of Letters Patent No. 671,434, dated April 9, 1901.

Application filed June 2, 1900. Serial No. 18,890. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS M. CHAMPION, a citizen of the United States, residing at Catlin, in the county of Vermilion and State of Illinois, have invented a new and useful Door-Hinge, of which the following is a specification.

My invention relates to door-hinges, and has for its object to produce a spring which may be inserted between the hinge and the jamb or other support for the purpose of adjusting the same in order to vary the position of the door within its frame.

With this object in view my invention consists in the improved construction of such a spring and the combination of the same with the hinge and its support, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a perspective view of a door provided with my improved hinge-spring, a portion of the hinge being broken away. Fig. 2 is a transverse sectional view of the hinge and its support through one of the retaining and adjusting screws. Fig. 3 is a perspective view of my improved hinge, and Fig. 4 is an edge view of the same.

Referring more particularly to the drawings, 1 indicates the jamb or side of a door-casing, to which a door 2 may be secured by means of the ordinary butt-hinge 3. These parts may be of the ordinary construction and all of them secured together in the well-known manner.

Seated in the recess 4 upon the jamb, within which the stationary leaf of the hinge is secured, is a suitable spring 5, which is adapted to engage with the rear face of the hinge-leaf and normally forces it out away from the jamb or out of its recess. The spring is preferably located near the outer edge or pivotal portion of the hinge, so as to exert its greatest force to the base edge for forcing the hinge out of the recess. This hinge may be formed in any suitable manner—as, for instance, by cutting two tongues 6 6 upon the outer edge of the metallic plate 7, which is secured in the bottom of the recess by means of the ordinary screws 8. The tongues are

curved, so as to cause their free ends to normally extend away from the bottom of the recess when the plate is in position, whereby they will engage with the leaf of the hinge and normally force it outward.

In using my improved spring the recesses in the jamb are cut a trifle deeper than usual for the reception of the plate, which is secured in the bottom thereof. The plate is provided with openings 9, which register with the openings in the hinge, so that when the hinge is placed in position upon the plate the ordinary screws can be passed through the leaf of the hinge and through the perforations in the plate into the jamb or door-frame. When the parts are constructed and arranged in this manner, it is evident that the leaf of the hinge can be adjustably secured within the recesses, and the position of the door can thereby be changed within the frame by varying the position of the hinges within the recesses. In case the outer edge of the door sags so as to engage with the frame or the weather-strip the upper hinge can be forced into the recess a sufficient distance to draw the top of the door in toward the jamb, and thereby cause the lower end to swing clear. If the door should swell so as to engage with the opposite jamb, both hinges can be tightened, which will draw the entire door toward the hinged side of the frame and make its free edge swing clear of the opposite side. In case the door should shrink the screws in the jamb can be slightly loosened, when the spring will automatically force the hinge outward a sufficient distance to cause the opposite edge to close in the desired manner. By locating the hinge between the screws and the pintle or pivot portion of the hinges a slight movement of the hinge will be increased at the pivotal point of the hinge, thereby enabling the hinges to be adjusted with a very slight turn of the retaining-screws.

With doors provided with my improved spring-plates it is evident that the doors can be adjusted so as to work properly by simply giving the screws a slight turn in the proper direction. It will also be evident that the same construction can be applied to hinges for other objects than doors—as, for instance, in gates and such like—and instead of flat



metal springs coil-springs can be substituted, or the springs can be formed from pieces of elastic material—as, for instance, rubber and such like.

5 I reserve the right to make such changes and alterations as will come within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by

10 Letters Patent, is—

1. In an automatic hinge, the combination, with a support, of a hinge secured thereto, and a metallic spring between the support and the hinge, said spring being located be-  
15 tween the point of attachment and the pivotal point of the hinge, substantially as described.

2. In an automatic hinge, the combination, with a support, of a hinge secured thereto,  
20 and a flat substantially bow-shaped spring between the hinge and the support, said spring being located between the point of attachment

and the pivotal point of the hinge, substantially as described.

3. In an automatic hinge, the combination, 25 with a recessed support, of a perforated plate therein, the outer edge of which is provided with an outwardly-projecting tongue at each end, and a hinge secured in said recess, the means of attachment for the hinge passing 30 through the plate, substantially as described.

4. A new article of manufacture, a hinge-spring consisting of a plate of metal, the outer edge of which is slotted nearly to the center, forming tongues, said tongues being curved 35 out of the plane of the plate at their free ends, the main portion being provided with two sets of perforations, one set being for fasteners and the other set for the passage of the hinge-screws, substantially as described. 40

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Witnesses:

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