No. 738,039. PATENTED SEPT. 1, 1903.

E. C. HOFFMAN.

HINGE.

APPLICATION FILED APR. 11, 1902.

NO MODEL.

Fig I.

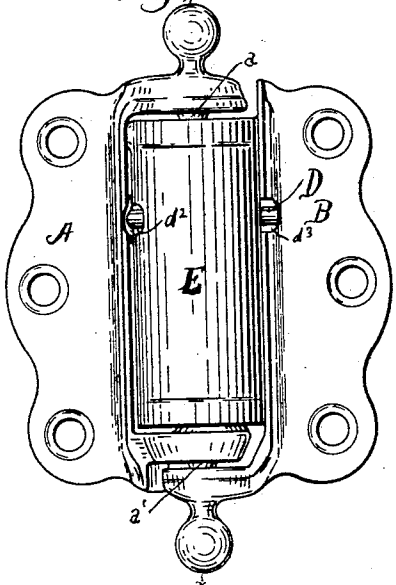


Fig II.

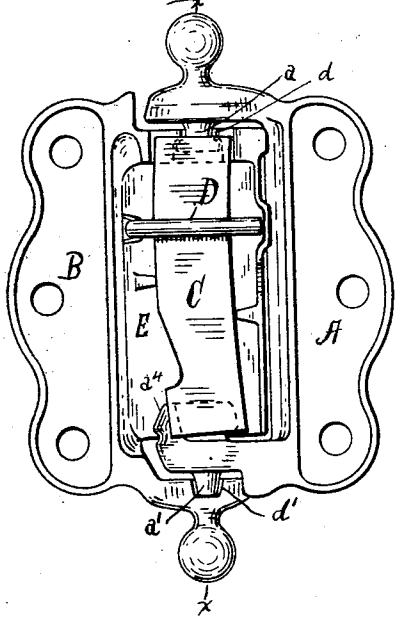


Fig III.

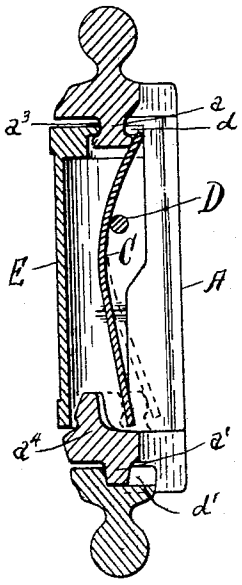


Fig IV.

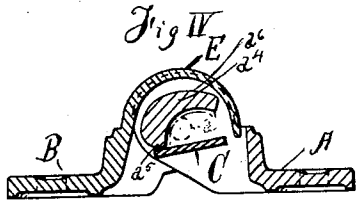
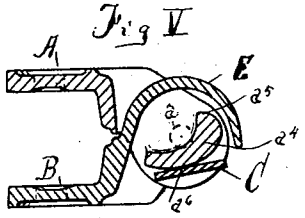


Fig V.



Witnesses:

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by

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his Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 738,039. Patented September 1, 1903.

UNITED STATES PATENT OFFICE.

EDWARD C. HOFFMAN, OF CLEVELAND, OHIO.

HINGE.

SPECIFICATION forming part of Letters Patent No. 738,039, dated September 1, 1903.

Application filed April 11, 1902. Serial No. 102,406. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. HOFFMAN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to spring-hinges, and more especially to such as are adapted for screen-doors.

The object of my invention is to construct a hinge in such a manner as to allow of the leaves being separated before or after the same are placed on the door and door-frame, and thus allow the door being removed and replaced without removing the leaves from either the door or the door-frame.

My invention consists in the peculiar construction of the hinge and assemblage of the parts, all of which will be more fully set forth and claimed.

In the drawings, Figure I is a view in elevation looking at the hinge from outside, and Fig. II is a view in elevation looking at the same from the inside. Fig. III is a vertical sectional view taken through line $x\ x$, Figs. I and II. Figs. IV and V are cross-sectional views illustrating the hinge in open and closed positions.

A B represent the leaves or respective members of the hinge, one of which is adapted to be secured to the door-casing and the other adapted to be secured to the door.

C indicates a leaf-spring by means of which and the retaining-pin D the members of the hinge are held in engagement against lateral displacement, said pin pressing against said spring and holding it in its position relative to both members of the hinge, as best shown in Figs. II and III.

One of the main features outside of that above enumerated is economy in construction of a hinge, which enables the pintle portion of the same to be cast in connection with the leaves and also enables the parts to be quickly and economically assembled.

With the above object in view the part A is cast with small pintle-lugs $a\ a'$, the upper pintle a being formed with a groove or annular recess a^3 and the lower pintle a' having lying directly above it a cam-shaped formation a^4, which is also formed integral with the leaf A. The pintle a is received and seated in a recess d, which acts as a journal and is made of such shape and contour as to engage the recess portion a^3 of the pintle a, thus preventing the vertical separation of the parts A and B, while still allowing of the hinge movement of both parts A and B. The lower pintle a' is received in a pocket d', formed opposite the part d and in connection with the leaf B.

The spring action of the leaves A and B in relation to each other is obtained through the flat spring C, one end of said spring pressing against the pintle a and the opposite portion of said spring engaging the cam a^4. The spring C is held in position against these parts a and a^4 by means of a pin D, which passes through a half-cylindrical casing E, which is formed integral with the leaf B. The pin D is driven through orifices $d^2\ d^3$, formed in said casing E in such a manner that it may be withdrawn, thus releasing the spring C and its engagement with the parts and allowing the leaves A and B to be separated.

The above structural features and assemblage of parts allow the tension of the spring C to be practically nothing when it assumes the position illustrated in Figs. I, II, and IV, at which time the pin D can be easily removed, thus allowing the spring to be removed and the parts A and B to be separated. This releasing of the tension of the spring C is accomplished by the shape of the cam a^4, which gradually increases in an outward radial direction from the point a^5, where it presses against the spring, as illustrated in Fig. IV, to a point a^6, where it rests against the spring, as illustrated in Fig. V, thus allowing the hinge or the leaves of the same to be locked in either position, holding the door open in one position, as illustrated in Fig. V, and holding it closed in the other position, as illustrated in Fig. IV, the tension of the spring against the cam a^4 in the position illustrated in Fig. V holding the door open and its position as illustrated in Fig. IV holding it closed.

It will be seen by the above that the hinge-leaves A and B may at all times be attached

to the door and the door-frame, respectively, being locked together by the pressure of the spring C, and that the action of the spring C in relation to the cam a^4 is a sliding action or a rolling action. In the latter case the wear of the parts is decreased, making the spring C longer lived.

In setting forth this invention I have illustrated certain details or structural features which I prefer to employ as best adapted for my purpose; but I do not, hence, wish to be limited to the same, inasmuch as they may be modified without departing from my invention.

What I claim is—

1. A hinge comprising two leaves or parts, one of said parts being provided with integral pintles, the other of said parts being provided with journals or seatings for said pintles, an eccentrically-disposed cam connected to one of said pintles, said cam adapted to rotate therewith, and a spring engaging both of said parts for holding the leaves together, and detachable means for retaining said spring in position.

2. In a hinge of the type set forth, the combination with two leaves or parts, pivotally hinged together, of pintles attached respectively to the upper and lower ends of one of said parts, and the opposite part or section provided with seats for the pintles, a cam located above one of said pintles and eccentrically disposed thereto, said cam adapted to rotate therewith, of a leaf-spring extending lengthwise of the hinge and engaging one of the pintles at one end of the spring and the cam at the other end thereof, as and for the purpose described.

3. A hinge of the type set forth comprising two leaves or sections, one of said leaves or sections having pintles, an eccentrically-disposed cam connected to and adapted to rotate with one of said pintles, said cam increasing in radii from said pintle, a leaf-spring engaging said cam and one of said pintles, removable means for holding said spring in place, and seats located in the other leaf or section, said seats comprising slots or recesses with open fronts whereby the pintles may be removed from the seats upon the removal of the spring, substantially as described and for the purpose set forth.

Signed at Cleveland, in the county of Cuyahoga and State of Ohio, this 15th day of January, 1902.

EDWARD C. HOFFMAN.

Witnesses:
E. B. DONNELLY,
W. E. DONNELLY.