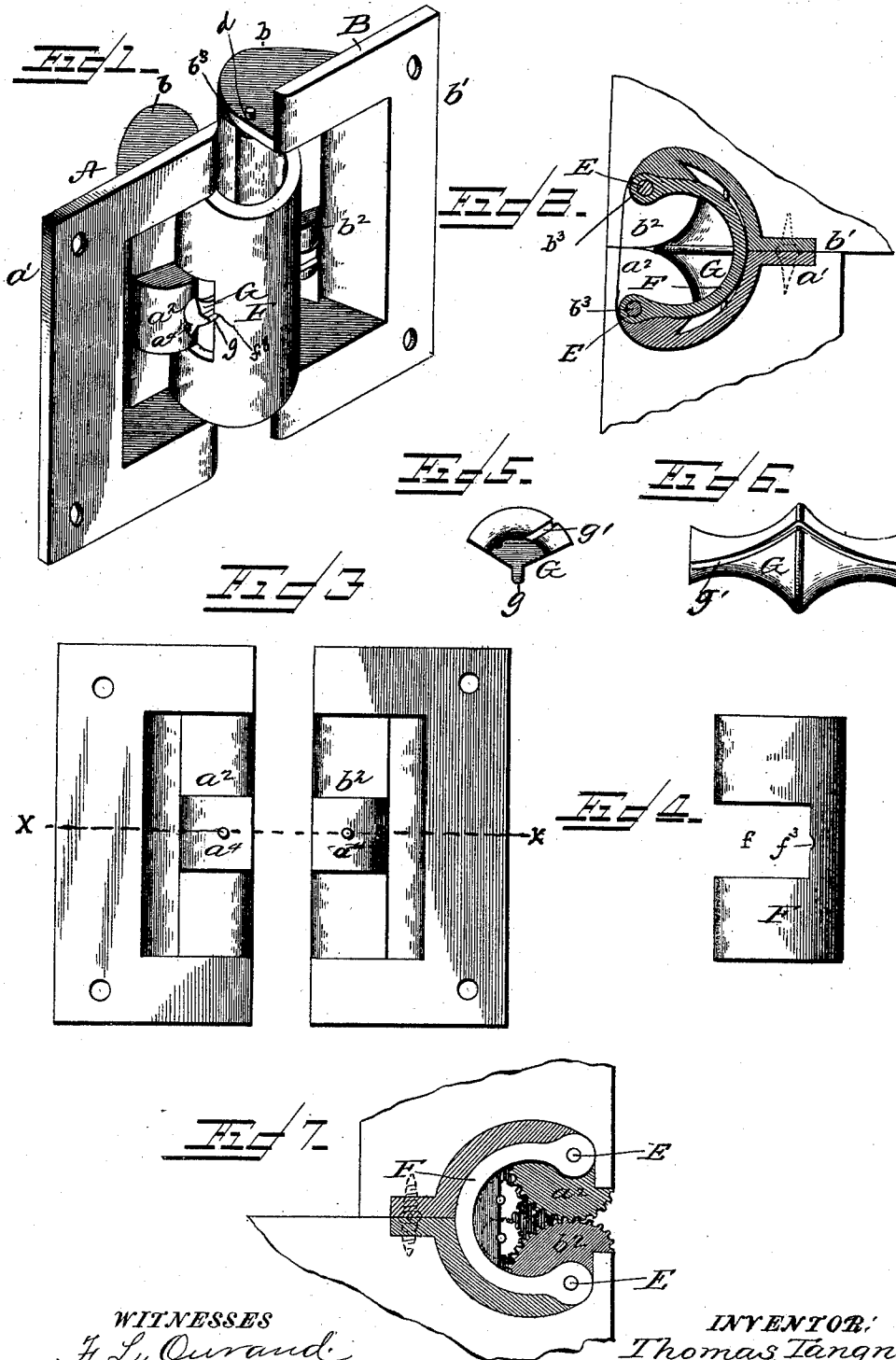


(No Model.)

T. TANGNEY.
HINGE.

No. 509,702.

Patented Nov. 28, 1893.



WITNESSES
H. L. Ourand
L. J. Johnson

INVENTOR:
Thomas Tangney.
by M. E. Chamblin & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

THOMAS TANGNEY, OF SOUTH SUPERIOR, WISCONSIN.

HINGE.

SPECIFICATION forming part of Letters Patent No. 509,702, dated November 28, 1893.

Application filed May 12, 1892. Serial No. 432,785. (No model.)

To all whom it may concern:

Be it known that I, THOMAS TANGNEY, a citizen of the United States, residing at South Superior, in the county of Douglas and State of Wisconsin, 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 appertains to make and use the same.

My invention relates to hinges; and has for its objects to provide a hinge that is readily applied to doors; that will be invisible when the door is closed; that will be neat in appearance when the door is opened; that is reversible in its application; and that carries a motion-transmitting device to give a regular movement to the parts. I attain these objects by certain combinations, arrangements, and construction of the parts as will be more fully set forth in the description and then pointed out in the claims.

Reference being had to the accompanying drawings and letters of reference marked thereon, Figure 1 is a perspective view of the hinge in an open position. Fig. 2 is a transverse-sectional view taken above and in the direction of the line $x-x$ of Fig. 3. Fig. 3 is an elevation of the two plates disconnected. Fig. 4 is a detail view of the link which connects the plates. Figs. 5 and 6 are an end and elevation respectively of the rocking cam; and Fig. 7 is a cross-sectional view of a modified form of my invention.

Referring to the drawings, A and B represent the two plates which are exactly the same in construction, and are provided each with flanges a' , b' , having apertures for securing the plates to the door and jamb respectively. The plates have each projecting therefrom a casing b , which casing is preferably curved, as shown in Figs. 1 and 2, to admit of the parts being compactly closed. Within the casing, and upon the upright portion thereof, are the lugs a^2 and b^2 , having each a projection a^4 therefrom, the said projections adapted to engage grooves in the rocking cam as will be explained hereinafter. The lugs a^2 and b^2 , and the upper portion of the casing b is provided with apertures d for connecting the plates together through the medium of the link F.

The link F is approximately semi-circular in cross-section and is provided at its central portion with the recess f , the said recess having the groove f^3 which serves as a pivoting point for the cam G. The inner portion of the link is somewhat enlarged and rounded to admit of the apertures b^2 said apertures corresponding to the apertures in the lugs and casing of the plates, so that when said apertures of link and casing are brought into alignment, a pin E inserted therein will secure the plates together. The recess f in the link is of sufficient size to admit the lugs a^2 and b^2 and also the cam G, which cam is provided with the projection g adapted to enter the groove f^3 of the link F, the said groove forming a pivot for the cam. The cam, best shown in Figs. 5 and 6, is approximately a segment of a circle in cross-section, and has produced upon its exterior surface a right and left spiral groove g' , the said grooves preferably meeting in the central portion of the cam. The curved portion of the cam is concaved to agree with the curvature of the lugs a^2 , b^2 , of the plates which lugs form a bearing surface for the cam, while the projection a^4 upon the lugs are adapted to enter the grooves of the cam and to give movement to the same.

It is obvious that should one of the plates be fixed and the other allowed to swing freely, the projections a^4 upon the lugs will be nearer together when the hinge is closed. Should the free plate now be moved the projection upon that plate will follow the groove in the cam and cause it to rock upon its pivot g , thus causing the cam to move laterally upon the projection of the other plate. The cam being carried by the link will cause the link to move upon its pivot, thus giving a regular rate of motion to the link and plate respectively. By this means the irregular movement and opening of the door is obviated. To accomplish the same results other means may be employed as shown in Fig. 7, in which teeth are formed upon the lugs a^2 , b^2 and adapted to engage each other. The lugs also engage intermediate gears which in turn engage the other, the said gears being journaled upon and carried by the link.

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

1. A hinge composed of two plates, a link connecting the plates, a motion-transmitting device located upon said plates, whereby a regular movement is imparted to the link and plate respectively, substantially as described.

2. A hinge composed of two plates, a link connecting the plates, lugs upon the plates, a motion-transmitting device bearing upon the lugs and carried by the link, whereby a regular movement is imparted to the link and the plate respectively, substantially as described.

3. A hinge composed of two plates, a link connecting the plates, a cam having grooves upon its surface and located between the plates and the link, projections upon the plates for engaging said grooves, whereby a regular movement is imparted to the plate and the link, substantially as described.

4. A hinge composed of two plates having each a projecting casing therefrom, a link provided with a recess connecting the plates, lugs upon the casing adapted to enter said recess, a rocking cam, as G, pivoted in the recess and bearing against the lugs, the cam having a right and a left spiral groove upon its exterior surface, projections upon the lugs adapted to engage said grooves, whereby a regular movement is imparted to the link and the plate, the whole adapted to close compactly, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS TANGNEY.

Witnesses:

GEO. A. SHEDD,
C. F. REED.