

(Model.)

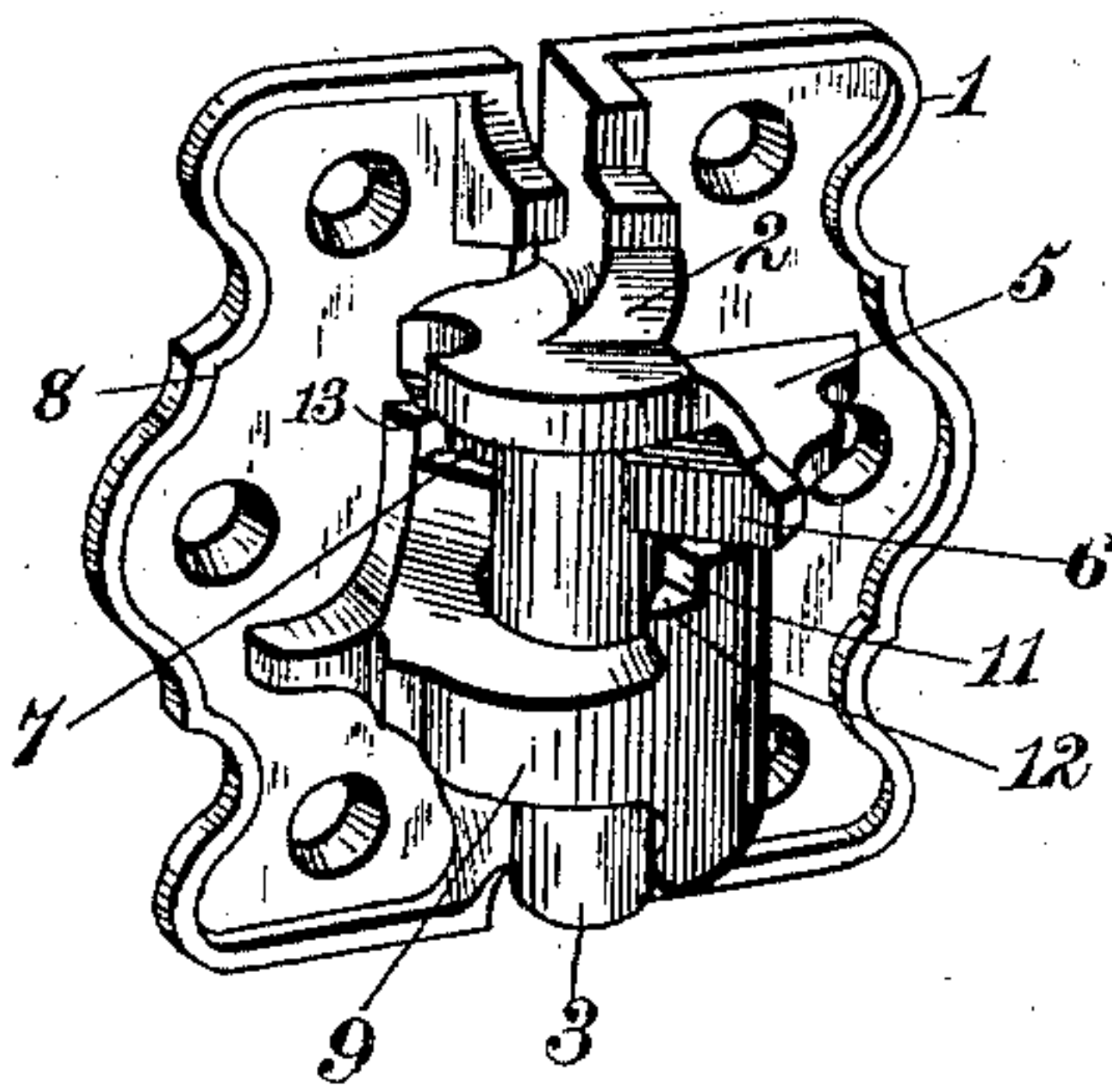
J. K. CLARK.

LOCK HINGE.

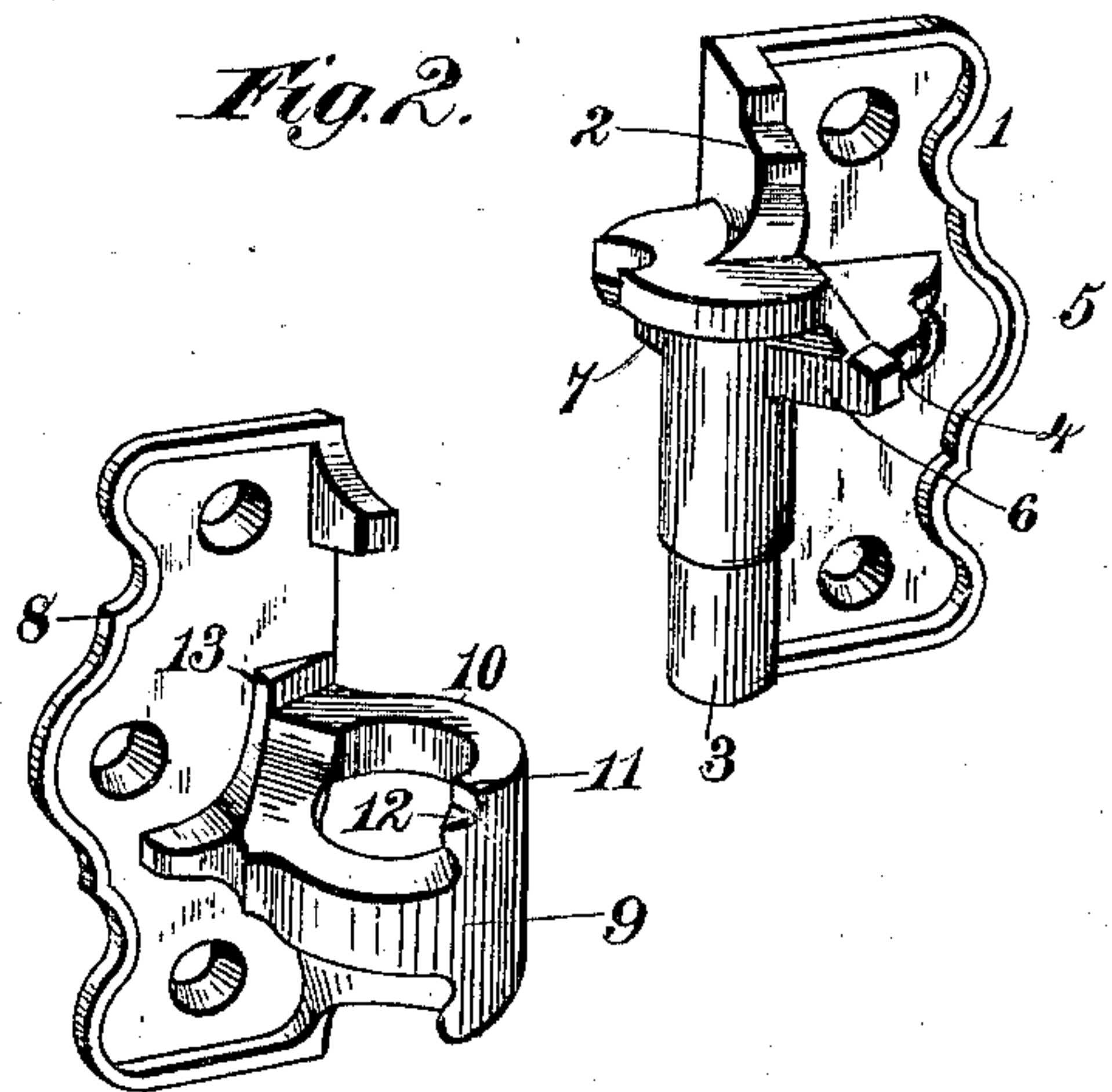
No. 277,680.

Patented May 15, 1883.

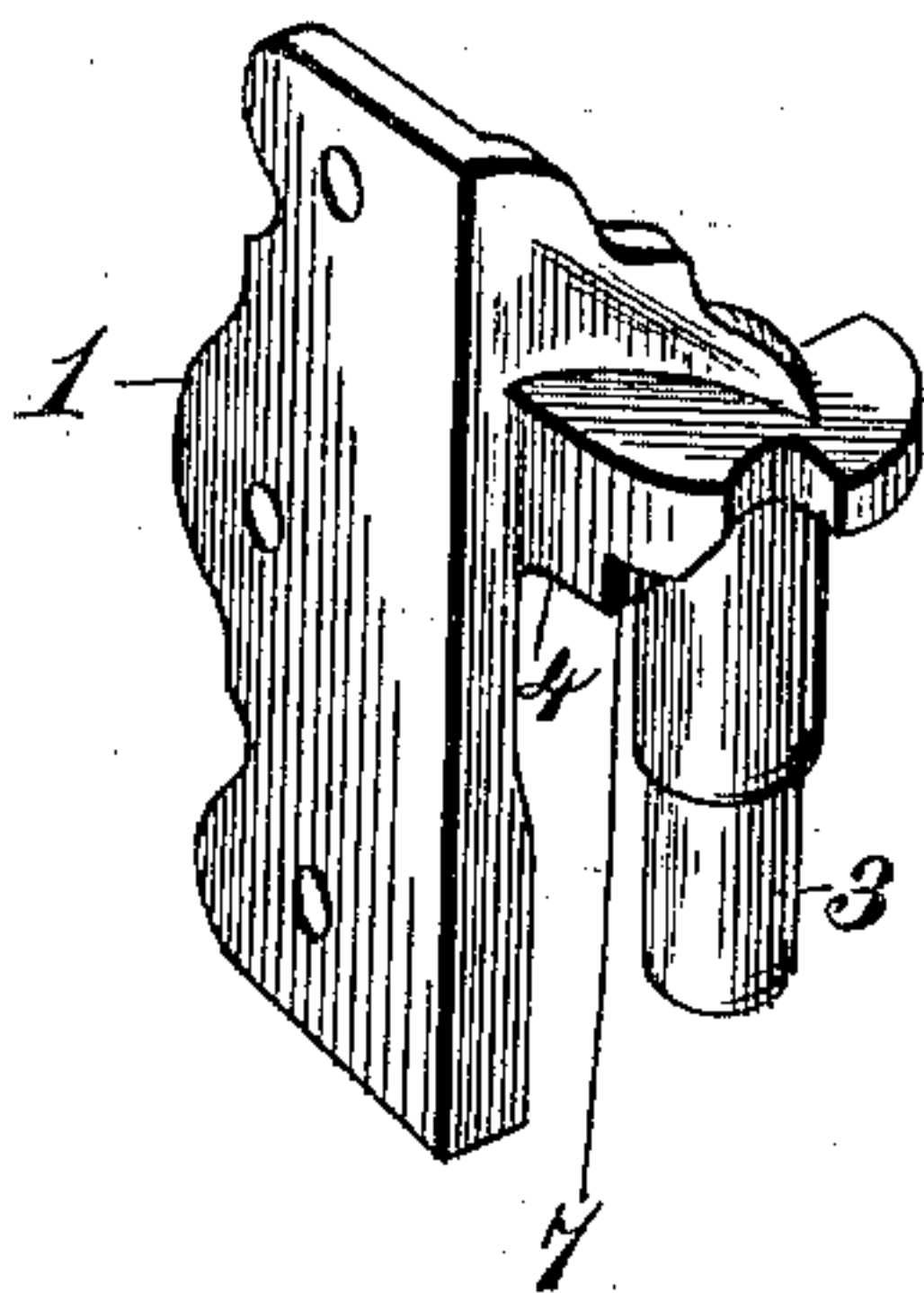
*Fig. 1.*



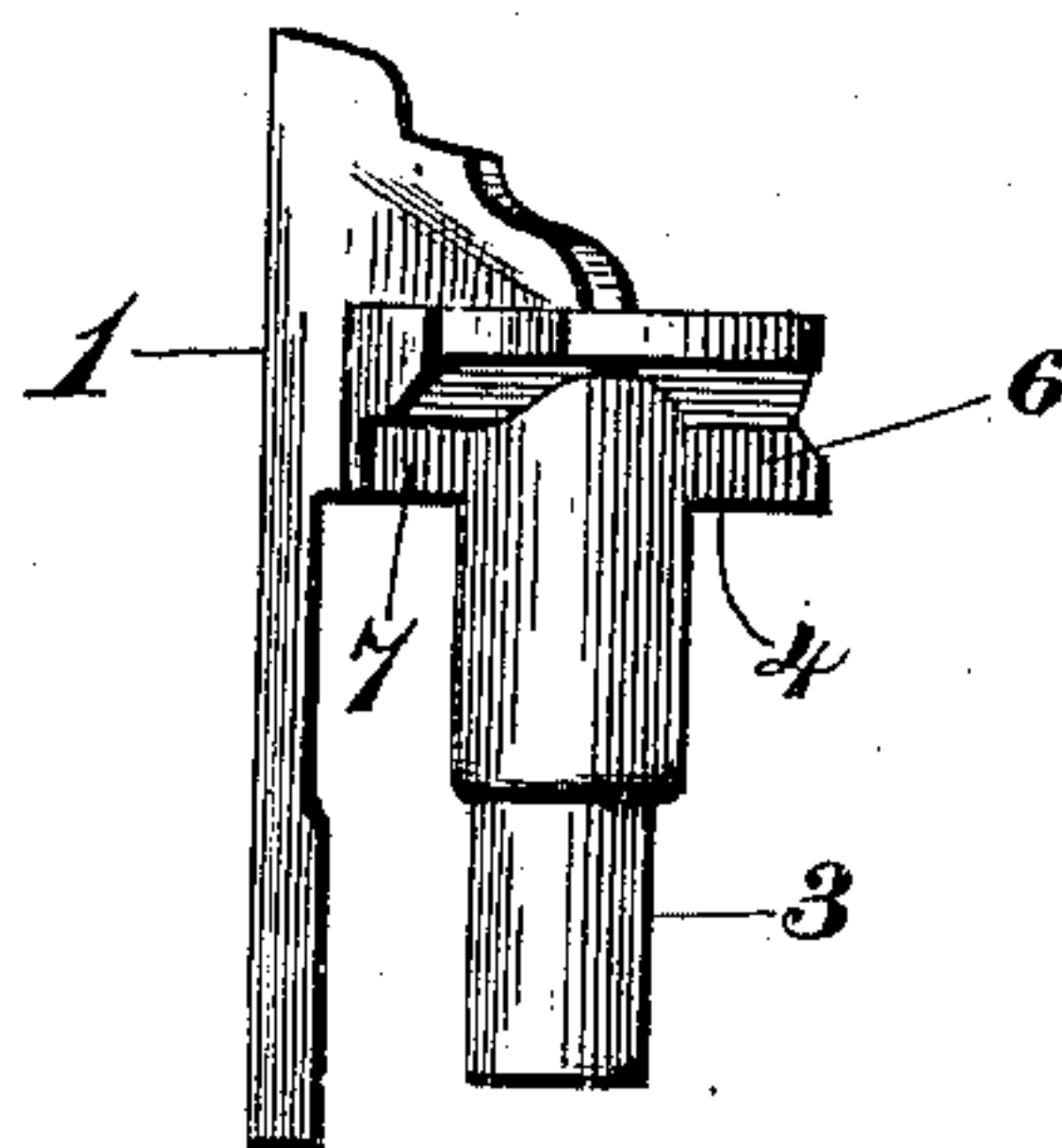
*Fig. 2.*



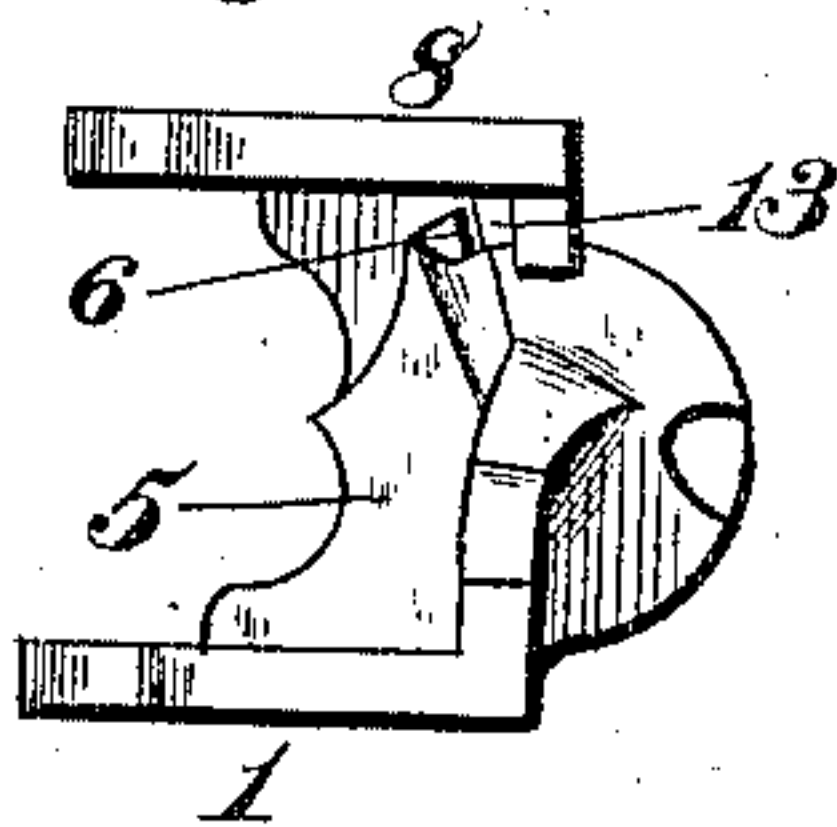
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

JOHN K. CLARK, OF BUFFALO, NEW YORK.

## LOCK-HINGE.

SPECIFICATION forming part of Letters Patent No. 277,680, dated May 15, 1883.

Application filed September 1, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN K. CLARK, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Lock-Hinges, of which the following is a specification.

This invention relates to that class of hinges for window blinds or shutters known as "gravity locking-hinges," which are constructed to retain the blind or shutter in an open position, and parallel, or substantially so, with the wall of the building, so that the blind or shutter, when opened, will not only be prevented from striking the wall, but will be locked in its open position. Several styles of such hinges are in use; but those employed most extensively are constructed of two leaves, one leaf having an attached eye or socket-piece, and a horizontal plane or bearing-shoulder around the upper edge of the eye, which terminates at each end in an inclined plane, the other leaf having an attached pin or pintle, around the upper end of which is a horizontal plane or bearing in the form of a projecting flange which terminates at each end in similar inclined planes, all in such manner that when the hinge is in position and the blind or shutter opened it will turn or move in a horizontal plane until the inclined planes or bearings are coincident, when the blind or shutter will suddenly descend by gravity until the inclined bearings engage, thereby limiting the further turning of the blind or shutter and holding it in such open position. These inclined planes or bearings have been found objectionable, in that sudden gusts of wind catch the blind or shutter and close it, the inclines affording this being done easily by reason of one freely riding up the other. Further than this, the inclined planes or other devices which form the back stop to the blind or shutter—that is, the stop which prevents the latter striking the wall of the building—have always been located beneath the horizontal planes or bearings, and hence when the blind or shutter is suddenly thrown open it first descends, and then the back stops of the hinge engage each other, which results in such violent concussion as to frequently fracture the hinges, and thereby render them useless.

The objects of my invention are to avoid such objections, to provide simple and efficient means for causing the back stops to first engage and then permit the movable part of the hinge to descend and engage the locking-shoulders, so that the back stop subserves the function of directing the immediate and certain engagement of the locking-shoulders, and to provide such a construction and arrangement of parts as will absolutely prevent the sudden closing of the blinds or shutters by sudden gusts of wind without the employment of pivoted locking-latches and similar extraneous devices. These objects I accomplish by the construction of gravity locking-hinge illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of a hinge made in accordance with my invention, the parts being in the position they occupy when the blind or shutter is closed; Fig. 2, a detached perspective view, showing the two parts of the hinge disconnected; Fig. 3, a perspective view, looking from the rear side of that leaf which carries the pin or pintle; Fig. 4, an edge view of Fig. 3, to clearly show the locking-shoulder and back stop on the pin or pintle part of the hinge; and Fig. 5, a top view of the hinge in the position it occupies when the blind is in an open position.

The hinge is composed of but two pieces—that is, two leaves which are cast integral with their concomitants.

The male part of the hinge is composed of a leaf, 1, provided with a lateral projecting brace-arm, 2, carrying the cylindrical pin or pintle 3, at the upper end of which, where it joins the brace-arm, is formed a horizontal plane or bearing, 4, in the form of a lateral flange, 5, which terminates at one end in a vertical abutment, 6, which constitutes one of the back stops, and at the other end in a vertical shoulder, 7, which constitutes one of the locking-shoulders.

The female part of the hinge is composed of a leaf, 8, formed with a lateral extension in the form of the eye or socket-piece 9, which is provided at its upper edge with a horizontal plane or bearing, 10, the latter terminating at its outer end in a vertical shoulder, 11, at the base of which is the projecting rest, 12, which forms a right-angled recess. The leaf 8 is



formed in its outer face with an upright lateral abutment, 13, which projects above the horizontal plane or bearing 10 and constitutes the other back stop.

5 It is essential for the practical use of the hinge that the vertical locking-shoulders 7 and 11 should not exceed one-eighth of an inch in length, or that, when engaged, such should be the extent of their engagement, as otherwise  
10 considerable power would be essential to lift the blind or shutter to disengage such shoulders when it became desirable to close the blind; and it is further essential that the opposing faces of the locking-shoulders should  
15 stand in a plane parallel, or substantially so, with a right line taken longitudinally through the pin or pintle of the hinge, in order that there will be a firm, square lock or bearing between the shoulders when the hinge is opened,  
20 as otherwise the action of sudden gusts of wind will throw the blind closed by causing the ordinary incline to slide up the other incline, as hereinbefore stated.

Another essential feature in the structure of  
25 my improved hinge is the location and arrangement of the back stop or abutment, 13, so as to project or extend above the plane of the horizontal bearing 10 on the eye or socket-piece, the object of which, as before stated, is  
30 to cause the back stops to engage or abut before the moved part of the hinge begins to descend by gravity to lock the hinge in an open position. This arrangement of back stop subserves the function of directing the immediate  
35 engagement or interlocking of the locking-shoulders, while it relieves the concussion resulting in that form of hinge where the moved part of the hinge descends by gravity to engage the back stops.

40 The operation of the hinge will be obvious from the foregoing; but in explanation it may be stated that in opening the blind the horizontal plane or bearing 4 on the male part of the hinge moves around on the horizontal plane

or bearing 10 on the female part until the vertical abutment or back stop, 6, on the male part comes against the vertical abutment or stop 13 on the female part, which stops serve to receive the shock incident to throwing the blind suddenly open. At this moment, but after the  
50 back-stops have come in contact, the blind, with the male part of the hinge, descends slightly and causes the shoulder 7 on the male part to interlock or engage the shoulder 12 on the female part, thereby locking the hinge  
55 in its open position and holding the blind from the wall of the building.

What I claim is—

1. In a gravity lock-hinge of the character described, wherein the two leaves are provided  
60 with horizontal planes or bearings and interlocking shoulders, the back stop or abutment, 13, extending upward above the plane of the horizontal bearing 10 to receive the impact of the moved part 1 of the hinge and to direct  
65 the engagement of the locking-shoulders, substantially as described.

2. In a gravity lock-hinge consisting of two parts only, the combination of one leaf, having the pin or pintle, the horizontal bearing around  
70 the same, and the vertical back stop and locking-shoulder at the ends thereof, with the other leaf, having an eye or socket-piece, a horizontal bearing, and the locking-shoulder and back stop at the ends thereof, the latter  
75 back stop extending above the plane of the horizontal bearing to receive the impact of the moved part of the hinge and direct the engagement of the locking-shoulders, substantially as described.  
80

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN K. CLARK.

Witnesses:

JOHN A. FRANKE,  
HENRY R. CLARK.