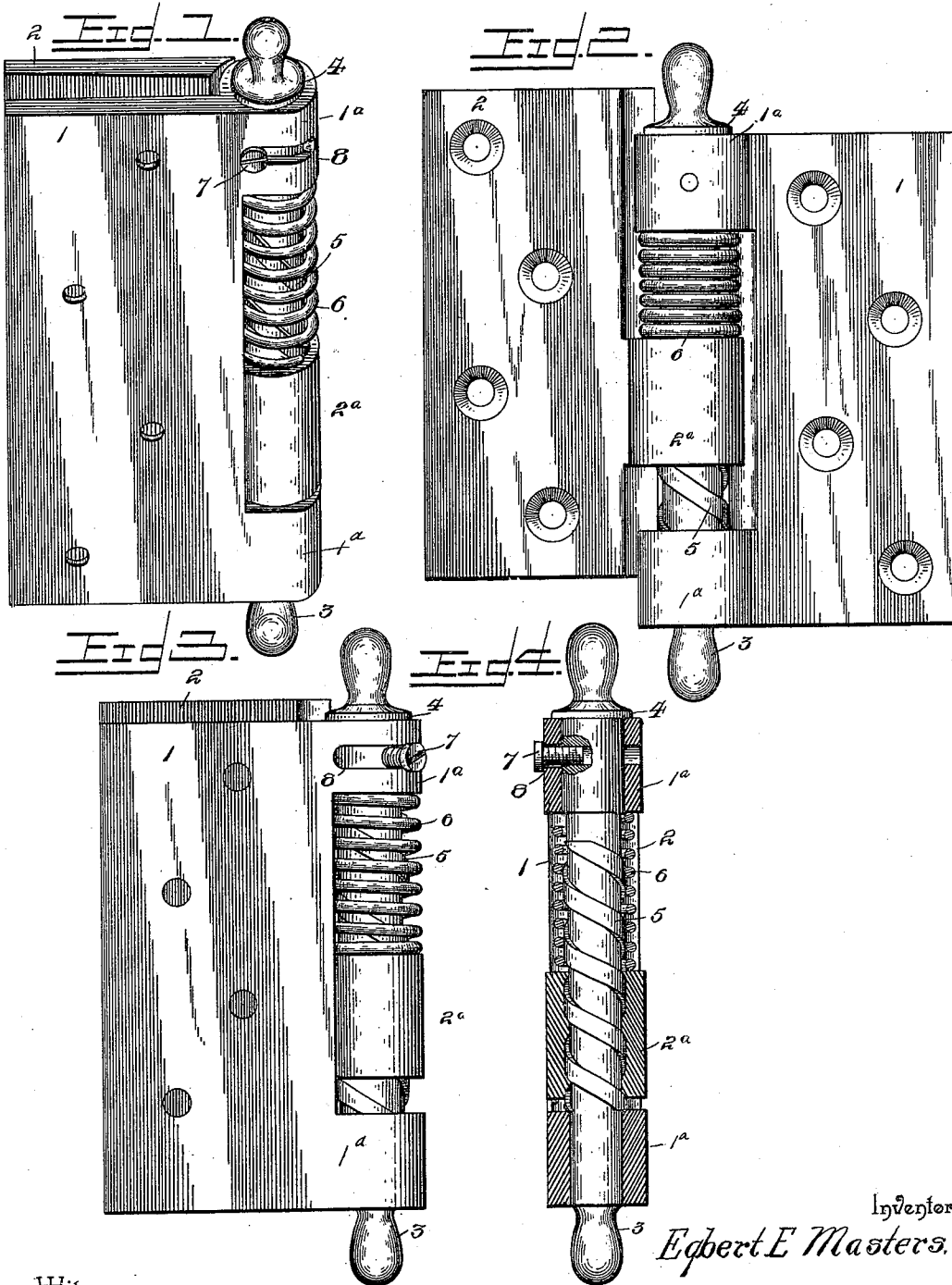


(No Model.)

E. E. MASTERS.
SPRING HINGE.

No. 583,536.

Patented June 1, 1897.



Witnesses
H. J. Ladd.

[Signature]

By his Attorneys,

Inventor
Egbert E. Masters.

[Signature]

UNITED STATES PATENT OFFICE.

EGBERT E. MASTERS, OF SACRAMENTO, CALIFORNIA.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 583,536, dated June 1, 1897.

Application filed June 13, 1896. Serial No. 595,410. (No model.)

To all whom it may concern:

Be it known that I, EGBERT E. MASTERS, a citizen of the United States, residing at Sacramento, in the county of Sacramento and State of California, have invented a new and useful Hinge, of which the following is a specification.

My invention relates to hinges adapted for use in connection with doors, gates, and similar closures, and particularly to that class of spring-hinges wherein the swinging leaf is elevated by a cam or screw connection to raise the closure as it is opened and allow it to descend as it is closed.

The object in view is to provide means whereby the point of repose of the hinge may be adjusted to vary the point in its rotary movement at which the vertical movement of the swinging leaf terminates.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a butt-hinge constructed in accordance with my invention, the leaves being folded or closed together to occupy parallel planes. Fig. 2 is an elevation of the same with the leaves open or arranged in a common plane. Fig. 3 is an elevation with the parts arranged as shown in Fig. 1, the hinge-pin being arranged to elevate the swinging leaf. Fig. 4 is a vertical section taken in the plane of the axis of the hinge-pin.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 and 2 designate, respectively, the fixed and swinging leaves of a butt-hinge provided with registering eyes 1^a and 2^a, engaged by the axial hinge-pin 3, which is shouldered, as at 4, above the uppermost eye 1^a to prevent accidental displacement. The hinge-pin is threaded or provided with cam-faces 5 to cooperate with corresponding threads or cam-faces in the eye 2^a of the swinging leaf, whereby as said leaf is swung from the position shown in Fig. 1 to that shown in Fig. 2 it is elevated to raise the closure supported by the hinge and thus remove the lower edge of said closure from contact with the floor or

other surface above which it operates. It is obvious that the weight of the swinging member or leaf, together with that of the closure supported thereby, is sufficient, under ordinary circumstances, to cause the leaf 1 to swing from the open position shown in Fig. 2 to the folded or closed position shown in Figs. 1 and 3; but in order to insure this folding or closing operating of the swinging member or leaf I preferably interpose an actuating-spring 6 between the eye 2^a and the uppermost eye 1^a, whereby the swinging member is depressed when released.

By rotating the hinge-pin independently of the members of the hinge the swinging member may be elevated or depressed with relation to the fixed member to correspondingly adjust the closure and bring its lower edge in close contact with the sill without causing unnecessary friction, such adjustment serving to compensate for wear, shrinkage, and the like, and maintain a sufficiently-tight joint between the lower edge of the closure and the sill to exclude air, rain, and snow, and thus dispense with weather-strips and equivalent devices. If this hinge-pin is adjusted to elevate the movable leaf to such a point that it is adapted to reach a position parallel with the stationary leaf before the eye 2^a comes in contact with the lowermost eye 1^a, the gravity of the closure, together with the tension of the actuating-spring, will cause the closure to be closed when released; but if it is desired to cause the closure to reach a point of repose (so far as a vertical movement is concerned) before it is closed, or while it is more or less open, the hinge-pin should be adjusted to cause the eye 2^a to come in contact with the lowermost eye 1^a before the swinging leaf reaches the limit of its closing movement, or before it reaches its position parallel with the stationary leaf. This arrangement of the point of repose of the hinge at an intermediate point of the swinging movement of the leaf 2 does not form a stop for the swinging leaf, however. The closure may be swung in either direction from this point of repose, but the closing movement thereof is accomplished without vertical movement, inasmuch as the eye 2^a rotates upon the upper end of the lowermost eye 1^a, and all of the weight of the swinging leaf and

the closure attached thereto is carried by said lowermost eye 1^a.

Various means may be employed for securing the hinge-pin at the desired revoluble adjustment, but in the drawings I have illustrated a simple and efficient construction wherein a set-screw 7 is threaded in a transverse socket or opening in the hinge-pin near its upper end and extends through a horizontal slot 8 in the uppermost eye 1^a of the stationary member. After loosening this set-screw the hinge-pin may be turned in either direction to arrange the leaves vertically in the desired relative positions and then may be permanently secured by again tightening the set-screw.

The advantage derived from the use of the revolubly-adjustable hinge-pin lies in the fact that it provides for maintaining the closure normally in a partially or wholly open position without in any way interfering with the movement of the closure in either direction from this point of repose to either close or open the same. In arranging the parts to hold a closure in a partially-open position it is necessary to adjust the hinge-pin of only one hinge to cause the eye on the swinging member of said hinge to reach its point of repose, so far as vertical movement is concerned, when the closure is at the desired point of its swing. The moment the swinging eye of one of the hinges reaches a point of repose it relieves the other hinge of the weight of the closure, and hence renders inoperative the coacting cam-faces without in any way interfering with the movement of the closure in either direction from said point of repose.

In addition to serving as a means for securing the hinge-pin at the desired adjustment with relation to the stationary leaf of the hinge the set-screw operates as a means for preventing displacement of the hinge-pin or the disengagement thereof from the registering eyes of the leaves. Said screw must be removed in order to allow the hinge-pin to be withdrawn to disconnect the leaves.

From the above description it will be seen that the lowermost eye 1^a forms a permanent stop to limit the vertical movement of the swinging leaf by being arranged in the path of the eye 2^a, said stop not interfering with the rotary movement of the swinging leaf, but, on the other hand, serving as a bearing therefor.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit

or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a hinge, the combination of leaves having registering eyes, a hinge-pin engaging said eyes and provided with screw or cam faces coöperating with corresponding faces in the eye of the swinging leaf, and a permanent bearing for limiting the downward movement of the swinging leaf, said hinge-pin being revolubly adjustable to vary the point in the rotary movement of the swinging leaf at which its downward movement is checked by said bearing, substantially as specified.

2. In a hinge, the combination of leaves having registering eyes, a revoluble hinge-pin engaging said eyes and provided with cam-faces coöperating with corresponding faces in the eye of the swinging leaf, a permanent bearing on the fixed leaf for limiting the downward movement of the swinging leaf, and a set-screw threaded in an opening in the hinge-pin and engaging a slot in an eye of the fixed leaf, whereby the hinge-pin may be secured at any desired adjustment to vary the point in the rotary movement of the movable leaf at which its downward movement is checked by said bearing, substantially as specified.

3. In a hinge, the combination of stationary and movable leaves having registering eyes, the eye of the movable leaf being arranged between those of the stationary leaf, a hinge-pin revolubly fitted in the eyes of the stationary leaf and threaded in the eye of the movable leaf to form coöperating cam-faces, an actuating-spring interposed between the eye of the movable leaf and the upper eye of the stationary leaf, said eye of the movable leaf being limited in its downward movement by contact with the lower eye of the stationary leaf, and a set-screw engaging the hinge-pin and extending through a slot in one of the eyes of the stationary leaf whereby the hinge-pin may be secured at the desired adjustment with relation to the stationary leaf, said set-screw also serving to secure the hinge-pin against displacement, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EGBERT E. MASTERS.

Witnesses:

CHAS. R. WILCOX,
H. P. DOW.