A. L. FOOSE.

HINGE.

APPLICATION FILED DEC. 26, 1911.

1,129,284.

Patented Feb. 23, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

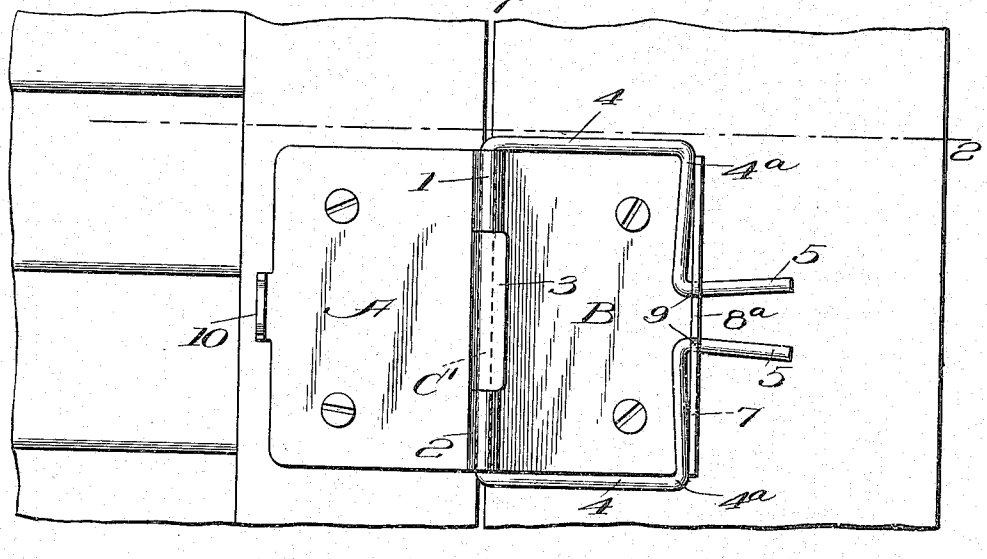


Fig. 2.

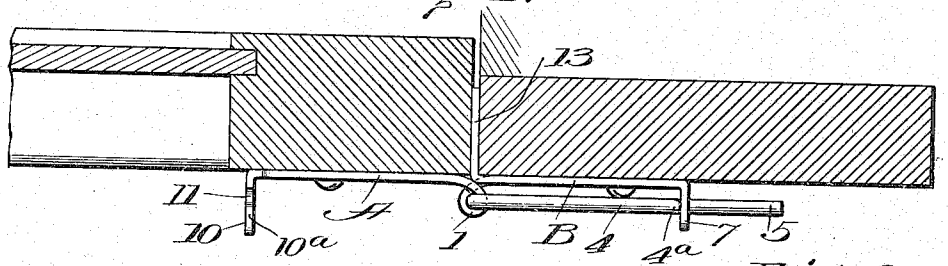


Fig. 4.

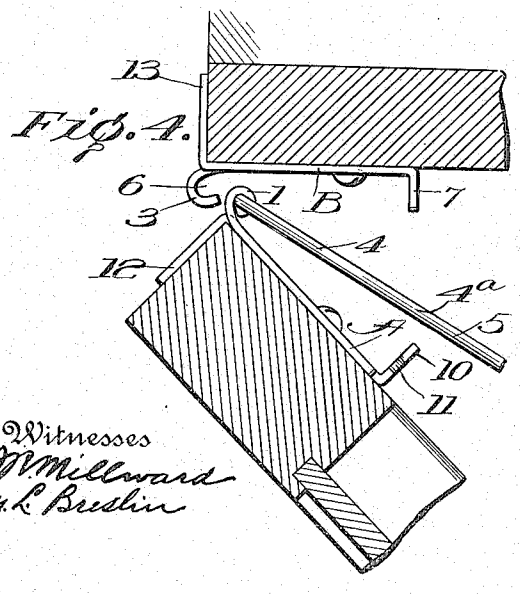
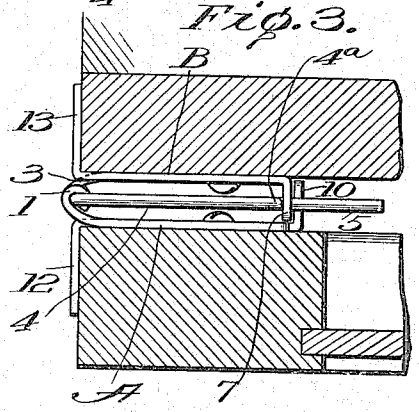


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 5.

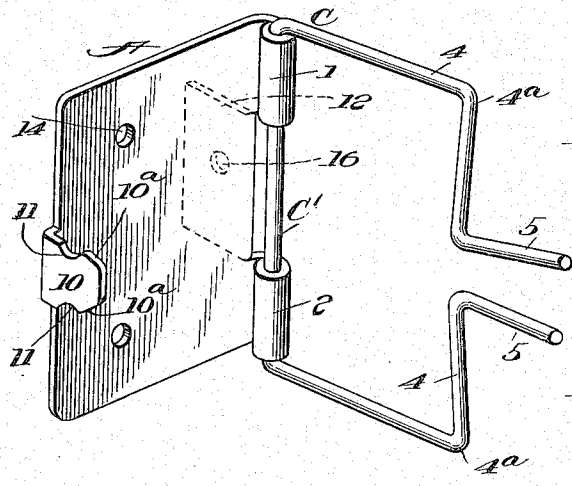


Fig. 6.

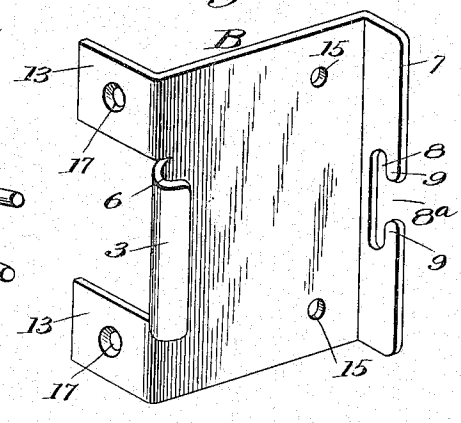
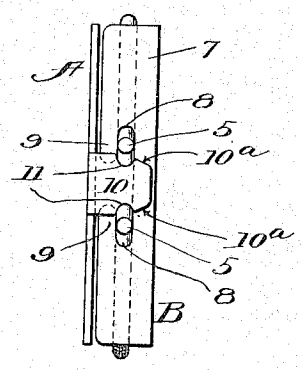


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALFRED L. FOOSE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO WILLIAM F. EMERSON, OF BUFFALO, NEW YORK.

HINGE.

1,129,284. Specification of Letters Patent. Patented Feb. 23, 1915.

Application filed December 26, 1911. Serial No. 667,646.

To all whom it may concern:

Be it known that I, ALFRED L. FOOSE, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Hinges, of which the following is a specification.

This invention relates to hinges, and particularly to window blind hinges.

One of the objects of the invention is to provide a hinge with improved locking means adapted automatically to lock the leaves of the hinge against swinging movement when the leaves are swung together.

Another object of the invention is to provide a self-adjustable hinge which will adjust itself, without the assistance of any particular mechanical skill, to its proper hinging position, with relation to the parts, which are adapted to be hinged to each other by the hinge when the hinge is properly placed on said parts to be secured thereto in hinging position thereon.

Another object of the invention is to provide a hinge with means adapted to space the swinging edges, of the parts, which are hinged together by the hinge, a slight distance apart, so as to provide the proper joint between said edges to enable the swinging part to swing freely on the hinge.

Another object is to provide an improved interchangeable hinge adapted to be used either as a right or left hinge to hinge a swinging part so that said part may swing either to the right or left.

Another object is to provide an improved hinge which may be produced from sheet material, preferably sheet steel.

Another object is to provide an improved hinge combining simplicity in construction, efficiency in operation and durability, which may be manufactured at a minimum cost.

Other objects will appear from the following description.

Referring to the drawings Figure 1 is a view illustrating in front elevation my improved hinge attached to a window blind and frame and hinging the blind to the frame, the hinge appearing in open position and the blind in closed position. Fig. 2 is a horizontal sectional view taken on the line 2 of Fig. 1, showing the hinge and blind in the same positions as shown in Fig. 1, and showing the hinge in plan view. Fig. 3 is a horizontal sectional view taken on line 2 of Fig. 1 showing the blind in open position and the hinge in closed and locked position. Fig. 4 is a horizontal sectional view taken on line 2 of Fig. 1, showing the blind and the leaf of the hinge, which is attached to the blind, swung at an angle of substantially 45° to the window frame and the leaf of the hinge, which is attached to the frame, and the leaves of the hinge disengaged from each other. Fig. 5 is a perspective view of one of the leaves of the hinge and the pivoting, pivot retaining, and locking element which is mounted on said leaf. Fig. 6 is a perspective view of the other leaf of the hinge. Fig. 7 is an end view of the hinge in its closed position.

Similar characters of reference indicate similar parts throughout the several views of the drawings.

The hinge comprises the leaves A and B and the pivoting, pivot retaining, and locking element C which is operatively mounted on the leaf A in the manner and for the purpose hereinafter described. The leaf A is provided at one of its edges with a pair of tubular knuckles 1 and 2 which rest forwardly of the leaf, at a predetermined distance apart, in pivoting alinement with each other, the purpose of which will be hereinafter more fully described. The pivoting, pivot retaining, and locking element C comprises a pivot C^1, a pivot retaining part comprising a pair of spring pivot retaining members 4 which extend from the respective ends of said pivot and a locking part comprising a pair of locking members 5 provided at the respective outermost ends of said members 4 which are adapted to be compressed toward each other or spread apart against the tension of the spring members 4, in the manner and for the purpose hereinafter described. The members 4 are provided with shoulders 4^a for the purpose hereinafter described.

The pivot C^1 of the pivoting, pivot retaining and locking element C is journaled in the knuckles 1 and 2 of the leaf A, whereby the element C is operatively mounted upon the leaf A to swing upon the pivot C^1 in the manner and for the purpose hereinafter described.

The leaf B of the hinge is provided at one of its edges with a forwardly extending semi-tubular knuckle 3, adapted to fit be-

tween and to rest in pivoting alinement with the knuckles 1 and 2 of leaf A, to receive the intermediate section of the pivot C^1 between the knuckles 1 and 2. The formation of the knuckle 3 provides a longitudinal entrance 6 at one side of the knuckle leading into the knuckle, through which the pivot C^1 is adapted to be inserted into the knuckle or removed therefrom. The leaf B of the hinge is provided with a flange 7, which is adapted to rest in the path of swinging movement of the locking members 5 and in alinement with the outside line of swinging movement of the shoulders 4^a of the pivot retaining members 4 of the element C when the leaves of the hinge are in pivotal relation to each other. The flange 7 is provided with a slot 8 and an entrance 8^a leading into said slot, through which entrance the locking members 5 of the element C are introduced into said slot or removed therefrom, in the manner and for the purpose hereafter described.

The formation of the slot 8 and the entrance 8^a thereto provides a pair of lugs 9 against which rest the locking members 5 of the element C, when the hinge is completely assembled.

The leaf A is provided with a latch 10 in which is formed a pair of cam shaped notches 11 adapted to receive the locking members 5, of the element C, to lock the leaves of the hinge against swinging movement, when said leaves are swung together. The forward part of said latch is provided with a pair of relatively diverging cam surfaces 10^a extending from the forward extremity of the latch to the notches 11 in the latch and intersecting said notches. The smaller dimension between said surfaces lies between their forward ends which are located at the forward extremity of the latch, while the greater dimension between said surfaces lies between the points of intersection of the surfaces and the notches 11.

The leaf A of the hinge is provided with a rearwardly extending adjusting member 12 which is adapted to fit against the hinging edge of the part to which said leaf is attached and thereby properly adjust said leaf in hinging position with relation to said part, while the leaf B is provided with a pair of adjusting members 13 which are adapted to rest at the respective ends of the member 12 of the leaf A in alinement therewith when the hinge is in its open position as shown in Fig. 1 of the drawing, and are adapted to fit against the hinging edge of the part to which the leaf B is attached, and thereby properly adjust said leaf in hinging position with relation to said part.

The leaves A and B and the adjusting members 12 and 13 are respectively provided with screw holes 14, 15 16 and 17 through which screws are driven into the parts, which are hinged together by the hinge, to attach the leaves and said members to said parts to hinge said parts to each other. The screw holes 16 and 17 in the members 12 and 13 are shaped to receive the heads of the screws in a countersunk position with relation to the surfaces of said members, which engage the hinged parts, to space said parts properly apart, so that said heads will not interfere with the operation of the parts which are hinged together by the hinge.

The assembling and detaching of the leaves is obvious from the disclosure.

When the leaves of the hinge are detached from each other, the element C may be swung into a compact position with relation to the leaf A, on which said element is mounted, and locked in such position where the parts of said element will be protected from injury by other objects with which said parts might engage if left in an outstanding position, by swinging said element on its pivot axis until the locking members 5 of said element spring into the notches 11 of latch 10.

Variations and modifications of the hinge may be made within the scope of the invention. I reserve the right to such variations and modifications.

I claim:

1. A hinge comprising a pair of leaves and a pivoting, pivot retaining, and locking element, said element comprising a pivot, a pivot retaining part, and a locking part, one of said leaves provided with knuckles, in which said pivot is mounted, and a latch, the other leaf provided with an open sided knuckle through the opening of which said pivot is inserted into said knuckle to pivot the leaves of the hinge together, said leaf provided with a flange to be engaged by said pivot retaining part to retain the pivot in said open sided knuckle, said flange provided with lugs to be engaged by said locking part to lock the pivot retaining part in engagement with said flange to lock the pivot in said open knuckle said latch adapted to engage said locking part to lock the leaves of the hinge in closed position against opening movement.

2. A hinge comprising a pair of leaves and a pivoting, pivot retaining, and locking element, said element comprising a pivot, a pivot retaining part, and a locking part, one of said leaves provided with tubular knuckles, in which said pivot is mounted, said leaf provided with a latch, the other leaf provided with a semi-tubular knuckle into which said pivot is inserted through the open side of said knuckle to pivot the leaves of the hinge together said leaf provided with a flange to be engaged by said retaining part to retain the pivot in said semi-tubular knuckle, said flange provided with a slot to

receive said locking part to lock the retaining part in engagement with said flange to lock said pivot in said semi-tubular knuckle, said latch adapted to engage said locking part when in locking position in said slot to lock the leaves of the hinge in closed position against opening swinging movement.

3. A hinge comprising a pair of leaves provided with knuckles resting in pivotal alinement with each other, a pivot extending through said knuckles and pivoting said leaves to each other, said pivot provided with a locking element comprising a projecting latch engaging part, means for maintaining said latch engaging part in operative position on the hinge, a latch to be engaged by said latch engaging part to lock said leaves in closed position.

4. A hinge comprising a pair of leaves provided with knuckles adapted to rest in pivotal alinement with each other, a pivot adapted to extend through said knuckles to pivot said leaves to each other, the knuckle on one of said leaves being open at one side through which open side said pivot is adapted to be introduced into said knuckle to pivot said leaves together, said pivot being provided with a projecting part, and means for engaging said part to maintain said pivot in said open knuckle when the leaves are pivoted together.

5. A hinge comprising a pair of leaves provided with knuckles adapted to rest in pivotal alinement with each other, a pivot adapted to extend through said knuckles to pivot said leaves to each other, the knuckle on one of said leaves being open at one side through which open side said pivot is adapted to be introduced into said knuckle to pivot said leaves to each other, said pivot being provided with a projecting part, and a lug adapted to engage said projecting part to maintain said pivot in said open sided knuckle when the leaves are pivoted to each other.

6. A hinge comprising a pair of leaves provided with knuckles adapted to rest in pivotal alinement with each other, a pivot adapted to extend through said knuckles to pivot said leaves to each other, the knuckle on one of said leaves being open at one side through which open side said pivot is adapted to be introduced into said knuckle to pivot said leaves together, said pivot provided with a pivot retaining part and a pivot locking part, means to be engaged by said pivot retaining part to retain said pivot in said open sided knuckle, and means to be engaged by said pivot locking part to lock the pivot in said open sided knuckle.

7. A hinge comprising a pair of leaves provided with knuckles adapted to rest in pivotal alinement with each other, a pivot adapted to extend through said knuckles to pivot said leaves to each other, the knuckle on one of said leaves being open at one side through which open side said pivot is adapted to be introduced into said knuckle to pivot the leaves together, said pivot provided with a pivot retaining part and a pivot locking part, a flange to be engaged by said pivot retaining part to retain said pivot in said open sided knuckle and a lug to be engaged by said locking part to lock said pivot in said knuckle.

8. A hinge comprising a pair of leaves provided with knuckles adapted to rest in pivotal alinement with each other, a pivot adapted to extend through said knuckles to pivot said leaves to each other, the end of said pivot being bent first substantially at right angles to the pivot, then substantially parallel to the pivot and then again substantially at right angles to said pivot, one of said leaves provided with means adapted to engage the outermost bent part of the end of the pivot to retain said part in operative position upon said leaf, a latch on the other leaf adapted to be engaged by said part to lock the leaves of the hinge in closed position.

9. A hinge comprising a pair of leaves provided with knuckles adapted to rest in pivotal alinement with each other, a pivot adapted to extend through said knuckles to pivot said leaves to each other, the knuckle on one of said leaves being open at one side through which open side said pivot is adapted to be introduced into said knuckle, the end of said pivot being bent first substantially at right angles to the pivot, then substantially parallel to the pivot, to form a pivot retaining member, and then again substantially at right angles to the pivot to form a pivot locking member, one of said leaves provided with means for engaging said pivot retaining member and said pivot locking member to retain and lock said pivot in said open sided knuckle.

Signed at Washington, in the District of Columbia, this 19th day of December, A. D. 1911.

ALFRED L. FOOSE.

Witnesses:
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WM E. MURPHY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."