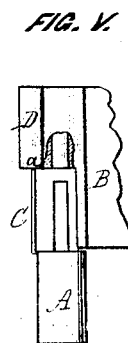
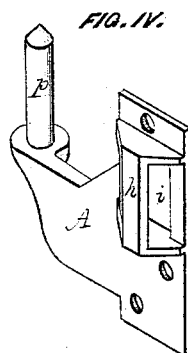
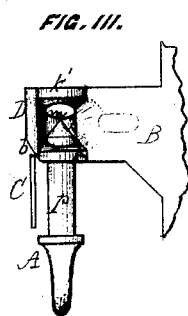
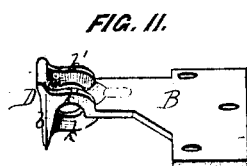
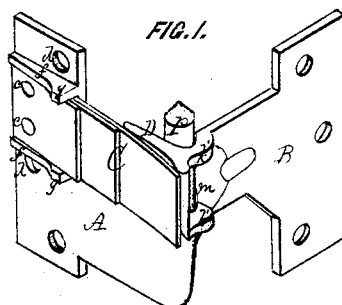


*A. Hyffer,*

*Hinge.*

No. 108143.

*Patented Oct. 11. 1870.*



*Ino Dennis* } *Witnesses.*  
*L. W. M. Matt* }

*INVENTOR.*

Abraham Kupper,  
By J. Fraser & Co.,  
attys..

# United States Patent Office.

ABRAHAM HUFFER, OF HAGERSTOWN, MARYLAND.

Letters Patent No. 108,143, dated October 11, 1870.

## IMPROVEMENT IN HINGES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ABRAHAM HUFFER, of Hagerstown, in the county of Washington, and State of Maryland, have invented a certain new and useful Improvement in Hinges, of which the following is a specification.

### *Nature of the Invention.*

This hinge is an improvement on that patented to myself and Nathaniel Schuer, July 4, 1865.

The present invention consists in an improved form of the eccentric, whereby it is more easily inserted in place, and in an improved construction of the leaf for holding the spring, as hereinafter described.

### *General Description.*

In the drawing—

Figure 1 is a perspective view of my hinge, complete;

Figure 2, a view of the swinging portion of the hinge;

Figure 3, a diagram, showing the method of inserting the eccentric in place;

Figure 4, a view of a modification of the form of the leaf of the stationary portion of the hinge; and

Figure 5, a diagram of the old form of the hinge, and representing, in contrast with my present improvement, the difficulty of inserting the eccentric.

A is the stationary or pintle part of the hinge, and

B, the swinging or socket part.

The stationary part has a spring, C, composed, preferably, of several layers of sheet steel, riveted to the leaf, as shown.

The swinging part has an eccentric, D, outside the socket or eye, against which the spring presses.

The faces or bearings of this eccentric are so situated that the blind, shutter, or other body attached, may be held stationary in three positions, viz., open, half open, or shut. Thus far the construction is the same as in the patent of 1865, before alluded to.

We found in the use of the old hinge two radical difficulties; first, the considerable thickness or projection of the eccentric, and its abrupt shoulder *a* at the bottom, caused it to sit considerably over the plane of the spring, as shown in fig. 5.

In applying in place, the eccentric can be inserted in but one position, viz., at the half-open position of the blind or shutter; hence, in order to depress or bend the spring backward far enough to enter the eccentric between it and the pintle *p*, it was necessary to use a lever or pry, and then insert a wedge to hold till the eccentric was in place. This was so difficult for workmen to do that they would not adopt it.

In my present case, I remedy this difficulty by casting the eccentric thinner, and forming at the bottom a shear or wedge-shaped edge, *b*, fig. 3, which, when the eccentric is pressed down in place between the spring and the pintle, opens its own way, and gradually forces the spring outward without difficulty.

Indeed, with a blind or shutter attached, there is no more difficulty than in inserting the parts of a common hinge. This device, combined with the eccentric and spring, I claim as the first feature of my improvement.

The second difficulty was that, in riveting the spring at *c c* to the leaf, so near the screw-holes *d d*, the leaf was very liable to break under the strain; also, the workmen, in cutting the mortise in the wood, to receive the leaf and the thickness of the spring, would make no allowance for the bend or yield of the spring backward in the turning of the eccentric, but would fit the parts tight; consequently, when the spring was forced back, there was great liability of the tearing out of the screws or the breakage of the spring; and, furthermore, there being no top and bottom holds or guards to the spring, it was liable to get out of place under the constant action of the eccentric.

To remedy these difficulties, I employ two cross-ribs or flanges *f f*, cast to the leaf, and situated respectively on opposite sides of the spring top and bottom.

At the front end are two ribs, *g g*, whose projection is just equal to the throw of the spring backward when the eccentric is turned.

The workman, in making his mortise in the wood, is obliged to make it deep enough to receive these ribs, and hence there is always left sufficient space for the play of the spring. They also serve as guides to keep the spring in place, and, furthermore, serve as stiffeners to the casting, to prevent breakage. This device constitutes the second feature of my invention.

In some cases, I contemplate making the bearing or socket for the spring in the form shown in fig. 4, that is, with a cross-piece, *h*, connecting the two side ribs, which incloses the end of the spring, and with an opening, *i*, in the other side to lessen the weight of the casting. In this case, the spring rests in the bearing inclosed by the cross-piece, and may be secured by a rivet, or a small wood screw, or by any other desired means. There is a peculiarity also in the formation of the eye or socket that fits upon the pintle. In the old form of the hinge the eye was entire or closed; in the present form, I cast it with a central bearing, *k*, on one side, and two side bearings, *k' k'*, on the other, leaving the balance of the space open, as shown at *m m*. This not only lessens the amount of metal, and the friction upon the pintle, but

enables me to dispense with chills and cores in casting, which is a great desideratum.

*Claims.*

What I claim, and desire to secure by Letters Patent as an improvement upon the patent of Schuer and Huffer, is—

1. The eccentric *D*, constructed with the sharp edge *b*, as described, and employed in connection with the spring *C* and pintle *p*, in the manner and for the purpose specified.

2. The cross-ribs or flanges *f f*, inclosing the spring *C*, either with or without the cross-bar *h*, to keep it in place, and formed with projections to insure the free play of said spring when fitted to the wood, as described.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

ABRAHAM HUFFER.

Witnesses:

R. F. OSGOOD,

G. WILLIAM MIATT.