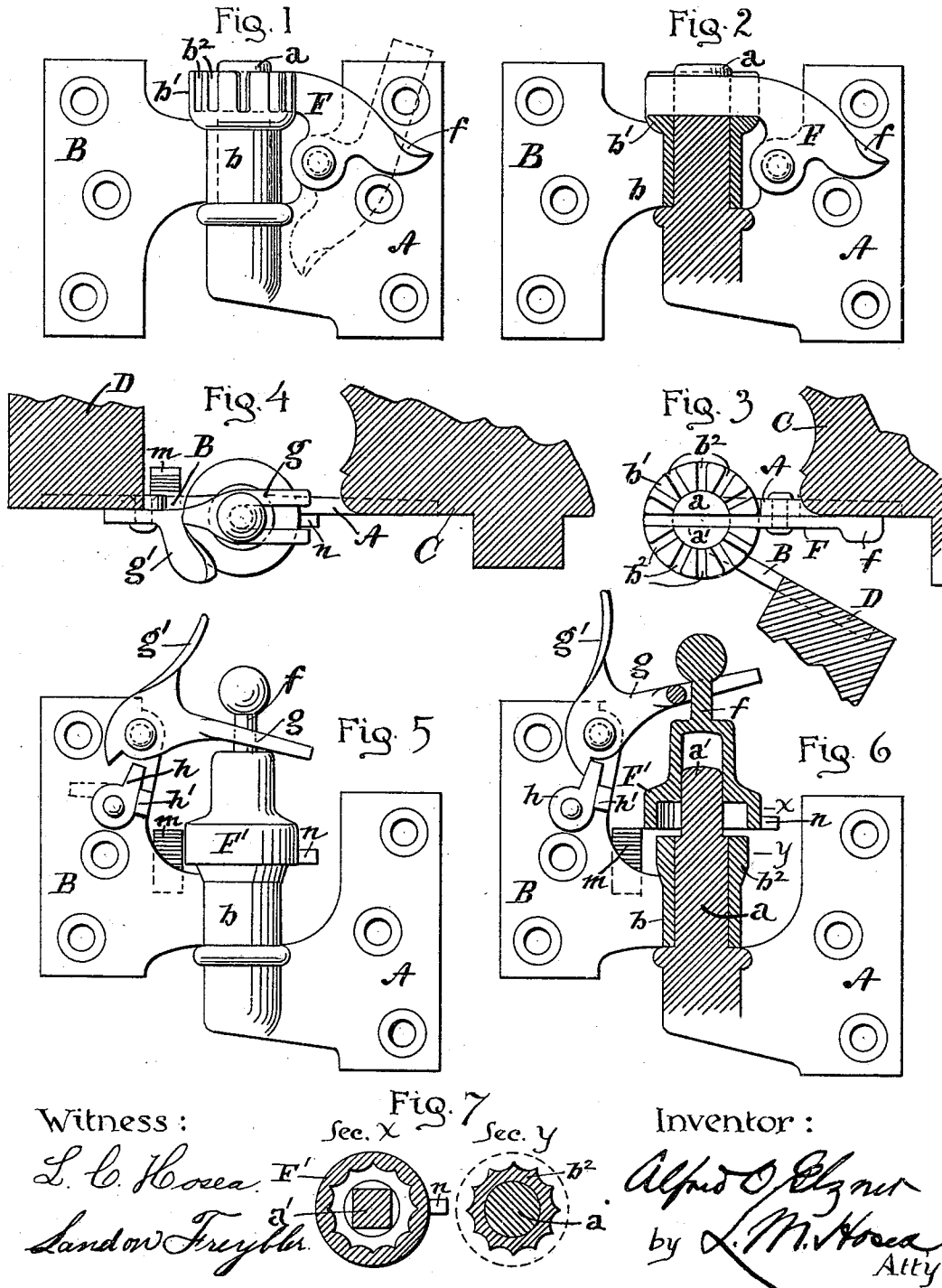


(No Model.)

A. O. ELZNER.
SHUTTER HINGE.

No. 525,843.

Patented Sept. 11, 1894.



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UNITED STATES PATENT OFFICE.

ALFRED O. ELZNER, OF CINCINNATI, OHIO.

SHUTTER-HINGE.

SPECIFICATION forming part of Letters Patent No. 525,843, dated September 11, 1894.

Application filed January 31, 1894. Serial No. 498,625. (No model.)

To all whom it may concern:

Be it known that I, ALFRED O. ELZNER, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Hinges for Shutters, Screen-Doors, &c., of which the following is a specification.

My invention relates to hinges of shutters, screen-doors, &c.; its object being to provide a cheap and simply constructed hinge adapted to general use in house-building; having, in addition to its ordinary functions, a capacity of retaining the shutter in any desired radial position within the range of its ordinary rotative movement.

To this end the invention consists in a hinge provided with a locking device adapted to temporarily connect and retain the pintle and corresponding socket of the hinge plates in any desired radial relation; capable of ready change of adjustment as may be desired.

The nature and constructive features of the invention will be more clearly understood by reference to the accompanying drawings, in which—

Figures 1, 2, and 3 exhibit a complete elevation, (an elevation partly in section,) and a complete plan view, respectively, of a hinge or parts of connected hinge plates, with the locking device in preferred form applied thereto. Figs. 4, 5, and 6, exhibit a complete plan, complete elevation, and an elevation partly in section, respectively, of a modified form of device; and Fig. 7, exhibits two corresponding detail horizontal cross-sections on planes *x* and *y* of Fig. 6 showing construction.

Referring now to the drawings, the two sets of figures enumerated are intended to exhibit two general types of construction in which the principle of the invention may be realized in practice, either of which types may include various mechanical modifications.

In the first and preferred type, represented in Figs. 1, 2, and 3, the essential principle of invention is in a key or bolt passing through the wall of the pintle-socket and engaging the pintle, as a lock against the inter-rotation of these elements.

The construction exhibited, which is preferred for simplicity of construction and op-

eration, is as follows: The two hinge-plates A, B, are cast or formed in the usual manner;—one being provided with a vertical pintle, *a*, and the other with a corresponding socket, *b*, adapted to fit over the same. Both pintle and socket are extended somewhat higher than usual,—the pintle being provided with a diametrical recess, *a'*, opening upward, and the extension, *b'*, of the socket being somewhat enlarged, and provided with opposite radial recesses, *b²*, corresponding and registering with the recess, *a'*, of the pintle. The pintle contains but one diametric recess, while the socket-extension may contain any number consistent with proper strength of parts, arranged in symmetrical radial relations. To the pintle hinge-plate, A, is pivoted a suitable key or locking finger F swinging in the plane of and adapted to enter the diametric recess of the pintle, in one of its ultimate positions, as shown in full lines in Figs. 1, 2, and 3; and arranged to hang approximately vertical when out of engagement, as shown in dotted lines in Fig. 1. The pivot of the key being below its normal axis, gravity retains it in either of its ultimate positions. The key, F, is provided with a projecting lip, *f*, at the rear end, as shown, for convenience of manipulation. Suitable provision is made for the lateral space occupied by the key, F, when the hinge-plates are shut together; but, as the width of the key is very little, (sheet steel being the preferred material of construction,) this is accomplished by increasing very slightly the offset of the pintle and socket, respectively, in relation to the face-planes of the hinge-plates respectively.

The operation of the device will be clearly apparent upon considering the construction shown in Figs. 1 and 2, and mode of attachment shown in Fig. 3. As the key, F, is in permanent radial relations with the pintle, it is attached to the pintle-plate A; and the latter, as is usual, is attached to the window casing, C; while the socket-plate, B, is attached to the shutter, D. Fig. 3, exhibits these parts and the shutter in locked position partly open and under control of the locking lever, F. To close the shutters, the key is thrown permanently out of engagement into the position shown by dotted lines in Fig. 1, by depressing the rear end of the key, F, by means

of the finger upon the lip, *f*. If the shutter is to be locked in any intermediate position, or in fully open position, the key is first released and again thrown into engagement when the proper position is reached.

The type of structure shown in the remaining figures does not differ in principle. In this case, the "locking key" is an annular element engaging wholly outside of the pintle and outside of the socket element. As shown herein, the upward extension, *b*² of the socket, *b*, is formed with an external periphery of polygonal cross-section (preferably with convex faces) as shown in section *y*, Fig. 7. The pintle *a* is extended upward beyond the socket *b*², and squared, as shown at *a'* in section *x*, Fig. 7. Over these is fitted an annular "cap," *F'*, with its opening cavity fitted to engage over the socket, *b*², and its inner or counter-sunk recess fitted to engage the squared extension of the pintle, *a'*, all as clearly shown in vertical section Fig. 6, and cross section, *x*, in Fig. 7. It will be readily perceived, that by lifting the cap above its engagement with the socket, *b*², the shutter is allowed to swing freely; and that on being depressed, into engagement with the socket, *b*², rotation of the shutter in relation to the pintle, *a*, is prevented.

I may provide, as a convenience, not essential to the operation, a lifting lever, *g*, pivoted to the socket hinge-plate, as shown in Figs. 4, 5 and 6, and bifurcated at rear to engage an upward extension *f'* of the cap, *F'*. The lever, *g*, may be provided with an upward bell-crank extension, *g'*, as a lip for convenient manipulation,—so as to be easily reached (as for example, in opening the shutters slightly, to be retained in partly open position) by hand from within an apartment. The lever is also a means of preventing the cap, *F'*, from becoming detached while the shutters are in use. To this end, a pawl, *h*, is pivoted to the plate, *B*, beneath the lever, *g*, and normally rests against a lug, *h'*, so as to project into

the path of a projecting end of the lever, *g*, and limit its upward movement. In turn, this limits the upward movement of the cap, *F*, and prevents its removal until the pawl, *h*, is thrown over into position shown in dotted lines in Fig. 5; when the lever may be thrown up and entirely release the cap, *F*.

A further feature of this type of the device is a cam projection, *m*, upon the hinge-plate, *B*, engaging a lug, *n*, projecting radially from the cap, *F'*. The function of these parts is to lift and hold the cap, *F'*, out of engagement when the shutter is closed; thus holding the locking device out of engagement until the shutter is opened far enough to enable the attendant to reach the cap or its lever so as to control its operation.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. A shutter-hinge embodying a pintle provided with a diametric recess, a socket provided with a series of corresponding diametric recesses, and a bolt or key attached to the pintle member and adapted to be thrown into the diametric recess of the pintle and corresponding diametric recesses of the socket, selectively, to lock the pintle and socket members against rotation, substantially as set forth.

2. A shutter hinge embodying a pintle provided with a diametric recess, a socket provided with a series of corresponding diametric recesses, and a key or bolt pivoted below its normal axis to the pintle member and adapted to be oscillated upon its pivot into or out of engagement with the pintle and socket, and be retained by gravity in either position, substantially as set forth.

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

ALFRED O. ELZNER.

Witnesses:

L. M. HOSEA,
LONDON FREYBLER.