

(No Model.)

F. B. MALLORY.
SHUTTER WORKER.

No. 360,708.

Patented Apr. 5, 1887.

Fig 1.

Fig 2.

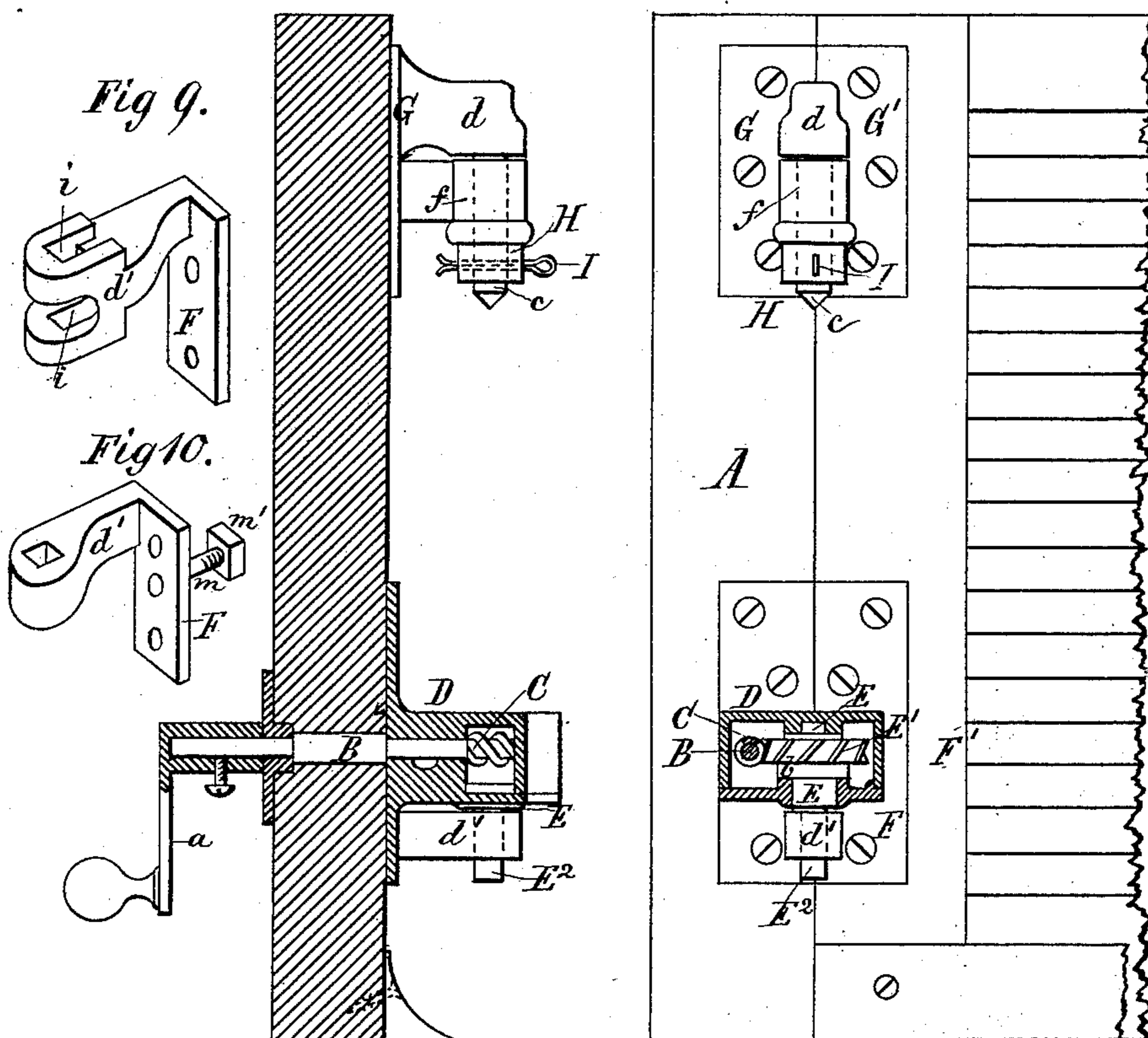


Fig 9.

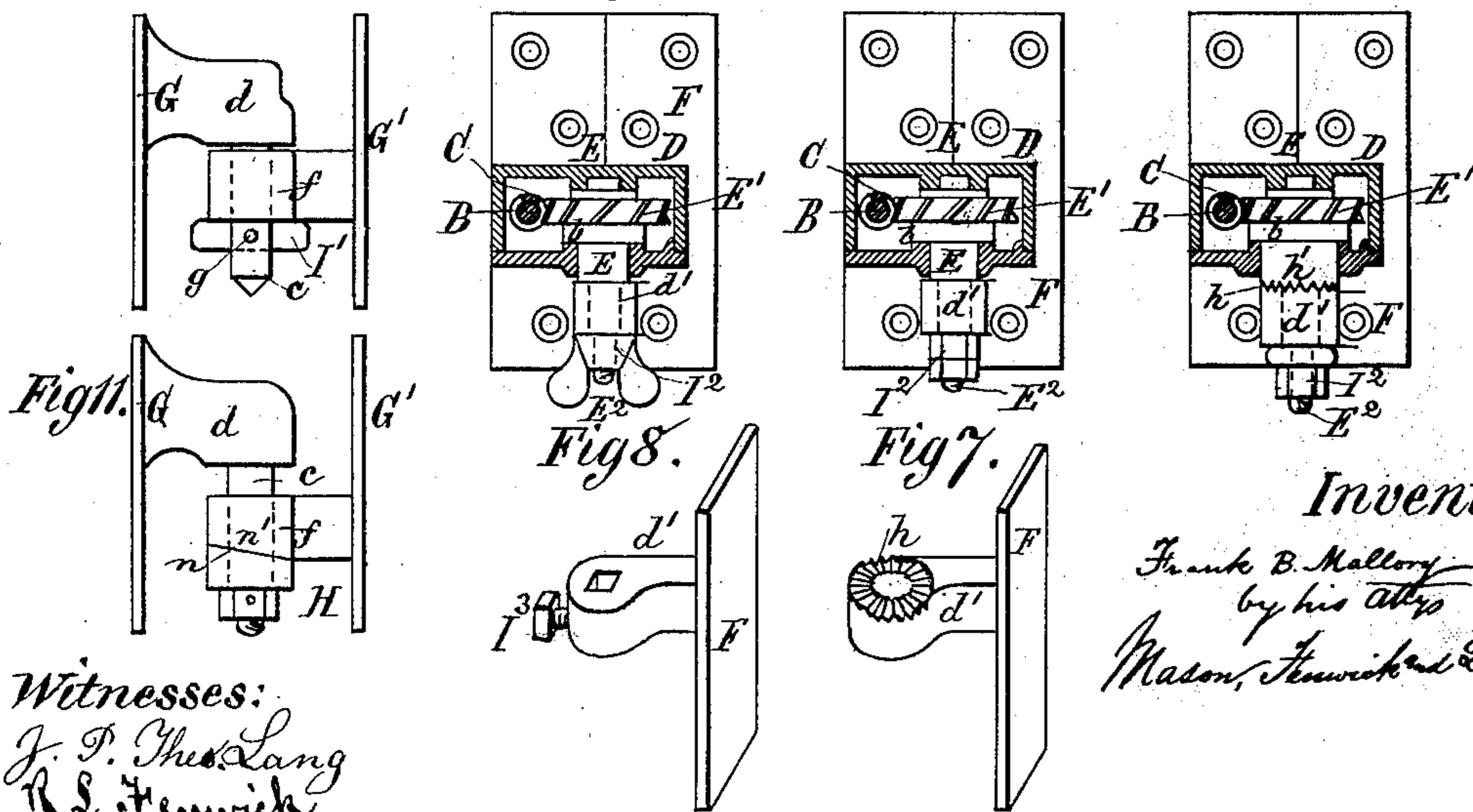
Fig 10.

Fig 3.

Fig 4.

Fig 5.

Fig 6.



Witnesses:
J. P. The Lang
R. L. Fenwick.

Inventor:
Frank B. Mallory
by his attys
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UNITED STATES PATENT OFFICE.

FRANK B. MALLORY, OF FLEMINGTON, NEW JERSEY.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 360,708, dated April 5, 1887.

Application filed December 20, 1886. Serial No. 222,041. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. MALLORY, a citizen of the United States, residing at Flemington, in the county of McDonough and State of New Jersey, have invented certain new and useful Improvements in Means for Hanging and Working Window-Shutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in certain novel constructions and combinations of parts, as hereinafter described and specifically claimed, whereby shutters can be underhung upon pendent pintles and sustained by a support applied directly to either the upper or lower hinge-pintle, instead of to the window-frame or wall of the building, and such support so constructed that it can be utilized for keeping the thread of the worm-shaft and the teeth of the worm-wheel in positive contact, and thereby prevent rattling sounds from slight vibrations of the shutter.

In the accompanying drawings, Figure 1 is intended to represent a vertical section through either a window frame, casing, or wall of a building and the hinge-bracket housing of a well-known shutter-worker on the line of the worm-shaft of such shutter-worker, the shutter being closed, and the bracket of the shutter-hinge leaf attached to it, and the ice or snow scraper at the bottom of the shutter being shown in elevation. Fig. 2 is a vertical section of the hinge-bracket housing in the line of the shaft of the worm-wheel, the window frame or casing or wall of the building, the shutter, the hinge leaves and pintles, brackets, and shutter-support of the upper hinge and the lower bracket of the lower hinge being shown in elevation. Fig. 3 is a detail view of the upper hinge, with a pin and plate support substituted for the spring key-pin shown in Figs. 1 and 2. Figs. 4, 5, 6, 7, 8 illustrate different constructions of supports for shutters underhung on pendent pintles, such supports being applied to the lower shutter-hinge pintles. Fig. 9 is a view of a modified form of lower hinge-leaf, the same being cast with an open-sided square passage for a lower square pintle-extension of the worm-

shaft to enter in hanging the shutter. Fig. 10 is a view of the lower hinge-leaf which is attached to the shutter, illustrating that it may be fastened to the shutter by bolts and nuts, instead of wood-screws; and Fig. 11 is an elevation of the upper hinge, showing its support for a shutter, and the eye-bracket of the hinge-leaf attached to the shutter, constructed with an inclined surface for preventing the shutter vibrating and the thread of the worm and the teeth of the worm-wheel of the shutter-worker from being moved apart by a slight force of the wind upon the shutter.

A in the drawings, Figs. 1 and 2, is intended to represent either a portion of a window frame, casing, or wall of a building, and B the shaft of a shutter-worker passed through said frame or wall, and having a crank-handle, *a*, on its inner end and a worm, C, on its outer end.

D is a two-part housing, constructed similar to the housing for the same purpose shown and described in my application for a patent for a means for hanging and working shutters, filed in the United States Patent Office on the 15th day of December, 1886, and which is not claimed in this patent further than it is an element in combination with certain parts not shown in said application.

E is the ordinary worm-wheel shaft, carrying worm-wheel *E'*, and suspended by means of a collar, *b*, from the inside of the housing, and having a straight flat-sided vertical pendent revolving pintle-extension, *E''*, which passes through the bottom plate of the hinge-bracket housing and enters the square eye of the bracket *d'* of the hinge-leaf F, attached to the shutter *F'*, as shown. The upper hinge comprises two leaves, G G', one having a stationary pendent round pintle, *c*, on its bracket *d*, and the other a round eye in its bracket *f*. The shutter *F'* is underhung upon the lower pintle, *E''*, and upper pintle, *c*, and beneath the bracket *d* a collar, H, is slipped upon the upper pendent pintle, *c*, and a spring key-pin, I, passed through holes in the collar and pintle, as illustrated in the figures named. The shutter is supported on the collar H, and by turning the worm-shaft from the inside of the room by its crank-handle the shutter can be opened and closed on its pintles, and held open or closed, as desired.

In Fig. 3 I have shown an upper supporting cross-bar, I' , secured by means of a removable pin, g , in a horizontal slot formed in the pintle c .

5 In Figs. 4 and 5 I have shown a shutter-supporting device, I^2 , applied to the lower hinge-pintle, E^2 , instead of to the pintle c , said device being a nut or nuts screwed upon a cylindrical threaded end portion below the square
10 portion of the pintle E^2 , as shown.

In Figs. 6 and 7 I have shown a shutter-support, I^2 , similar to the one shown in Figs. 4 and 5; but instead of making the pintle E^2 with a square portion to fit the eye of the
15 bracket of the hinge-leaf attached to the shutter, I have formed the eye-bracket of said leaf with angular teeth h and provided the pintle with a round integral collar, h' , having teeth similar to those h . By this construction the
20 shutter hinge-leaf can be made rigid with the pintle E^2 , the same as if the pintle and the eye of said hinge-leaf were made square.

In Fig. 8 I have shown a simple set screw, I^3 , screwed into the eye-bracket d' of the
25 hinge-leaf attached to the shutter, and made to bind against or enter a socket in the square portion of the pintle E^2 , and thereby serve as a support for the underhung shutter. I do not regard this as a very substantial construction, and prefer the other plans shown.
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In Fig. 9 I have shown the hinge-leaf, which is attached to the shutter, cast with separated brackets with open slots, i , and by this construction the hinge-leaf can be cast without a
35 core, which saves expense of manufacture.

In Fig. 10 I have shown that bolts and nuts $m m'$ may be used instead of wood-screws for fastening the hinge-leaf to the shutter, and in
40 Fig. 11 I have shown the supporting-collar H , for use on the pintle of an upper hinge, and constructed with an inclined surface, n , while the bracket of the hinge-leaf attached to the shutter is formed with a reversely-inclined

surface, n' . By this construction the weight of the shutter, in connection with the resist- 45 ing inclined surfaces $n n'$, prevents rattling of the worm and worm-wheel gearing, as slight winds are not liable to move the shutter up the inclined surface, so as to cause the thread of the worm and the teeth of the worm-wheel
50 to separate and vibrate against each other.

I am aware of the gate-hinge of Whiting, patent numbered 152,714, and make no claim for anything therein shown.

My invention enables me to suspend the 55 shutter upon under-hanging supports applied on the pendent pintles of the hinges; and the form of these supports can be such as will insure the weight of the shutter resting bodily upon the supports, and thereby the tendency
60 of the shutter to slightly swing back and forth overcome.

What I claim is—

1. The combination, with the upper stationary pendent pintle and lower pendent turning 65 pintle of shutter-hinges, of the shutter-support applied to a pintle of said hinges and in bearing relation to the said pintle, and the eye-bracket of the hinge-leaf attached to the shutter, substantially as and for the purpose
70 described.

2. The combination, with the shutter-working gearing described, and with the upper stationary pendent pintle and lower turning 75 pendent pintle of shutter-hinges, of the shutter-support formed with an inclined surface, n , and applied below the eye-bracket of a hinge-leaf which is attached to a shutter and formed with an inclined surface, n' , substantially as
80 and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. MALLORY.

Witnesses:

C. C. DUNHAM,
N. DUNHAM STIGER.