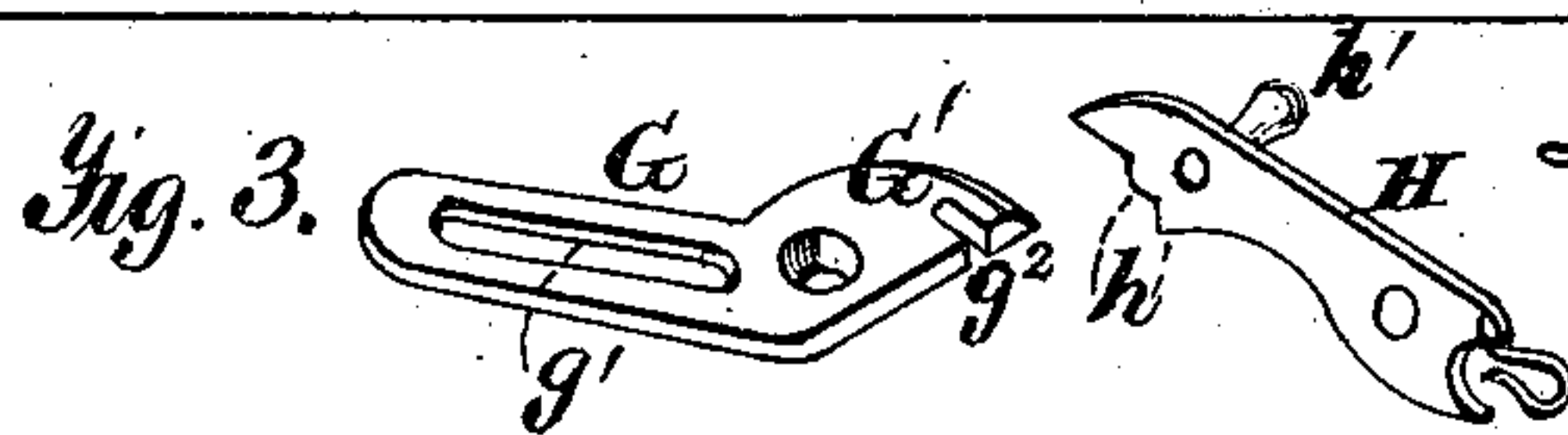
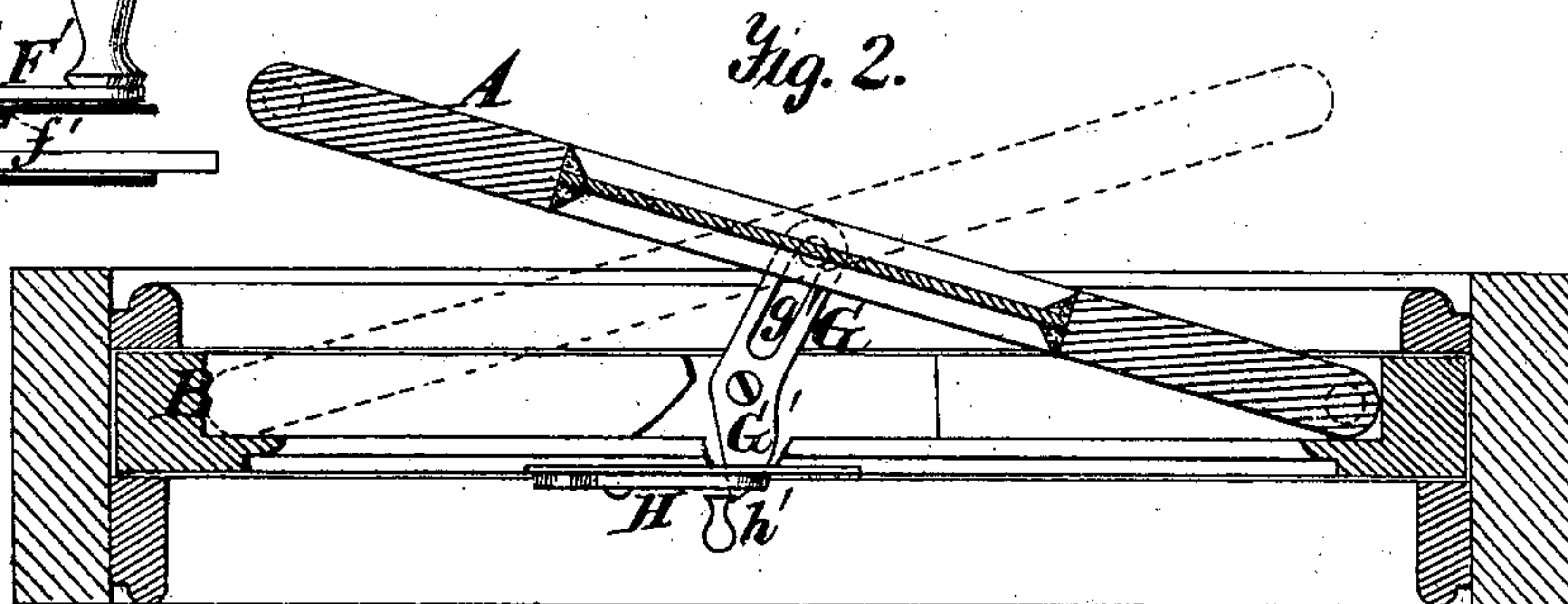
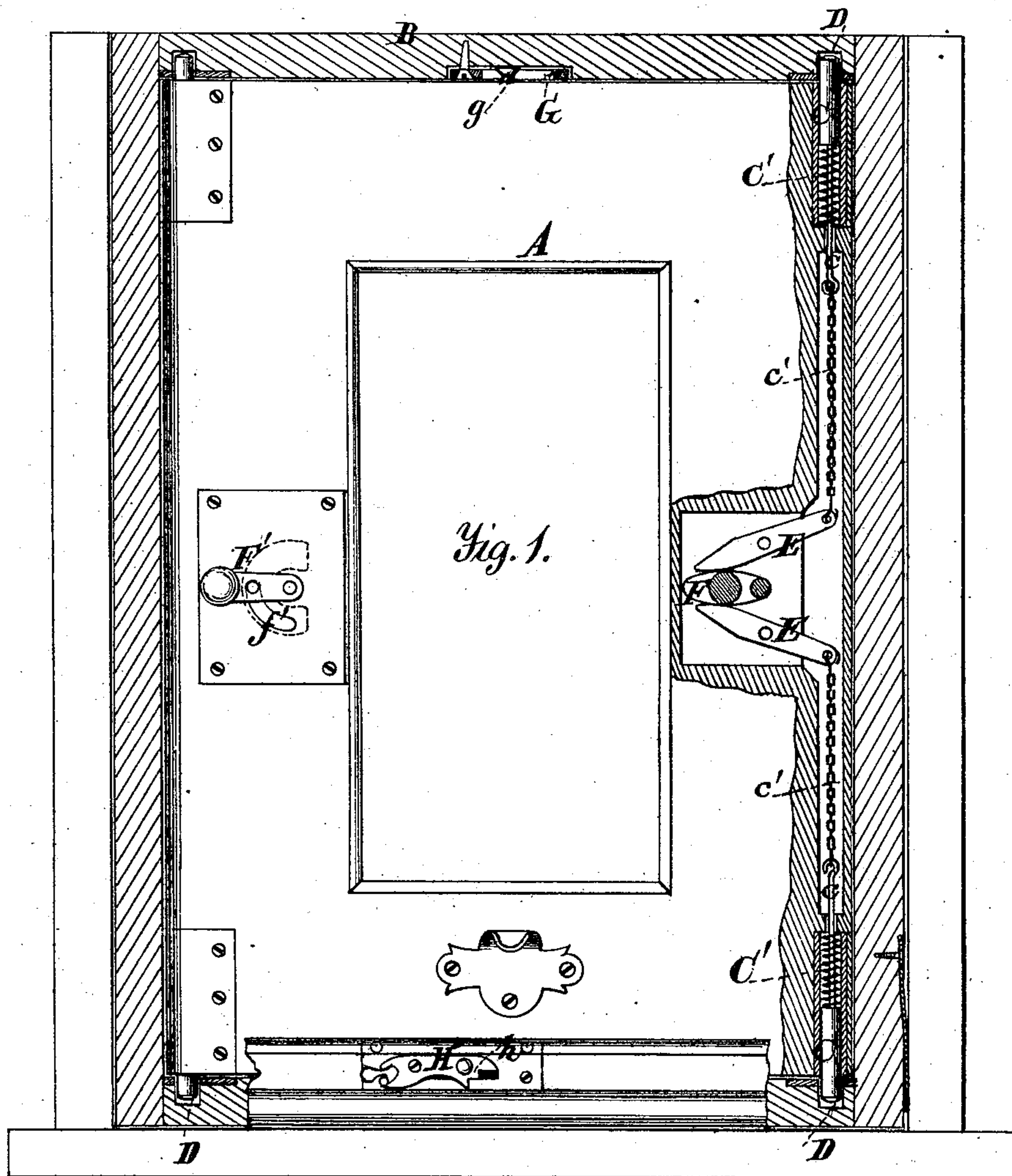


J. L. M. DU FOUR.
Car-Windows.

No. 164,534.

Patented June 15, 1875.



Witnesses:
A. Ruppert.
Goswami

J. L. M. Du Four
Inventor.
D. R. Holloway, Atty.

UNITED STATES PATENT OFFICE.

JOSEPH L. M. DU FOUR, OF BOUNDBROOK, NEW JERSEY.

IMPROVEMENT IN CAR-WINDOWS.

Specification forming part of Letters Patent No. **164,534**, dated June 15, 1875; application filed April 28, 1875.

To all whom it may concern:

Be it known that I, JOSEPH L. M. DU FOUR, of Boundbrook, in the county of Somerset and State of New Jersey, have invented a certain Improvement in Car-Windows, of which the following is a specification:

This invention relates to that class of car-windows which are hung to swing horizontally, and are provided with a set of hinges at either side or stile, so contrived that either set may be disjoined to allow the window to turn on the other set.

My improvement consists of certain novelties of construction of the mechanisms for operating the hinges and fastening the window, as will be fully explained in the ensuing description, and specifically pointed out in the claims.

In the annexed drawings, Figure 1 is a sectional front elevation of my improved car-window. Fig. 2 is a horizontal section of the same, showing the window as standing open, and indicating by broken lines how it may be opened from the other side. Figs. 3 and 4 are detailed views hereinafter more specifically referred to.

The same letters of reference are used in all the figures in the designation of identical parts.

In order to combine the advantages of a horizontally-swinging with a sliding window, as well as to admit of the application of my invention to cars now in use, without requiring any change whatever in the framing, I hang the window A in a sash, B, adapted to slide in the ordinary framing of a passenger-car window.

The hinges illustrated consist essentially of two pairs of spring-bolts, C, arranged in sockets at the corresponding corners of the window, and adapted to enter keepers or cavities D in the sash B. The stem *c* of each bolt, encircled by a spiral spring, C', is connected by a chain, *c'*, to a lever, E, pivoted on a pin, *e*, in the stile of the window. Thus there is a pair of these levers in each stile of the window, corresponding to the pairs of spring-bolts.

Each pair of levers embraces a cam, F, which can be turned by a crank, F', (see Figs. 1 and 4,) so as to either retract the bolts, withdrawing them from the keepers, or permitting them to become engaged with said keepers by the action of springs C'.

The crank has a stud, *f*, which plays in a sectoral slot, *f'*, (see Fig. 1,) to limit its motion to the arc required for operating the bolts. In its closed condition, all the bolts should be shot into the keepers, so as to lock the window.

Of course, the window will always be swung open from what temporarily is the rear side or stile, when it is arranged to swing outwardly, which I prefer, so as to act as a deflector upon the air and flying particles of dust and cinders the car meets in its progress, and cause them to be thrown off away from the car.

The air rushing past the opening will also induce suction, and cause a discharge of the vitiated air in the car.

To limit the swing of the window, I provide slotted arms G, pivoted respectively to the top and bottom bars of sash B. Pins or studs *g*, fixed centrally to the upper and lower ends of window A, play in the slots *g¹* of these arms, which fold in between the window and sash B when the window is closed, and are turned out in opening the same to the extent permitted by the slot. The lower arm has an angular leaf, G', the notch *g²* of which is engaged in opening the window by either one or the other of a series of teeth, *h*, on a spring-catch, H, pivoted on the inside of sash B, and provided with a knob, *h'*, for conveniently lifting it out of notch *g²* when the window is to be closed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of window A, pairs of spring-bolts C c C', keepers D, chains *c'*, levers E, and cams F, substantially as and for the purpose specified.

2. The horizontally-swinging window A *g g*, in combination with the slotted arms G *g¹*, one of which has an angular notched leaf, G' *g²*, and spring-catch H *h*, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH L. M. DU FOUR.

Witnesses:

GEO. S. JONES,
CHAS. D. TULL.