

(No Model.)

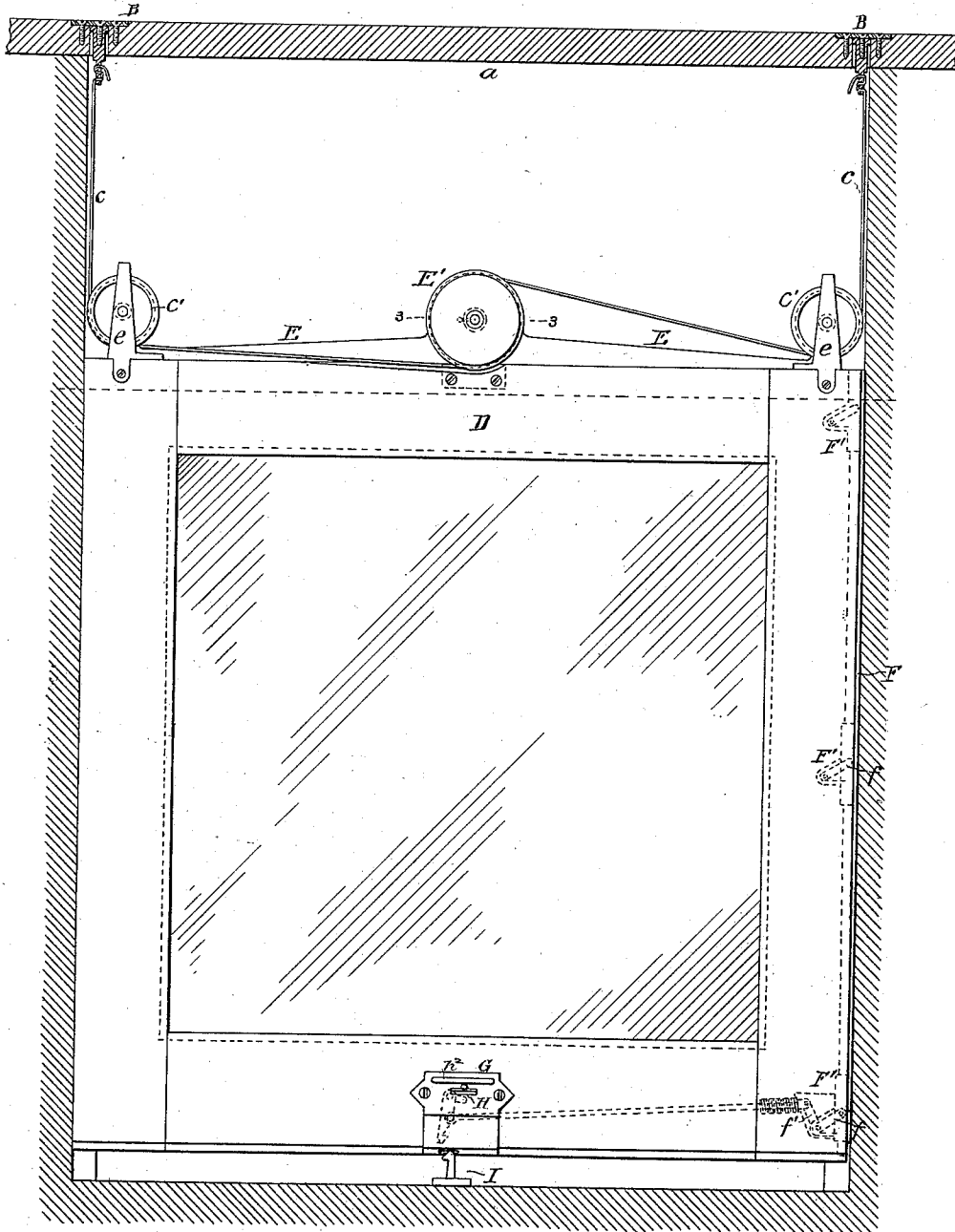
2 Sheets—Sheet 1.

G. F. CLAMER.
SASH BALANCE AND HOLDER.

No. 545,847.

Patented Sept. 3, 1895.

FIG 1



Witnesses:
F. D. Goodwin
Wes. A. Barr.

Inventor:
George F. Clamer
by his attorneys
Howson & Howson

G. F. CLAMER.
SASH BALANCE AND HOLDER.

No. 545,847.

Patented Sept. 3, 1895.

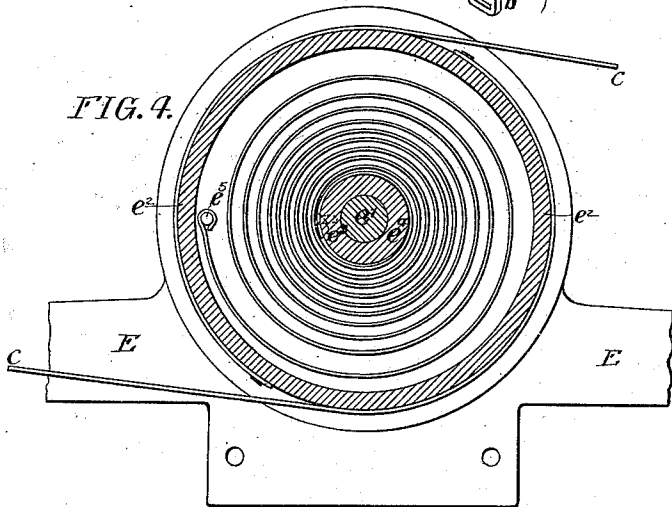
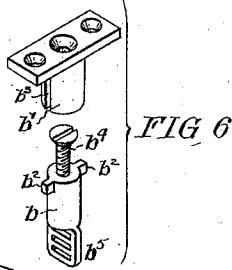
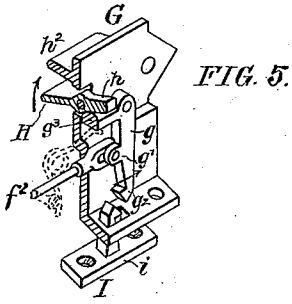
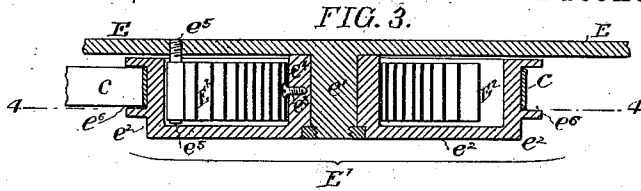


FIG. 2.

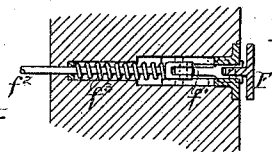
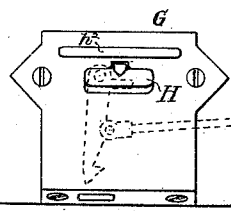
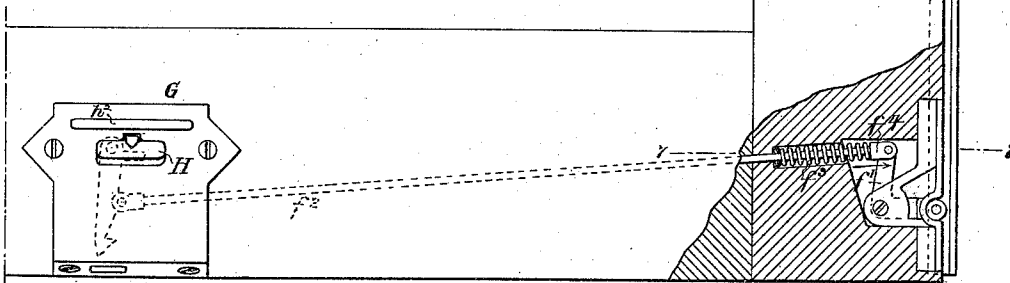


FIG. 7.

Witnesses:
F. D. Goodwin
Will. A. Barr.

Inventor:
George F. Clamer
by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

GEORGE F. CLAMER, OF PHILADELPHIA, PENNSYLVANIA.

SASH BALANCE AND HOLDER.

SPECIFICATION forming part of Letters Patent No. 545,847, dated September 3, 1895.

Application filed September 25, 1894. Serial No. 524,091. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CLAMER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Sash Balances and Holders, of which the following is specification.

The object of my invention is to provide a window-sash balance and holder which can be used especially in connection with rail-
10 road-car windows, although it will be understood that the invention can be applied to any ordinary window without departing from my invention.

A car-window as generally made is not a
15 balanced window, and has to be pushed up and held by catches, and the window-sashes have to snugly fit the grooves in which they slide. Consequently the least swelling of the sash or the working of the car will cause the
20 frame to bind upon the sash.

By my invention I overbalance the sash, so that as soon as it is released it will have a tendency to rise, and I hold it at any point
25 desired by friction which is sufficient to overcome the tendency to rise. I also provide a catch which automatically locks the window when it is closed.

In the accompanying drawings, Figure 1 is a sectional elevation of a car-window frame
30 with the window-sash mounted therein. Fig. 2 is an enlarged view of a portion of the window-sash, partly in section, to illustrate the working of the friction-plate. Fig. 3 is a sectional plan view of the spring-box on the
35 line 3 3, Fig. 1. Fig. 4 is an elevation on the line 4 4, Fig. 3. Fig. 5 is a sectional perspective view of the lock and friction-plate operating device. Fig. 6 is a detached perspective
40 view of the adjustable holders for the tapes, and Fig. 7 is a section on the line 7 7, Fig. 2.

A is the frame of the window.

a is the head-bar, in which are mounted the adjustable holders B B for the tapes c, which
45 pass around wheels c', secured to the upper portion of the sash D. In the present instance these wheels c' are mounted in bearings e e on a frame E, secured to the top of the window-sash. Centrally mounted on this frame
50 is a spring-box E'. Projecting from the frame E is a stud e', Fig. 3, on which is mounted the flanged disk e², forming with the frame

the spring-box E', and within this box is a spring E², secured at e³ to the hub e⁴, its opposite end being secured to a pin e⁵ on the
51 frame, near the outer portion of the spring-box. The flanged portion of the disk e² has a groove e⁶ for the reception of the tapes c c, which are secured in any suitable manner to
60 the disk. The spring is wound to such an extent that it will overbalance the weight of the sash, and as soon as the sash is released the spring will have a tendency to turn the disk and wind the tapes thereon, causing the
65 sash to rise. The spring can be set to any tension desired when the sash is adjusted to the window-frame in the first instance, and if at any time the spring should become slack it can be readjusted with very little trouble
70 by shortening the tapes c c.

In order that the spring may pull evenly upon both tapes and thus elevate the sash in a straight line, I secure the upper end of each tape c to an adjustable stud b, Fig. 6,
75 which is adapted to a socket b', ears b² on the stud being guided in slots b³ in the socket. A screw b⁴ passes through an opening in the upper portion of the socket and enters the threaded opening in the stud, so that by turning the screw the stud can be raised or lowered.
80 The lower portion b⁵ of the stud in the present instance has a series of slots, through which the end of the tape passes. The tape, being the ordinary metallic sash-tape, will be firmly secured to the stud by this means. If one tape
85 should be a trifle longer than the other, one or other of the tapes can be adjusted by simply turning the screw so that an even tension will be placed upon both tapes, thus insuring the proper elevation of the window.
90 At one side of the window there is a friction-plate F, which preferably extends the full length of the sash, although it may extend, in some instances, throughout only a portion
95 of the sash. This plate is connected by links f to blocks F', secured in the sash, as clearly shown in Figs. 2 and 7. On the lower link is an arm f', forming a bell-crank lever, to which is connected the operating-bar f², which
100 extends to the lock G. On this operating-bar is a spring f³, which is confined between the head f⁴ of the operating-bar and the end of the socket formed in the sash, so that the tendency of the spring is to force the arm forward

in the direction of the arrow, Fig. 2, and thus tends to keep the friction-plate always against the groove in the frame. The lock in the present instance simply consists of a pivoted dog g , connected to the rod f^2 at g' , and has at its lower end an under-cut head g^2 , which engages when the sash is down with an under-cut head i on a plate I , secured to the window-still, as clearly shown in Figs. 1 and 5. An arm h on a lever H acts upon an arm g^3 of the dog g when the lever H is operated. For convenience, a projection h^2 is formed on the lock-casing g directly above the lever H , so that by placing the thumb on this projection and the forefinger under the lever H and drawing them together the lever H will be moved in the direction of its arrow and will consequently move the dog in the direction of its arrow, thus releasing it from the head i , and the sash will be elevated by its spring; and, as soon as the lever H is released the friction-plate F , carried by the sash, will be thrown out against the window-frame, holding the window in a set position against the pressure of the spring.

I claim as my invention—

1. The combination of the frame, the sash mounted therein, the frame E' secured to the upper portion of the sash, said frame carrying a central spring box and side bearings, wheels c' mounted in said side bearings, a stud on the frame, a flanged disk mounted on said stud, a spring within the flanged disk and secured thereto and to the frame, tapes $c c$ secured to the periphery of the disk, and passing around wheels $c' c'$ and secured to the upper portion of the window frame, substantially as described.

2. The combination of the window frame, the sash, the spring box attached to the upper portion of the sash, tapes extending from the spring box, adjustable holders B mounted in the upper portion of the frame, each holder consisting of an adjustable stud b to which the tapes are secured, a socket b' and an adjusting screw b^4 , substantially as described.

3. The combination of the window frame, the sash mounted therein, a spring tending to raise the sash, a friction plate F at one side of the window sash and connected thereto, a bell crank lever pivoted to the sash and connected to the friction plate, an operating bar also connected to said bell crank lever, and a spring for forcing the friction plate against the window frame, to resist the elevating tendency of the lifting spring, substantially as described.

4. The combination of the window frame, the sash, the spring box mounted on the sash, tapes extending from the spring box to the upper portion of the window frame, a friction plate connected to the sash, a bell crank lever pivoted to the sash and connected to the plate, a spring for forcing the friction plate against the frame, a locking dog, lever for operating the same, said locking dog being connected to the bell crank lever, substantially as described.

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

GEORGE F. CLAMER.

Witnesses:

HENRY HOWSON,
WILL. A. BARR.