To all whom it may concern:

Be it known that I, Patrick J. O'Brien, a subject of the King of Great Britain, and a resident of the city of Mobile, Newfoundland, have invented certain new and useful improvements in Sash Raising and Locking Devices, of which the following is a specification.

My invention relates to certain new and useful improvements in devices for counter-balancing and raising window-sashes and the like and means for locking the sash in any position desired.

Primarily my invention has for its object to provide a device of this character of a very simple and effective construction which can be easily and cheaply manufactured and will readily and effectively serve its intended purposes.

Generically my invention embodies a slotted plate adapted to be attached to the window-frame and containing lock-receiving apertures suitably spaced apart, a device secured to the window for projecting through the slotted plate, and a spring secured to said window-attached devices and to a member on the window-frame for lifting the window at times.

My invention also includes an improved lock for cooperatively using the lifting devices for holding the window in its adjusted position and comprises a spring pawl carried by the window and projecting beyond the side thereof for engaging the lock-apertures of the window-frame plate.

With other objects in view than have been heretofore enumerated the invention also comprises certain novel construction, combination, and arrangement of parts, all of which will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which--

Figure 1 is a perspective view of a window with my device applied, parts of the window-frame being shown in section to more clearly illustrate the invention. Fig. 2 is a vertical section of the window and frame with the windows closed. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a detailed perspective view of the latch member adapted to be secured to the window. Fig. 5 is a detail perspective view of the window-frame plate. Fig. 6 is a detailed perspective view of the spring-engaging devices carried by the window. Fig. 7 is a detailed cross-section showing the manner in which the spring is secured to the window-frame. Fig. 8 is a side elevation of one of the springs. Fig. 9 is a detailed perspective view of keys for engaging the locking device to release it from its locking position. Fig. 10 is a detail section of a portion of the window and frame, illustrating the manner in which the latch member engages the apertured portion in the window-frame.

Referring now to the accompanying drawings, in which like numerals of reference indicate like parts in all of the figures, 1 designates the window, and 2 the frame, all of which may be of the ordinary construction. In carrying out my invention I provide a plate 3, which I secure to the window-frame by screws 8a & 8a at a suitable distance along the sides of the frame, and the plate is provided with an elongated slot 3b, terminating at one end in a right-angled extension 3c, which runs across the plate. The window-frame is cut out to correspond with the slot 3b & 3c and is of the usual hollow-box type.

Within the frame, on each side of the window, 1 I locate a spring 4, one end 4a of which is secured to a stud-bolt 5, projecting through the slot 3b and formed with a plate 5a, which is adapted to be secured in a suitable countersunk portion 1a on the side of the window 1 by screws 6, as shown, the stud-bolt 5 having a spike portion 5b to enter the window-sash. The other end 4b of the lower pair of springs is secured to a similarly-formed stud-bolt 7, secured to the window-frame, as shown.

The plates 3 have suitably-spaced latch-receiving apertures 3a to cooperate with the latch 8, carried by the window, and the latch 8 comprises an edge plate 8a and a key-plate 8b, formed together and secured to the window-sash in suitable mortises by screws 9, as shown. The latch 8 also comprises a latch member 10, having a spring-arm 10a secured to the plate 8a, as at 10b, and a latch-head 10c, which projects through an aperture 8a in the plate 8a and is adapted to enter the apertures 3a of the plate 3, as will be clearly understood by reference to the drawings. The latch member 10 also has a heel portion 10d, provided with a key-receiving aperture 10e to receive a stud-key 11, which projects through an elongated slot 8a in the key or guard plate 8b and by means of which the latch can be 110
withdrawn from the apertures 3d to permit 40
the springs 4 to aid in raising the window, as
will be presently more fully explained.

By providing the slot 3e, when the windows
are closed and the beading 2a removed from
the window-frame, the windows 1 can be
swung out of the frame when it is desired to
remove the windows.

In practice I provide a plate 3 at each side
of the lower and upper window-sashes and two
springs 4 likewise located for each window, one
on each side thereof, and the plates and springs
are so arranged as to afford an easy opera-
tion of opening the windows.

By reference to Fig. 2 of the drawings it
will be seen the springs for the upper win-
dow 4 are normally compressed when the
window is closed, while those for the lower
window are normally expanded when the
lower window is closed, and the latch devices
serve to hold the window in its adjusted
position against the tension of the springs 4.

It should be understood that the window-
frame is provided with suitable grooves to
receive the springs 4.

It will also be noticed that by providing
the latch with the spring portion 10d after
the latch has been released from the aper-
tures 3d by releasing the operator's pressure
on the latch the same will be forced against
the plate 3 and serve as a friction-retarding
means to prevent the springs 4 releasing the
windows too rapidly.

Instead of using the springs 4 as a raising
means entirely when the latch members are
released I may make the tension of the
springs 4 only slightly more than counter-
balance the weight of the window-sash, and
thus aid the manual operation of opening the
windows.

The slotted blades 3 serve a twofold func-
tion: First, they protect the woodwork of
the window-frame and guide the pins 5 and
keep them from marring or chipping the
grooved portion of the window-frame casing
and, secondly, they serve, in conjunction
with the latch, to hold the window in posi-
tion against the tension of the springs.

From the foregoing description, taken in
connection with the accompanying drawings, it
is thought the complete construction, opera-
tion, and many advantages of my invention
will be readily understood by those skilled in
the art to which the invention appertains,
and I desire to say that many slight changes
in the detailed construction, combination,
and arrangement of parts may be made with-
out departing from the spirit of the invention
or the scope of the appended claims.

What I claim is:

1. The combination with a window-frame
and windows therein, said window-frame
having a box portion, of plates having
grooves, secured to the window-frame,
tension-springs held within the window-frame
and secured at one end to the window-frame,
stud-bolts carried by the window and pro-
jecting through said plate-grooves and se-
cured to the other end of the springs, and
means carried by the window and cooper-
ating with said plate for locking the window
in various positions substantially as shown
and described.

2. The combination with a window-frame
and windows therein, said window-frame
having a box portion, of plates having
grooves secured to the window-frame, ten-
sion-springs held within the window-frame
and secured at one end to the window-frame,
stud-bolts carried by the window and pro-
jecting through said plate-grooves and se-
cured to the other end of the springs, and
means carried by the window and cooper-
ating with said plate for locking the window
in various positions, said last-named means
comprising a latch member carried by the
window, said plates having latch-receiving
apertures for cooperating with the latch
member, substantially as shown and de-
scribed.

3. The combination with a window-frame,
of windows held therein, spring devices with-
in the window-frame and secured at one end
to the frame, slotted plates secured to the
window-frame, stud-bolts carried by the win-
dow and projecting through said slotted
plates and into the window-frame and con-
ected with said springs, said plates having
latch-receiving apertures, and latch devices
carried by the window for engaging said latch,
apertures of the plates, substantially as shown
and described.

4. The combination with a window-frame,
and windows mounted therein, of a plate se-
cured to the window-frame, said plate having
an elongated aperture and a transverse ap-
erture merging therewith and latch-engag-
ing apertures, a stud-bolt secured to the win-
dow and projecting through said slotted plate,
a coil-spring within the window-frame and se-
cured at one end of said bolt, a second stud-
bolt secured to the window-frame and to the
other end of said spring, a latch member car-
ried by the window and comprising a face-
plate and a key guard-plate secured to the
window-sash, a latch-bolt having a spring
portion secured to said face-plate and pro-
jecting through an aperture therein to en-
ge the latch-apertures of said first-men-
tioned plate, said latch-bolt having an ap-
tured head, an operating-key adapted to be
inserted into said apertured head through said
elongated aperture of said key guard-
plate to release said latch from said first-
mentioned plate-latch aperture, substantially
as shown and described.

PATRICK J. O'BRIEN.

Witnesses:

PATRICK J. FORTUNE.

WILLIAM J. SHARPE.