(No Model.)

G. LUSHER.

SASH BALANCE.

No. 528,331. Patented Oct. 30, 1894.

Fig. 1.

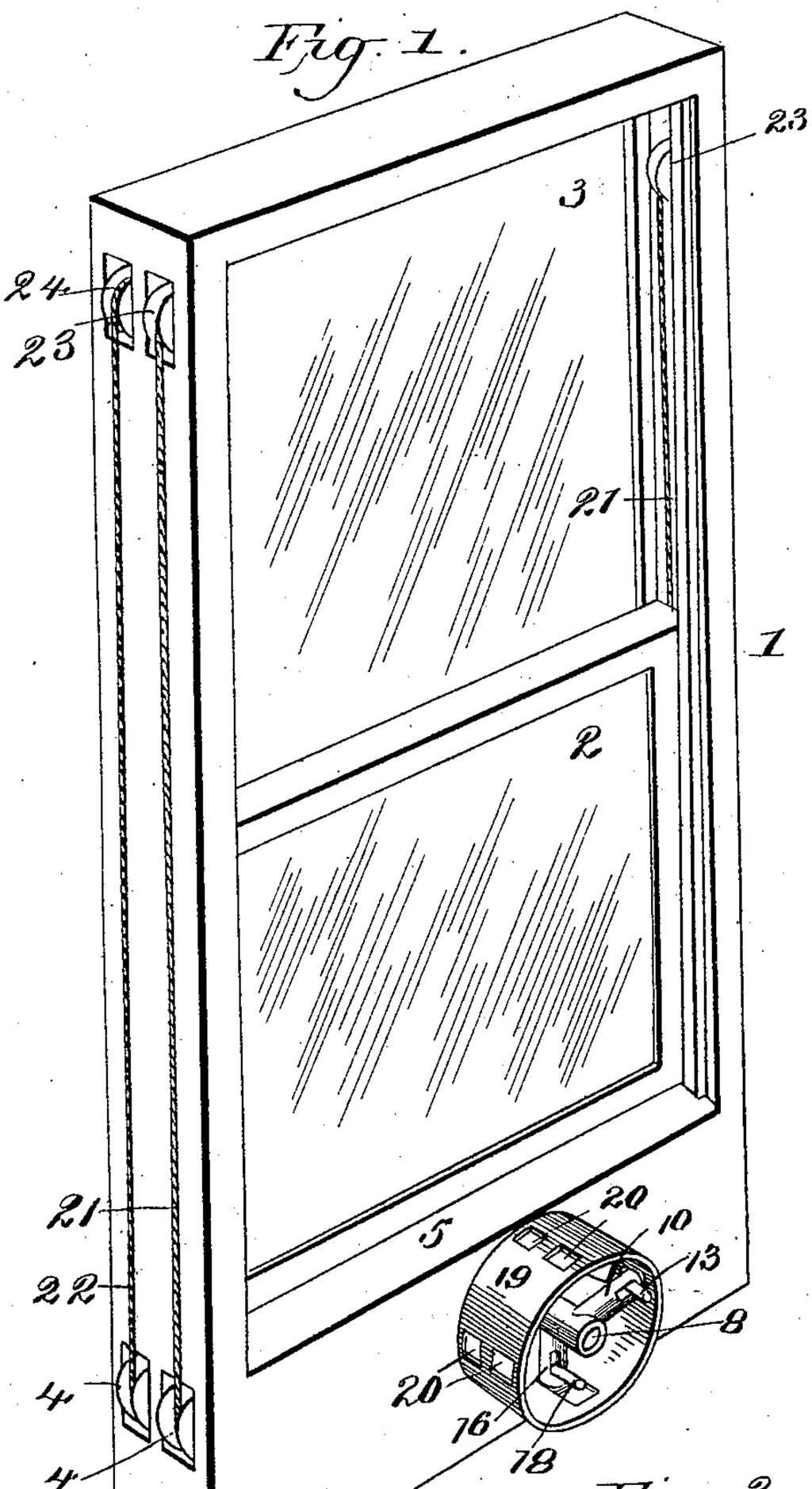


Fig. 2.

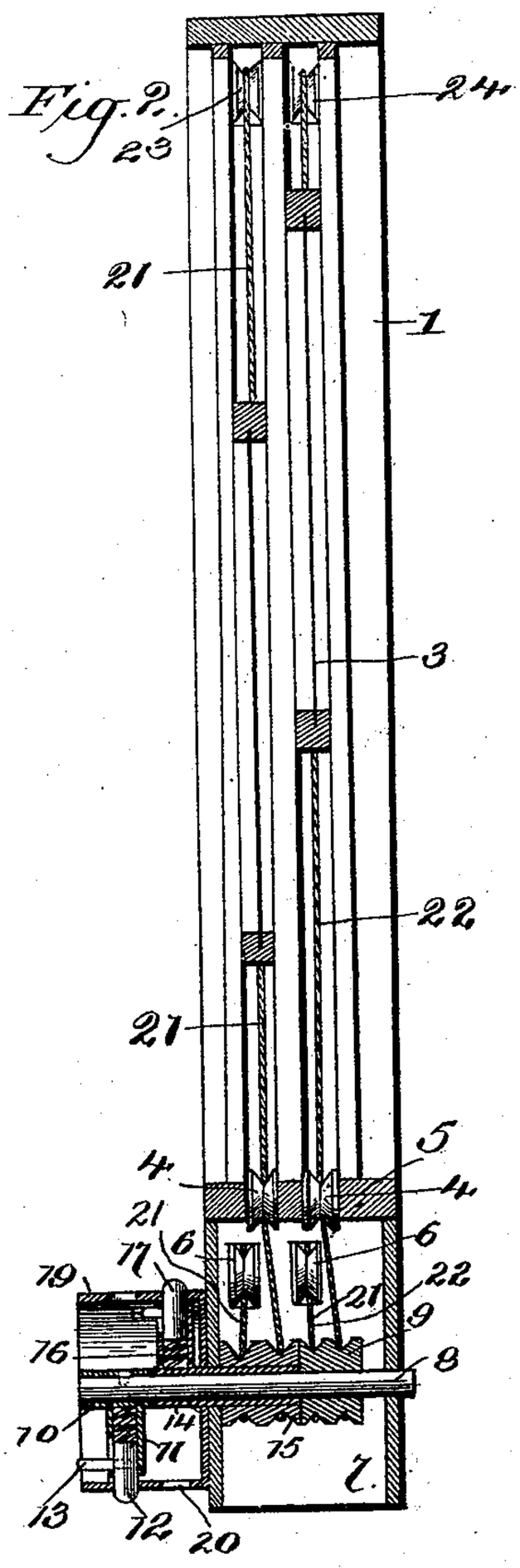
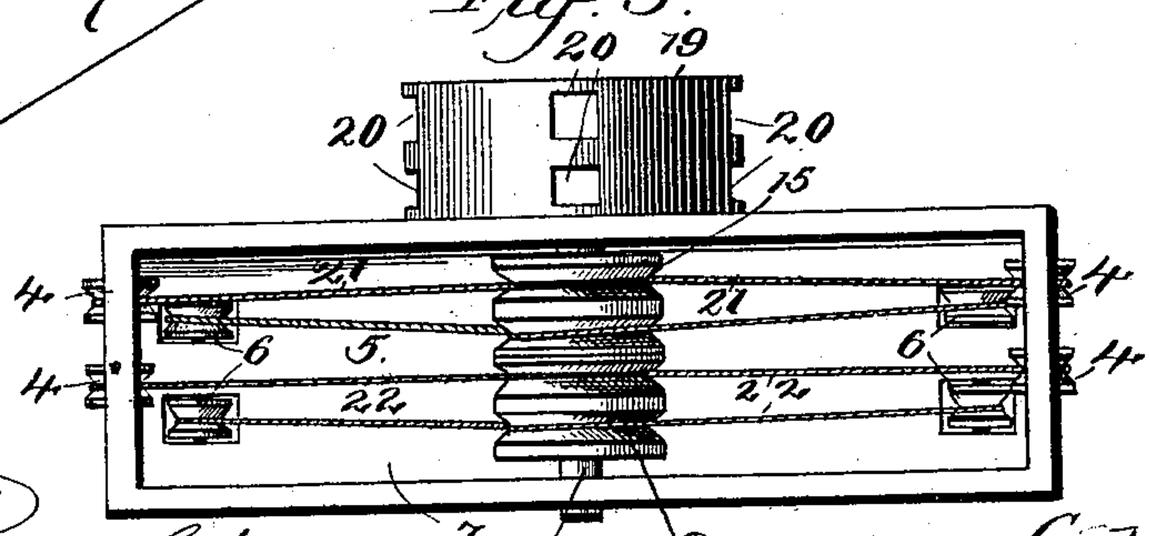


Fig. 3.



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GODFREY LUSHER, OF PASADENA, CALIFORNIA.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 528,331, dated October 30, 1894.

Application filed February 5, 1894. Serial No. 499,134. (No model.)

To all whom it may concern:

Be it known that I, GODFREY LUSHER, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Windows; 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.

This invention relates to windows, and has for its object to provide simple and effective means for independently raising and lowering the sashes.

With these and other objects in view, the invention consists of the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings: Figure 1 is a perspective view of a window-frame and sash, showing the improved construction applied thereto. Fig. 2 is a transverse vertical central section, of the window and the improved attachment. Fig. 3 is a bottom plan view of the window frame with a portion thereof removed, showing the arrangement of the parts.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Referring to the drawings, the numeral 1 designates a window frame or casing in which are mounted a pair of sash 2 and 3. In the lower outer portion of the window frame or casing are mounted oppositely situated pairs of grooved rollers 4, while in the outer ends of the sill or lower stop 5, are also mounted pairs of grooved rollers 6. The bottom portion of the window frame or casing is provided with a hollow compartment or lower extension 7, and extending transversely therethrough in a horizontal plane is a rod or shaft 8, having keyed or otherwise fastened to the rear portion thereof a double grooved pulley 9, and to the outer part thereof, which projects outwardly beyond the front portion of the said collar compartment or extension, is secured a hollow sleeve 10 having a right angular tubular arm 11 with a spring actuated bolt or catch 12 mounted therein and which is provided with an operating handle or knob 13, the said bolt being normally distended or held outward beyond the outer termination of the said angular arm 11. On the said shaft is also mounted an elongated pulley 14 to which is rigidly secured a double grooved pulley 15 adjacent to the pulley 9 of a similar construction. The outer portion of the said elongated pulley is in like manner provided with a right angular arm 16 located in a plane farther to the rear than the plane of rotation of the angular arm 11, and also having a similar spring actuated bolt or catch 17 mounted therein and provided with an operating knob or handle 18.

The outer portion of the shaft together with the sleeve 10 with its arm 11 and bolt or catch 12 and also the angular arm 16 with its bolt or catch 17 are partially inclosed by a metallic box or casing 18, with a series of slots 20 arranged oppositely in pairs at the terminations of the horizontal and vertical diameters of the said box or casing. The said slots 20 are adapted to be engaged by the bolts 12 and 17, to hold the sash in adjusted position against accidental displacement or an effort to raise or lower the same by force.

The grooved pulleys 9 and 15 are engaged by cords or ropes 21 and 22 which wind thereon in opposite directions, the cords or ropes 22 passing over the rearmost of the rollers 4 and 6 while the cord or rope 21 engages the outermost of said rollers 6 and 6. The rearmost cords or ropes 22 are attached to the upper sash, while the outermost cords or ropes 21 engage the lower sash; and said cords or ropes are attached to the opposite sides of the sash. Thus it will be seen that the upper and lower sash may be operated independently, and held in their adjustment through the medium of the bolts 12 and 17 engaging the slots 20, heretofore set forth.

This device is especially useful in raising and lowering heavy sash with ease and convenience, and it is obviously apparent that many minor changes in the construction and arrangement in the several parts might be made and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

The cords or ropes 21 and 22 pass over upper pulleys 23 and 24, as fully shown, and

thence extend downward on the inside of the frame when the sash are operated, as clearly illustrated in Fig. 2 and partially in Fig. 1.

Having thus described the invention, what is claimed as new is—

1. In a window, the combination with the sash having independently acting cords or ropes attached thereto, a shaft for operating said cords or ropes provided with a sleeve and an arm with a locking bolt therein, a second sleeve mounted on the said shaft also having an arm with a locking bolt on the same and means for holding the said locking bolts in their adjusted position, substantially as and for the purpose specified.

2. In a window, the combination of the upper and lower sash, grooved pulleys, or rollers, mounted in the sash plane, independently operating cords or ropes attached to the sash and engaging said grooved pulleys or rollers, a transversely arranged shaft having a double grooved pulley thereon, engaged by a portion of said cords or ropes, sleeve mounted on said shaft, an angular arm attached to said sleeve having a locking bolt therein, an elongated sleeve rotatably mounted on the said shaft with a double grooved pulley attached thereto adapted to be engaged by the remaining portion of said cords or ropes, an angular arm attached to said elongated sleeve and having a spring actuated bolt therein and a casing or box with slots in the same adapted to be engaged by the said bolts, substantially as and for the purposes specified.

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

GODFREY LUSHER.

Witnesses:
ANN E. DEAN,
LUCIE PLACE.