

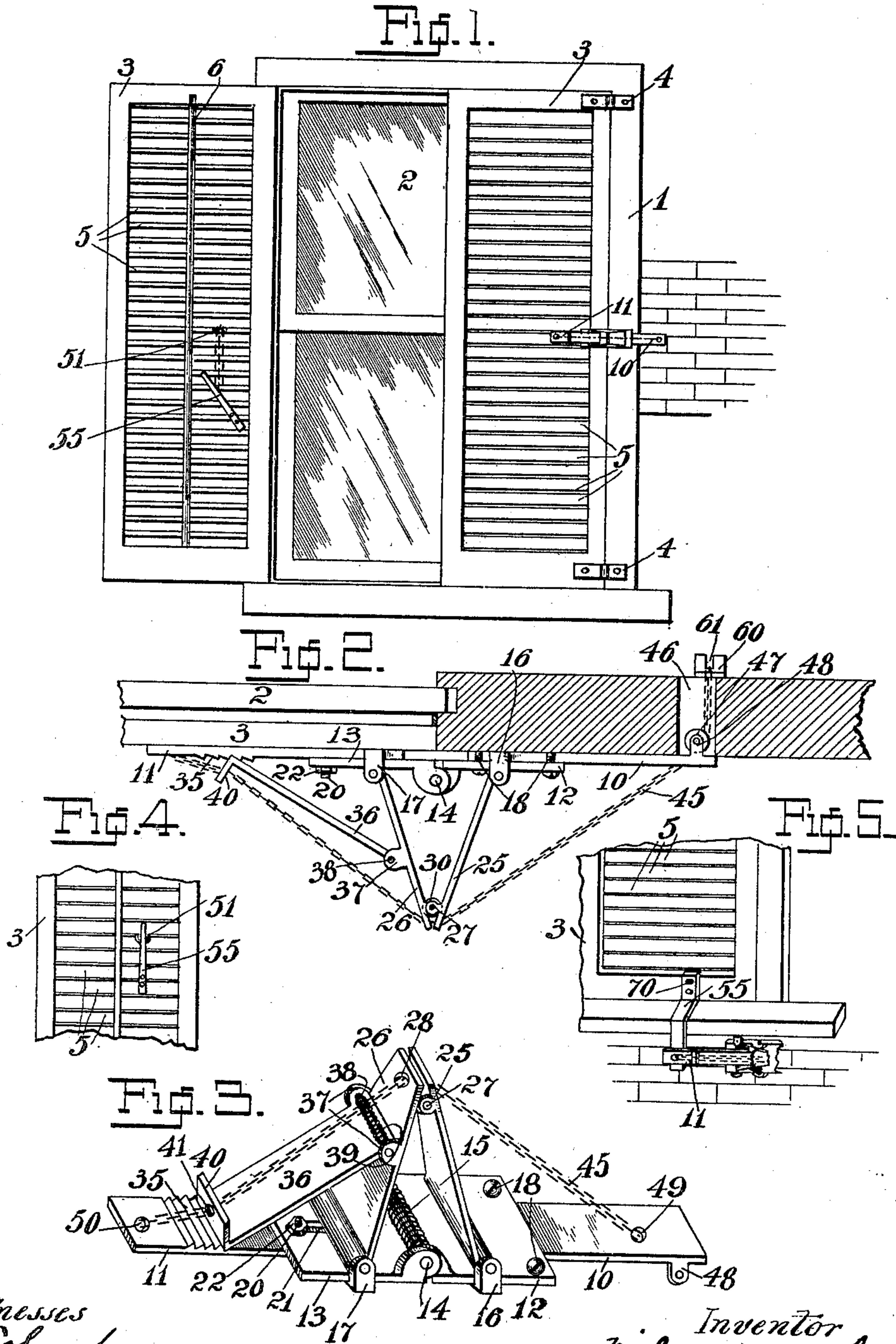
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W. W. VAN DUZER.
SHUTTER OPERATING DEVICE.

(Application filed Jan. 31, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILSON W. VAN DUZER, OF WARWICK, NEW YORK.

SHUTTER-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 697,297, dated April 8, 1902.

Application filed January 31, 1902. Serial No. 91,983. (No model.)

To all whom it may concern:

Be it known that I, WILSON W. VAN DUZER, a citizen of the United States, residing at Warwick, in the county of Orange and State of New York, have invented certain new and useful Improvements in Shutter-Operating Devices, of which the following is a specification.

The object of my invention is to provide a simple and effective device for opening and closing the outside shutters or blinds of windows from a point inside of the room.

To this end my invention comprises a pair of operating-arms connected by a spring-hinge and having means for attaching them respectively to the outer wall of a building adjacent to a window and to the shutter or blind which is to be operated, a pair of pivotally-connected links, each of which is pivoted to one of said operating-arms, and a chain, wire, or rope suitably connected with the blind or shutter to be operated and passing over antifriction rollers or pulleys supported in the outer end of said links and upon the end of the rigidly-attached operating-arm and extending through an opening in the wall to a point within the room from which the blind or shutter may be operated.

Another arm or bar is preferably attached to one of the pivotally-connected links by means of a spring-hinge and is supported in such relation to the operating-arm which is connected with the shutter that it may travel over a series of ribs constituting a rack, so as to automatically hold the operating-arms in distended position. A preferred means for attaching the operating chain, wire, or rope to the blind or shutter consists of a small plate or bar of metal attached to the end of the chain, wire, or rope, which is passed through an opening in the blind or shutter.

The said plate or bar is attached near one of its ends, so as to cause it to hang approximately vertically from the chain. With blinds having the pivotally-mounted slats I prefer to pass the operating chain, wire, or rope through a notch cut in the upper edge of one of the slats in such manner that when the chain is pulled taut the attached plate or bar will engage several of the adjacent slats and close all of the slats of the series, and when the chain is loosened the weight of the plate or bar will be exerted to open the slats.

In order that my invention may be more fully understood, I will first describe the same with reference to the accompanying drawings, and afterward point out the novelty with more particularity in the annexed claims.

In said drawings, Figure 1 is the front view of a window having ordinary blinds or shutters equipped with my improved operating devices, one of the blinds being opened and the other closed. Fig. 2 is a detail horizontal sectional view of part of the same on a larger scale. Fig. 3 is a perspective view of the main parts of one of my shutter-operating devices. Figs. 4 and 5 are detail views.

1 is the window-frame, 2 the window, and 3 the ordinary outside blinds or shutters hinged at 4 and having the pivotally-mounted slats 5, which are connected to operate as a whole by means of the vertical bar 6 of well-known construction.

10 and 11 are the main operating-bars of my improved shutter-operating device.

12 and 13 are plates pivotally connected at 14 and provided with a spring 15, which tends to throw the hinged plates 12 and 13 apart.

The operating-arms 10 and 11 are formed with integral lugs 16 and 17, respectively, which extend approximately vertically from the arms and afford yokes or guide-brackets, between which the hinged plates 12 and 13 rest.

The operating-arm 10 is adapted to be rigidly secured to the window-frame or wall of the building adjacent thereto by means of screws, bolts, or other fastening devices which pass from suitable openings in the hinged plate 12 and securely clamp the plate 12 and arm 10 to the wall.

The operating-arm 11 is formed with a single bolt-opening, in which is mounted a bolt 20. The bolt 20 extends up through an elongated slot 21, formed in the hinged plate 13, and a nut 22 is threaded upon the bolt 20 and securely clamps the hinged plate 13 to the arm 11. By this means the arm 11 can be adjusted upon the plate 13 to lengthen or shorten the spread of the operating-arms 10 and 11.

Journalled in the lugs 16 and 17 of the operating-arms 10 and 11 are the links or plates 25 and 26, which extend outwardly from the

arms 10 and 11 and are pivotally connected adjacent to their outer ends by a bolt 27. Openings 28 are formed in the outer ends of the links 25 and 26 for the passage of an operating chain, wire, or rope, hereinafter referred to, and mounted on the bolt 27 is an antifriction wheel or roller 30 for the operating-chain to run upon.

The outer face of the operating-arm 11 is formed with a series of ribs or serrations 35 to constitute a rack. A pawl or arm 36 is journaled to the ears or lugs 37 of the link 26 upon a bolt 38, a spring 39 surrounding the bolt 38 and giving the arm or pawl 36 a tendency to move into engagement with the rack 35 of arm 11, the lower end of said pawl or arm 36 being shaped to closely engage said rack. A rib 40 is formed integral with the lower end of the pawl or arm 36, and an opening 41 is formed through said rib 40 for the passage of the operating chain, wire, or rope.

45 is the operating chain, wire, or rope, which extends from a point inside of the building through an opening 46, cut in the wall or casing, then over an antifriction roller or wheel 47, journaled in lugs 48 upon the outer end of the rigid operating-arm 10, then through an opening 49 in said operating-arm 10, then through the openings 28 and around wheel 30 of the links 25 26, then through the opening 41 of the pawl or arm 36, then through an opening 50 in the outer end of the movable operating-arm 11, and finally through an opening 51, cut in the upper edge of one of the pivoted slats 5 of the shutter to be operated. To the outer end of the operating chain, wire, or rope is attached a plate or bar 55, the point of attachment being near one end, so as to cause the plate or car to hang approximately vertical.

At a point inside of the room adjacent to the opening 46 any suitable fastening device for the operating-chain may be provided. I prefer to employ a flanged bracket, such as 60, formed with a recess or slot 61, in which the operating-chain may be fastened.

If the blinds or shutters are closed and it is desired to open them, the operating-chain 45 is pulled inwardly, first causing the plate or bar 55 to close the slats 5 of the shutter, then causing the pawl or arm 36 to be raised out of engagement with the rack 35, and then pulling the shutter upon its hinges outwardly against the action of the main operating-spring 15. The shutter may be opened entirely or only partially and fastened in the desired position by reason of the securing device 60 and the opposing spring, which tends to move the shutter in the contrary direction.

When it is desired to close the shutter, the chain is loosened from the fastening device 60 and allowed to pass freely out through the opening 46 and around the rolls above referred to, the operating-spring 15 causing the shutter to close and the spring 39 throwing the pawl or arm 36 into engagement with the rack as the shutter opens. By allowing the

operating-chain to continue loose the plate or bar 55 will automatically open the slats; but if it is desired to retain the slats in closed position it is only necessary to pull the operating-chain 45 to a slight degree, care being taken not to exert sufficient force to overcome the strength of spring 39.

It may sometimes be desirable to mount my shutter-operating device upon the wall or siding under the sill of the window just below the shutter, as shown in Fig. 5. The device can be readily used in this manner by taking the plate or bar 55 and bending it to the necessary shape to fit around the sill and then rigidly securing it to the shutter-frame, as shown at 70. The operating-chain 45 of the shutter-operating device is then suitably fastened to the lower end of the plate 55, and the remaining parts of the device are arranged and operated as already described.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a device of the character described, the combination of the main operating-arms, means for pivotally connecting said arms, a pair of pivotally-connected arms or links extending outwardly from said operating-arms and connected respectively thereto, an operating chain, wire or rope passing through suitable openings in the outer ends of said main operating-arms and said pivotally-connected links, and means for attaching one end of said operating chain, wire or rope to a blind to be operated, substantially as set forth.

2. In a device of the character described, the combination of the two main operating-arms, one of which is adapted to be rigidly attached adjacent to a window, a spring-hinge pivotally connecting said operating-arms, a pair of pivotally-connected arms or links, one of which is pivoted to each of said operating-arms, an operating chain, wire or rope passing through suitable openings formed in said operating-arms and in the outer ends of said pivotally-connected links, and means for attaching one end of said operating chain, wire or rope to a shutter to be operated.

3. In a device of the character described, the combination of the main operating-arms, one of which is adapted to be rigidly attached adjacent to a window, a spring-hinge pivotally connecting said arms, an adjustable connection between one member of said spring-hinge and one of the operating-arms, a pair of pivotally-connected arms or links projecting outwardly from said operating-arms and pivoted to them, an operating chain, wire or rope passing through suitable openings in said operating-arms and said pivoted links, and means for attaching said operating chain, wire or rope to the shutter to be operated, substantially as set forth.

4. In a device of the character described, the combination of the main operating-arms, means for rigidly supporting one of said arms, a spring-hinge pivotally connecting said arms,

a series of ribs constituting a rack upon one of said operating-arms, a pair of pivotally-connected links pivoted to said operating-arms and projecting outwardly therefrom, an arm
5 or pawl pivotally mounted upon one of said links and adapted to engage said rack, an operating chain, wire or rope passing through suitable openings formed in said operating-arms, said links, and said pawl or arm, and
10 means for attaching one end of said chain, wire or rope to the shutter to be operated, substantially as set forth.

5. In a device of the character described, the combination of the main operating-arms,
15 means for rigidly supporting one of said arms,

a spring-hinge connecting said arms, a pair of pivotally-connected links extending outwardly from and pivoted to said operating-arms, an operating chain, wire or rope passing through suitable openings formed in said
20 operating-arms and said pivotally-connected links, and a plate or bar connected adjacent to one of its ends to said operating chain, wire or rope and adapted to engage the pivoted slats of a shutter for closing them, substan-
25 tially as set forth.

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