(No Model.)

G. ANDREEN.

SHUTTER WORKER AND FASTENER.

No. 524,016. Patented Aug. 7, 1894.

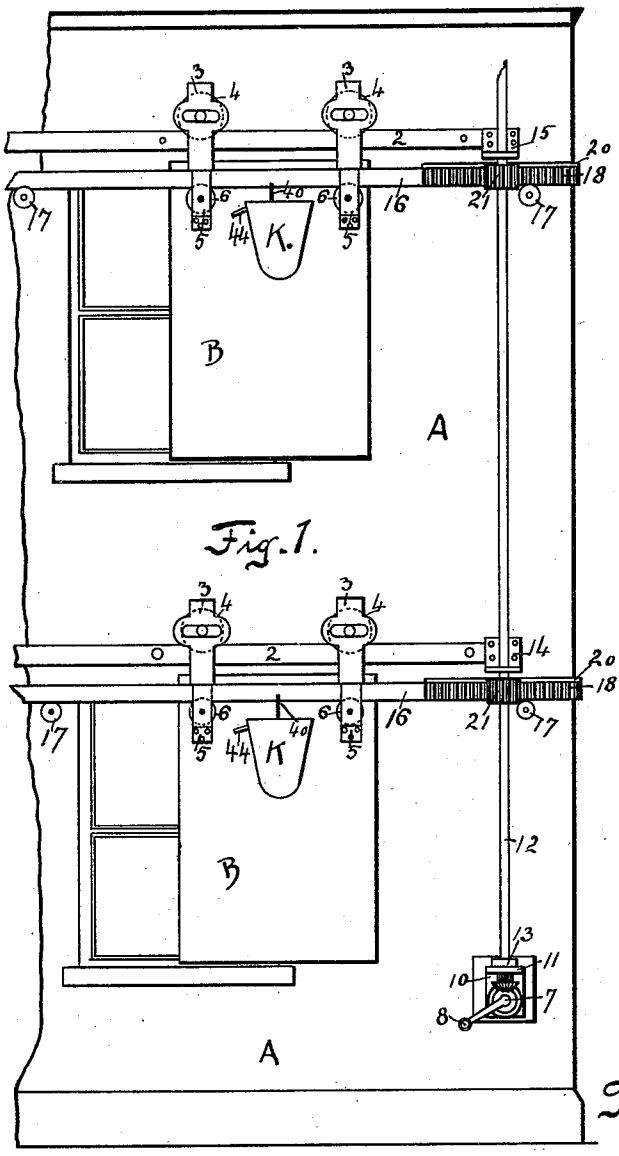

Fig. 1.

Fig 4

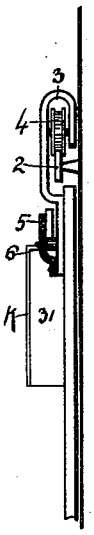

Fig. 2.

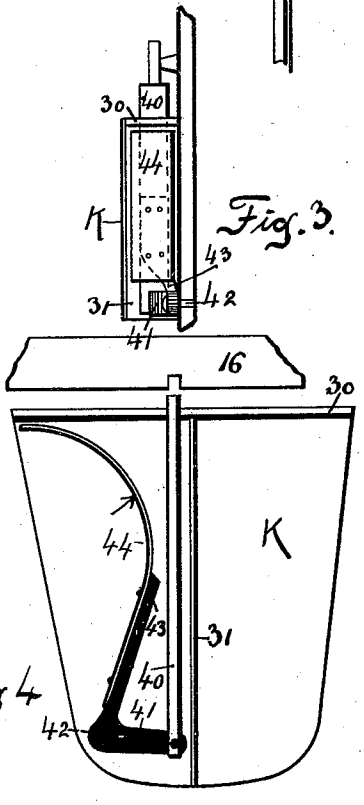

Fig. 3.

WITNESSES:

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SHUTTER WORKER AND FASTENER.

SPECIFICATION forming part of Letters Patent No. 524,016, dated August 7, 1894.

Application filed October 17, 1893. Serial No. 488,352. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE ANDREEN, of Omaha, in the county of Douglas and State of Nebraska, have invented certain useful Improvements in Shutters; and I do hereby declare that the following is 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, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to a new and novel improvement in shutter workers and fasteners and is more particularly adapted to be used in combination with my shutter worker, granted to me April 7, 1891, and numbered 449,656, though the device is intended and adapted to be used in combination with any suitable shutter workers, or even doors.

In the equipment of the large modern buildings, it is often the practice to provide a building with a system of fire protecting shutters, which are usually connected by means of a long bar or chain, or cable so that, by means of a certain operating device the whole system of shutters can be operated from one point to open or close the same.

My shutter worker is adapted to be used in combination with such a system of shutter closing mechanism.

In the accompanying drawings I have shown in Figure 1 a section of a two storied building, provided with my improved device. Fig. 2 shows an end view of the rail and hanger. Fig. 3 shows an end view of my improved shutter worker, while Fig. 4 shows my shutter worker with the front plate removed.

A represents a suitable building, which is provided with the shutters B, which are mounted upon the rail 2 by means of the recurved hanger 3, provided with the supporting roll 4. Each shutter is, usually, provided with two of those hangers, which are preferably secured on the outside of the shutter, and so hold the shutter in a suspended condition immediately adjoining the window or door opening. In front, I have provided each shutter with one or more stub brackets 5, which give a purchase to the supporting rolls 6, which may be either grooved or simply flat rolls; at a suitable point I provide an ordinary operating shaft 7, which preferably extends clean through the wall so that a detachable operating crank 8 can be attached to the same, either upon the inside or outside. This shaft is supported by means of a plate 10, which has an upper outwardly extending portion, 11, through which the perpendicular shaft 12 is adapted to pass, as shown in Fig. 1. This shaft is of any suitable length and, preferably, comprises a hollow tube provided below with the collar 13 riding upon the shelf portion 11 and so supporting the shaft 12, which is given further stability by means of the plates 14 and 15, which could, also, be provided with collars aiding in the support of this operating shaft 12.

Extending clear across the building and immediately in front of a system of shutters to be operated is a bar 16, there being one of such bars for each story. These bars, of course, extend in a horizontal direction and work to the rear of the stub brackets 5 and upon the supporting rolls 6, so that this bar, which could be of any suitable length, will be supported by the rolls of each shutter. To further support these rods 16, I provide the additional roll 17, positioned at suitable intervals between the windows. These rods 16 are provided, at one end, with a rack 18, having an upper portion 20 projecting at right-angles, adapted to ride over and to protect a pinion 21, which is adapted to engage the rack and is secured to the perpendicular operating shaft 12, as will be noticed in the figure. These racks work between the building and the shaft and the portion 20 is adapted to partially ride over the pinion and so keep the sleet and snow from clogging within the rack and also the pinion. These bars 16 are all secured to the operating shaft 12 so that they can be simultaneously actuated. I now further provide each of the shutters with one of my improved striker plates or hoods K, which are secured to the shutters in front and preferably near the upper end and being provided with the upper portion 30 and the central rib 31, as shown more clearly in Fig. 4. This hood is open upon the sides and bottom and is adapted to be operated by the impact of a hose stream, which would be directed against the web 31 to actuate the shutter, as is described in my patent granted April 7, 1891, and numbered 449,656. However, where

the shutters are all secured to one main operating bar or rod, as in my present invention, it is often desirable in case of a fire to remove one or more shutters without removing the remaining shutters. To effect this, I have detachably secured the shutters to the horizontal bars 16 by means of a gravity actuating bolt 40, which is held within an opening of the top 30 and below is supported by means of the angle bar 41, as shown in Figs. 3 and 4. This angle bar 41 is preferably a piece of bar iron, of a suitable width, which is bent at right-angles and provided with a pivot pin 42, by means of which this angle bar is secured to the shutter.

The upper extending portion 43 is provided with a blade 44, which is preferably slightly curved and is so positioned that the bolt 40 is normally held in an upward position, part of the blade 44 projecting beyond the hood K, as shown in Figure 1. These bolts 40 are removably held within suitable slots of these rods 16 and it is by means of these bolts 40 that the shutters B are connected to the operating bars 16. Now, if at any time it is desired to detach any single one of the shutters from the system during a conflagration, the firemen simply direct a stream against the blade 44, which is then, promptly, carried upward, which would, of course, cause the lower angular portion 41 to drop, and this portion being pivotally secured to the bolt would, of course, carry this bolt out of its seating within the shutter bar 16, and as soon as this were accomplished the shutter would be carried along the rail 2 by means of the impact of the stream. The windows could then be broken and a stream directed into the burning building.

It is, of course, understood that the blade 44 and the angle iron 41 could be cast in one piece, though I prefer using the device as shown and described. So, also, could the shutters B be released by hand, it simply being necessary to carry back the projecting paddle 44, which would release the blade when the shutter could be readily worked upon its rail.

Now, having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent, is—

1. The combination with a sliding shutter of an open hood, a pivoted bolt positioned within said open hood and provided with an extending bolt and a notched bar or rack, adapted to be engaged by said bolt, all substantially as and for the purpose set forth.

2. The combination with a system of sliding shutters of a main operating bar, provided with a pinion a horizontally actuated bar removably held in front of said sliding shutters, and provided with a rack adapted to mesh with said pinion said bar being provided with a suitable bolt seating; a hood secured to each of said shutters, open at the sides and bottom and provided with a gravity actuating bolt, provided with a projecting paddle, said blade extending beyond said hood and working within the bolt seating of said rack bar, all substantially as and for the purpose set forth.

3. The combination with a system of sliding shutters B, of a main operating shaft 12, provided with the pinion 21 of the rod 16, held in front of said shutter B by means of the stub brackets 5 and rolls 6, the rack 18, meshing with the pinion 21, the hood K forming part of the shutter and provided with the pivoted bar 41, giving support to the bolt 40 and the paddle 44 working within said hood K and adapted to actuate said bolt 40, working within a seating of said rod 16 so that said bolt may be detached in releasing the shutter, all substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAVE ANDREEN.

Witnesses:
ALEX. MOORE,
GEO. W. SUES.