(No Model.) 2 Sheets—Sheet 1.

J. G. LANE.

SHUTTER FASTENER.

No. 604,053. Patented May 17, 1898.

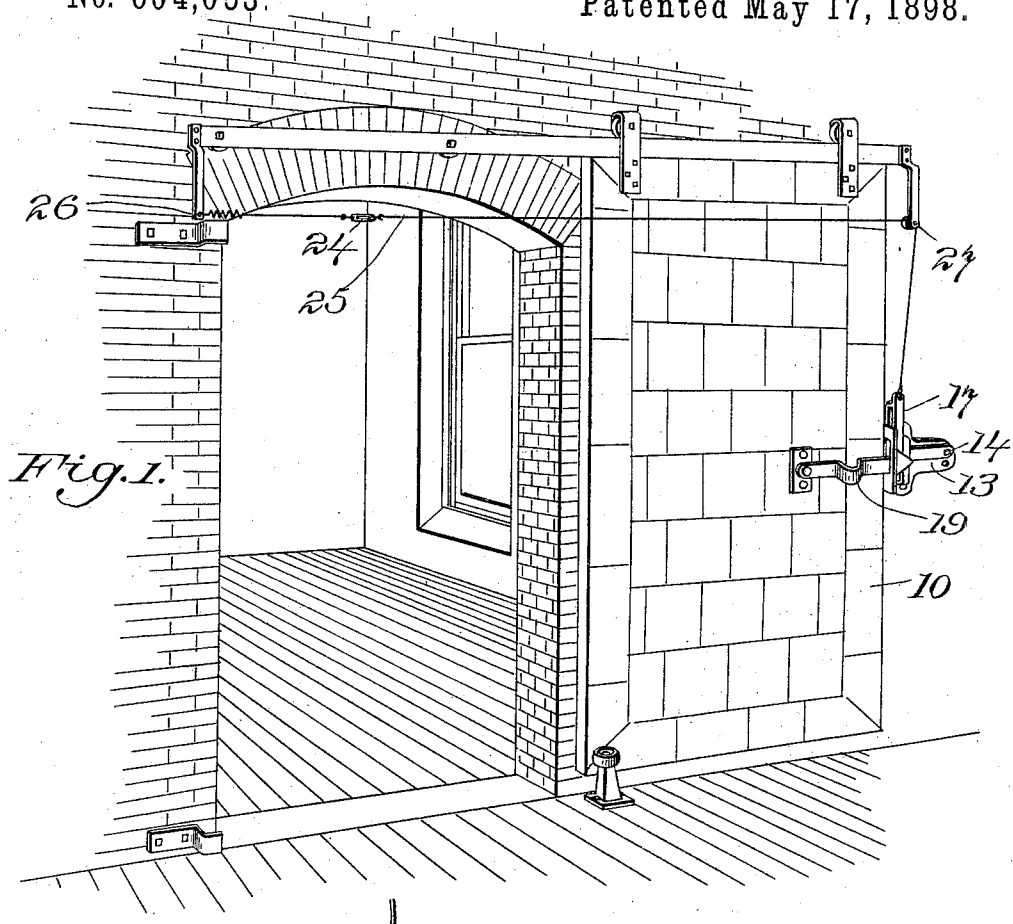


Fig. 1.

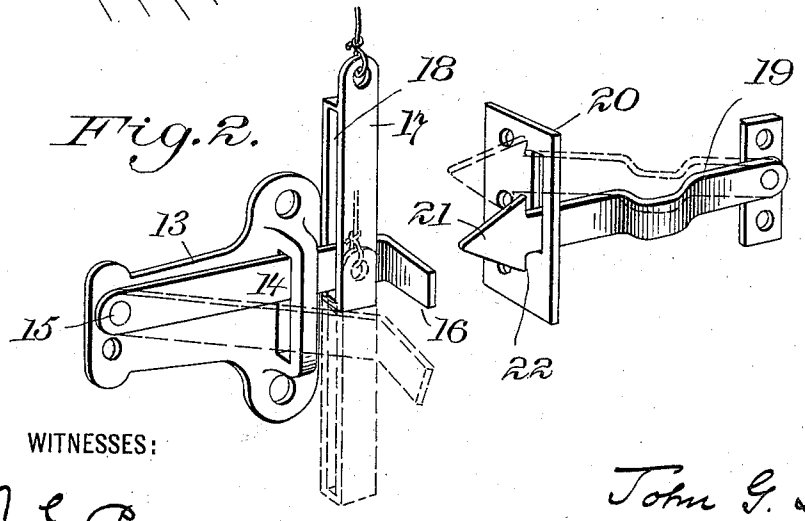


Fig. 2.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

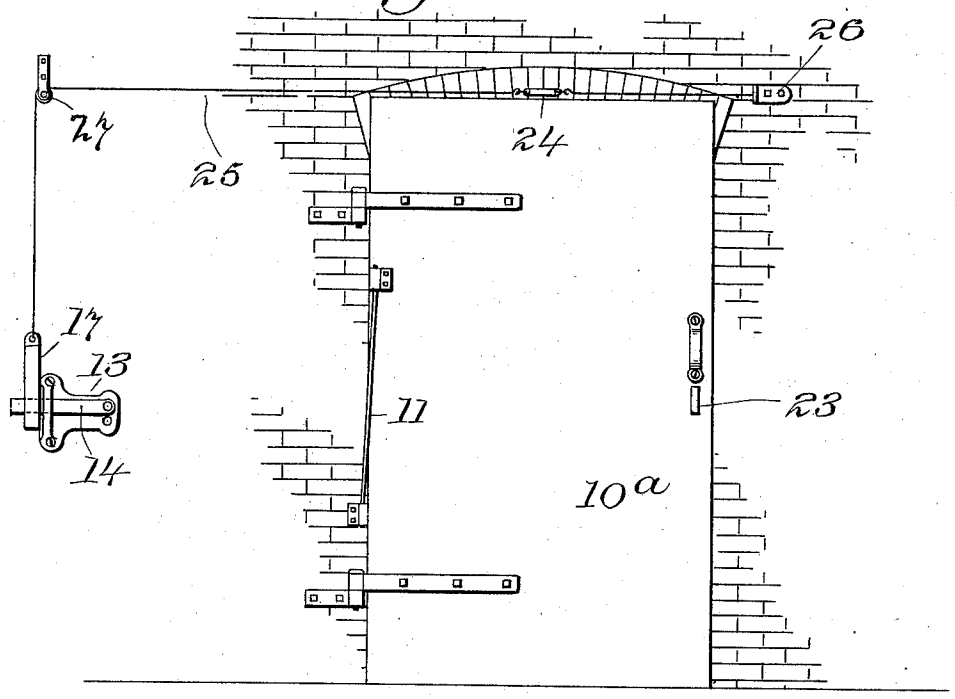
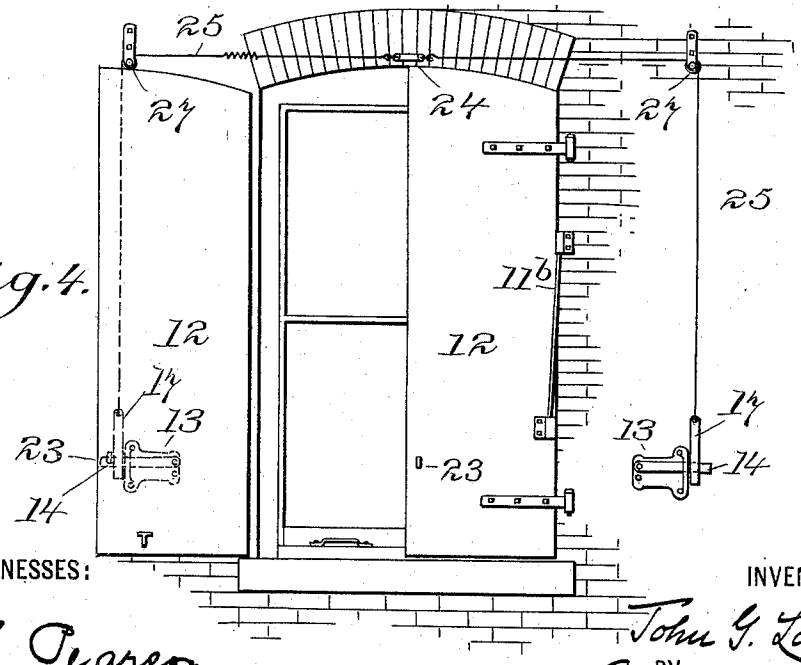


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SHUTTER-FASTENER.

SPECIFICATION forming part of Letters Patent No. 604,053, dated May 17, 1898.

Application filed February 17, 1898. Serial No. 670,666. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. LANE, a citizen of the United States, residing at Philadelphia, State of Pennsylvania, have invented new and useful Improvements in Shutter-Fasteners, of which the following is a specification.

My invention relates to fasteners for fire doors and shutters of the class which are adapted to be automatically closed when the fastener which holds them open is released by reason of the melting of a fusible link by a fire on the premises.

My invention has special reference to the construction of the fastener or lock which normally holds the door or shutter open.

The object of my invention is to provide a fastening device for self-closing doors or shutters comprising a pivoted arm, a weight, and a latch, and in which the pivoted arm is held in engagement with the latch by the weight and released in case of fire by the falling weight impinging upon the arm, and thereby permitting instantaneous closing of the door or shutter in case of fire.

In the accompanying drawings, which illustrate my invention, similar numerals indicate like parts.

Figure 1 is a view in perspective of a sliding fire-door. Fig. 2 is a similar view in perspective, showing the construction of the fastener and illustrating in dotted lines the movements of the respective parts. Fig. 3 is a front elevation of a hinged fire-door, showing the door closed. Fig. 4 is a similar view of a pair of shutters, showing the shutter on the left open and that on the right closed.

In the drawings, 10 indicates a fire-door of the type which is mounted to slide and close by its own gravity; 10^a, Fig. 3, a door of the type which is mounted upon hinges and which is closed by the influence of a spring 11. 12 are a pair of shutters which are closed by the influence of springs 11^b. All of the doors and shutters are therefore self-closing.

It is obvious that very many types of self-closing doors may be used. I therefore wish it understood that I do not limit myself to any particular type of self-closing door or shutter to be used in connection with my improved fastener.

Mounted upon the wall of the building or partition, to the rear of the door, Fig. 1, or behind the door or shutters, Figs. 3 and 4, is arranged the major portion of my improved fastener. The arrangement shown in Fig. 1 is that illustrated to the right of Fig. 2 and consists of the plate 13, carrying the arm 14, pivoted at 15. In the construction shown in Fig. 1 the end of the arm 14 is bent at a right angle outwardly, as at 16. In the construction shown in Figs. 3 and 4 this arm is straight.

Mounted so as to include the arm 14 is a weight 17, having a slot or opening 18. In the construction shown in Fig. 1 there is mounted and pivoted upon the fire-door a latch 19, arranged to move in a slotted plate 20; but this plate may be dispensed with. The projecting end 21 of the latch 19 is arrow-shaped or otherwise so formed as to provide a shoulder 22, which will take over the arm 14 of the fastener 13 when the arm 14 is in the position shown in full lines—*i. e.*, when the door is open.

In the arrangement shown in Figs. 3 and 4 there is fastened to the door or the shutter or shutters a projecting latch 23, provided with a shoulder similar to 22 to take over the straight arm 14.

24 represents a fusible link which may be located in the doorway, window-opening, or in any suitable position. 25 represents a wire or cord connected at one end at point 26 and then carried over a pulley 27 and connected to the upper end of the weight 17, the arrangement being such that the weight is normally lifted to the position shown in full lines, Fig. 2. By lifting of the weight the arm 14 is so raised that when the door is open, as shown in Figs. 1 and 4, the latch 19 or 23 takes over the arm 14. When the link 24 is melted and the cord released, the weight drops and carries down the arm 14, which releases the latch 19 or 23 and allows the door or shutters to close, as influenced by gravity or a spring.

By reason of the arrangement of the arm 14 in the slot 18 of the weight 17 the arm is directly acted upon by the releasing of the weight and by the weight itself.

I am aware that fasteners have heretofore been made to open by the influence of a falling weight acting through a cord. In practice, however, the dropping of the weight is more apt to rupture the cord than release the

fastening, particularly if the fastening is at all rusted. In my arrangement this cannot occur, as the weight acts directly upon the pivoted arm to release the latch.

Having thus described my invention, I claim—

1. In combination with a self-closing door or shutter, a fusible link, a cord, a slotted weight supported by said cord, a pivoted arm located in the slot of the weight, and a latch.

2. In a fastener for self-closing doors or shutters, the combination of a pivoted arm, a weight which normally supports said arm but impinges upon it in falling, and a latch.

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

JOHN G. LANE.

Witnesses:
J. E. PEARSON,
W. H. PUMPHREY.