(No Model.)

N. A. FOSS.

IRON SHUTTERS.

No. 270,047. Patented Jan. 2, 1883.

Fig. 1.

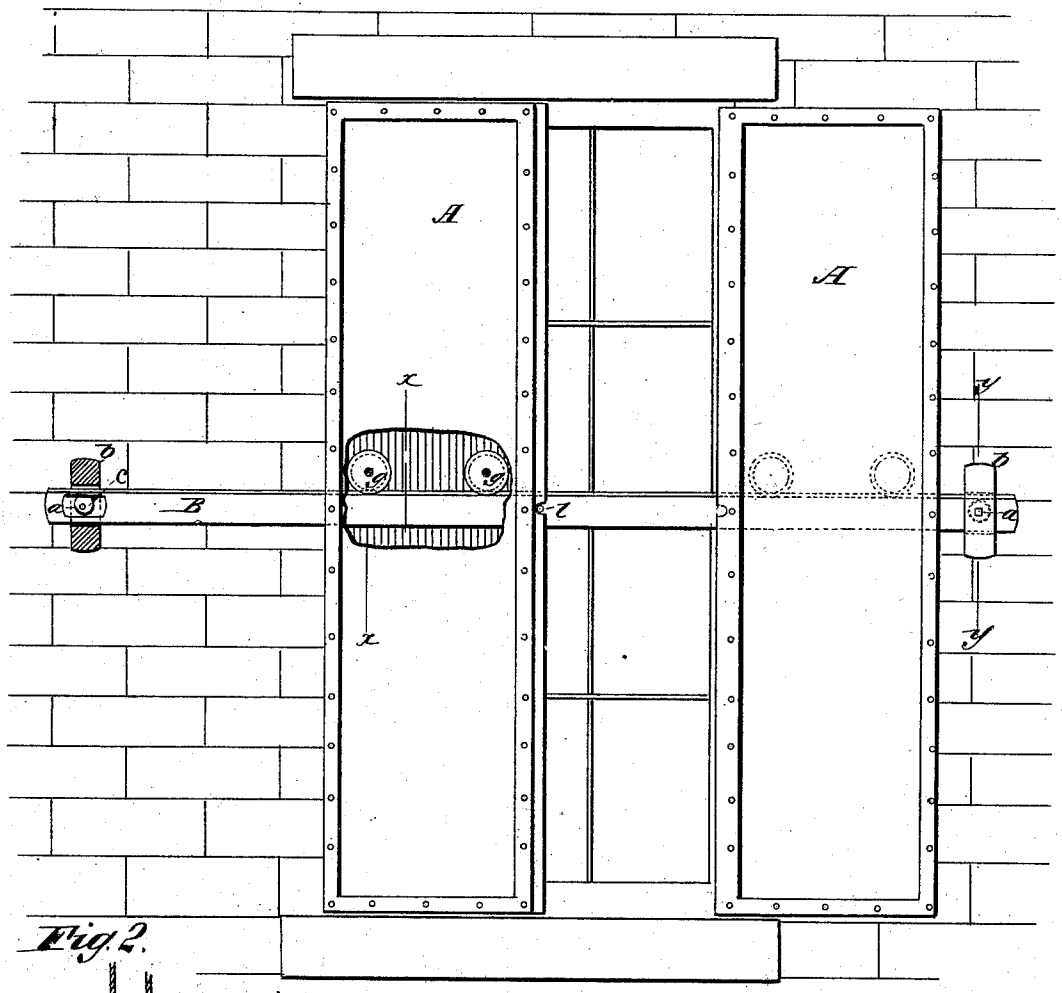


Fig. 2.

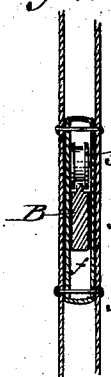


Fig. 3.

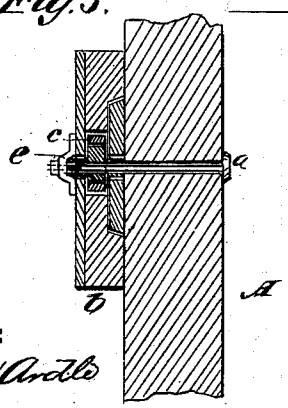
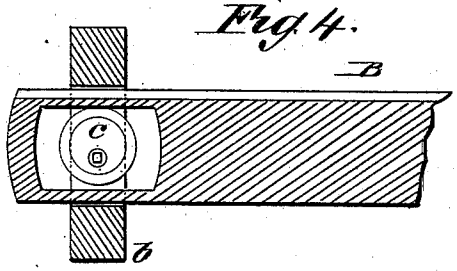


Fig. 4.



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UNITED STATES PATENT OFFICE.

NEWMAN A. FOSS, OF GOLD RUN, MONTANA TERRITORY.

IRON SHUTTER.

SPECIFICATION forming part of Letters Patent No. 270,047, dated January 2, 1883.

Application filed June 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, NEWMAN A. FOSS, of Gold Run, in the county of Meagher and Territory of Montana, have invented a new and useful Improvement in Iron Shutters for Buildings, of which the following is a full, clear, and exact description.

It is well known that iron shutters are an excellent protection to buildings against fire from adjoining buildings; but on account of the difficulty experienced in opening such shutters from the outside in case of fire they have been generally condemned.

The object of my invention is to provide iron shutters that can be readily opened from the outside, and at the same time more easily operated from the inside than the usual hinged shutters.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation showing a window of a building with my improved shutters applied thereto, one shutter being shown partially sectional. Fig. 2 is a transverse section on line *x x* of Fig. 1. Fig. 3 is a transverse section on line *y y* of Fig. 1. Fig. 4 is a detail view of the devices for fastening the cross-bar.

A A are the shutters, which are of ordinary construction, made of two thicknesses of sheet-iron, with a space between that may be filled with a non-conductor of heat, if desired. The shutters rest and move upon a cross bar or track, B, preferably of steel, attached at its ends to the wall of the building. The ends of the bar are slotted, as shown in Figs. 1 and 4, and enter loosely through the slotted castings *b*, that are attached to the wall by bolts *a*.

On the bolts *a*, and within the slots of the bar B, are eccentrics *c*, by which the bar is clamped to the castings. This construction allows the bar to expand from the heat without springing, which might prevent the free working of the shutters. The object of the eccentric is to allow adjustment of the shutters if the wall settles or the shutters work too closely to the window-sill. The outer end of the bolt *a* is formed square to receive a wrench for the adjustment of the eccentric, and this square end is covered usually by a hollow washer, *e*.

The supporting-bar B passes between the two sides of each shutter and through an iron box or casing, *f*, that is fitted within the shutter. This casing is held in place by cross-bolts, and within it are contained sheaves *g g*, that work upon axles fitted in the casing *f*. The sheaves are grooved, and the supporting-bar B is formed with a flange or rib corresponding in form with the groove.

The shutters are preferably made with their inner edges rabbeted to lap one upon the other, and the bar B is provided with a pin, as shown at *l*, to prevent each shutter from passing beyond the center. The shutters are also provided with small handles both upon the inside and outside, for convenience in opening and closing them.

The advantages of shutters applied in this manner may be stated as follows: They can be readily opened from the outside of the building in case of fire or otherwise, it being understood that no fastenings are used, none being required. They can be opened from the inside with perfect ease and safety, even in high winds. The shutters may be applied to either the inside or the outside of the window. They are free to expand in case of fire without preventing their easy operation. They can be closed entirely or partly, as desired, in order to admit more or less light. They are safe in time of storm, cannot become loose or be blown down, and they may be applied to either new or old buildings.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a rolling shutter made of two thicknesses of metal and having an intermediate space, of the box *f*, arranged in said space, the grooved sheaves *g* on axles journaled in said box, and the ribbed bar B, as shown and described.

2. In window-shutters, the bar B, sustained at its ends by devices passing through slots in the bar, so as to allow free expansion and contraction, substantially as described.

3. The combination, with the supporting-bar B, of the slotted castings *b*, bolts *a*, and eccentric *c*, substantially as and for the purposes set forth.

NEWMAN ALLEN FOSS.

Witnesses:
JOHN M. GRAY,
SETH W. EDDY.