W. H. CLAMPITT.

FIREPROOF SHUTTER.

APPLICATION FILED NOV. 22, 1915.

1,234,873.

Patented July 31, 1917.

4 SHEETS—SHEET 1.

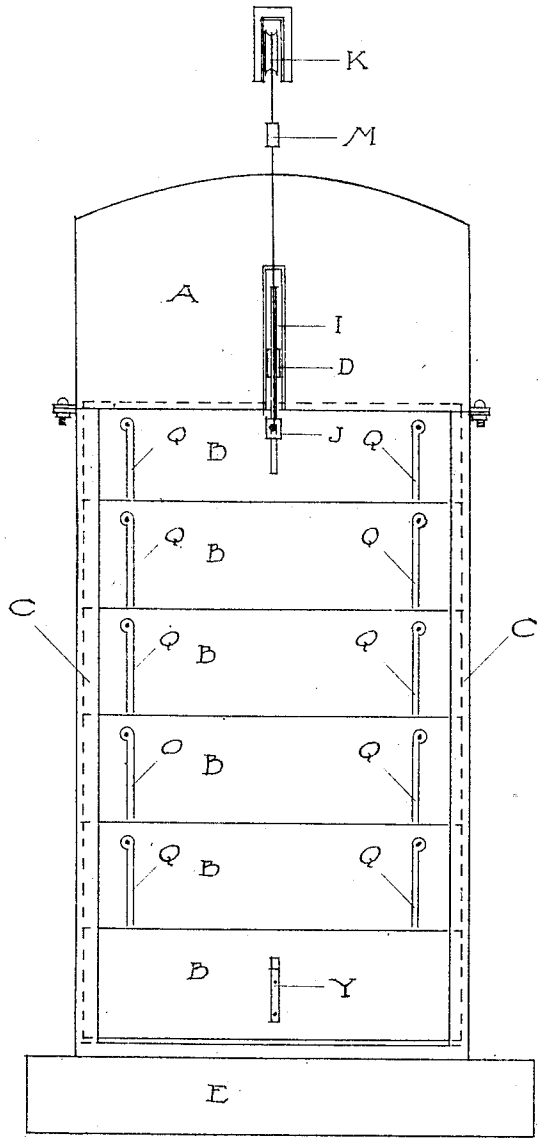


Fig. 1

WITNESS

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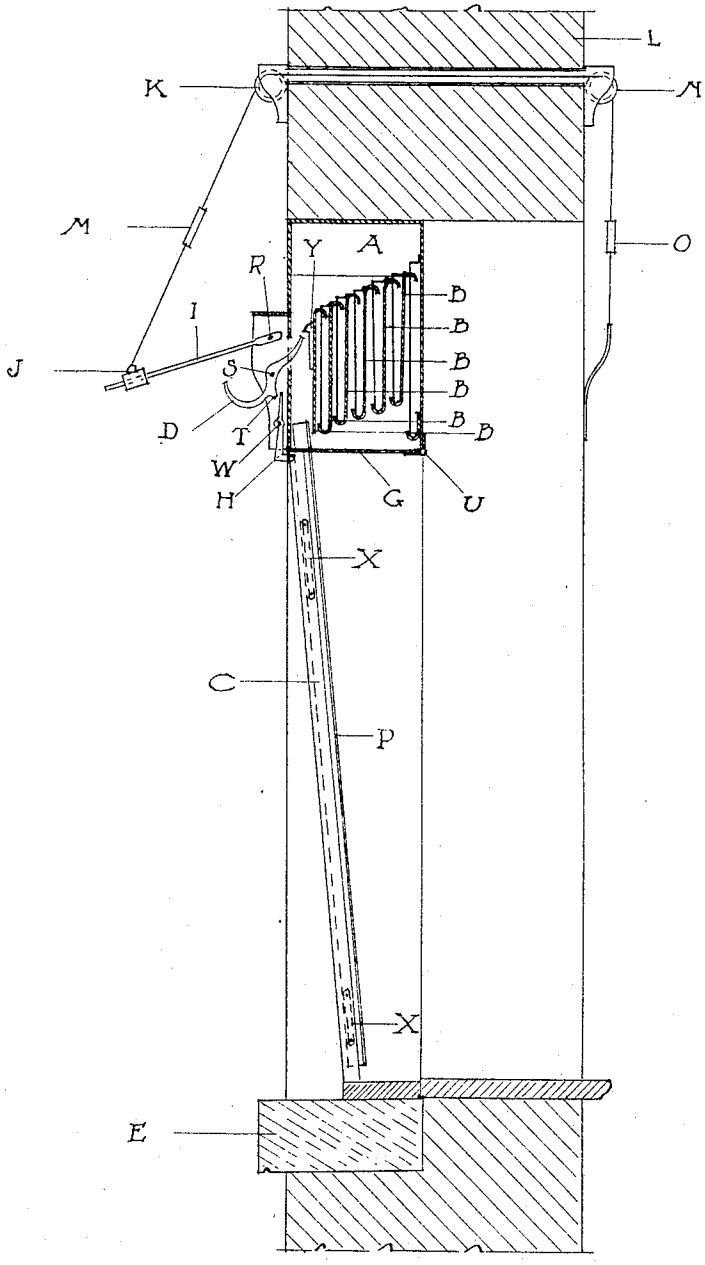


Fig. 2

WITNESS

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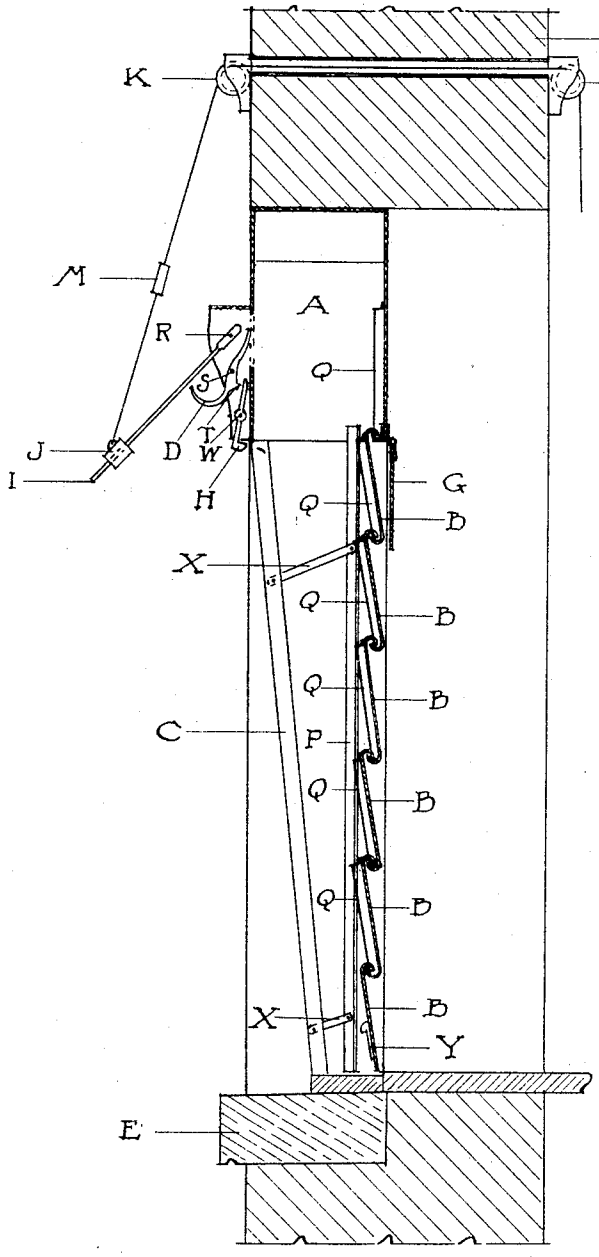


Fig 3

WITNESS

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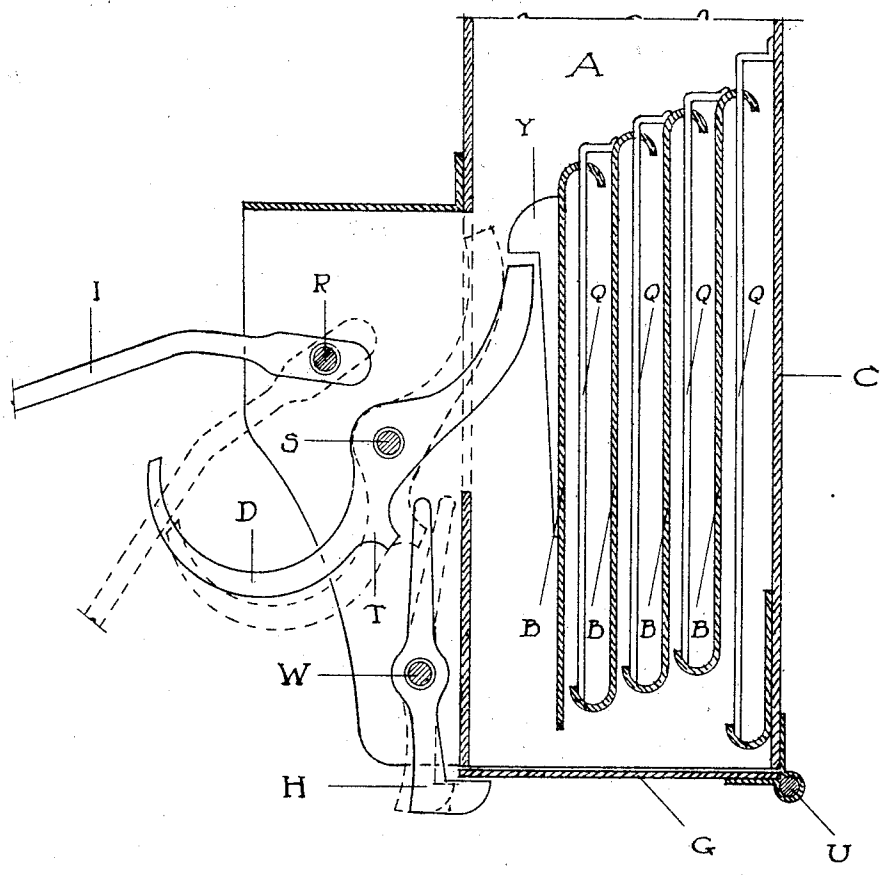


Fig 4

WITNESS

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UNITED STATES PATENT OFFICE.

WILLIAM HENRY CLAMPITT, OF LONDON, ONTARIO, CANADA.

FIREPROOF SHUTTER.

1,234,873. Specification of Letters Patent. **Patented July 31, 1917.**

Application filed November 22, 1915. Serial No. 62,901.

To all whom it may concern:

Be it known that I, WILLIAM HENRY CLAMPITT, of the city of London, in the county of Middlesex and Province of Ontario, blacksmith, having invented certain new and useful Improvements in Fireproof Shutters, do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to improvements in "fireproof shutters" made of iron, steel, or other non-inflammable material arranged in combination with fusible connecting links so that the following objects of my improvement are accomplished.

First,—to provide absolute resistance to fire on all windows, doors and elevators.

Second,—the automatic closing of the fireproof shutters when buildings are on fire by means of fusible links in combination with the sectional shutters.

Third,—the closing of any one or more of the shutters at the will of the operator if found necessary without link fusing.

I obtain these objects by the mechanism illustrated in the accompanying drawing in which,—

Figure 1. is a vertical view of the fireproof shutters dropped into place covering the window space.

Fig. 2. shows the shutters raised into the retaining receptacle at the top of the window, locking device, release arm, fusible link, attachment, and clamping device.

Fig. 3. is a side view of fire proof shutters clamped into place against the window frame and held there by my clamping device.

Fig. 4. is a detailed view of my locking and release device.

Similar letters refer to similar parts throughout the several views.

Reference being made to—

Fig. 1.—A. represents top or receptacle for the retention of sectional shutters B. B. B. B. B. when not in use. C. C. the frame on each side in which the sectional shutters B. B. B. B. B. slide up and down and which is fitted into the window openings; D. the locking device and arm I. in a released position, E. the window sill.

Fig. 2.—B. B. B. B. B. shutters raised into the receptacle A. and retained in position by locking device D. which is pivoted at S.; G. hinged drop-door closed and retained in a horizontal position by locking device H. I. a hinged arm with weight J. both suspended by a rope or wire cord with fusible link M. passing over pulley K. on the wall outside of the building entering into and through the wall L. to the inside of the building over pulley N. attaching to another fusible plug or link O. and then fastened to the inside of the wall. P. represents an angle iron inserted in each side of the frame C. C. which is suspended to the frame by hinged straps X. X. the lower one being long enough to admit of the passage of all the sectional shutters when raised together. The angle irons P. P. being raised at the same time as the shutters are held in place by door G. When sectional shutters B. B. B. B. B. are released the angle irons P. P. guide the sectional shutters B. B. B. B. B. into place against the frame and then fall by gravity the length of the straps X. X. which in turn brings them against the sectional shutters B. B. B. B. B. thereby clamping all the sectional shutters against the frame, preventing all drafts, fire, sparks and water from getting through the window.

Fig. 3.—The shutters B. B. B. B. B. are here shown when in use clamped into place by angle iron P. P.; Q. Q. Q. Q. Q. are iron rods riveted to each section at or near the upper and lower ends thereof and extending to the curved top from the bottom of the section. The first rod Q. being securely riveted or fastened to frame C. C. The rod Q. before being riveted to the sectional shutter is passed through a hole in curved or turned top of next section which permits that section to slide up and down on the rod Q. and so on for every section required to cover the openings in the window. Each section is curved or turned over, top and bottom in reverse order to form a hook to engage the one with the other when sliding on rod Q. The last section of the shutter is provided with hook Y. to engage with the locking device D.

Fig. 4.—In this figure the iron rod Q. is shown attached near the top of receptacle A. which forms a part of the frame C. C. and Q. is again attached to the bottom of the receptacle at Z. as shown. Each successive rod passes through the top of the next curved section of the shutter.

The locking device D. pivoted at S. is here engaged with the hook Y. and holds all the shutters in the receptacle A.; D. has a projection or knocker T. which releases

lock H. sustaining door V. hinged at U. when struck by weighted arm I. hinged at R.

The dotted lines show the positions I. D. and U. assume when I. is released by fusion of links M. or N. from the inside or without the building and I. striking on the end of the pivoted arm D. throws it from under the catch Y. on section B. thereby dropping all the shutters; and at the same time the knocker T. striking the end of the lock H. pivoted at W. releases the catch thereon sustaining the horizontal hinged door V. permitting V. to drop by gravity out of the way of the descending sectional shutters B. B. B. B. B. When these sectional shutters B. B. B. B. B. drop as above described they cover the window opening and are clamped into place by angle iron P. P.

The curved portion of each section forming a hook on the end of each section through which the rod P. P. P. P. passes so when the section slides down the rod it engages the reversed curved hook on the other end of the next section and thereby remains suspended. These curved ends of sections prevent the warping of the shutters by heat as well as forming hooks of suspension for each other.

Where the fire proof shutters are put on elevator shafts my device is worked automatically by the fusing of the links on any floor on which the fire may occur. If the fire is in a basement the fusion of the link there will automatically close all shutters on the elevator in the same manner as if the fusion link on the outside of the building was released, the device being reversed for use in elevator shafts, the cord, and fusion link passing down a pipe within the elevator shaft to the basement where the plug is exposed and all flats connected with the one cord, so when the link is released by fusion in the basement all the shutters drop.

If the fire is on the flat the fusion of the link on the outside of the elevator on that floor releases that shutter only and does not prevent the use of the elevator as a fire escape from other floors.

What I claim as my invention or device is:—

In combination with a sectional shutter adapted to cover an opening, a housing therefor adapted to be secured above the opening, and comprising a hinged bottom door, and a locking device adapted to hold the shutter up and the door closed, said locking device comprising a hooked lever to support the door edge, a second pivoted lever normally supporting the shutter and a weighted arm normally supported by a fusible member, the arrangement being such that the door and shutter may be manually released and also such that on fusion of the said member, the weighted arm falls and strikes the said second lever which in turn strikes the hooked lever and thus automatically releases both door and shutter.

Place and date, London, Ontario, August 30th, 1915.

WILLIAM HENRY CLAMPITT.

Signed in the presence of—

R. E. WALKER,

J. W. G. WUMETH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."