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M. B. WATSON.

FIRE SCREEN.

APPLICATION FILED OCT. 18, 1906.

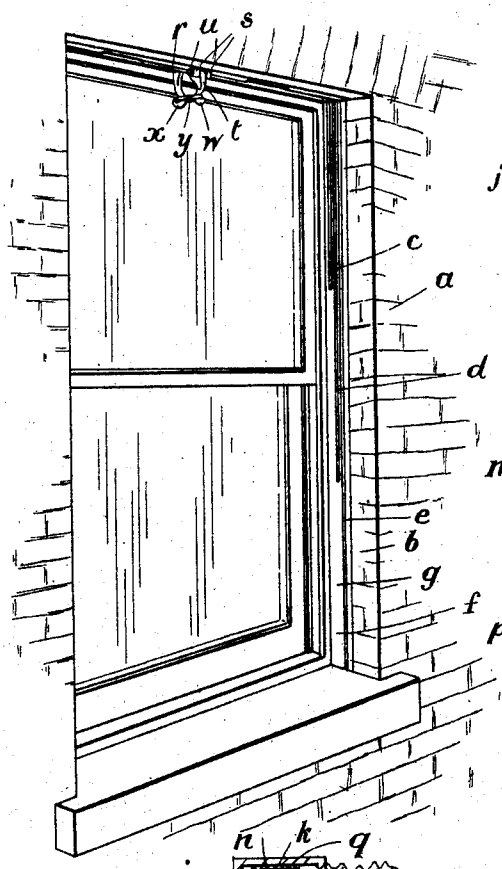
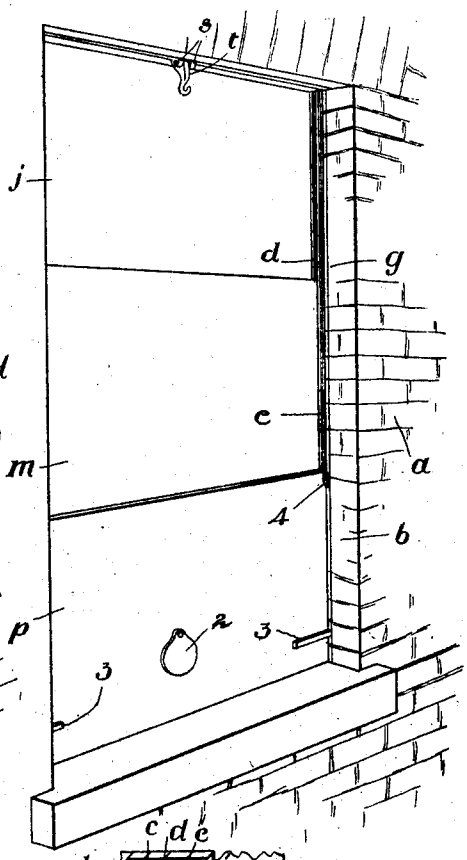


Fig. 1.



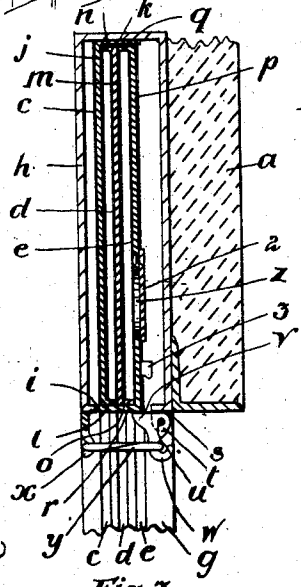


Fig. 3.

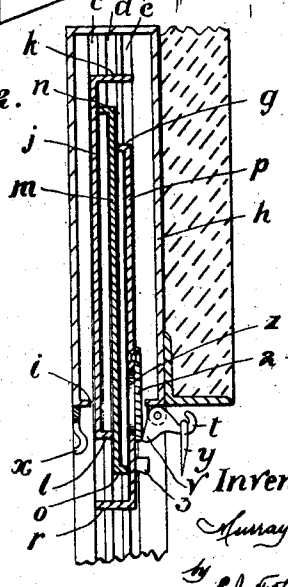


Fig. 4.

Witnesses

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FIRE-SCREEN.

No. 866,170. Specification of Letters Patent. Patented Sept. 17, 1907.

Application filed October 18, 1906. Serial No. 339,513.

To all whom it may concern:

Be it known that I, MURRAY BELL WATSON, of No. 31 Brookfield street, in the city of Toronto, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Fire-Screens; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to improvements in fire screens and the object of the invention is to devise an automatic means of localizing a fire in a burning building and thus prevent a conflagration, or to prevent fire from outside entering a building, and to provide a convenient form of window or door screen which will not in any way be unsightly while not in use, and yet simple and effective in its operation, and it consists essentially of a plurality of drop shutters or screens inclosed in the wall of a building immediately above the door or window opening therethrough, the particular arrangement and construction being more particularly explained in detail in the present specification and shown in the accompanying drawings that form part of the same.

In the drawings Figure 1 is a perspective view of a portion of the wall of a building having an opening therethrough showing the guideways for the shutters in the sides of said opening and the position of the drop shutters when contained within the wall. Fig. 2 is a perspective view of a portion of a wall of a building showing an opening therethrough closed by the drop shutters. Fig. 3 is a vertical sectional view through the shutters in their closed position and showing a portion of one side of an opening. Fig. 4 is a vertical sectional view through the shutters shown in the act of dropping to close the opening.

Like letters of reference indicate corresponding parts in each figure.

Referring to the drawings, *a* is the wall of the building and *b* a window opening therethrough. *c*, *d* and *e* are vertical grooves or guideways in the side of the window opening. The said grooves may be formed in the window frame *f* but are preferably formed in a metallic face plate *g* secured to and either wholly or partly covering in said frame. The grooves *c*, *d* and *e* extend downwardly from the top of the frame, the groove *c* extending downwardly one third of the distance from the top, the groove *d* extending down two thirds of the distance from the top, and the groove *e* extending from the top to the bottom of the said window frame. Three grooves are shown but it must be understood that any suitable number may be used.

h is a rectangular casing located within the wall *a* above the opening *b* and extending the full width thereof, the ends of said casing forming a continuation of the side face plates *g* of the window opening. The grooves *c*, *d* and *e* are continued upwardly to the top of the casing *h* forming continuous guideways.

i is an opening in the under side of the casing *h* leading into the interior thereof and extending the full width of the window opening *b*, there being no interruption in the course of the guideways *c*, *d* and *e* from the side plates *g* of the sides of the window frame *f*.

j is a shutter formed of sheet metal or other fire proof material and having the side edges thereof extending into the guideway *c* in the side plates *g* and between said side plates *g* having the forwardly extending flange *k* at the top thereof and the forwardly extending flange *l* at the bottom thereof, the top flange *k* extending in proximity to the front of the opening *i* when the said shutter is in its lowermost position and effectually closing said opening.

m is a shutter formed of like material to the shutter *j*, the side edges thereof extending into the groove *d* and a backwardly extending flange *n* at the top and a forwardly extending flange *o* at the bottom thereof between said side plates *g*.

p is a shutter formed of like material to the shutters *j* and *m* having the side edges extending into the groove *e*, and a rearwardly extending flange *q* at the top and a rearwardly extending flange *r* at the bottom thereof between the side plates *g*, the said bottom flange being equal in width to the opening *i* and closing the same when the shutters are in their closed position.

s is a pair of lugs extending downwardly from the underside of the casing *h* at the forward side of the opening *i* and preferably arranged centrally between the sides of the window opening.

t is a trigger fitting between the lugs *s* and pivotally supported in position on the pin *u* secured in said lugs and having a rearwardly extending lug *v* and a downwardly extending hook shaped portion *w*.

x is a downwardly extending hook shaped lug secured to the under side of the casing *h* at the opposite side of the opening *i* and directly opposite the trigger *t*. When the shutters *j*, *m* and *p* are in their raised position the flange *r* closes the opening *i* and the lug *v* of the trigger *t* engages the under surface thereof.

y is a link of metal formed in two halves and joined together by a solder of soft fusible material. The link *y* is hooked over the hook portion *w* of the trigger *t* and the hook shaped lug *x*, securely holding the said trigger in position with the lug *v* engaging the under surface of the flange *r* of the shutter *p* and effectually holding the said shutter *p* and the shutters *j* and *m*, which rest on said flange, in their raised positions within the casing *h*. It will thus be seen, that, in a burning building when the heat becomes intense, the fusible metal holding the portions of the link *y* together will melt and permit the trigger *t* to swing on its pivot and release the shutter *p*. Immediately on the releasing of the shutter *p* the shutters *p*, *m* and *j* will drop downwardly, sliding in their respective guideways.

The shutter *j* will drop only one third of the distance in the window frame *f* as the groove *c* only extends one third of the distance down and the flange *k* will close the opening *i*. The shutter *m* will fall two thirds of the distance down, the flange *n* coming in contact with the flange *l* which will, to some extent, relieve the effect of the drop. The shutter *p* will drop to the bottom of the window frame, the rearwardly extending flange *q* at the top thereof engaging the forwardly extending flange *o* at the bottom of the shutter 1.

The shutters are so constructed that the lower corner of the edge sliding within the guideways will rest upon the bottom of their respective grooves and the flanged edges fit closely together so that the window or door opening will be effectually sealed. All the window or door openings in a building may thus be completely closed by the shutters or screens in the inclosures thereabove, which will have the effect of smothering the fire and eliminating entirely the danger of drafts in conflagrations and also in cases where the heat from a fire in an adjacent building is sufficient to melt the fusible links, the shutters will drop and prevent the fire working its way into the building so protected. The closing in of the different compartments will also have the effect of preventing the spread of dangerous combustion and poisonous gases generated in a burning building and altogether it may herein be said to be emphasized, a distinctive advantage and advance in the fighting of fires, minimizing the risks of the fire fighters and the ever-present danger of the fire spreading to surrounding buildings.

In order to facilitate the work of the fire fighters, the lower shutter *p* is provided with a small circular opening *z* through which the nozzle of a hose may be inserted. Thus the firemen handling the hose will be able to direct a stream of water on the burning interior of the building and be protected from the intense heat.

2 is a circular disk pivotally secured to the outer face of the shutter *p* normally closing the opening *z* but it may be readily pushed aside to allow a hose nozzle to be inserted. Suitable handholds 3 may be provided on the lower shutter so that the shutters may be raised at any time. A small latch or dog 4 may be secured to the plate *g* close to the groove *e* so that should it be desired to hold the lower shutter in a raised position the said shutter will be raised and the dog thrown over to engage one of the handholds 3.

What I claim as my invention is:—

1. In a fire screen, the combination with a wall of a building having an opening therethrough and a casing embedded in said wall above said opening, said casing having an opening in the under side thereof in communication with the aforesaid opening and a plurality of vertical guideways in the sides of the opening through said wall and extending from the top thereof downwardly and upwardly through the opening in said casing, of a plurality of shutters flanged at the top and bottom and sliding in said guideways and normally contained within said casing, the lower flange of one of the shutters closing the opening in the under side of said casing, said shutters being adapted to close the opening in said wall, means secured to the under face of said casing for holding said shutters within said casing, and means for releasing said holding means, as and for the purpose specified.

2. In a fire screen, the combination with a wall of a building having an opening therethrough and a casing inclosed therein above said opening, said casing having an opening in the under side thereof, and a plurality of guideways in the sides of the opening in said wall, of a plurality of shutters normally contained within said casing and closing the opening in the under side thereof, a trigger pivotally supported from the under side of said casing having a portion thereof projecting inwardly beyond the edge of said opening and engaging the lower portion of one of said shutters and holding said shutters within said casing and a downwardly depending hook shaped portion, a hook shaped bracket fixedly secured to the under side of said casing opposite said trigger, and a fusible link engaging said hook shaped bracket and hooked shaped portion of said trigger, as and for the purpose specified.

3. In a fire screen, the combination with a wall of a building having an opening therethrough and a casing embedded in said wall above said opening, said casing having an opening in the under side thereof in communication with the aforesaid opening and a plurality of vertical guideways in the sides of the opening through said wall and extending from the top thereof downwardly and upwardly through the opening in said casing, of a plurality of shutters flanged at the top and bottom and sliding in said guideways and normally contained within said casing, the lower flange of one of the shutters closing the opening in the under side of said casing, said shutters being adapted to close the opening in said wall, a trigger pivotally supported from the under side of said casing having a portion thereof projecting inwardly beyond the edge of said opening and engaging the lower portion of one of said shutters and holding said shutters within said casing and a downwardly depending hook shaped portion, a hook shaped bracket fixedly secured to the under side of said casing opposite said trigger, and a fusible link engaging said hook shaped bracket and hook shaped portion of said trigger, as and for the purpose specified.

4. In a fire screen, the combination with a wall of a building having an opening therethrough and a casing embedded in said wall above said opening, said casing having an opening in the under side thereof in communication with the aforesaid opening and a plurality of vertical guideways in the sides of the opening through said wall and extending from the top thereof downwardly and upwardly through the opening in said casing, of a plurality of shutters flanged at the top and bottom and sliding in said guideways and normally contained within said casing, the lower flange of one of the shutters closing the opening in the under side of said casing, and the upper flange of another of said shutters adapted to close said opening when said shutters are in their lowered position, the lower one of said shutters having an opening therethrough intermediate of its height, a pivotal plate pivotally secured to said shutter and closing said opening, handholds secured to said lower shutter for raising said shutter, a trigger pivotally supported from the under side of said casing having a portion thereof projecting inwardly beyond the edge of said opening and engaging the lower portion of one of said shutters and holding said shutters within said casing and a downwardly depending hook shaped portion, a hook shaped bracket fixedly secured to the under side of said casing opposite said trigger, and a link formed in two halves and engaging the hooked extension of said trigger and the opposing hook shaped bracket on said casing the half portion of said link being secured together with a fusible metal, as and for the purpose specified.

Signed at the city of Toronto, in the county of York, Province of Ontario, in the Dominion of Canada, this 11th day of October, 1906.

MURRAY BELL WATSON.

Witnesses:
H. DENNISON,
E. WILKIN.