

(No Model.)

W. PATERSON.
DOOR FOR FIRE ENGINE STATIONS.

No. 558,416.

Patented Apr. 14, 1896.

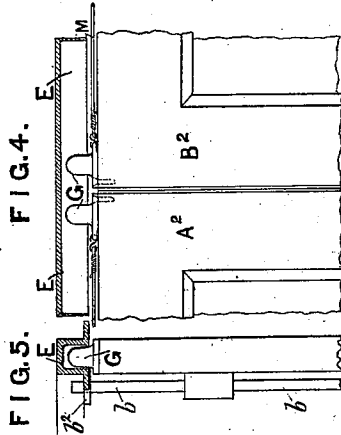
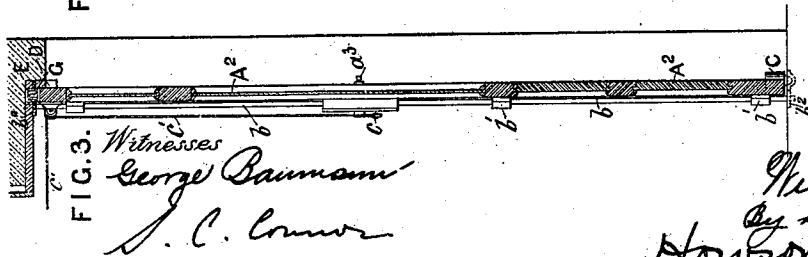
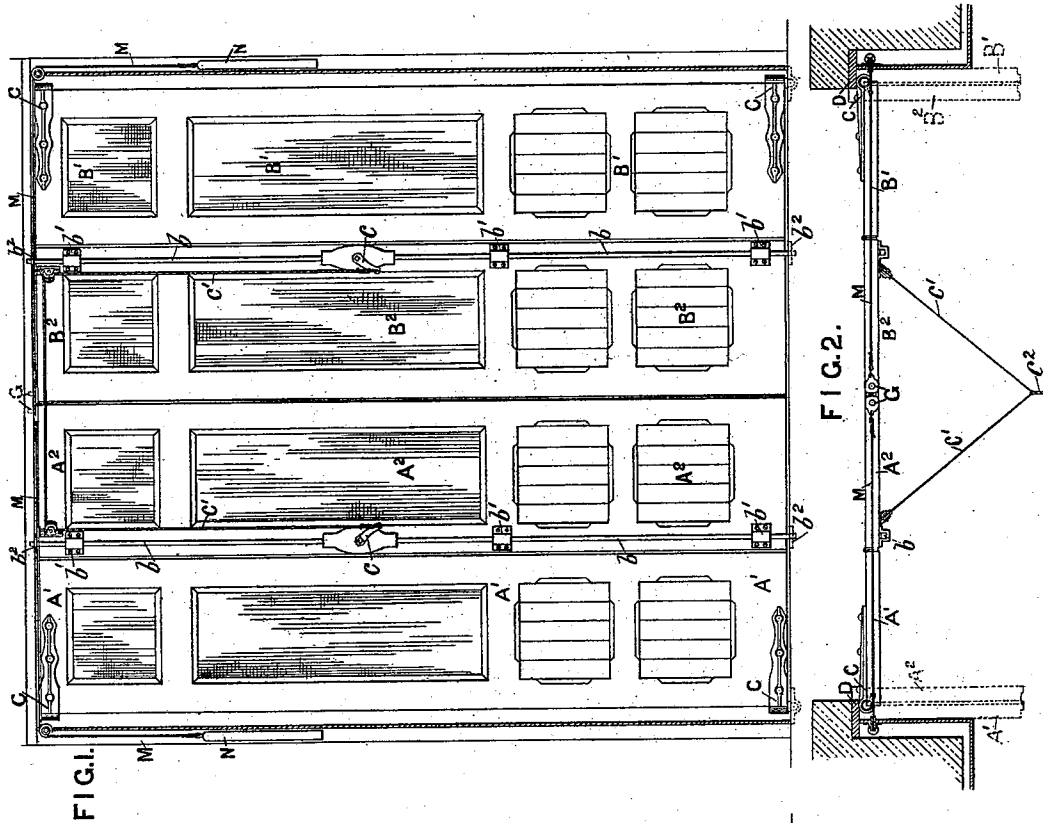
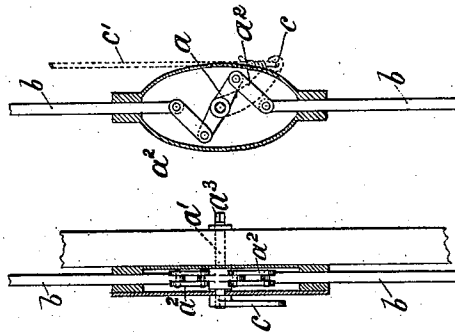


FIG. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM PATERSON, OF GLASGOW, SCOTLAND.

DOOR FOR FIRE-ENGINE STATIONS.

SPECIFICATION forming part of Letters Patent No. 558,416, dated April 14, 1896.

Application filed June 22, 1895. Serial No. 553,732. (No model.) Patented in England July 18, 1893, No. 13,882.

To all whom it may concern:

Be it known that I, WILLIAM PATERSON, a subject of the Queen of Great Britain and Ireland, and a resident of Glasgow, Scotland, have invented certain Improvements in Doors for Fire-Engine Stations and the Like, (for which I have obtained British Patent No. 13,882, dated July 18, 1893,) of which the following is a specification.

This invention has reference to an improved combination of doors and appliances for operating the same, so that said doors can be instantaneously freed to open automatically and can slide into a small space and leave a clear opening for the immediate departure or entrance of vehicles and the like; and it is specially applicable for use at fire-brigade stations and like structures where instantaneous and clear opening of doors is requisite. According to my improvements the door is formed in two main parts, each consisting of two leaves hinged together. Vertical-acting duplex bolts are fitted near these hinges, with an operating-lever at the center, and cords are led from said lever, the pulling of which will withdraw the bolts from their top and bottom locking-sockets and release the doors for being automatically opened by the falling action of counterbalance-weights. The doors are guided by pins secured at their ends sliding in channel-irons above the door.

In order to enable others skilled in the art to which my invention relates to understand how it may be carried into practice, I have hereunto appended an explanatory sheet of drawings, in which the same reference-letters are used to indicate corresponding parts in all the figures where shown.

Figure 1 is an elevation of the doors complete as fitted in accordance with my improvements. Fig. 2 is a plan view, and Fig. 3 an end section corresponding to Fig. 1. Figs. 4 and 5 are enlarged detached side and end sections, respectively, showing the guiding-organs at the center top part of the door. Fig. 6 is an enlarged detached front view, and Fig. 7 an end sectional view, of the lever mechanism used to operate the locking-bolts.

Referring to the drawings, the folding doors consist of two main parts made up of duplex

leaves $A' A^2$ and $B' B^2$, respectively, each pair of leaves being hinged together at their joining edges. The leaves $A' B'$ are firmly hung on hinges C , attached to the wall of the building. The upper and outer sides of these doors close against a head-piece D , and above these doors, when closed, is a channel-iron E fixed to the lintel of the door and running parallel with the outer face. On the upper side of the leaves $A^2 B^2$ and at their outer ends I provide guides or pins G , projecting upward and entering the channel-iron E . By this means the outer edges of the door-leaves $A^2 B^2$ when folding are guided in a straight line running between the hinges C . To these pins G , I attach, by means of links and cords M , counterbalance-weights N , which in their descent will assist and complete the opening of the folded doors. These counterbalance-weights are incased, as shown, on the doors $A^2 B^2$. I also provide locks with bolts, consisting of a lever a , mounted at its center on a spindle a' and having its end connected by links a^2 to vertical bolts b , which pass through eyes b' and enter sockets b^2 in the building at the top and bottom of the door. Lever-arms c are mounted on the spindles a' , and to these arms are attached cords c' , which, extending from points near the folds of the doors, as shown in Fig. 2, converge into a single cord c^2 , which runs to a position near the coachman's seat of the engine or other convenient spot. When the coachman pulls these cords and releases the bolts b and continuing to pull starts the folding doors, the counterbalance-weights N complete the operation until the doors $A' A^2 B' B^2$ slide and fold to the position shown in dotted lines, Fig. 2.

The center spindles a' of the locks are carried through the doors to the outer side, and by means of a square end a^3 can be turned by a key or wrench, so that the doors can be opened from without as well as within.

In closing these doors they are pulled by hand into their central position and the bolts b liberated to lock in their notches b^2 .

I claim as my invention—

The combination of duplex-leaved folding doors and means for guiding their outer edges in a straight line between the hinges, with

locking-bolts, cords controlling said bolts and
extending from points on the doors near the
folds, to unlock the doors and also to start
them open, and counterbalance-weights to
5 automatically complete the opening of the
doors, all substantially as described.
In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

WILLIAM PATERSON.

Witnesses:

JOHN SIME,

R. C. THOMSON.