(No Model.)

J. P. BLACK.

BOLT.

No. 267,398. Patented Nov. 14, 1882.

Fig. 1.

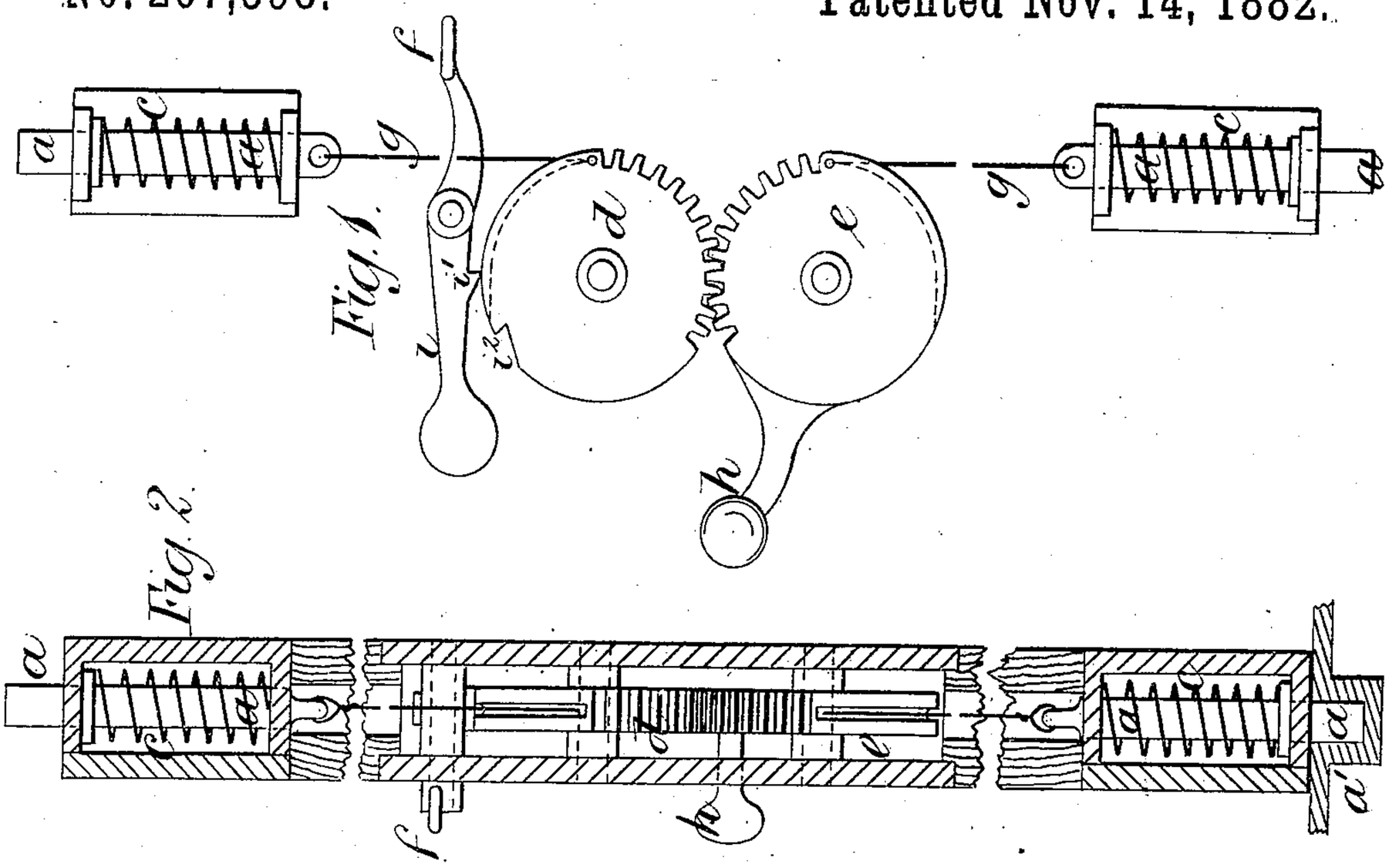
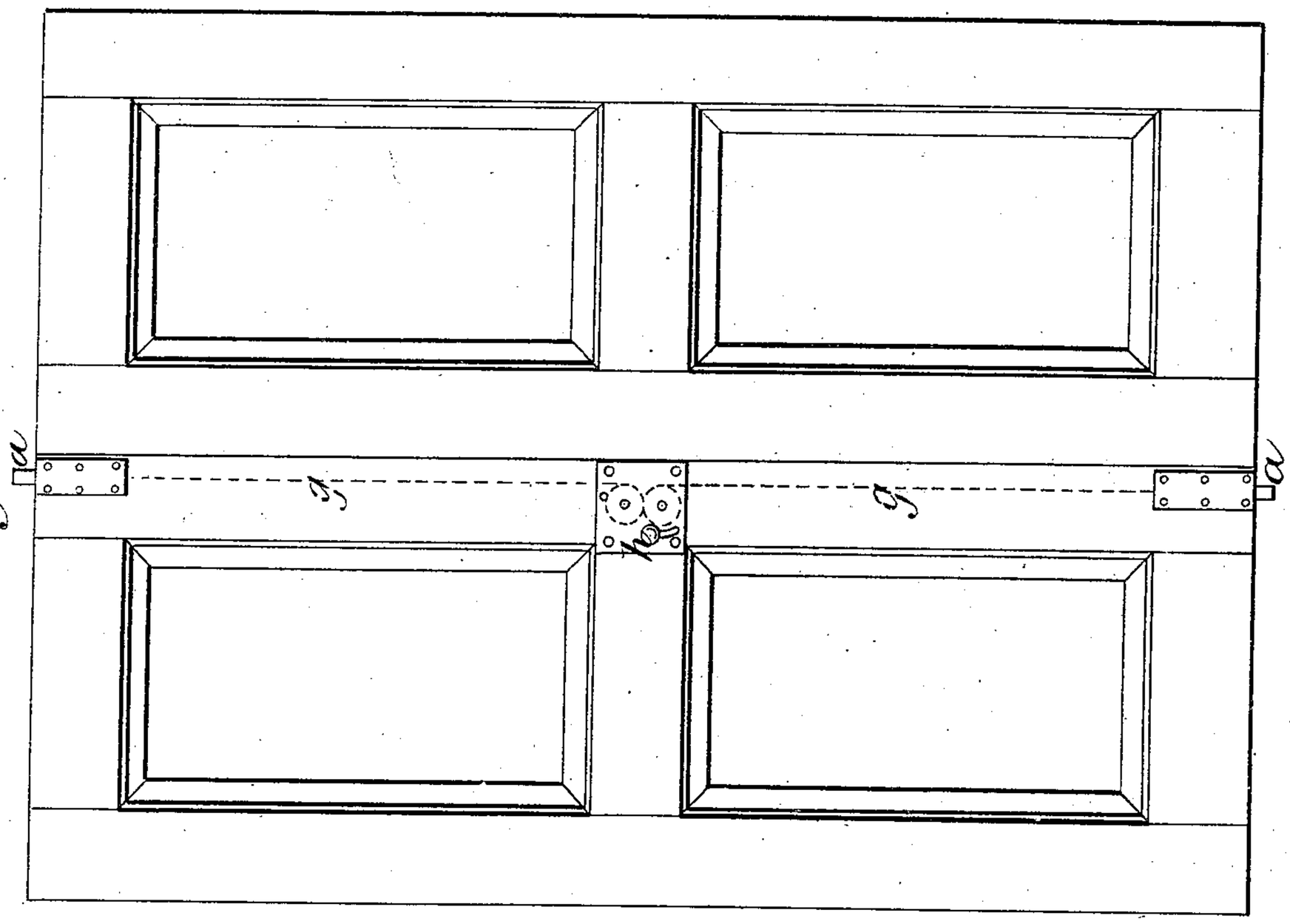


Fig. 2.

Fig. 3.



Witnesses
Harold Serrell
Chas H. Smith

Inventor
per James P. Black
Samuel W. Serrell
atty.

UNITED STATES PATENT OFFICE.

JAMES P. BLACK, OF NELSON, NEW ZEALAND.

BOLT.

SPECIFICATION forming part of Letters Patent No. 267,398, dated November 14, 1882.

Application filed December 23, 1881. (No model.) Patented in New Zealand August 30, 1880, No. 470; in England July 27, 1881, No. 3,292; in Victoria August 30, 1881, No. 3,067; in Tasmania September 3, 1881, No. 202—11; in New South Wales October 15, 1881, No. 81—9,647, and in Queensland October 18, 1881, No. 374.

To all whom it may concern:

Be it known that I, JAMES PALMER BLACK, of Nelson, in the Colony of New Zealand, have invented new and useful improvements in fastenings or apparatus for facilitating exit from places of public entertainment, churches, and other places in case of fire or otherwise, (for which I have obtained a patent in the Colony of New Zealand the 30th day of August, 1880,) of which the following is a specification.

The chief object of this invention is the employment and construction of escape-door fastenings, whereby ready means of egress or exit from places of public entertainment—such as theaters—in case of panic is afforded.

The invention consists of top and bottom spring-bolts on door, fitting into metallic socket or sockets mortised into the door-frame. Each bolt is provided with what may be called a "thrust-spring" to press and keep the bolt or bolts in the socket or sockets while the door or doors is or are shut. The opening appliances are or may be toothed or partially toothed wheels, each preferably provided with teeth one-third of their circumference and geared into each other. One wheel—say the upper—is provided with a ratchet-tooth and fitted with a pawl, which resists the pressure of the springs when the bolts are drawn. The plain portion of the periphery of the wheels is grooved to receive a metallic or other cord or chain, or its equivalent, connecting the bolts to their respective wheels. A lever and knob is connected to one wheel, which on being depressed simultaneously and instantly through the wheels and cords withdraws the bolts from their sockets and releases the door or doors.

The accompanying drawings illustrate the manner in which the invention is carried into effect.

Figure 1 is a side elevation detached, and Fig. 2 is an edge view of the apparatus or escape-door fastening applied to a door, and Fig. 3 shows in front elevation the same applied to a pair of doors.

a a are the top and bottom spring-bolts, fitting into metallic sockets *a'* in the door-frame.

c c are the springs to press the bolts into their sockets, and to keep them there while the door is shut.

d e are the two partially-toothed wheels for operating the bolts. These wheels are placed in the most convenient position, or where thought advisable.

g g are the cords or wires connecting the bolts to the wheels *d* and *e*, respectively. The untoothed portions of the wheels are grooved, as shown at Fig. 2, for the guidance of the wire, chain, or cord.

h is the operating-lever, (shown on the wheel *e*,) and *i* is the pawl-lever, with tooth *i'*, which, when the lever *h* is depressed, causes the partial rotation of the wheels *d* and *e*, so that the tooth *i'* engages with the ratchet-tooth i^2 on the wheel, and in that position the bolts are unlocked and the springs *c* compressed, thereby preventing the return of the bolts. To effect the opening depress the lever *h*, which gives the wheels a partial rotation and simultaneously pulls the wires, chains, or cords, and with them the bolts *a a*. The doors then are free to open. To refasten them depress the lever *f* on pawl *i* and the pawl-tooth will be raised and disengaged from the ratchet-tooth i^2, and the springs act simultaneously and force the bolts into their respective sockets.

The invention is applicable to any size of door. It will sustain any inside pressure equal to the strength of the building and any amount of pressure on the door from inside—such as might occur in case of panic. It does not interfere with the easy action of the apparatus or fastening, while the opening of the door is instantaneous, extremely simple, and not liable to get out of order.

I claim—

The wheels *d* and *e*, each having teeth upon a portion of its periphery, and each having a segmental groove in its edge, in combination with the wires *g g*, connected at their ends to the grooved portions of the wheels *d* and *e* respectively, the spring-bolts *a a*, to which the wires *g g* are connected, the arm *h* upon the wheel *e*, and the pawl-lever *i* and stop-tooth *i'*, passing into a notch, i^2, in the wheel *d* when the bolts are withdrawn, substantially as specified.

JAMES P. BLACK.

Witnesses:

W. R. WALKER,

H. WEEDING,

Both Clerks, Nelson.