(No Model.)

W. C. SHAFFER & S. M. PLUSH.

FIRE GUARD FOR PLACES OF AMUSEMENT.

No. 261,772. Patented July 25, 1882.

Fig. 1.

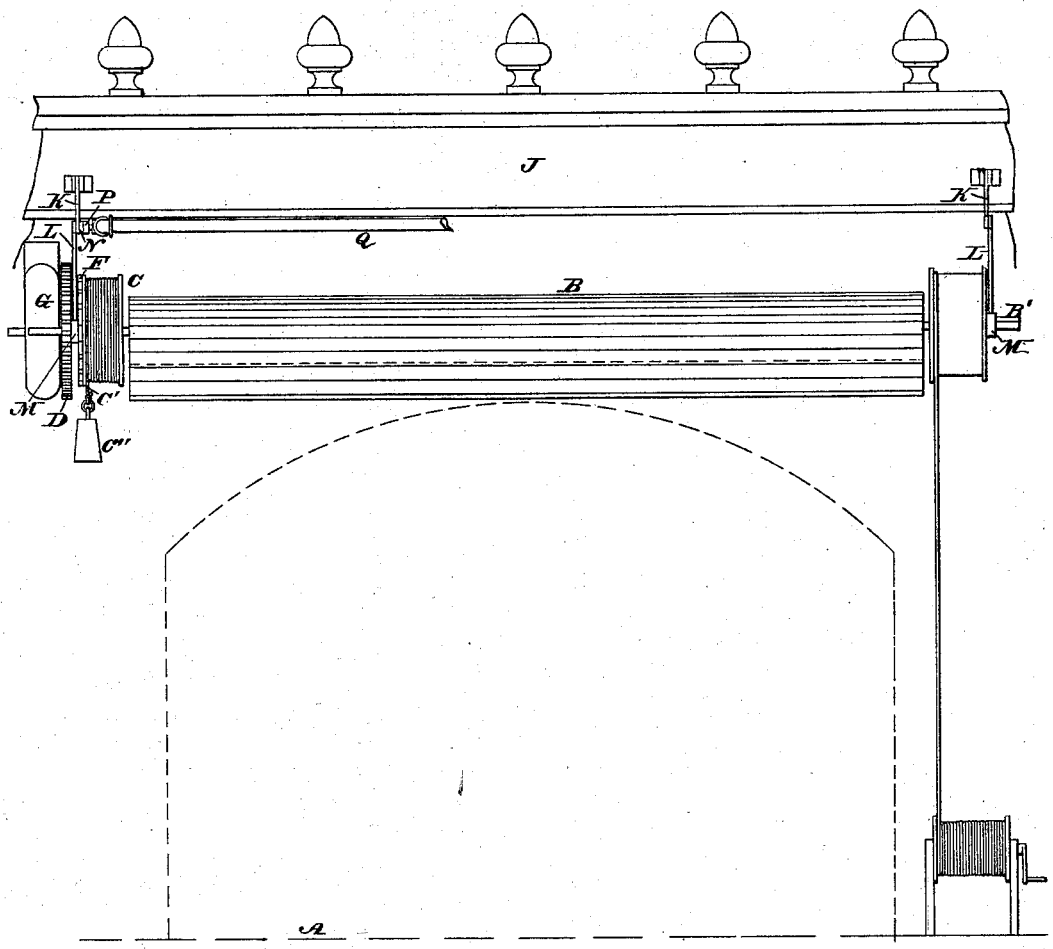


Fig. 3.

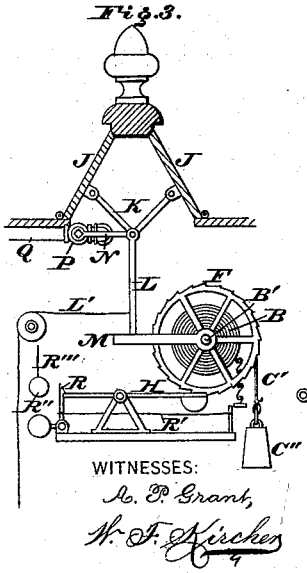


Fig. 2.

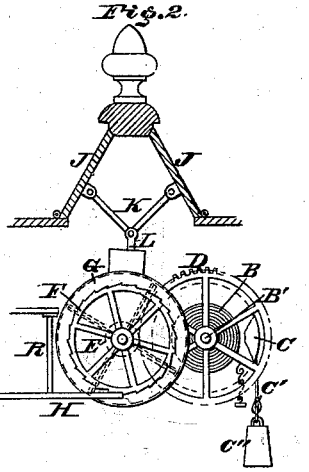


Fig. 4.

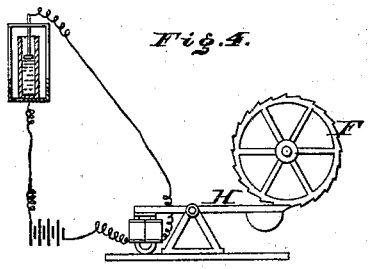
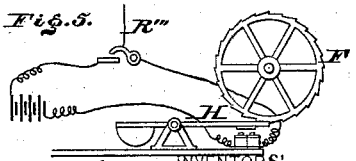


Fig. 5.



WITNESSES:
A. P. Grant,
W. F. Kirches

INVENTORS:
Wm C. Shaffer,
Sam'l M. Plush,
BY John A. Wiedersheim ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM C. SHAFFER AND SAMUEL M. PLUSH, OF PHILADELPHIA, PA.

FIRE-GUARD FOR PLACES OF AMUSEMENT.

SPECIFICATION forming part of Letters Patent No. 261,772, dated July 25, 1882.

Application filed March 7, 1882. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM C. SHAFFER and SAMUEL M. PLUSH, both citizens of the United States, and residents of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Fire-Guards for Places of Amusement, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view of the fire-guard embodying our invention. Fig. 2 is a side view, partly sectional, of a portion thereof. Figs. 3, 4, and 5 are views of modifications.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists of trap-doors which are opened when the curtain is automatically lowered, so that while the fire may be increased provision is made for directing the smoke from the building, and the fire will not immediately spread to other localities.

It further consists of a water-pipe, the cock of which is connected in such manner that it will be automatically operated, and water thereby turned on to wet the scenery, curtain, stage, &c.

Referring to the drawings, A represents the stage of a theater or place of amusement, which may be of usual construction.

B represents a curtain formed of iron or other suitable material of fire-proof nature and employed independent of the drop or stage curtain proper, said curtain B being secured to a rotating shaft, B′, suitably mounted at the top of the stage, and carrying a drum, C, around which is wound a chain or wire or other rope, C′, whose lower end has connected to it a weight, C″. The drum C has secured to or cast with it a spur-wheel, D, which meshes with a pinion, E, whose shaft, properly mounted, carries a ratchet, F, and a fan, G.

H represents a dog, which is pivoted to the top frame of the stage, and engages with the teeth of the ratchet F, various methods being employed for holding said dog engaged with the ratchet and releasing it therefrom, as will be hereinafter set forth.

In the roof of the building above the stage are trap-doors J, (one or more,) which are hinged at their lower ends, so as to open at top, and have connected to them a toggle or other lever, K, to which is pivoted a rod or bar, L, whose lower end is adapted to be struck by a crank or arm, M, fixed to the ratchet F or fan G, whereby said bar may be raised and the doors thrown outwardly and thus opened. To said bar L or toggle K is connected a key, N, attached to the valve P of a water-pipe, Q, which latter is fixed in position and continued across or around the stage or other portion thereof and perforated or provided with roses or sprinklers, as desired.

To the bar L is connected a cord or chain, L′, which passes downward, so as to be conveniently reached on the stage, whereby the bar may be moved clear of the arm M and rendered incapable of raising the trap-doors.

In Fig. 2 the dog H is connected to a metallic thermostat, R. In Fig. 3 the dog is engaged by a weighted catch, R, to which is attached a string, R′, one end of which is fixed to the frame of the mechanism, whereby the catch is held on the dog, or said string R′ is dispensed with and a weight, R″, is suspended over the lower limb of the catch by means of a string, R‴, and adapted when liberated to strike said limb.

In Figs. 4 and 5 we show electric devices for holding and releasing the dog, said devices each consisting of a battery, thermostat, magnets, and wires, and a closed or open circuit, so that when the circuit is broken or closed the dog is caused or permitted to disengage from the ratchet F, whereby the latter, and consequently the fire-proof curtain B, is no longer controlled.

The fire-proof curtain is wound by means of a chain or wire or other rope and a windlass similar to those employed for the usual stage-curtain. The dog is properly set or engaged by the ratchet and the other appurtenances located.

In the event of fire, if the flames reach the string R′ or R‴ the latter is burned, whereby the catch R is thrown clear of the dog H and the ratchet F is uncontrolled, whereby the curtain begins to unroll and descend, thus shutting off the auditorium from the stage, the descent being insured by the weight C″, the fan G acting as a retarding device for preventing abruptness in the descent of the curtain. Simultaneously therewith the arm M strikes the bar L and raises the toggle K, whereby

the trap-doors are thrown open and remain open, the bar L being thereafter clear of the arm. The key N is turned by the elevation of the bar L or toggle K, thus opening the cock or valve P and letting on the water, which escapes through the perforations or sprinklers of the pipe over, around, or through the stage, the scenery, stage, curtain, &c., thus being subjected to the jets, spray, or streams of the water, the effect whereof is evident. As the trap-doors are opened it creates a draft and ventilation in the space or apartment below said doors, whereby while the fire may be increased in said space or apartment it is, as it were, temporarily drawn away from surrounding apartments or spaces, and thus prevented from immediately spreading. Furthermore, the smoke is caused to escape through the trap-doors, being forcibly impelled thereto by the action of the fan G, thus clearing the room of smoke and giving the audience and actors and stage-help opportunity to see the danger of the situation.

It is evident that where the thermostat, Fig. 2, is employed its expansion will force the dog from the ratchet, or the breakage of the electric circuit, Fig. 4, or closing of such circuit, Fig. 5, will accomplish the same result, thus permitting the unrolling of the fire-proof curtain and the other operations stated.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The fire-proof curtain B and its shaft B′, in combination with drum C, weighted cord C′, ratchet-wheel F, dog H, and devices for automatically releasing said dog from said ratchet-wheel on the outbreak of fire, substantially as set forth.

2. The curtain and its shaft, in combination with the drum C, weighted cord C′, ratchet-wheel F, dog H, fan G, and devices for automatically releasing said dog from said ratchet-wheel on the outbreak of fire, substantially as set forth.

3. Shaft B′, provided with arm M, in combination with arm or bar L, toggle K, and trap-door J, ratchet-wheel F and dog H, and devices which automatically release said dog from said ratchet-wheel on the outbreak of fire, substantially as set forth.

4. Cord L′, in combination with arm L, toggles K, trap-door J, and shaft B′, carrying arm M, substantially as set forth.

5. Key N, cock or valve P, and the water-pipe governed thereby, in combination with shaft B′, arm M, bar L, ratchet F, dog H, and devices which automatically release said dog from said ratchet on the outbreak of fire, substantially as set forth.

6. Shaft B′, provided with drum C, cord C′, and weight C″, in combination with ratchet-wheel F, weighted dog H, catch R, weight R″, and a cord, the burning of which allows the latter weight to free said dog, which then automatically separates from said ratchet-wheel, substantially as set forth.

WILLIAM C. SHAFFER.
SAML. M. PLUSH.

Witnesses:
JOHN A. WIEDERSHEIM,
A. P. GRANT.