M. J. WALSH.

FIRE EXTINGUISHING APPARATUS.

APPLICATION FILED JULY 29, 1914.

1,315,353.

Patented Sept. 9, 1919.

3 SHEETS—SHEET 1.

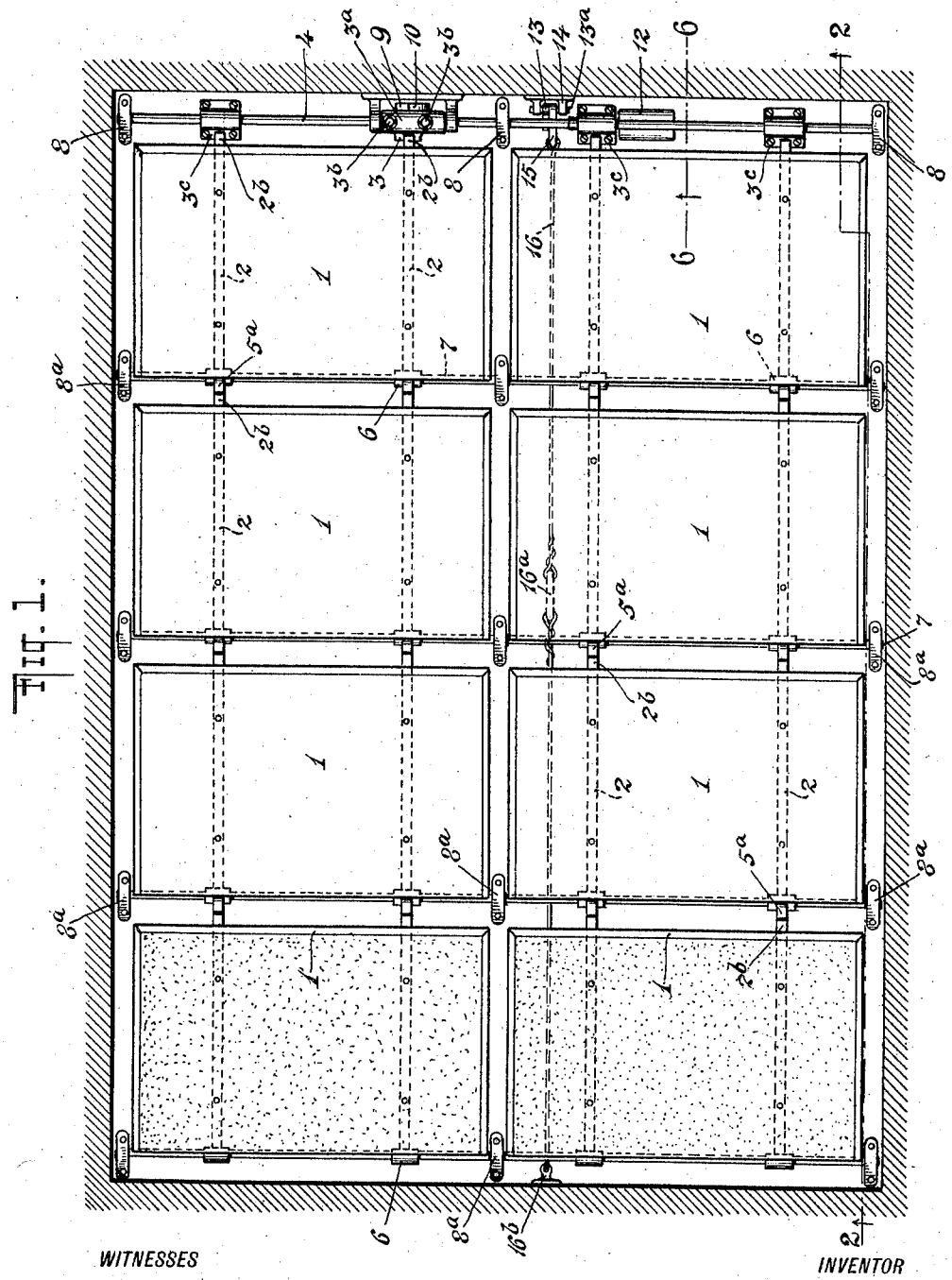


Fig. 1.

WITNESSES

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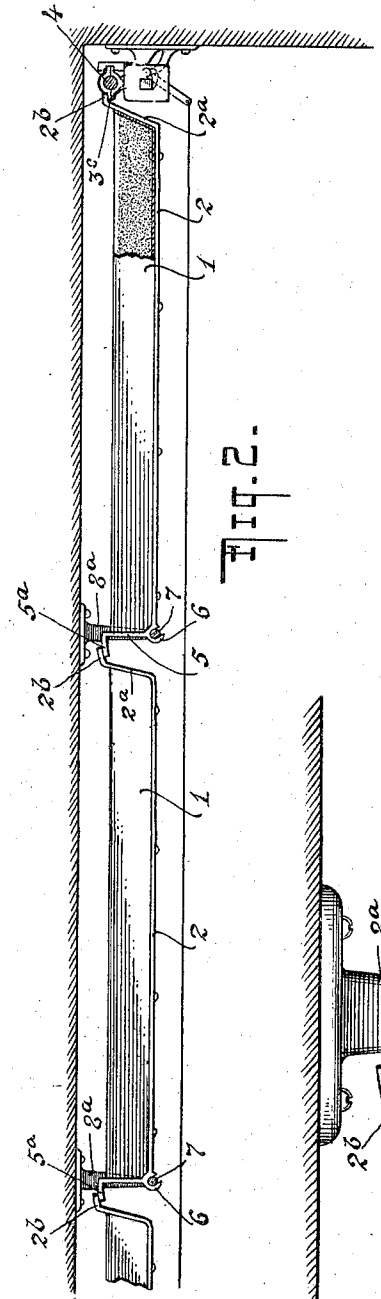


FIG. 2.

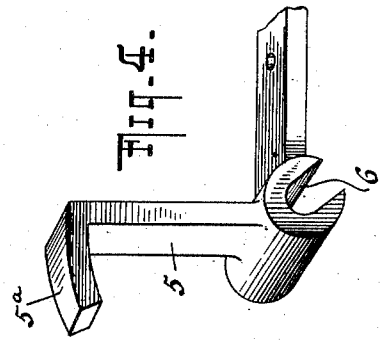


FIG. 4.

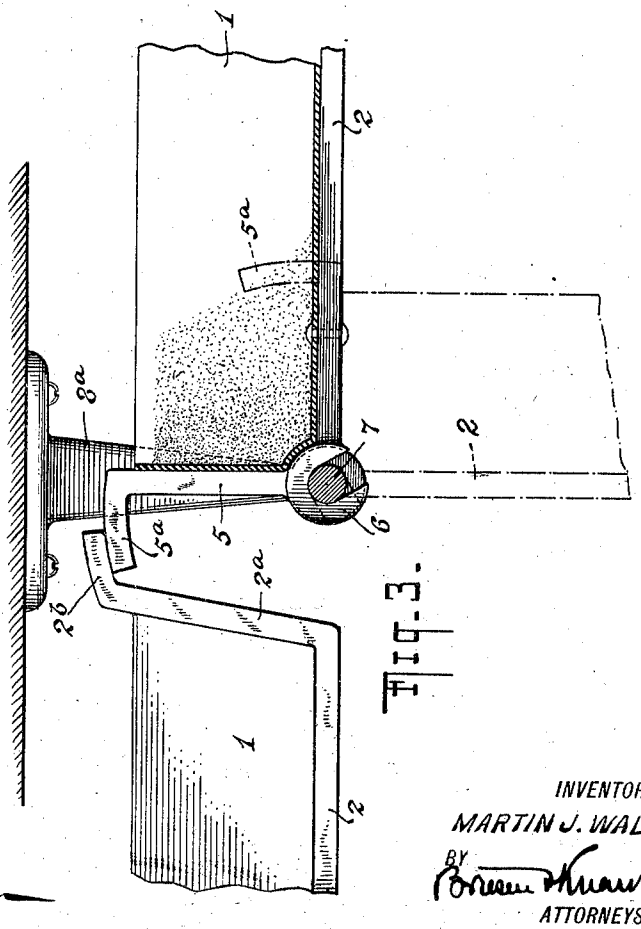


FIG. 3.

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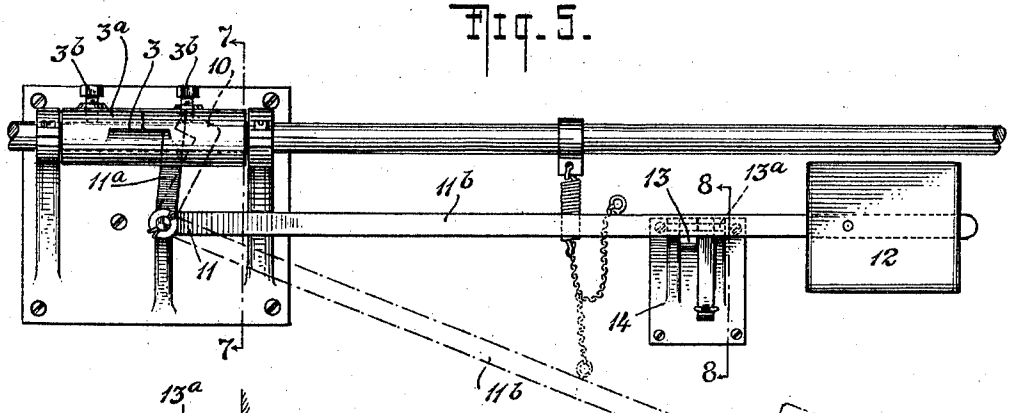
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3 SHEETS—SHEET 3.

Fig. 5.



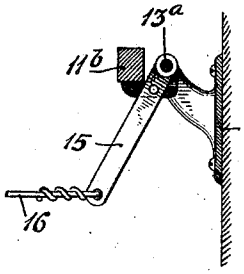


Fig. 8.

Fig. 6.

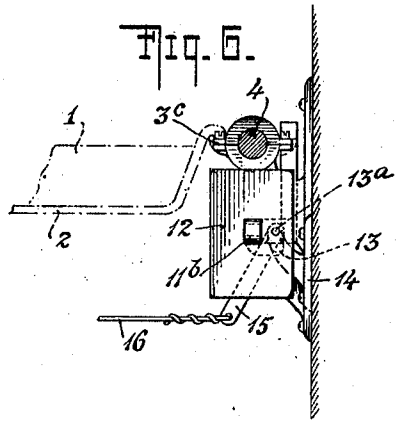


Fig. 7.

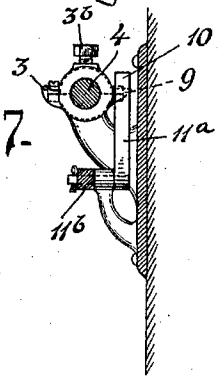
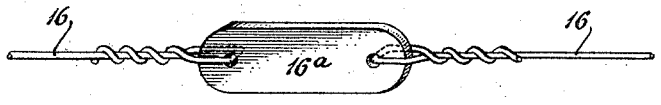


Fig. 9.



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UNITED STATES PATENT OFFICE.

MARTIN J. WALSH, OF NEW YORK, N. Y.

FIRE-EXTINGUISHING APPARATUS.

1,315,353. Specification of Letters Patent. Patented Sept. 9, 1919.

Application filed July 29, 1914. Serial No. 853,786.

To all whom it may concern:

Be it known that I, MARTIN J. WALSH, a citizen of the United States, and a resident of the borough of Manhattan, city, county and State of New York, have invented certain new and useful Improvements in Fire-Extinguishing Apparatus, of which the following is a specification.

My invention relates to fire extinguishing apparatus and is an improvement upon the apparatus disclosed in my pending application Serial No. 825,513 filed March 18, 1914.

My present invention consists of a simple and efficient extinguisher mechanism, wherein a finely divided non-combustible substance, such as, for instance, sand, is maintained upon oscillating supports located adjacent the ceiling, and such substance is released through the fusing from excessive heat of a fusible connection such as a wire or link, said fusing permitting the supports containing the non-combustible substance to swing or oscillate and thus to empty their contents to quell the fire.

Figure 1 is a top plan view of my apparatus.

Fig. 2 is a sectional elevation taken on line 2—2 of Fig. 1.

Fig. 3 is an enlarged detail of the ends of the supporting rods and their coöperating lips.

Fig. 4 is a detail in perspective showing the bearing of one of the supporting rods.

Fig. 5 is an enlarged detail of the releasing mechanism and its related parts.

Fig. 6 is a detail taken approximately on line 6—6 of Fig. 1 showing the releasing lever.

Fig. 7 is a section of the bracket and rock shaft taken on line 7—7 of Fig. 5.

Fig. 8 is a detail of the supporting bracket of the releasing lever and its hook taken on line 8—8 of Fig. 5.

Fig. 9 is a detail of the fusible link of my apparatus.

In the form of construction shown in the foregoing drawings, I employ a series of interdependent receptacles or supports 1, horizontally supported at a slight distance from the ceiling. These supports may be formed of metal and as herein shown by way of example are secured upon a series of metal rods 2, which sustain them horizontally as hereinafter described. In the accompanying drawings two such rods are shown by way of example for each support.

Each of the supporting rods 2 is bent upwardly, as shown at 2^a, the upward bend terminating in a lip 2^b which, in the case of the first series of supports 1 engages the lug 3 upon a collar 3^a secured upon a rock shaft 4 by set screws 3^b, the rock shaft 4 being rotatably supported in wall brackets 8—8 near its respective ends. It will be understood, without further reference thereto, that along the length of the rock shaft 4 additional fixed collars and lugs 3^c are provided to sustain as many supporting rods and supports 1 as may be provided for the series of trays. The opposite ends of each of these rods 2 is likewise turned upwardly, as shown at 5, and terminates in a lip 5^a which lip serves as a support for the next succeeding support 1 as will be hereinafter described. This latter end of the supporting rod 2 is formed with a bearing 6 which pivotally engages a shaft 7 carried by bracket arms 8^a, secured to the wall of the room or loft. The next succeeding support 1 and supporting rod 2 are similarly formed but the lip 2^b thereof is arranged normally to rest upon the lip 5^a of the preceding supporting rod and so on, until the last tray of the series is reached.

From the foregoing description, it will be apparent, that when the lip 2^b of the first support 1 of the series is disengaged from the lug 3 upon the rock shaft 4, it will swing from horizontal to vertical position, thereby causing its rearward lip 5^a to be withdrawn from the supporting position for the lip 2^b of the next succeeding support 1 causing said support 1 and all the next succeeding supports 1 to swing from horizontal to vertical position.

I shall now describe the mechanism for causing the release of the first support 1 of the series from its engagement with the lug 3 upon the rock shaft 4. Upon the collar 3^a of the rock shaft 4 another lug 9 is provided, which in the normal position of the shaft is engaged by the hook 10 formed upon the upwardly extending arm 11^a of a bell crank lever 11, the horizontal arm 11^b of which carries a weight 12 to accelerate the oscillation of said bell crank lever. This bell crank lever is maintained in its normal position (whereby its hook 10 is in holding engagement with the lug 9), by a hook

13 pivotally mounted upon a journal 13^a in a wall bracket 14 so that the said hook 13 in its normal position will underlie and support the horizontal arm 11^b of the bell crank lever 11 and its weight 12 against downward oscillation. Rigidly connected with said pivotally mounted hook 13 a depending release lever 15 is also mounted upon the shaft 13^a and at the lower end of said lever 15 an eyelet or other fastening means is provided to which one end of a fusible connection such as a fusible wire 16 is secured, the other end of said wire being tautly secured in any suitable manner at the other end of the room as shown at 16^b.

This wire 16 may consist of one continuous strand of fusible metal or of one or more fusible links 16^a which may be interposed between strands of ordinary wire or rope, a sample of such links being shown in Fig. 9 of my drawings.

I shall now describe the mode of operation of my apparatus.

All the supports are in the position shown in Figs. 1 and 2. A fire starts beneath them, producing in its early stages a rise in temperature sufficient to result in fusing the fusible connection 16 or of the interposed link or links 16^a whereby the release lever 15 and its hook 13 are rendered free to oscillate, the hook 13 thus swinging out of holding contact with the arm 11^b of the bell crank lever 11 causing the hook 10 to vibrate out of holding contact with the lug 9 on the collar 3^a of the rock shaft 4. The shaft 4 being thus released will rotate under the weight of the supports 1, thereby releasing the lips 2^b from holding engagement with the lugs 3 and 3^c on the fixed collars of the rock shaft 4, whereupon the tray will swing from its normal horizontal position to an approximately vertical position and empty its contents of non-combustible material. As heretofore explained, the oscillation of this first tray of the series will result in a similar oscillation of the second and the successive trays of the series so that the floor or loft will in immediate succession be covered with a layer of the non-combustible substance to quell the flame.

While I have shown one form in which my invention may be practised, I desire it to be understood that the supports for the non-combustible material and their relation to one another may be made in any desired form or dimension, the essence of my invention being that these supports shall be capable of movement to empty their contents of finely divided non-combustible material by reason of the fusing of a fusible support therefor. It will also be understood that another form of releasing or trigger mechanism may be substituted for the form shown and that various modifications in detail may be made without departing from the spirit of my invention.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a fire extinguishing apparatus, the combination of a plurality of oscillating supports arranged in series, an oscillating member carried by each of said supports except the last to engage the succeeding support; finely divided non-combustible material carried by said supports, and a fusible connection for holding and releasing the first of said supports.

2. In a fire extinguishing apparatus, the combination of a plurality of oscillating supports arranged in series, an oscillating member carried by each of said supports except the last establishing connection with the succeeding support; finely divided non-combustible material carried by said supports and a fusible connection for holding and releasing the first of said supports.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

MARTIN J. WALSH.

Witnesses:
EUGENE EBLE,
FRED A. KLEIN.

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