

J. YATES.  
AUTOMATIC FIRE ALARM.  
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959,828.

Patented May 31, 1910.

Fig. 1.

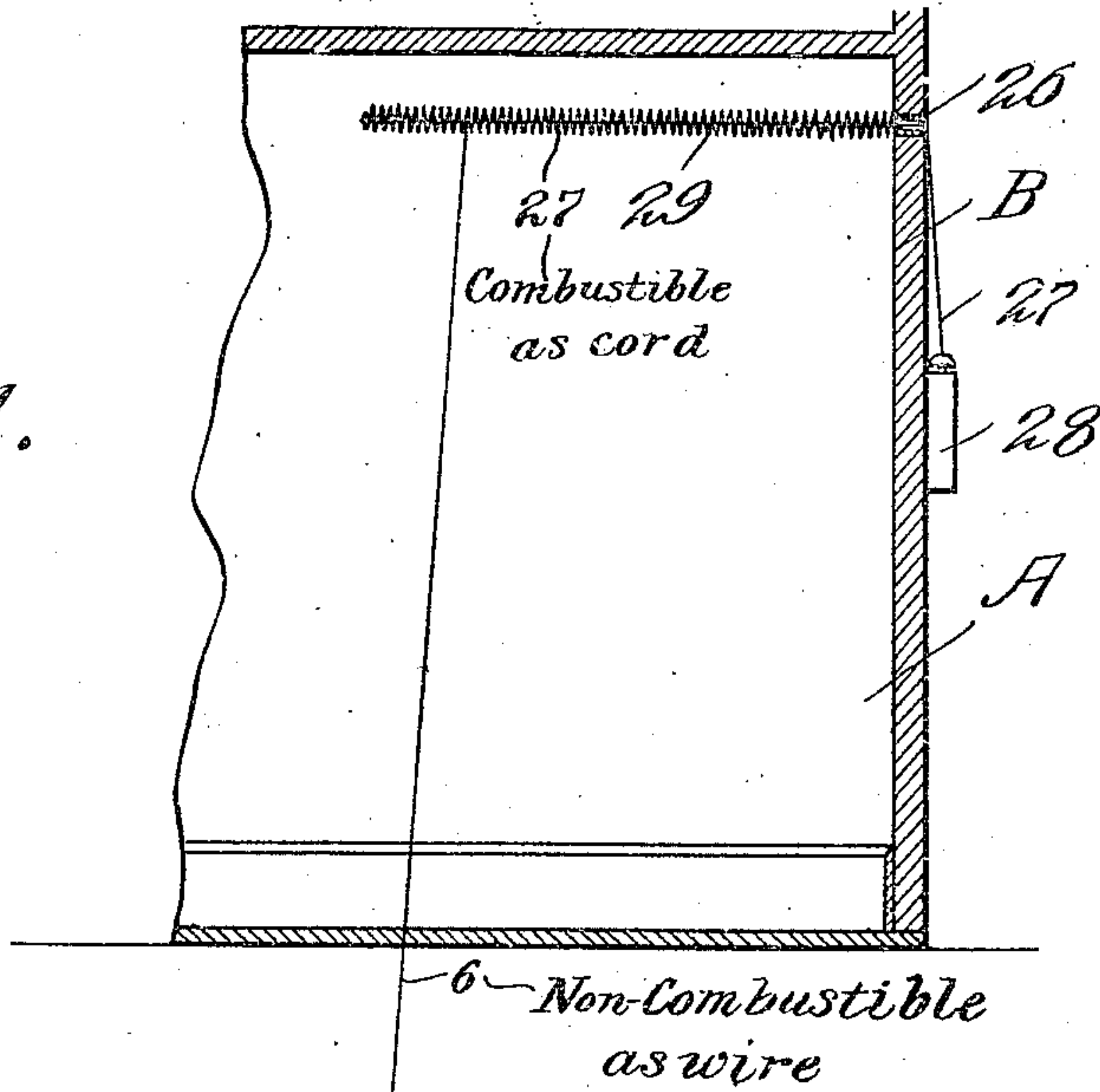
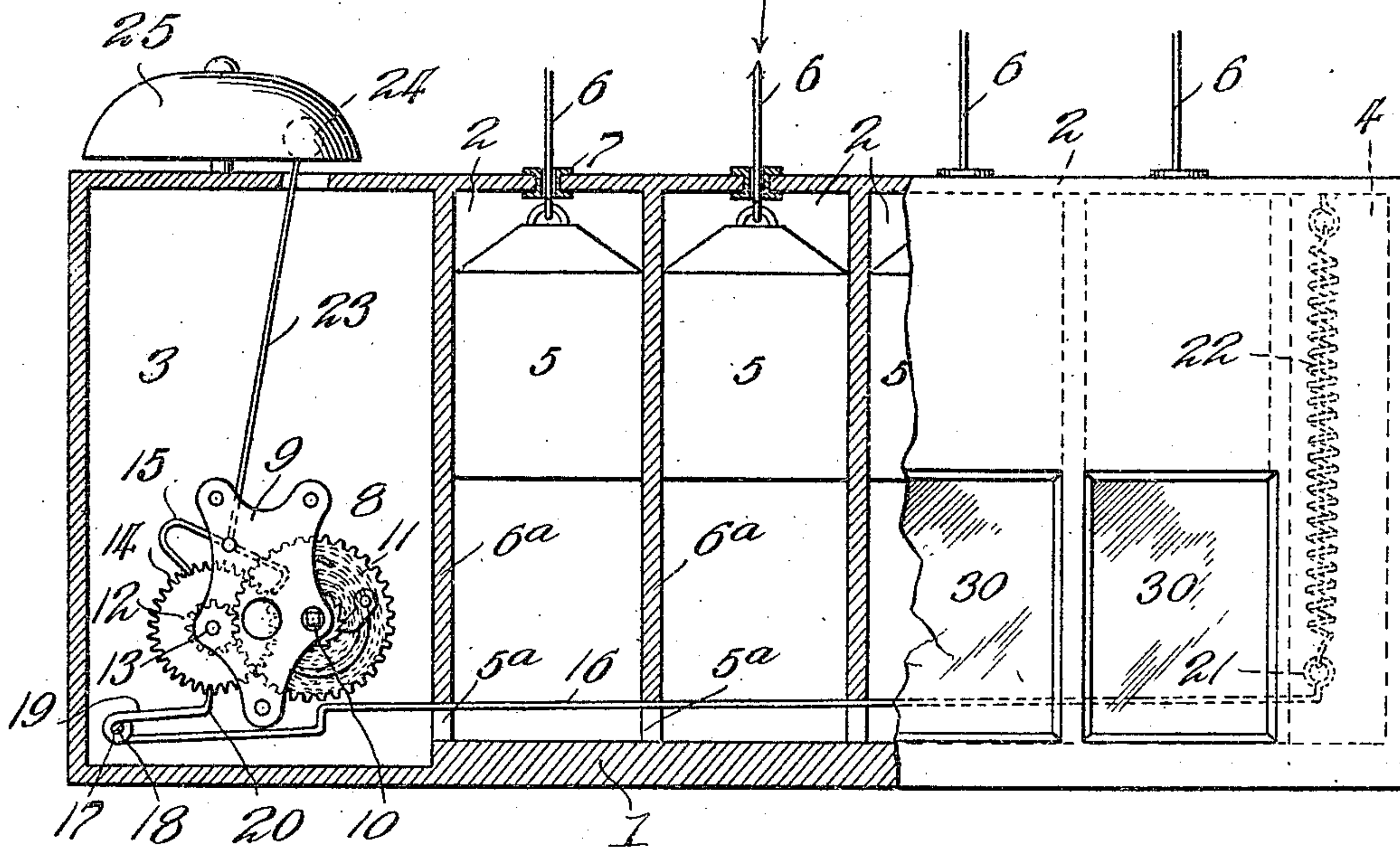


Fig. 2.



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# UNITED STATES PATENT OFFICE.

JOSEPH YATES, OF LEEMASTER, VIRGINIA.

## AUTOMATIC FIRE-ALARM.

959,828.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed August 27, 1908. Serial No. 450,519.

*To all whom it may concern:*

Be it known that I, JOSEPH YATES, a citizen of the United States, residing at Leemaster, in the county of Buchanan and State of Virginia, have invented new and useful Improvements in Automatic Fire-Alarms, of which the following is a specification.

This invention relates to automatic fire alarms, and it consists broadly of an annunciator at the central office, incombustible strands (such as wires) leading from the drops thereof to various apartments, in each compartment a local alarm adapted to be sounded by the parting of a combustible strand (such as cord) which otherwise retains the tension of the incombustible connection, and an open-work guard surrounding such combustible strand to protect it from mice and the like.

To this end the invention has for an object to provide an annunciator that can be placed at a convenient point in a building or the like and incombustible connecting strands leading therefrom to combustible retaining strands located in various or all of the rooms in the building to automatically sound an alarm at two places at the time of fire in any one room.

Other objects and advantages will be apparent as the nature of the invention is better disclosed, and it will be understood that changes within the scope of the claims may be made without departing from the spirit of the invention.

In the drawing, forming a portion of this specification and in which like characters of reference indicate similar parts in the several views,—Figure 1 is a sectional view through a portion of one room of a building showing the combustible retainer and the manner of attaching the incombustible strand of my invention thereto. Fig. 2 is a side view partly in section of the annunciator.

Referring now more particularly to the drawing and with particular reference to Fig. 2, it will be seen that the annunciator comprises a rectangular receptacle 1 having a plurality of compartments 2 intermediate its ends, and at one end the receptacle is provided with a compartment 3 and at the other end with a relatively narrow compartment 4. Each compartment 2 has slidably mounted therein a weight 5 which is connected to a wire 6, and the wire of each weight is slidably mounted through a bush-

ing 7 in the top of the receptacle 1, as shown. The compartment 3 has mounted therein a clock mechanism 8 consisting of a frame 9 having a spring driven shaft 10. The shaft 10 has mounted thereon a gear wheel 11 adapted to mesh with a pinion 12 mounted upon a countershaft 13. The countershaft 13 carries an escapement wheel 14 adapted to operate a pivotally mounted pallet 15 carried by the frame 9.

A rod 16 is mounted in the receptacle 1 and operates in passages 5<sup>a</sup> formed in the partitions 6<sup>a</sup> between the compartments 2, and this rod is provided in the compartment 3 with an eye 17 for receiving a pivot pin 18 engaged at its ends in the side walls of the receptacle. The rod 16 has a portion extending from the eye as indicated at 19 and is hooked as shown at 20 for engaging the teeth of the escapement wheel. The portion 19 of the rod 16 will be hereinafter referred to as a pawl adapted normally to hold the shaft 13 against rotation. In the compartment 4 the rod 16 is bent to form an eye 21 which receives the lower end of a helical spring 22 connected at its upper end to the receptacle 1 and is adapted for operation to hold the pawl normally engaged with the escapement wheel, and as will be readily understood, when the pawl is in this position the rod 16 will be raised above the bottom of the receptacle and will stand directly beneath the weights in the compartments 2. The pallet 15 is provided with an oscillating rod 23 having a weighted clapper at its upper end 24 for engaging a bell 25 during the oscillation of the rod 23.

Upon reference to Fig. 1 of the drawing, a portion of a room A is shown, and the retainer and its guard therein. Through one wall B of the room, which wall can be that next the hallway, is formed a passage for receiving a bushing 26 having a cord or similar combustible strand or element 27 slidably mounted therein. The cord 27 upon the exterior of the room has fixed thereto a weight 28 for sounding a local alarm when it falls. The cord 27 upon the interior of the room is disposed within an open-work guard, here shown as a coiled spring 29, and it will be seen that this cord is thus guarded or protected from being severed as, for instance, by gnawing of mice, rats, and the like, although the open-work guard will not prevent access to the cord by flames arising from a fire within the com-



partment. In setting up the device, the annunciator will be located at "central," such as in the office of a hotel, each of its wires 6 led thence through or over suitable devices 5 7 into an apartment to be protected, the retainer set up therein with the cord strung through its guard and held under tension by the suspended weight 28, and the wire drawn taut to raise its individual weight 5 10 and then passed into the guard and connected with the cord so that the latter retains the tension of the wire until it (the cord) is burned off. In case of fire occurring within any compartment so protected, it will be 15 seen that the cord or combustible strand will be burned, and when severed will drop its own weight 28 to sound a local alarm and simultaneously release the wire 6 connected thereto allowing its respective weight 5 to 20 fall upon the rod 16 to disengage the pawl from the escapement wheel to oscillate the rod 23 and sound an alarm by its clapper coming into engagement with the bell 25.

Each compartment 2 of the annunciator 25 is provided with a glass panel 30 whereby it can be observed when the alarm is in operation which weight is down. If desirable each weight may have printed thereon the number of the room with which it is connected and by so doing the location of the 30 fire may be readily ascertained. It is not absolutely necessary to number the weights 5 as it is obvious that the counterbalancing weight 28 will also fall when the cord 27 is 35 severed and this will indicate the room in which the fire is located. But such indication gives only a local alarm, useful more especially to the occupant and to the hall-watchman, while the alarm within the annunciator calls attention to the numbered 40 drop exposed through panel 30 and indicates the precise location so that help can be

sent from the office if necessary. By tying the weight 28 to the cord 27 at a point adjacent the bushing 26, the entire length of cord will be protected or guarded so that it 45 cannot be severed save by fire—then the sounding of an alarm would indicate fire within the room itself. But I consider the use of incombustible connecting strands (as 50 of wire) between the central station (office) and each local (apartment) highly superior to the use of combustible strands (as of cord), because burning off or accidental severance of any strand between 55 these points would sound an alarm without necessarily indicating its exact location. The use also of guards covering the cords obviates the danger of their being accidentally reached and severed, as by rats; although such guards are not necessary over 60 the wire.

I claim:—

1. In a local fire alarm, a combustible strand fixed at one end and a weight suspended by its other, combined with an open-work metallic guard consisting of a wire helix surrounding said strand, for the purpose set forth. 65

2. In a fire alarm, a combustible strand fixed at one end within a compartment, passing through a bushing in a wall thereof into the adjacent compartment or hallway, and a weight suspended by its other end; combined with an open-work metallic guard 70 surrounding said strand, for the purpose set forth. 75

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH YATES

Witnesses:

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M. H. LOONEY.