

(No Model.)

R. J. FLEISCHER.
DETONATING FIRE ALARM.

No. 538,643.

Patented Apr. 30, 1895.

Fig. 1.

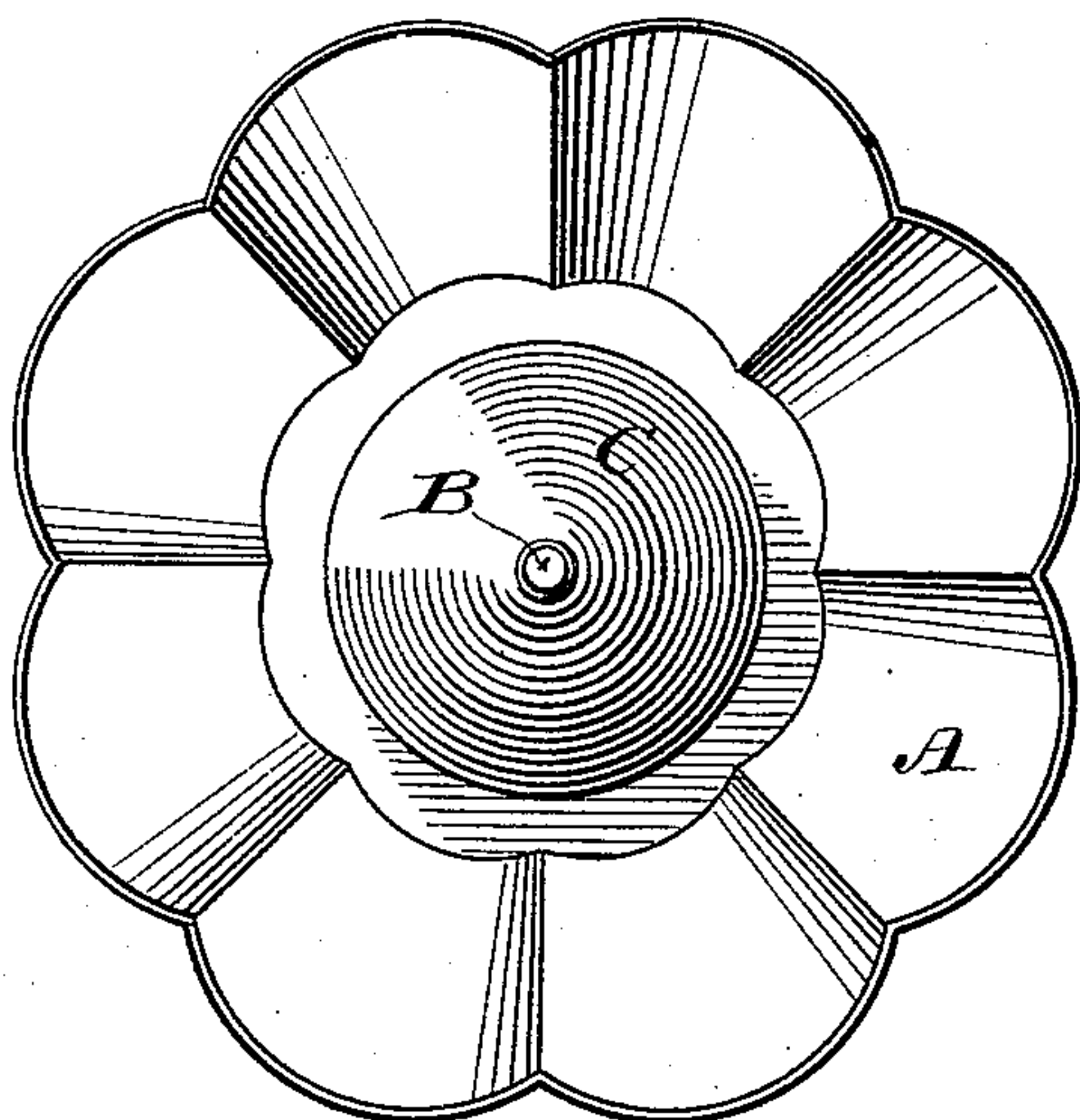


Fig. 2.

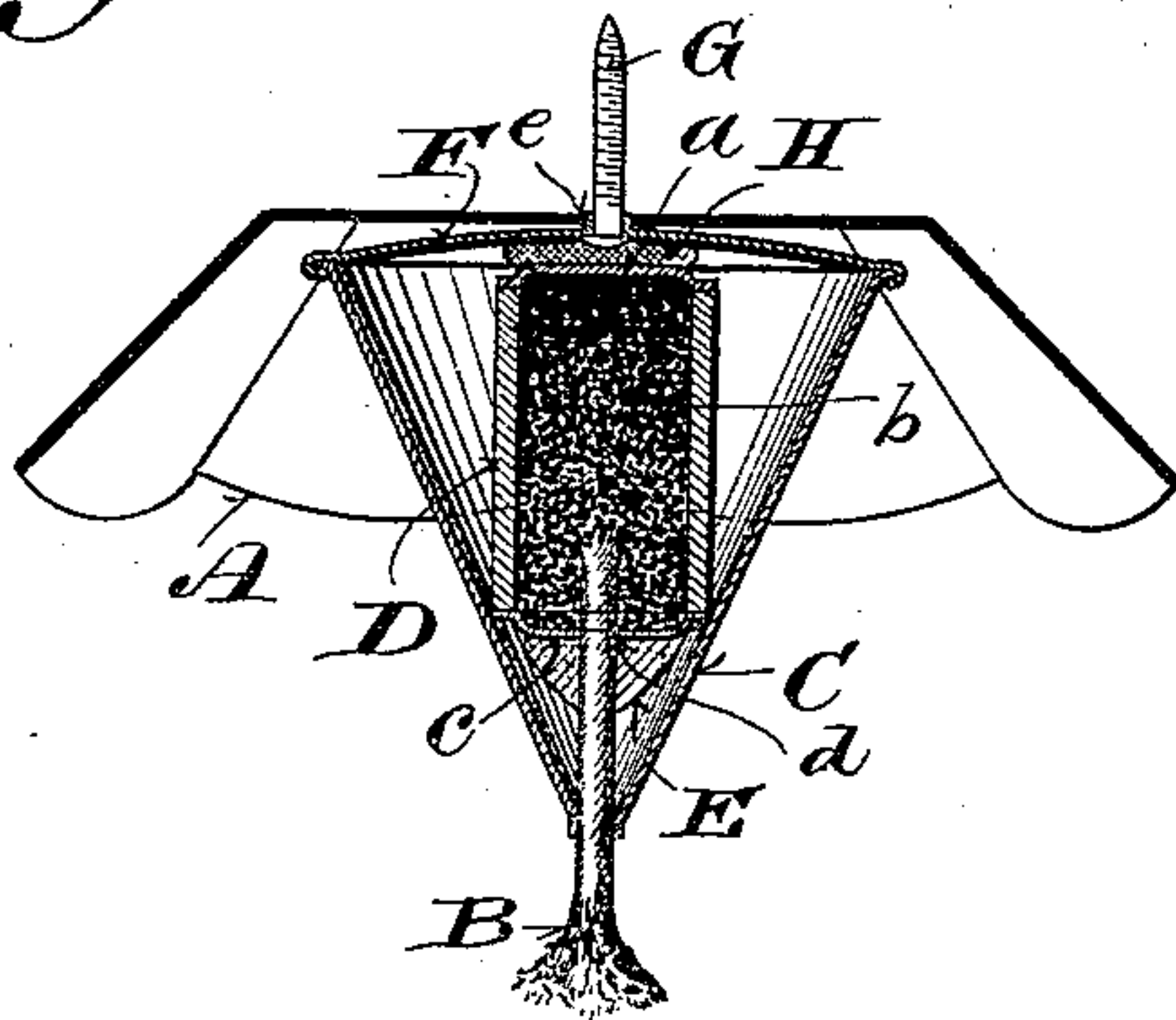
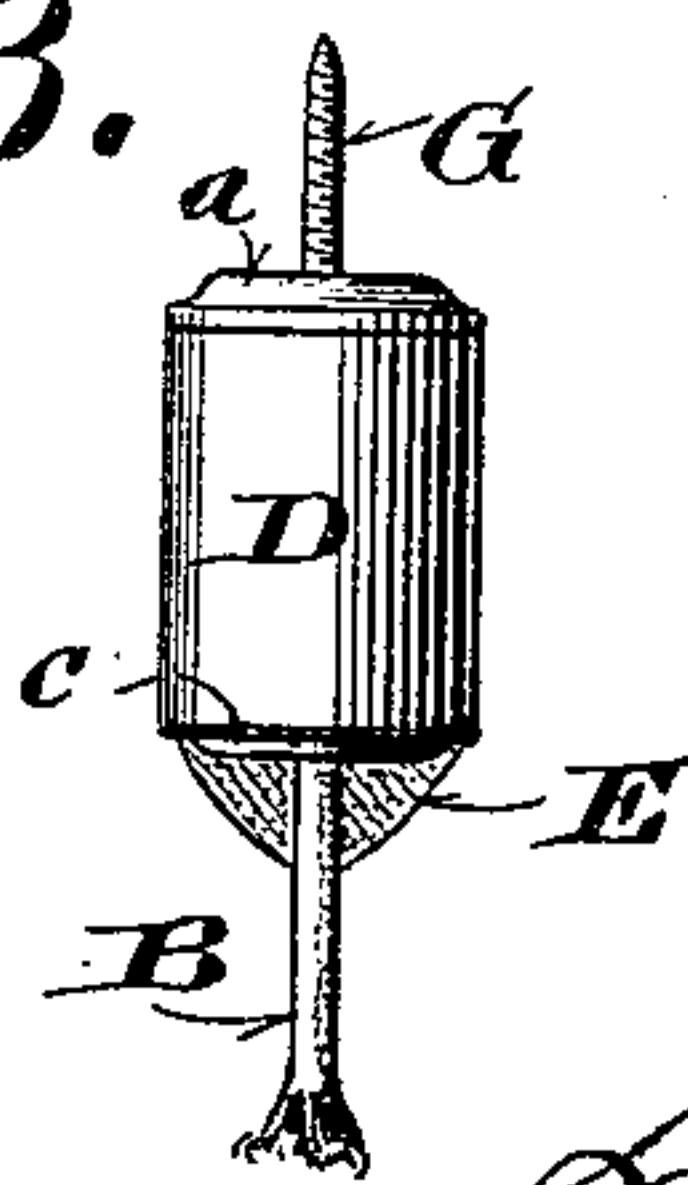


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

RICHARD J. FLEISCHER, OF MILWAUKEE, WISCONSIN.

DETONATING FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 538,643, dated April 30, 1895.

Application filed April 16, 1894. Serial No. 507,650. (No model.)

To all whom it may concern:

Be it known that I, RICHARD J. FLEISCHER, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Fire-Alarms; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 My invention relates to fire alarms and consists in certain peculiarities of construction and combination of parts as will be fully set forth hereinafter, and subsequently claimed.

15 In the drawings, Figure 1 is an inverted plan view of my improved device. Fig. 2 is a vertical central section thereof. Fig. 3 represents a somewhat modified construction.

20 My device is designed to be secured to the wall, ceiling or any other convenient or suitable portion of a room or apartment, and is so constructed that when the fuse of said device is ignited by flame or heat from fire, the device will explode with a loud noise, and thereby cause an immediate alarm, and notify 25 those within hearing of the fact of there being a fire in said room or apartment.

Referring to the drawings, A represents a cap preferably stamped out of sheet metal, in a somewhat ornamental form, and is designed 30 to serve as a guard and heat deflector to guide the heat and flame (if there be a fire in the apartment adjacent thereto) toward the fuse B.

C represents a casing, or shell, preferably 35 of conical form, and inverted, as shown, and truncated and open at its lower end.

40 D represents the cylinder of a cartridge having a closed top, *a*, soldered thereto, and filled with any suitable explosive powder or compound, *b*, with a similarly soldered bottom, *c*, the latter having a central opening, *d*, for the reception of the explosive material, and the fuse B.

45 E represents a seal of any suitable air and water proof material.

F represents the inverted base of the shell C, and G represents an attaching device, such as a screw, secured thereto, which passes through a hole, *e*, in the cap A.

50 H represents a packing, or flexible washer, interposed between the said inverted base F and the top *a* of the cartridge.

In putting my device together, in the process of loading or manufacture, I proceed as follows: The cylinder D of the cartridge is 55 made preferably of a section of annealed iron or steel tubing, and the ends *a c* are preferably of sheet metal soldered securely to said cylinder. The top piece, *a*, is made thicker, and is more strongly soldered to the cylinder 60 than the bottom piece, *c*, and there is consequently less resistance to the force of the explosion at the bottom. The explosive powder or compound is inserted into the cartridge, after the top and bottom pieces have been 65 soldered, and when the whole is cold, through the described hole *d*, and the fuse B is similarly inserted through said hole, with the inner end of said fuse well up into the explosive material, as shown in Fig. 2. Next, 70 the sealing compound is applied to form the seal E, to keep the fuse in place, and form an air and moisture proof seal around the fuse and opening *d*. In this condition, the cartridge and fuse are dropped into the conical 75 shell C, the fuse passing out through the open truncated end thereof, and the cartridge resting on the inner tapered wall of the said shell. The washer H is then placed on the top of the cartridge, and the inverted base F is secured 80 to the shell C. In the form illustrated in the drawings, the shell C and its base F are shown as made of thin sheet metal, seamed together, but other material may be employed, and I frequently make the shell C of sheet 85 asbestos, pressed into shape, in which case the base F may be of pasteboard simply glued or cemented to the said shell. The described screw G forms a ready and convenient means of attaching my device to the wall or ceiling 90 of the room or apartment in which it is to be used.

The operation of my device has been already sufficiently set forth, and it will be found a very economical and efficient fire alarm, and the 95 cap A not only renders the device ornamental in appearance but as already indicated serves as a heat and flame deflector, and also serves to protect the wall or ceiling from injury from the explosion, the bottom *c* of the cartridge 100 offering the least resistance and consequently being blown off when the fuse is ignited. This fuse B is preferably formed of cotton, and treated with a nitric acid solution, so as

to render the same ignitable at any given temperature, say from 165° to 250° Fahrenheit, as desired. The object of using the flexible washer or packing H is to hold the cartridge tightly within the shell C, when the base F is applied, and prevent any displacement therein, as might otherwise occur, especially as the cartridges are liable to differ slightly in length (owing to possible variations in the thickness of the solder) but as this washer is compressible, the exact length of the cartridge is immaterial, and the certainty of the operation of the device is thereby insured, and the convenience of manufacture is facilitated.

It is obvious that my device will be operative without the cap A and shell C, and the cartridge may be suspended or otherwise secured in any suitable manner to the wall or ceiling of a room (as for instance as shown in Fig. 3, with the screw G, or a loop or catch, secured directly to the cartridge) but for the reasons stated, I prefer generally to construct the device in the form illustrated and described.

My cartridge may be made of cast metal, with solid closed top integral with the cylinder, if preferred, and only the bottom piece c soldered as described, but I have found the hereinbefore described construction easy of manufacture, and satisfactory in use.

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

1. A fire alarm, comprising a cartridge filled with explosive material said cartridge having a thick closed upper end, and a lower end soldered to the walls of the cartridge and of less thickness than that of the said upper end, and said thin lower end having a hole there-through, and having a fuse projecting therefrom, and means for securing the cartridge to the walls, ceiling or other portion of a room or apartment.

2. A fire alarm, comprising a cartridge filled with explosive material and having a fuse pro-

jecting therefrom, a casing or shell inclosing and supporting said cartridge, a base or end plate united to said shell, a flexible washer or packing interposed between said base or end plate and said cartridge, and an attaching device secured to said shell.

3. A fire alarm, comprising a cartridge filled with explosive material and having a fuse projecting therefrom, a casing or shell inclosing and supporting said cartridge, a base or end plate united to said shell, a flexible washer or packing interposed between said base or end plate and said cartridge, a heat deflecting cap or guard, and an attaching device.

4. A fire alarm, comprising a cup-shaped deflector or guard, an inverted conical casing, a cylindrical cartridge filled with explosive material held rigidly within and by said casing with an air-space between said cartridge and the walls of said casing, and a chemically-treated ignitable fibrous fuse embedded in the explosive within said cartridge, and projecting through the end of said cartridge and casing.

5. A fire alarm, comprising a cup shaped deflector or guard, an inverted conical casing, whose base or end plate is provided with an attaching screw passed through said guard, a cylindrical cartridge filled with explosive material and held rigidly within and by said casing with an air-space between said cartridge and the walls of said casing, a chemically-treated ignitable fibrous fuse embedded in the explosive within said cartridge and projecting through the end of said cartridge and casing, a flexible washer between said base or end plate and said cartridge, and an air and moisture proof seal uniting said cartridge and fuse.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

RICHARD J. FLEISCHER.

Witnesses:

H. G. UNDERWOOD,
HENRY DANKERT.