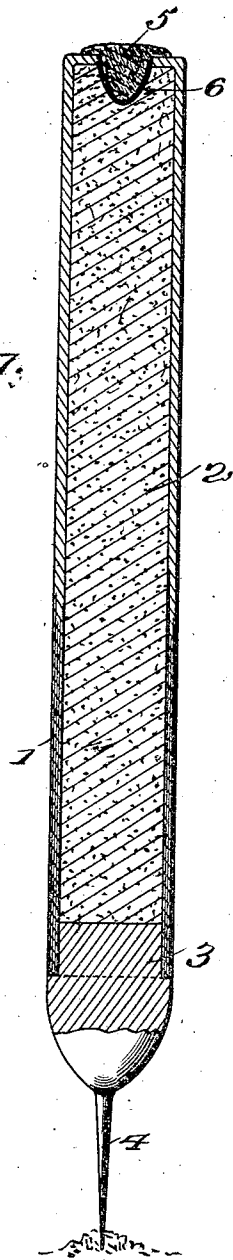


I. NIDITCH.
RAILWAY SIGNAL FUSEE.
APPLICATION FILED DEC. 28, 1910.

984,290.

Patented Feb. 14, 1911.

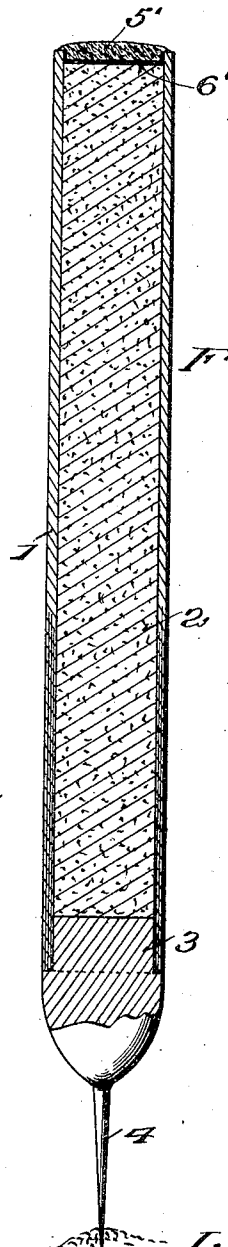
Fig. 1.



Witnesses

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Fig. 2.



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ISADORE NIDITCH, OF DORCHESTER, MASSACHUSETTS.

RAILWAY SIGNAL-FUSEE.

984,290.

Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed December 28, 1910. Serial No. 599,770.

To all whom it may concern:

Be it known that I, ISADORE NIDITCH, a citizen of the United States, residing at Dorchester, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Railway Signal-Fusees, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in railway signal fusees, and the primary object is to provide a railway signal fusee so constructed that it is not subject to spontaneous ignition.

In the accompanying drawings: Figure 1 is a longitudinal sectional view of a fusee which embodies my present improvement. Fig. 2 is a similar view showing a modification of the construction of my improved fusee.

It is well known to those skilled in this art, that the combustible composition contained within the paper tube of fusees has in years past been of such a character that spontaneous ignition resulted under the action of climatic conditions of moisture and heat to which the fusees are necessarily subjected in storage and in transportation. It is also well known that very destructive fires have resulted from spontaneous ignition of the combustible compound in railway signal fusees and, in some instances, there has been loss of life by reason thereof.

The spontaneous ignition of fusees was due to the fact that the combustible compound included sulfur and potassium chlorate. The sulfur in the compound in the presence of heat and moisture produces sulfuric and sulfurous acids, which in the presence of potassium chlorate decomposes the latter with the result that a gas is generated, known as chlorin peroxid which ignites spontaneously.

In my Patent No. 954,330, dated April 5th 1910, I describe and claim a fusee composition which omits the combination of sulfur and potassium chlorate thus preventing the spontaneous ignition, and reference is made to this patent for the detail description of my patent fusee compound.

Railway signal fusees as manufactured include a lighting head or stratum which is composed principally of potassium chlorate, and it is well known that the fusees have also a member carrying principally phosphorus, and that the fusee is ignited by fric-

tional contact between the potassium chlorate and the phosphorus.

My aforesaid patented composition includes sulfur and my present improvement consists in providing an improved separating wall between the potassium chlorate lighting stratum and the sulfur in the combustible compound, and thus prevents spontaneous ignition by reason of the action of any sulfuric or sulfurous acids generated in, or that may be generated within the combustible compound acting upon the potassium chlorate lighting head.

Referring now to the drawings, 1 is the usual paper tube in which my patented fusee compound 2 is contained. Connected with one end of this tube is the usual plug 3, which carries a spike 4.

Referring now particularly to Fig. 1, the lighting head or stratum 5, which is chiefly composed of potassium chlorate is shown in the form of a core 5, which projects into the combustible compound 2. My improvement consists in interposing between the core 5 and the compound 2 a separating wall 6, the chief constituent of which is a deoxidizing agent. This wall is of a substance which is undecomposable in the presence of any acid which may be generated within the combustible compound 2 and thus interposes a protecting barrier wall between the combustible compound 2 and the potassium chlorate lighting stratum 5. As shown in Fig. 1, this wall 6 is in the form of a pocket in which the lighting core 5 is placed. Preferably this wall or barrier is composed of celluloid, though it may be composed of any deoxidizing material that is not acted on by the acids within or liable to be generated within the fusee composition, such for instance as paper, shellac, glue, vaseline, paraffin, wood pulp, or tin foil.

Referring now to Fig. 2, 5' is the potassium chlorate lighting head or stratum, and 6' is the separating wall or barrier between the lighting stratum and the combustible compound 2.

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

1. An improved signal fusee comprising an elongated combustible tube, a combustible compound within the tube and including an ingredient liable to produce acids and an oxidizing agent undecomposable by acids, an outside lighting stratum, and a sepa-

rating wall consisting of a deoxidizing substance undecomposable by acids in or liable to be generated within the combustible compound.

5 2. An improved signal fusee comprising an elongated combustible tube, a combustible compound within the tube and including an ingredient liable to produce acids and an oxidizing agent undecomposable by acids,
10 an outside lighting stratum composed chiefly of chlorate, and a separating wall consisting of a deoxidizing substance undecomposable by acids in or liable to be generated within the combustible compound.

15 3. An improved signal fusee comprising an elongated combustible tube, a combustible compound within the tube and including an

ingredient liable to produce acids, an outside lighting stratum composed chiefly of chlorate, and a hydrocarbon separating wall 20 for the purpose described.

4. An improved signal fusee comprising an elongated combustible tube, a combustible compound within the tube and including an ingredient liable to produce acids, an outside lighting stratum composed chiefly of chlorate, and a celluloid separating wall for the purpose described. 25

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 30

ISADORE NIDITCH.

Witnesses:

GEORGE N. CLARK,
CONRAD VON KLOCK.