

(No Model.)

E. F. LINTON.
PYROTECHNIC TRAIL.

No. 262,442.

Patented Aug. 8, 1882.

Fig. 1.

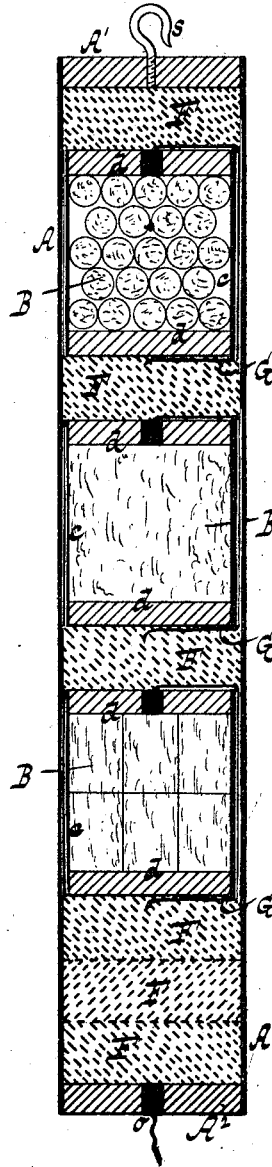


Fig. 2.

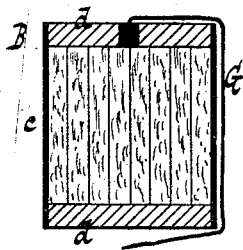
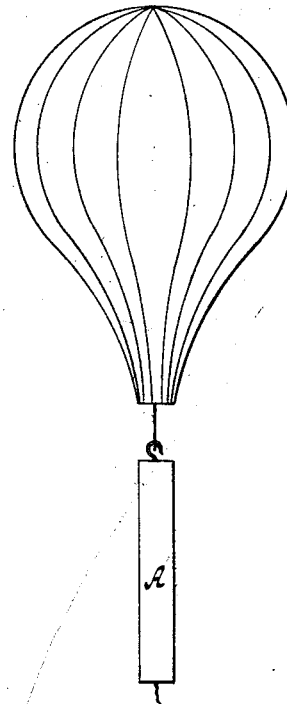


Fig. 3.



WITNESSES:

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PYROTECHNIC TRAIL.

SPECIFICATION forming part of Letters Patent No. 262,442, dated August 8, 1882.

Application filed March 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. LINTON, a citizen of the United States, residing at East New York, in the county of Kings, and State of New York, have invented new and useful Improvements in Pyrotechnic Trails, of which the following is a specification.

This invention relates to "trails" for attachment to balloons or other vehicles of aerial elevation in pyrotechnic displays; and it consists in the construction and arrangement, hereinafter described, of a series of pyrotechnic devices within a combustible case, whereby such devices are successively detached or permitted to drop away from each other and exploded.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a longitudinal central section. Fig. 2 shows one of the pyrotechnic devices detached. Fig. 3 illustrates the manner of attaching the trail to a balloon.

Similar letters indicate corresponding parts.

The letter A designates a case of cylindrical form and of proper length and diameter, within which are arranged or inclosed a series of pyrotechnic devices, B. The case A is closed at its opposite ends by means of plugs A' A², and it is composed of a thin sheet of paper-board or any other material which is adapted to render the article highly combustible or inflammable, and which possesses the required body, while each of the pyrotechnic devices B is composed of a shell, c, fitted to the interior of the case, combined with heads d, one at each end of the shell, and a suitable filling, the whole forming a star, fire-ball, explosive shell, gold-rain, streamer, or other similar article. The structure or composition of the pyrotechnic devices, however, is no part of my present invention, and may be modified according to taste or fancy.

The letter F indicates a series of layers or strata of inflammable powder, which are inclosed in the case A, together with the pyrotechnic devices B, in such a manner as to separate the latter from each other and from the ends of the case; and G indicates a series of matches which are arranged to connect the layers of the powder, one with another, and

the upper terminals of which are in fusible contact with the priming-points of the pyrotechnic devices, respectively, the priming-points being at the top of such devices. The successive layers F of powder are of different colors, and the powder is introduced at the proper places, in a damp condition, so that when dry it becomes hard and retains its position without disintegrating. At the lower or firing end of the case A, I prefer to arrange a series of layers of powder having different colors; but a single layer will answer the purpose of my invention.

The intermediate portions of the matches G are situated between the shells c of the pyrotechnic devices and the case A, as shown in Fig. 1, and their lower terminals are left free in communication with the appropriate layer of powder.

In the plug A², at the lower end of the case, is arranged a fuse, o, for igniting the bottom layer of powder, while to the plug A', at the upper end of the case, is attached a hook, s, or other suitable contrivance for suspending the apparatus.

In applying the trail to use it is hung to a balloon or other suitable vehicle or means of aerial elevation, and the fuse o is ignited, which, burning slowly, allows the balloon to ascend some distance before setting fire to the lower stratum of powder. This powder while burning consumes that part of the case A contiguous or opposite to it, and when the fire reaches the lowest match the latter is ignited and carries the fire up to the priming-point of the first or lowest pyrotechnic device B, at the same time igniting the next upper layer of powder and causing the consumption or destruction of the case at that place, so that said pyrotechnic device not only is exploded, but also detached from the case, the explosion taking place after the device has become detached and as it drops or falls, leaving the remainder of the trail intact. The second match next becomes ignited and carries the fire to the second pyrotechnic device, and so on to the end of the series, and hence a novel and very beautiful effect is produced with perfect safety to the balloon or its substitute.

I am aware that pyrotechnics have been composed of combustible charges contained in paper tubes, so that such charges are successively exploded, and also that it is not broadly new to send up pyrotechnic trains by means of balloons; but such are not broadly claimed by me. In my invention a series of pyrotechnic devices are arranged in a combustible case and separated from each other by intervening charges or layers of inflammable substance, which are connected by matches, the upper terminals of which are in contact with the priming-points of the pyrotechnic devices, whereby the intervening charges of inflammable substance on being lighted serve to consume that part of the case adjacent to them, so that the pyrotechnic devices are successively disconnected and exploded.

What I claim as new, and desire to secure by Letters Patent, is—

A pyrotechnic trail combining in its structure the combustible case A, the pyrotechnic devices B, the case-consuming layers of inflammable substance F, interposed between the pyrotechnic devices, and the firing-matches G, connected with the latter and with the layers of inflammable substance, substantially as and for the purpose described.

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

EDWARD F. LINTON. [L. S.]

Witnesses:

CHAS. A. CODMAN,
FRANK P. PERSON.