Oct. 27, 1925.

1,558,542

R. W. HOLLAND

SKYROCKET

Filed March 7, 1925

Fig. 1.

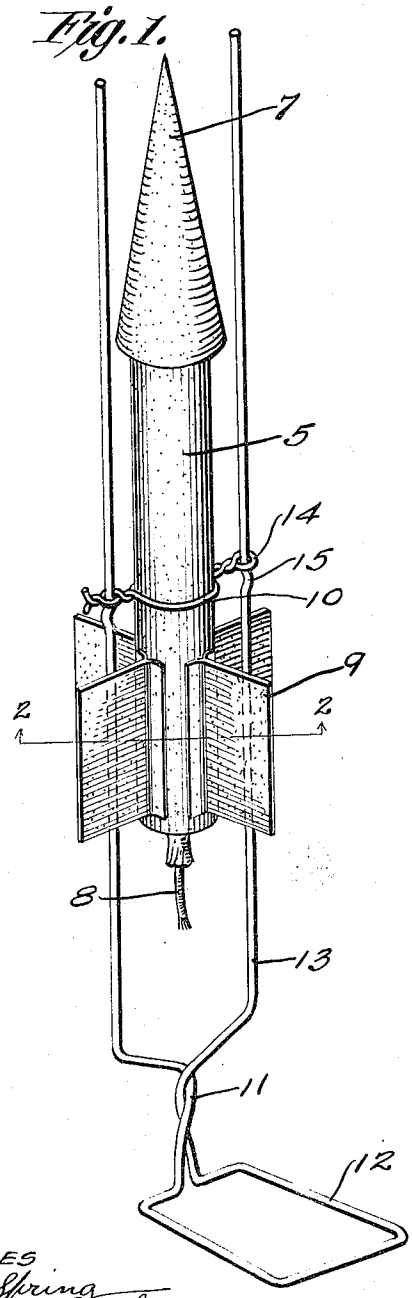


Fig. 2.

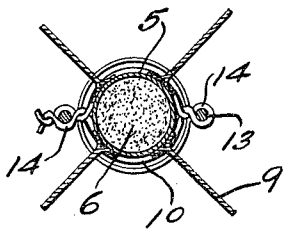
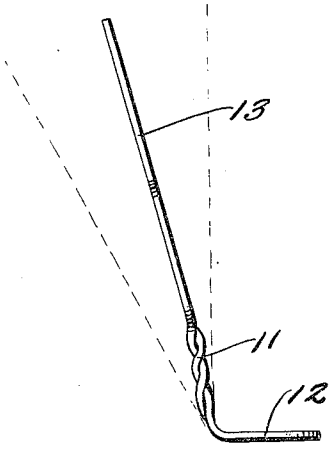


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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SKYROCKET.

Application filed March 7, 1925. Serial No. 13,878.

To all whom it may concern:

Be it known that I, RAYMOND W. HOLLAND, a citizen of the United States, residing at Kent, in the county of Portage and State of Ohio, have invented certain new and useful Improvements in Skyrockets, of which the following is a specification.

This invention relates to fire works, and has particular reference to an improved skyrocket and guiding and supporting means therefor.

Skyrockets as heretofore constructed, in so far as I am aware, comprise a body portion to the lower or inner end of which is attached a relatively long stick by means of which the body is properly guided in its course of travel through the air, the stick assisting to a great extent also in facilitating supporting of the skyrocket so that it will be projected upwardly at the desired angle or in the desired direction. The fall-of the remains of a skyrocket which includes this stick involves considerable danger as is obvious, and the construction of a special chute or guiding means is necessary for the use of these skyrockets. Furthermore the necessity of providing each individual skyrocket with a guiding stick of this character involves considerable expense.

The primary object of my invention is to so construct a skyrocket that the same will be effectively guided without the use of a stick, my substituted guiding means doing away with the danger incident to the falling of skyrockets which do have these guiding sticks.

Still another object of the invention is to provide a skyrocket with comparatively inexpensive and more effective guiding means which are not dangerous in use.

A still further object of the invention is to provide means for guiding and supporting the skyrocket so that the same may be directed upwardly in the desired direction, a member of the guiding and supporting means being capable of use for firing a number of similar skyrockets and doing away with the necessity of constructing special guide chutes or the like.

With the above general objects in view, and others that will become apparent as the nature of the invention is better understood, the same consists in the novel form, combination and arrangement of parts, hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views,

Figure 1 is a perspective view showing a skyrocket associated with a guiding and supporting means, all constructed in accordance with the present invention,

Figure 2 is a horizontal section taken substantially upon line 2—2 of Figure 1, and

Figure 3 is a side elevational view of the supporting member of the skyrocket guiding and supporting means, drawn on a smaller scale.

Referring more in detail to the drawing, the present skyrocket comprises the usual body 5 which is filled with a charge of powder 6 or the like in the usual way and has a pointed upper end as at 7 so that a minimum resistance is offered to its flight through the air, the usual fuse or wick 8 being extended through the bottom of the body 5 to be ignited for firing the skyrocket in the usual manner.

Instead of attaching a guiding stick to the lower end of the sky rocket, I provide the same with a plurality of external outwardly projecting wings or fins 9, which fins are preferably constructed of paper or cardboard and pasted or otherwise secured to the body so as to extend radially to the longitudinal axis of the body 5. I have found that the wings 9 will more effectively guide the skyrocket in its flight through the air than is accomplished by the stick so that the rocket will travel a greater distance and at a greater speed without materially deviating from a straight line of travel.

In order to support the skyrocket so that it will be directed upwardly at the desired angle or in the desired direction, and to guide the same for a slight distance in its initial travelling movement upon being fired, I provide a special guiding and supporting means. The guiding and supporting means includes an element 10 which is to be provided on each skyrocket when manufactured and a separate support 11 for cooperation with the element 10 that may be used in connection with an indefinite number of skyrockets. The stand or support 11 consists of a base 12 and an upright portion composed of parallel spaced legs 13 that

are comparatively straight throughout their length and have their upper ends free. This stand or support may be constructed of a single piece of wire formed with a loop to provide the base 12 and twisted adjacent the loop to provide strength after which the end portions are separated and made parallel to provide the legs 13 as clearly shown in Figure 1. Obviously, the upright portion may be flexed relative to the base so as to vary the angular relation of these parts and accordingly vary the direction of travel of the rocket. This is indicated quite clearly in Figure 3 by dotted lines at opposite sides of the full line position of the legs 13, the dotted lines indicating a wide range of adjustment of the legs relative to the base 12. The element 10 is provided with eyes 14 at opposite sides of the skyrocket body for slidable reception of the legs 13 so that when the skyrocket is associated with the support or stand as shown in Figure 1 the rocket will be effectively supported to be fired and then guided as it is projected until the eyes 14 leave the legs 13. The legs 13 are provided with offset portions 15 or the like upon which the eyes 14 rest so that the lowering movement of the skyrocket is limited to a proper position with the fuse 8 maintained above the ground.

The element 10 may be constructed of a single piece of wire so as to tightly embrace the body 5 with its intermediate portion forming one of the loops or eyes 14 and the ends twisted to provide the other eye 14.

In use, the rocket is associated with the support as shown in Figure 1 with the legs 13 extending through the eyes 14 and the latter resting upon the offset portion 15 of said legs. The legs 13 are flexed relative to the base 12 to the desired position and then the fuse 8 is lighted. The rocket will be projected in the usual manner together with the wire 10 and the legs 13 will guide the rocket until the eyes 14 leave the upper ends of the legs. Any suitable object of proper weight may be placed upon the base 12 if found necessary for preventing the device from tilting over when in use, and it will be seen that I have provided a simple and comparatively inexpensive means for effectively facilitating the firing of skyrockets than is presented by the usual construction involving guiding sticks, which means involves construction eliminating dangers of guiding sticks mentioned above.

From the foregoing description it is believed that the construction and operation as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art.

Minor changes may be made without departing from the spirit or the scope of this invention, as claimed.

What I claim as new is:—

1. In a device of the class described, a skyrocket including an elongated body provided with a firing charge and having a firing fuse projecting through the inner end thereof, and external outwardly projecting guiding wings secured to the body, and means for facilitating supporting and guiding of the body including an element attached to the latter and having guiding eyes at opposite sides thereof, and a supporting stand for the skyrocket including upwardly projecting spaced parallel legs adapted for slidable reception in said eyes, and means upon the legs for limiting movement of the eyes onto the latter whereby the rocket will be supported at the desired elevation above the ground.

2. In a device of the class described, a skyrocket including an elongated body provided with a firing charge and having a firing fuse projecting through the inner end thereof, and external outwardly projecting guiding wings secured to the body, and means for facilitating supporting and guiding of the body including an element attached to the latter and having guiding eyes at opposite sides thereof, and a supporting stand for the skyrocket including upwardly projecting spaced parallel legs adapted for slidable reception in said eyes, said supporting stand comprising a base portion flexibly associated with the legs whereby the angle between the legs and base may be varied for directing the rocket in a desired path of travel.

3. In a device of the class described, a skyrocket including an elongated body provided with a firing charge and having a firing fuse projecting through the inner end thereof, and external outwardly projecting guiding wings secured to the body, and means for facilitating supporting and guiding of the body including an element attached to the latter and having guiding eyes at opposite sides thereof, and a supporting stand for the skyrocket including upwardly projecting spaced parallel legs adapted for slidable reception in said eyes, said supporting stand comprising a base portion flexibly associated with the legs whereby the angle between the legs and base may be varied for directing the rocket in a desired path of travel, said legs and base constituting a single piece of wire bent with its intermediate portion constituting a loop for forming the base.

In testimony whereof I affix my signature.

RAYMOND W. HOLLAND.