

J. W. HADFIELD.

Sky Rocket.

No. 72,030.

Patented Dec. 10, 1867

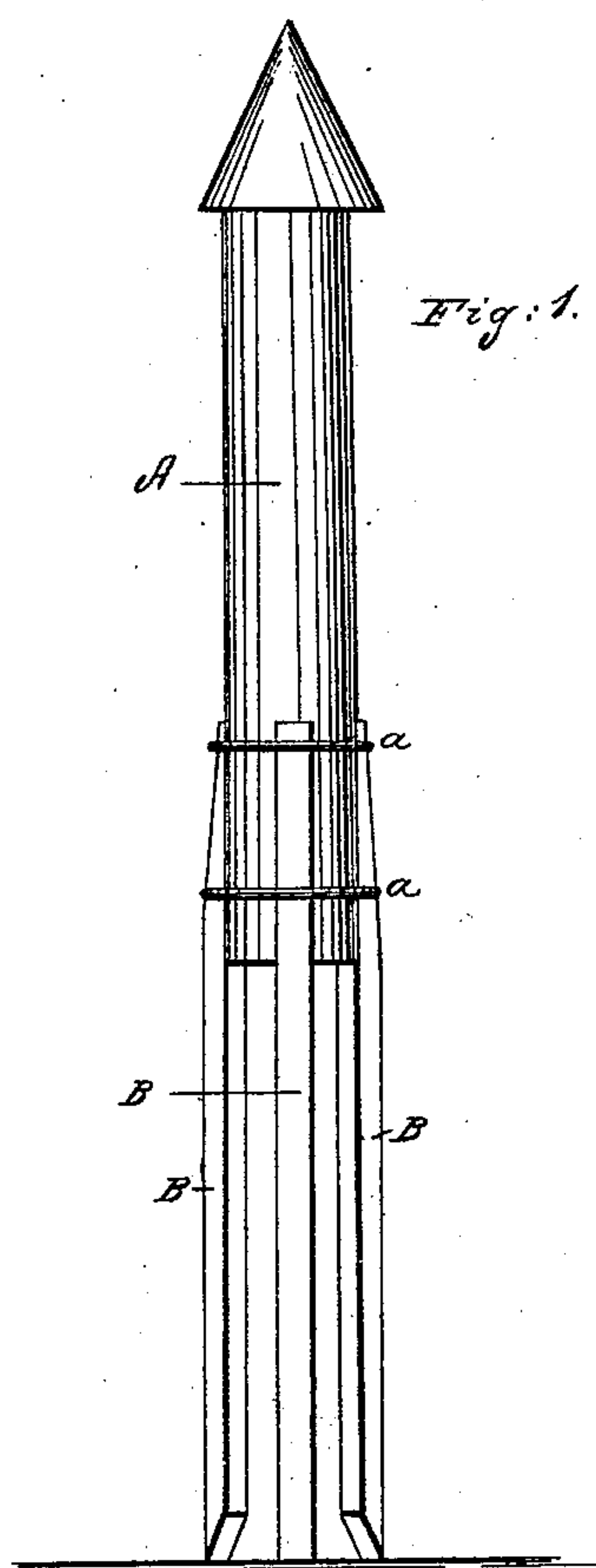


Fig: 1.

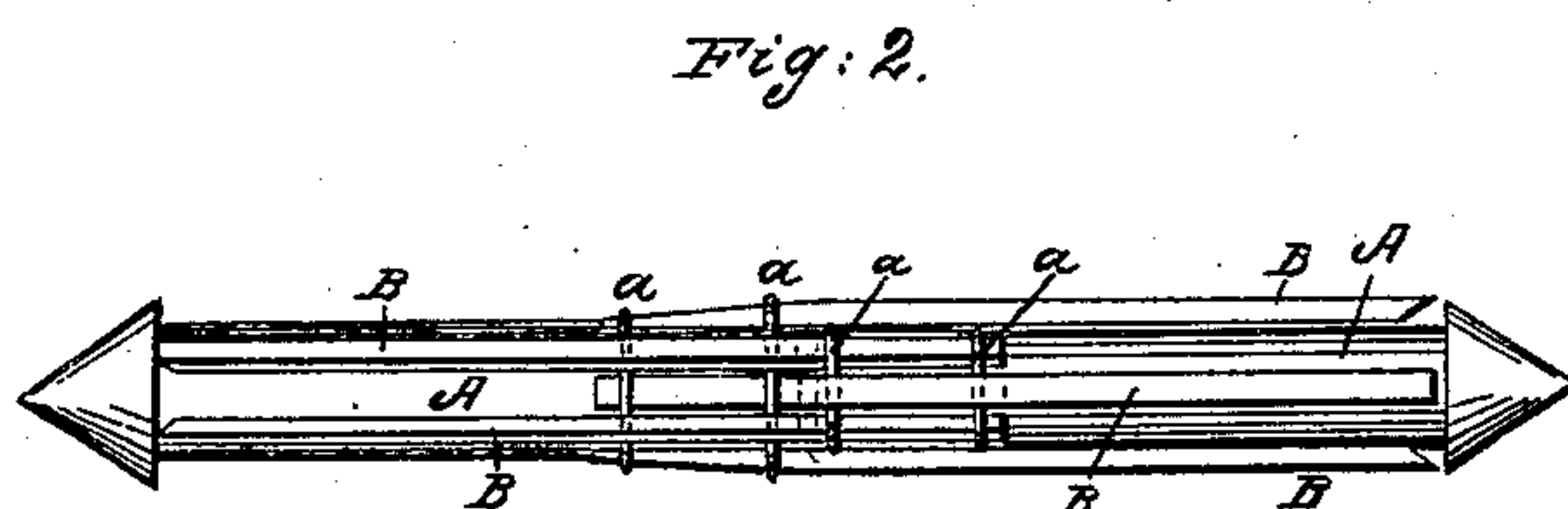


Fig: 2.

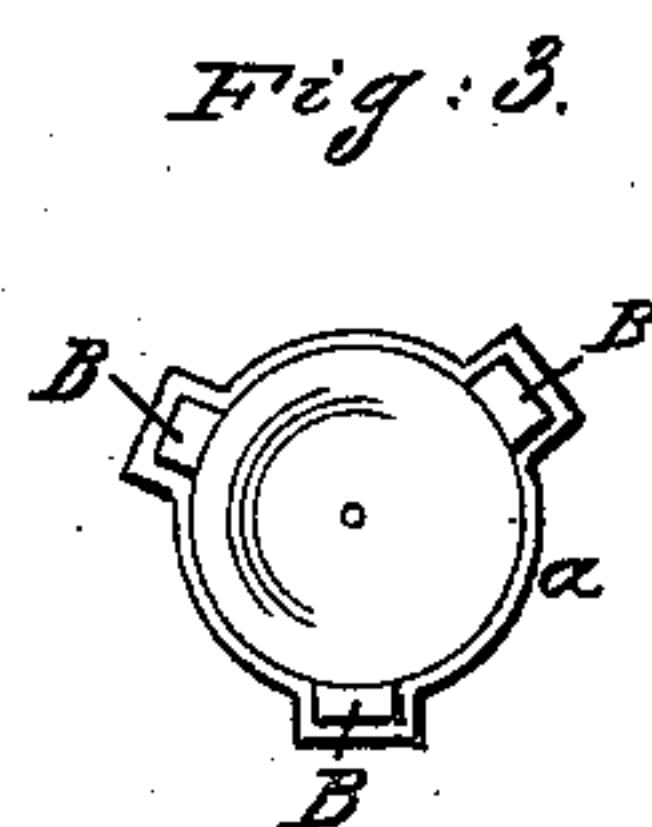


Fig: 3.

Witnesses:

Theo Tuschke.
Wm Trewin.

Inventor:

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United States Patent Office.

JOHN W. HADFIELD, OF EAST WILLIAMSBURG, NEW YORK.

Letters Patent No. 72,030, dated December 10, 1867.

IMPROVED SKY-ROCKET.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN W. HADFIELD, of East Williamsburg, Queens county, New York, have invented a new and useful Improvement in Sky-Rockets; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention consists in dispensing with the long stick or guide which is now attached to sky-rockets in order to insure a straight upward flight of the same in the air, and using instead three short guides, as herein-after fully shown and described, whereby several important advantages are obtained, to wit, the packing of the rockets in a small space, so as to economize in transportation; the forming of a stand or support for the rocket, so that no fixture of any kind will be required when it is to be fired or "set off;" and, lastly, the obtaining of an efficient guide to insure the straight flight of the rockets upward in the air. In the accompanying sheet of drawings—

Figure 1 is an external view of my invention.

Figure 2, a diminished side view of the same, adjusted together as when packed for shipment.

Figure 3, an end view of the same.

Similar letters of reference indicate corresponding parts.

A represents the barrel of the rocket, constructed in the usual way, and B B B represent three short, light sticks, which are secured to the inner end of the barrel by means of wires *a a*. These sticks are secured to the barrel at equal distances apart, and they form a stand or support for the rocket, so that the latter may be fired or "set off" without the aid of any particular guide or fixture, as will be understood by referring to fig. 1.

The short sticks insure a straight flight of the rocket, and are far more efficient in this way than the ordinary single long stick, as the latter is necessarily attached to the side of the barrel by a wire, and, consequently, is out of line with the axis of the barrel, and the latter is very liable to turn or be deflected in its flight to one side or the other by slight disturbing causes, such as the wind, or any irregularity in the burning of the charge.

By my improvement, it will be seen that the axis of the barrel is in line with the centre of the space between the three sticks B, and the rocket, therefore, is perfectly balanced, and will not be liable in its flight to turn to one side more than to another, and, by this perfect equipoise, short sticks B, about one-sixth the length of the ordinary rocket-stick, are only required, so that the rockets may be packed in a comparatively short case, two barrels being placed with their inner ends in contact, and the barrel of one rocket enclosed between the sticks of the other, as shown clearly in fig. 2. The cost of transportation, therefore, will be greatly reduced, and this is an important feature, for it will be understood that all railroad as well as other transportation companies require rockets and other fireworks to be boxed, on the score of safety. They would not be received as freight, done up in paper. This boxing renders the shipping of rockets with the long sticks very expensive. Three sticks is the desirable number; to me there would be no object in applying more.

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

The attachment to a sky-rocket of three or more sticks, at equal distances apart, substantially in the manner as and for the purpose set forth.

JOHN W. HADFIELD.

Witnesses:

WM. F. McNAMARA,
ALEX. F. ROBERTS,