

April 17, 1928.

1,666,534

T. G. HITT

REVOLVING ROCKET

Filed July 16, 1927

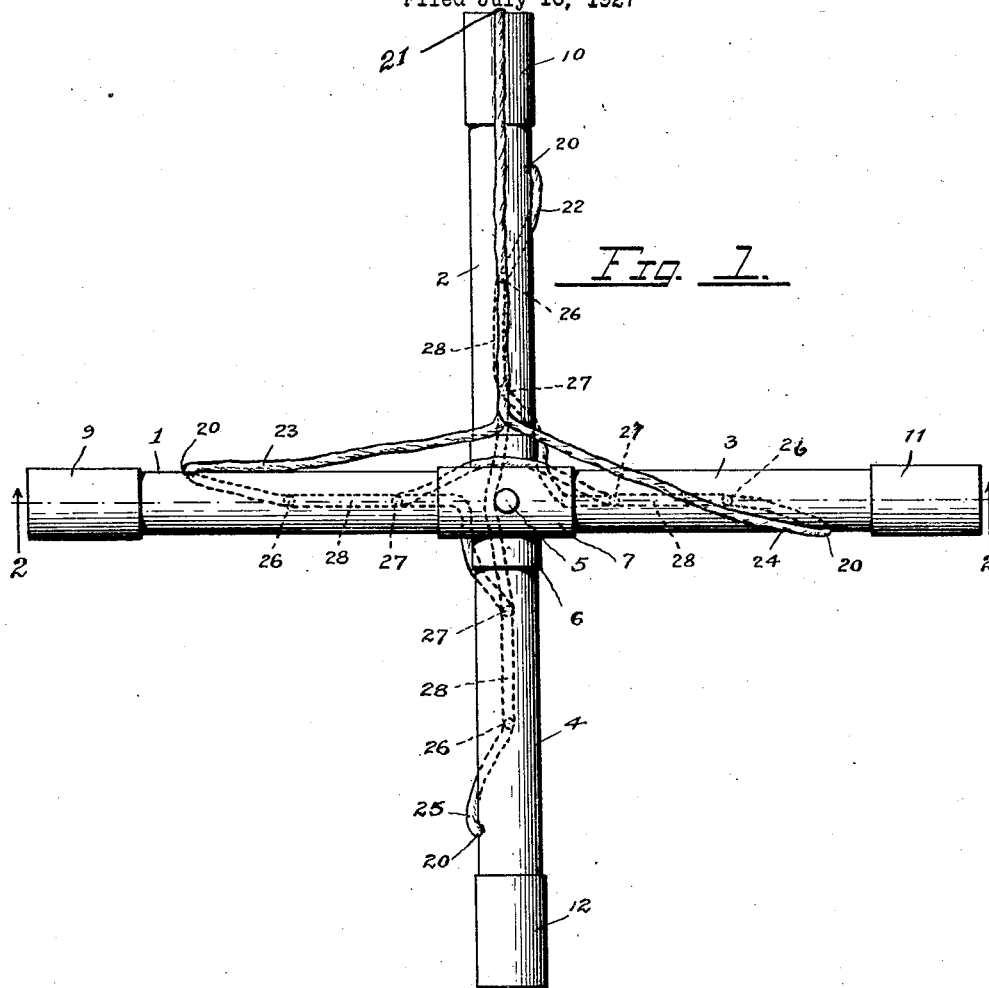


Fig. 1.

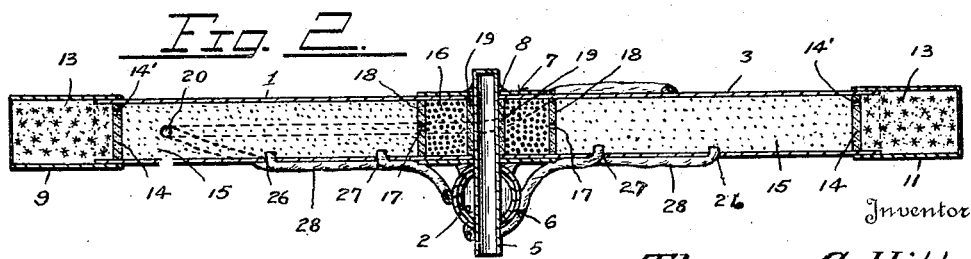


Fig. 2.

Inventor
Thomas G. Hitt

By *Mason Fenwick & Lawrence*
Attorneys

UNITED STATES PATENT OFFICE.

THOMAS G. HITT, OF SEATTLE, WASHINGTON.

REVOLVING ROCKET.

Application filed July 16, 1927. Serial No. 206,250.

This invention relates to rockets, particularly to rockets with compartments for holding display matter placed at the outer ends of horizontal lifting chambers.

5 An object of the invention is to provide a form of rocket which will rise from the ground in a substantially perpendicular direction to a predetermined point without the use of any guide stick, and when at the
10 height of its travel, the desired display matter will be scattered horizontally by the circular motion of the apparatus, and the empty and used parts of the apparatus will be shattered and destroyed by suitable charges
15 of destroying explosive carried at the inner ends of horizontal chambers in which the lifting and revolving charges had been packed.

A further object of the invention is to
20 provide a rocket formed from a plurality of horizontal chambers, with the inner ends thereof converging centrally and abutting upon a guide tube at right angles, with the chambers for holding the apparatus upon a
25 suitable pivot as it is revolved before ascending, with compartment caps on the outer ends of the chambers filled with suitable display matter, and the inner ends of the chambers filled with suitable explosive matter for shattering and destroying the several
30 parts of the device at a predetermined time, and the chambers elsewhere filled with suitable meal powder for lifting and revolving the apparatus as the powder burns, and
35 forcing gases outward through suitable holes in the sides and bottoms of the chambers.

With these and other objects hereinafter set out, I have illustrated my invention with the accompanying drawings, of which—

40 Figure 1 is a top plan view of the rocket assembled for use.

Figure 2 is a side elevational view of the rocket in section.

45 Like numerals on the different views represent like parts.

Numerals 1, 2, 3 and 4 are the holding chambers of any desired dimensions, preferably tubular in form, and arranged horizontally in form a cross, or the several chambers arranged crosswise in event of a greater
50 number than four being used, so that the device will be evenly balanced from its center. The inner ends of the chambers abut against a guide tube 5, which is attached thereto by
55 holding sleeves 6 and 7, the sleeves extending over the inner ends of the chambers, with

holes through the sleeves at right angles, and the guide tube, sleeves and ends of chambers attached by glue 8 or other suitable holding means, the several pairs of chambers
60 preferably arranged beneath each other.

At and over the outer ends of the chambers, suitable caps or compartments are affixed, as 9, 10, 11 and 12, in which are packed any desired form of display matter,
65 such as flags, etc., or material for making brilliant colored lights or stars, shown as stars 13 in Figure 2, with clay plugs 14 across the mouth of the chambers for holding
70 the stars apart from the ordinary meal powder 15 which is packed in the chambers and tamped in the usual manner and of similar ingredients as ordinarily used in
75 rockets for causing the same to rise when the powder burns. The plugs are provided with small openings 14' between the explosive
80 arranged in the caps 13 and the meal powder, which openings become filled with the meal powder and as the latter burn in the chamber up to the plug, the fire continues
85 through the openings and ignites any suitable explosive substance packed in the cap for exploding the same and loosing the display material.

The inner ends of the chambers are packed
85 with suitable explosive material 16 for shattering the chambers and the several parts of the device, when the apparatus has reached its highest point and immediately following
90 the bursting of the caps 13. The explosive 16 is ignited by the meal powder from the chambers burning through holes 17 in clay plugs or partitions 18. Plugs 19 across the inner ends of the chamber tubes hold the
95 explosive 16 in compressed position.

Each of the chambers is provided with an opening 20 in one side thereof at a predetermined distance from the outer ends, for the escape of gases as the meal powder is
100 burned, whereby the rocket is rotated immediately before and during its upward flight. The powder is ignited by a quick match fuse and its four branches 22, 23, 24 and 25, which extend into the holes 20. Each chamber is provided with a suitable
105 number of holes spaced at predetermined positions along the bottom thereof, for the escape of gases from the burning powder, whereby the revolving rocket is forced upward.

The device shown is provided with two
110 of such holes, in each chamber, as 26 and

27, connected by additional 28 or continuations of the quick matches 22, 23, 24 and 25, with the holes 20, so that as the powder begins to burn from the holes 20, the apparatus begins to revolve and the matches extending to holes 26 and 27 ignite the powder at such points and the gases rushing from the lower holes, raise the apparatus until the powder is exhausted, whereupon the display caps are burst open as above described and the stars or other contents are widely scattered by the centrifugal force from the revolving apparatus. Next, the chambers and parts are shattered and destroyed, so that no parts of substantial weight will fall or injure the spectators beneath.

The holes 20 are spaced at such distance from the interior of the outer caps and explosive therein, that the burning material in the chambers will be burned to the cap at the same time that the material in the chambers has been consumed throughout its length, and the holes 27 are similarly arranged from the destructive explosives 16 with a slightly greater distance so that the caps will have first been exploded. The holes 26 and 27 being spaced approximately twice the distance, as the material in the chambers will burn both ways.

Before the wick match is ignited, the operator places the lower end of the guide tube 5 over any suitable spindle or pivot point to permit the apparatus to revolve freely thereon, and the match quickly burns to each of the openings 20, and thence to holes 26 and 27. The apparatus begins to revolve immediately and continues to revolve as it is driven upward, until the material in the chambers is consumed, when the display matter is scattered, and the frame and parts destroyed, making safe device for use near large crowds of spectators, and the mass of burning gases from the great number of holes, providing a massive fire, and a loud roar, greatly to be desired in such form of pyrotechnics.

What I claim is:—

1. A revolving rocket, comprising a plurality of chambers arranged horizontally with the inner ends thereof converging toward a central point, a guide tube affixed to the inner ends of the chambers perpendicularly at right angles therewith, the tube open at the bottom for operating over a pivot

point, caps at the outer ends of the chambers filled with explosive and display material, and a short section of each chamber adjacent the tube, filled with destructive explosive for shattering the parts of the apparatus at a predetermined time, abutments across the chambers for separating the destructive explosive and the display explosives from the remainder of the chamber, excepting however and with a small opening through the abutments for contact therethrough of fire from the chambers into the said display explosive in the cap and the destructive explosive at predetermined times, the remainder part of the chambers filled with slow burning explosive, with holes in the sides of the chambers for the escape of gases caused by the burning of the slow burning explosive for revolving the rocket, and holes in the bottoms of the chambers for the escape of gases from the same slow burning explosive for causing the rocket to ascend, with a quick match contacting with each of the holes in the sides first and thereafter with the holes in the bottoms of the chambers for igniting the slow burning explosive.

2. A revolving rocket with a plurality of chambers containing slow burning explosive, with holes in the sides and bottoms of the chambers for the escape of gases from the burning explosive, for the purposes of revolving and raising the rocket, with caps over the outer ends of the chambers filled with display materials and suitable explosive for bursting the caps, and an abutment between the material in the cap and the display explosive with an opening through the abutment for contact therethrough of flames from the chamber into the caps at a predetermined time, and the inner ends of the chambers converging toward a central point, with an opening at the center for revolving over a pivot point before rising, with means for igniting the material to be burned.

3. A revolving rocket with a plurality of horizontally arranged chambers with one end of each affixed toward a central point and the outer ends radiating outward, with caps containing display material adjusted on the outer ends of the chambers.

In testimony whereof I affix my signature.

THOMAS G. HITT.