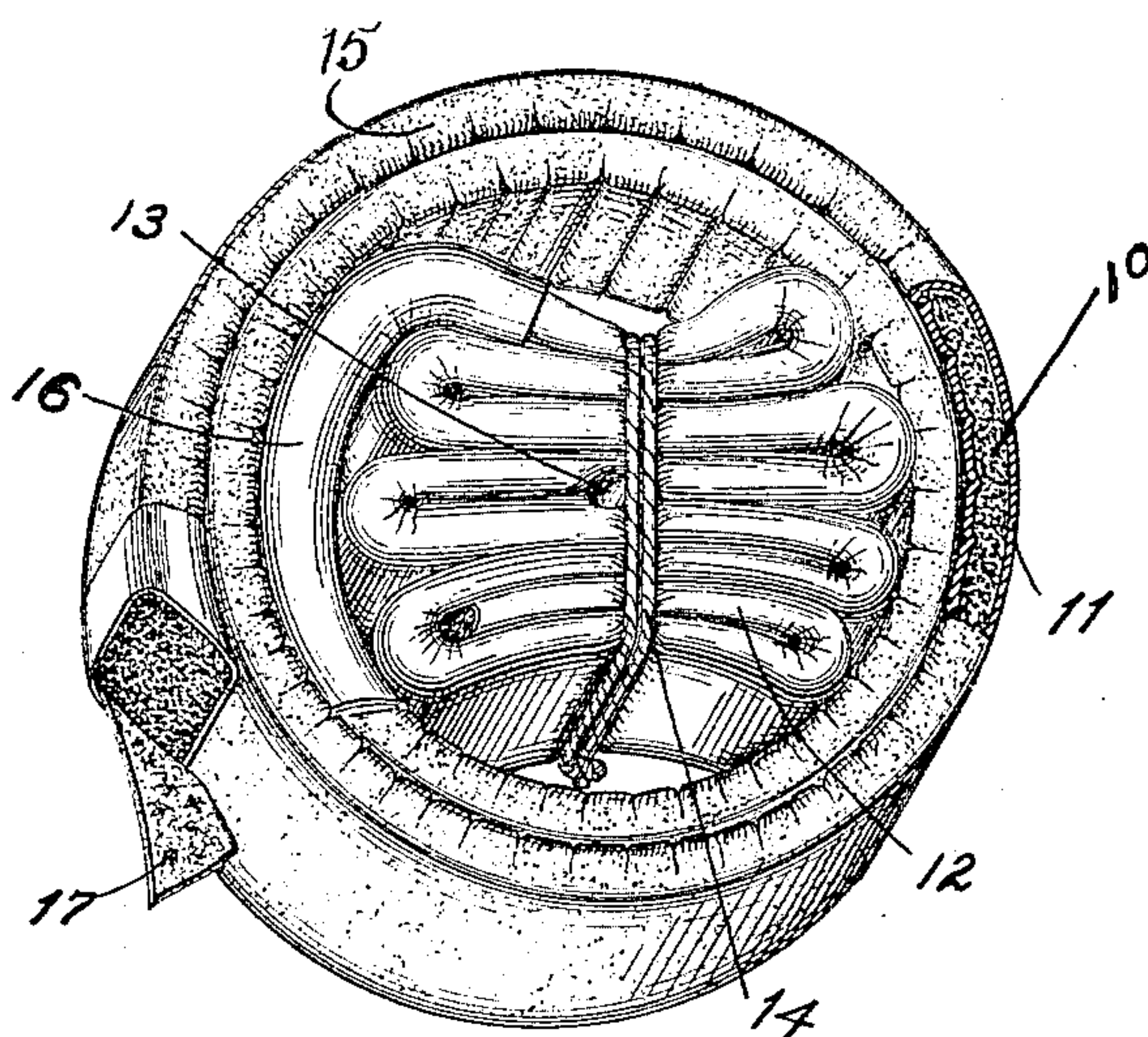


No. 843,125.

PATENTED FEB. 5, 1907.

E. H. WAGNER.
PYROTECHNIC DEVICE.
APPLICATION FILED OCT. 11, 1906.



WITNESSES:

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PYROTECHNIC DEVICE.

No. 843,125.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed October 11, 1906. Serial No. 338,363.

To all whom it may concern:

Be it known that I, EDWARD H. WAGNER, a subject of the King of Denmark, and a resident of the city of New York, in the county of New York and State of New York, United States of America, have invented certain new and useful Improvements in Pyrotechnic Devices, of which the following is a specification.

My invention relates to pyrotechnic devices; and its object is to provide an article of manufacture which is capable of producing novel and attractive pyrotechnic results.

I will describe my invention in the following specification and point out the novel features thereof in claims.

The drawing is a perspective view of a structure embodying my invention.

This article belongs to the class of fireworks in which pyrotechnic material is made up in long strips inclosed in a cover of paper or other suitable material.

In the drawing the strip of pyrotechnic compound or material is designated by the numeral 10 and the cover by 11. One end of this strip I fold back and forth in a zigzag manner, as is shown at 12, to form what is known in the art as a "grasshopper." In the center of this grasshopper a hole 13 is left for the insertion of a pin or nail. If desired, this grasshopper part of my device may be tied together by a string or wire 14, which is preferably somewhat embedded in the strips. Around this zigzag or grasshopper portion I wind the strip to form a flat spiral 15. Sometimes I make this spiral portion of a pyrotechnic compound or material composed of different ingredients than that of which the zigzag portion is formed and connect the two parts together, as shown at 16. The outer end of this strip is shown provided with a fuse 17. When this device is used, the outer end, which is provided with the fuse, is lighted. The material of which the strip is composed is arranged to burn freely with spectacular or explosive effects. The surrounding cover 11 guides the fire which is emitted from the strip, so that it goes in practically one direction, and the reaction of this operation will cause the device itself to be moved. The result is that while the spiral portion is burning the device has a tendency to rotate.

As soon as the fire reaches the zigzag portion, however, the device will have a tendency to jump back and forth.

This article is arranged to be used in the manner of an ordinary pin-wheel by nailing it up with a pin or nail inserted through the hole 13. When it is thus held in place, its effectiveness is increased, as the rotating alone caused by the spiral part burning will continue until the grasshopper portion is in full operation, when the repeated change of direction of the burning parts will cause the device to have a quickly - alternating effect. The string or wire which is tied around the zigzag portion has a choking effect upon the operation of the grasshopper part of this article, so that it causes successive explosions and consequent jumps in the operation. To enhance the effect, I sometimes make the spiral or pin-wheel portion of one material and the zigzag or grasshopper portion of another material, so that the effect is more varied.

The outer or spiral portion may be arranged to produce colored-fire effects, and the inner or zigzag portion may be arranged to produce similar effects in a different color, or one or the other of these portions may have explosive material combined with it to produce reports either alone or in combination with the spectacular effects.

What I claim is—

1. A pyrotechnic device comprising an inclosed strip of pyrotechnic compound, a portion of said strip being folded back and forth in a zigzag form, another portion of said strip being wound about the zigzag portion in the form of a flat spiral.

2. A pyrotechnic device comprising an inclosed strip of pyrotechnic compound, a portion of said strip being folded back and forth in a zigzag form, the central portion of said zigzag portion being so formed as to leave an opening between its middle folds, another portion of said strip being wound about the zigzag portion in the form of a flat spiral.

3. A pyrotechnic device comprising an inclosed strip of pyrotechnic compound, a portion of said strip being folded back and forth in a zigzag form, the central portion of said zigzag portion being so formed as to leave an opening between its middle folds, string or

wire wound about said zigzag portion, another portion of said strip being wound about the zigzag portion in the form of a flat spiral.

4. A pyrotechnic device comprising a strip of inclosed pyrotechnic compound, said strip being folded in a zigzag form, a second strip of inclosed pyrotechnic compound of different ingredients than the first strip, said second strip being connected to said first strip

and wound about the zigzag portion in the form of a flat spiral.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD H. WAGNER.

Witnesses:

ELLA TUCH,

ERNEST W. MARSHALL.