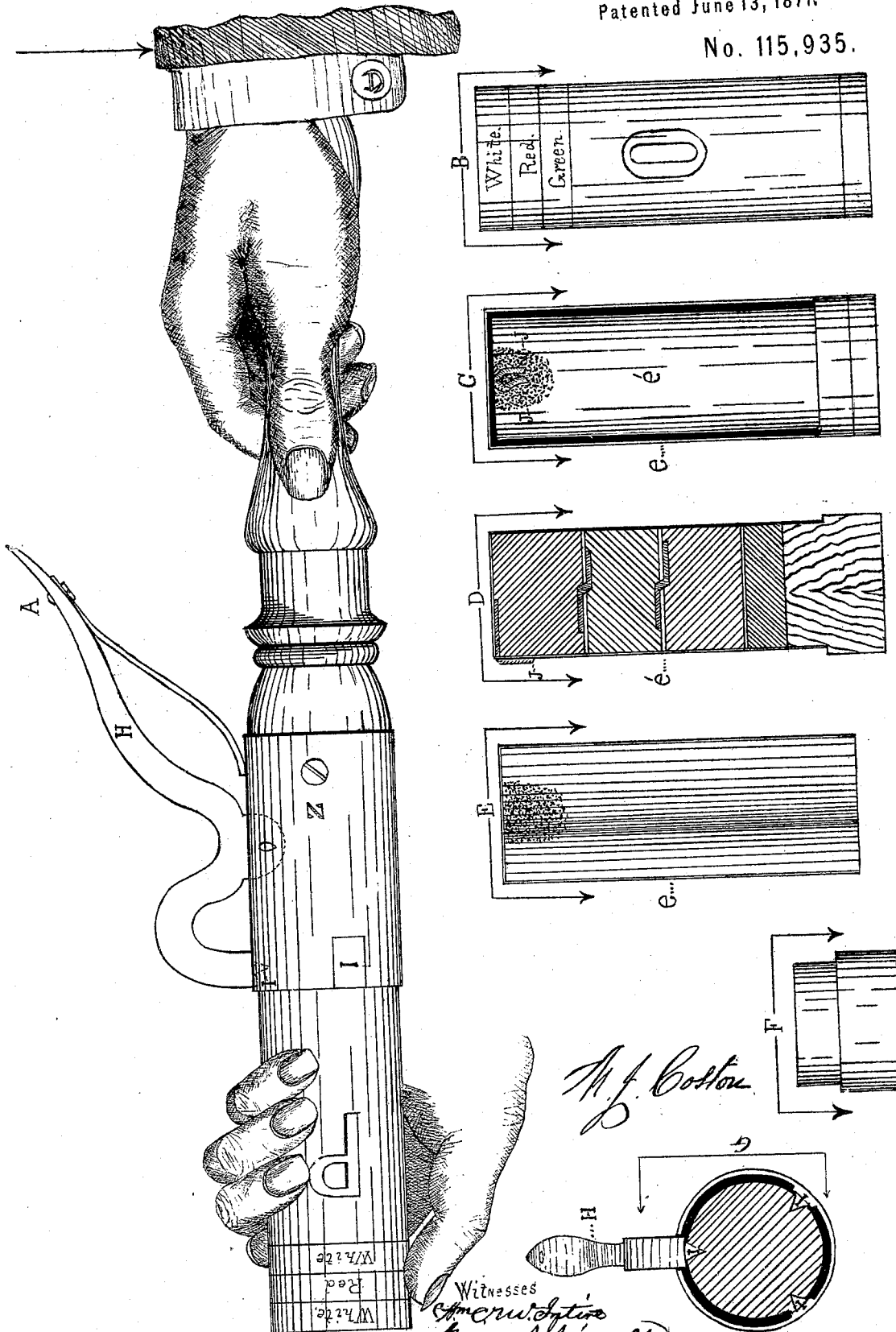


MARTHA J. COSTON.

Improvement in Pyrotechnic Night Signals.

Patented June 13, 1871.

No. 115,935.



# UNITED STATES PATENT OFFICE.

MARTHA J. COSTON, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN PYROTECHNIC NIGHT-SIGNALS.

Specification forming part of Letters Patent No. 115,935, dated June 13, 1871.

*To all whom it may concern:*

Be it known that I, MARTHA J. COSTON, of Washington, District of Columbia, have invented certain new and useful Improvements on "The Coston Telegraphic Night-Signals;" and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing.

A represents signal, with holder, as held when about to be ignited. B represents an external view of improved signal complete. C represents an external view of improved signal without the outer case, showing on its surface composition and quick-match by which signal is ignited; D, a longitudinal section of the interior structure of improved signal, showing course of the quick-match J by which signal is ignited; E, a sectional or interior view of outer case with the composition for ignition.

F represents the bottom of signal, (a solid block of wood,) to which signal and outer case are both attached. G represents the bottom of the solid block F as held by the steel points I and spring H in the holder; H, a spring, which drives the steel points I into the wooden bottom, thereby holding the signal firmly in the holder; I, steel points, one of which is attached to the spring H; can therefore be raised or pressed down, so as to let the signal-bottom F be placed on or taken off the holder. The other steel points are soldered fast to the sides of socket in the holder. J, the quick-match, which is embedded in the igniting composition, as set forth in the accompanying drawing C.

*Directions for Igniting the Coston Signals, as represented in the Accompanying Specification and Drawing.*

Grasp the holder in the right hand and insert in its top that end of the signal that has no colored stripes, (the stripes show the colors contained in signal.) Lift a little the spring H, that the steel point I of the same may penetrate well into the wooden bottom F. Then grasp around the upper part of signal with the left hand, firmly pressing it between the thumb and forefinger, while at the same time holding it firmly with the other parts of the hand that all may act in concert, firmly holding the holder in the right hand, and give the signal and holder a twist in opposite di-

rections with both hands, when the signal will ignite. The ignition announces itself by a fizzing sound. The twisting of the signal loosens the outer case E, which surrounds the signal proper and produces a friction. Raise off this outer case E and the ignition is complete, when the signal continues to burn, showing colors as numbered or signified by stripes of colored paper.

My invention consists, first, in the construction of an improved self-igniting case for the reception of pyrotechnic composition, said case being composed of two parts, styled outer and inner case. The outer case is a loose-fitting cylinder or cap, which is placed over the inner case and is attached to the block which forms the bottom of said inner case or signal, and can be freed by a slight twist. The twisting of this outer case or cylinder creates a friction, which causes an ignition to take place and which lights the signal. This ignition is caused by two compositions, the first being placed on the surface of the signal or inner case in contact with a quick-match which projects over and is fastened down on the outside of inner case. The second composition is placed on the inside of outer case or cylinder, near the top. The outer case should be placed over the signal proper, so that igniting compositions upon both cases should not come in contact one with the other before twisting, which produces the friction. The contact and friction of these two compositions, one with the other, causes a combustion to take place, which ignites a quick-match on the outside of inner case, and thereby communicates with the pyrotechnic compositions, when the ignition is complete. Second, in a peculiar construction of holder or handle, which aids the ignition of the aforesaid case; also firmly holding the same while burning.

I claim—

1. The case C, consisting of the outer and inner parts *e* and *e'*, having the friction composition and quick-match arranged between them, as described, and for the purpose set forth.

2. The signal-holder Z, with its spring H and steel points I, constructed as described.

MARTHA J. COSTON.

Witnesses:

WM. F. COSTON,  
JAMES S. GRINNELL.