(No Model.)

W. F. COSTON.

PYROTECHNIC SIGNAL HOLDER.

No. 570,458. Patented Nov. 3, 1896.

Fig. 1.

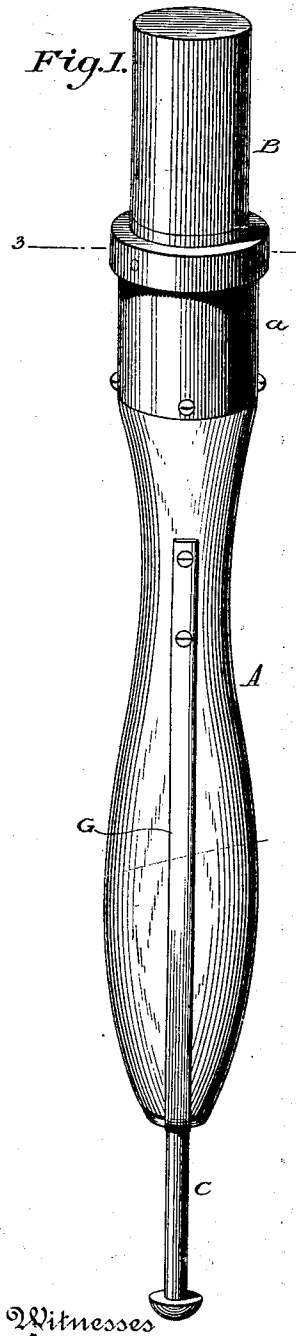


Fig. 2.

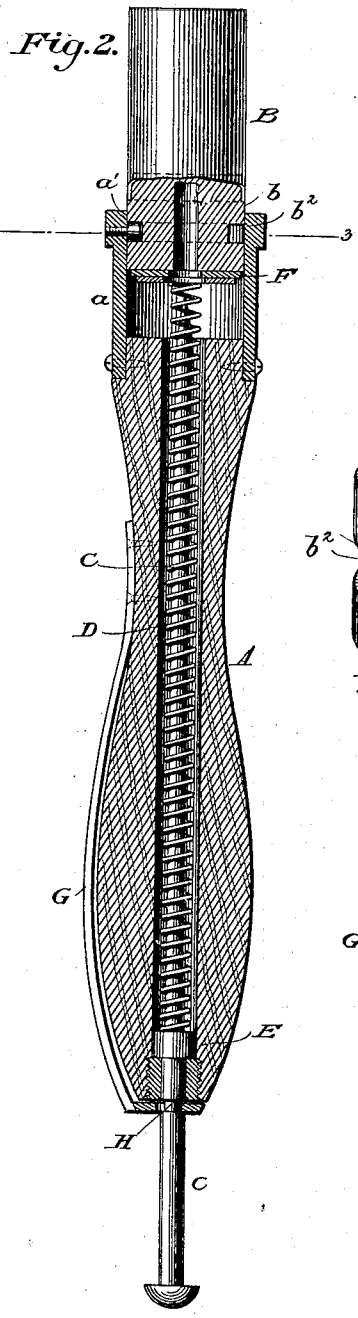


Fig. 3.

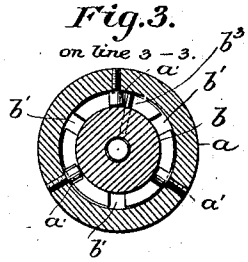


Fig. 4.

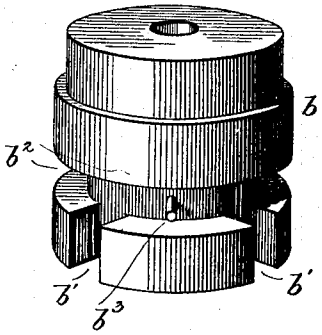
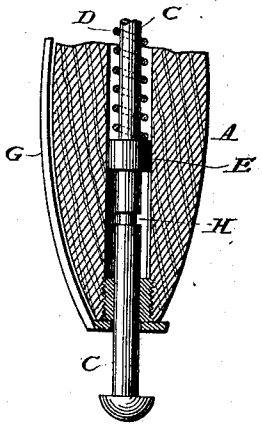


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM F. COSTON, OF NEW YORK, N. Y.

PYROTECHNIC-SIGNAL HOLDER.

SPECIFICATION forming part of Letters Patent No. 570,458, dated November 3, 1896.

Application filed June 26, 1893. Serial No. 478,798. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. COSTON, of New York, county of New York, and State of New York, have invented a new and useful Improvement in Signals, of which the following is a specification.

My invention has reference to what are commonly known in the art as "Coston signals," in which a cartridge, charged to produce colored lights when ignited, is also provided with a primer or igniting device and adapted to be inserted temporarily in a handle or holder, which is provided with a firing-pin to act upon the primer.

The first improvement relates to the cartridge, having in view cheapness of construction and firm and speedy connection with the handle or holder.

The second improvement relates to a locking device for the firing-pin, intended to prevent the accidental firing of the signal in the event of its being dropped or of the firing-pin being accidentally struck.

Figure 1 is a perspective view of my improved signal complete and ready for firing. Fig. 2 is a longitudinal vertical section through the center of the same, the firing-pin being in its locked condition. Fig. 3 is a cross-section on the line 3 3 of Figs. 1 and 2. Fig. 4 is a perspective view of the base portion of the cartridge. Fig. 5 is a central section through the lower part of the handle, showing the firing-pin in its unlocked condition.

Referring to the drawings, A represents a tubular handle or holder adapted to be grasped in the hand and provided at its upper end with a tube or socket a, intended to receive the lower end of the cartridge, and provided near its upper end with three or more inwardly-projecting stops or lugs a'.

B represents the cartridge or signal proper, consisting of a top of any suitable form and material containing the combustible charge and firmly fixed at its lower end to the base-block b, which is commonly made of wood or other cheap material in the form represented in Fig. 4. Its lower end is made of suitable diameter to fit within the socket a and is provided with three vertical grooves b' to admit of its being slipped downward past the lugs. The base-block is grooved circumferentially, as shown at b^2, so that after being inserted it may be turned so as to carry the portion between the grooves b' under the lugs, whereby it is held in place in the socket. In order to prevent it from being turned so far as to again effect its release, a pin b^3 is driven into its neck or grooved portion, as shown in Figs. 3 and 4, so that when the lock carrying the cartridge is inserted and given a partial rotation this pin b^3 will encounter one of the studs a' of the socket, as shown in Fig. 3, preventing further rotation.

The wooden base-block, constructed as above with the circumferential and vertical grooves and the stop-pin b^3, may be made very cheaply and serves as a simple and efficient means of securing the cartridge to the holder without danger of its being accidentally disconnected.

For the purpose of igniting the cartridge I employ the firing-pin C, extending longitudinally through the socket, its lower protruding end being provided with a head or button and its upper end pointed or otherwise formed to enter the base of the cartridge and ignite the primer. This pin is surrounded by a spiral spring D, bearing at its lower end against a nut or sleeve E, fixed on the firing-pin, and at the upper end against a plate F, loosely held in the socket a and retained therein by the lugs a' when the cartridge-block is removed. When the block is inserted, the plate is pushed back thereby and rests against the base of the same under the pressure of the spring. The firing-pin is thus normally held in a retracted position by the spring and is driven forward against the force of the same when the cartridge is to be fired. This firing apparatus is essentially the same as in the signal handle or holder heretofore made by me.

Unless means are employed to prevent there is danger of the signal being accidentally ignited by reason of accidental contact with the firing-pin. To avoid this difficulty, I attach to the side of the handle a long spring-arm G, the lower end of which is perforated for the passage of the firing-pin, which latter is provided with a groove or notch H in such position that when the firing-pin is retracted the spring automatically engages in the notch,

as in Fig. 2, to prevent the advance of the pin. When the holder is grasped in the hand, the pressure forces the spring G inward, causing it to disengage from the firing-pin, as shown in Fig. 5, leaving the latter free to be driven forward in the ordinary manner.

While I prefer to employ a locking device in the form shown, it is to be understood that any other latch or locking device of an equivalent character may be used.

What I claim as my invention is—

1. In a signal the combination with the handle constructed to hold a signal-cartridge at one end, of a manually-operated longitudinally-sliding firing-pin mounted in said handle with its rear end exposed, a spring acting on said pin and tending normally to retract the same, and an automatic locking device in position to engage and hold the pin in a retracted position, said locking device constructed to be operated by the hand to release the pin.

2. In a signal the combination with the handle constructed to hold a signal-cartridge at one end, of a manually-operated longitudinally-sliding firing-pin mounted in said handle with its rear end exposed and provided with a notch, a coiled spring encircling said pin bearing at its front end against the handle and at its rear end against the pin, thereby acting to normally retract the same, and a locking device tending to constantly engage the exposed portion of the pin and arranged to enter the notch therein when the pin is retracted and to hold the same in its retracted position, said locking device constructed to be operated by the hand to release the pin.

3. The improved handle for a signal-cartridge of the type described comprising a body portion adapted to be grasped by the hand and formed to receive and retain a signal-cartridge, a longitudinally-sliding firing-pin mounted in said body with its rear end exposed and provided with a notch, a spring-arm fixed at one end to the body portion extending longitudinally along the side of the same and having its opposite free end bent laterally at the rear of the body portion, perforated to receive the firing-pin and tending normally to engage the same and enter the notch therein when retracted; whereby the firing-pin is held in a retracted position by the spring-arm, and the latter is adapted to be included in the grasp when the handle is held and thereby enabled to be conveniently operated to unlock the pin and permit its advance.

In testimony whereof I hereunto set my hand, this 8th day of June, 1893, in the presence of two attesting witnesses.

WILLIAM F. COSTON.

Witnesses:
PHIL. T. DODGE,
W. S. CHASE.