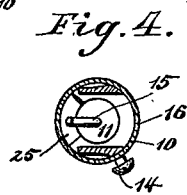
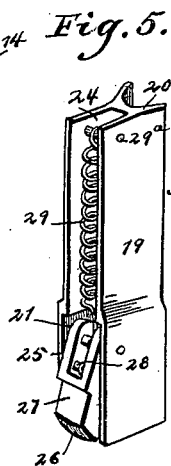
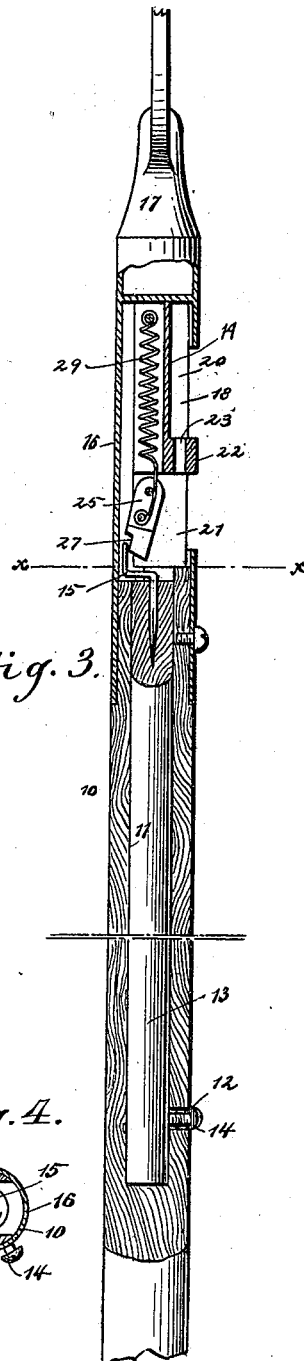
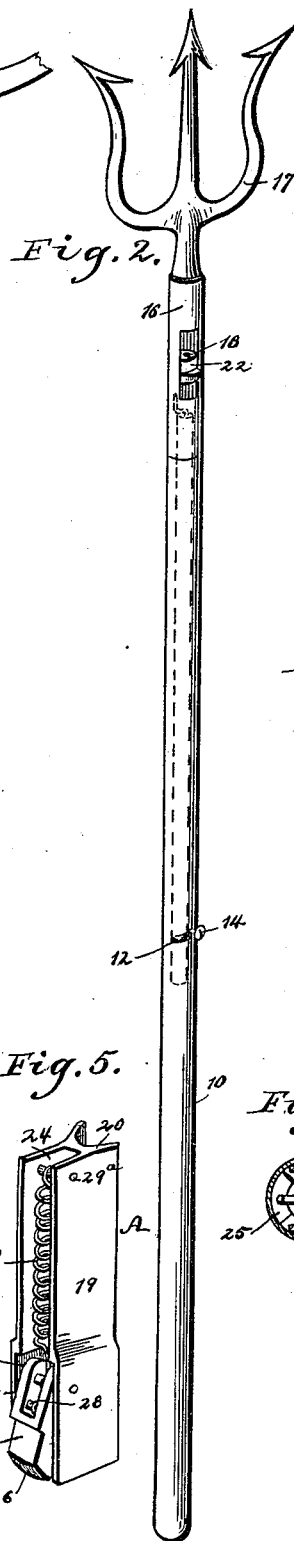
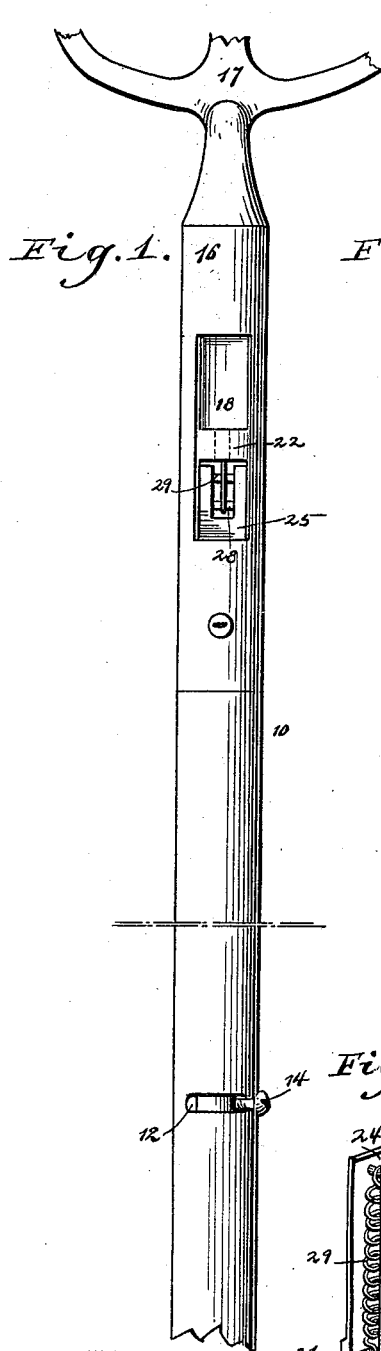


(No Model.)

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EXPLOSIVE STAFF.

No. 421,708.

Patented Feb. 18, 1890.



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EXPLOSIVE STAFF.

SPECIFICATION forming part of Letters Patent No. 421,708, dated February 18, 1890.

Application filed March 9, 1889. Serial No. 302,622. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM L. HEISKELL, of Indianapolis, in the county of Marion and State of Indiana, and FRANCIS E. DRAKE, of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Explosive Staff, of which the following is a full, clear, and exact description.

Our invention relates to an explosive staff especially adapted for employment in connection with theatricals and tableaux and for society or similar purposes, and has for its object to provide an ornamental staff carrying, for instance, a trident or spear containing a firing attachment for exploding cartridges, so located that the flash of the cartridge may be rendered visible, if desired.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a partial side elevation of the staff having a trident attached and having our invention applied thereto, the parts being illustrated in position for firing. Fig. 2 is a perspective view of the staff, illustrating the position of the parts after the cartridge has been exploded. Fig. 3 is a partial central vertical section taken through Fig. 1. Fig. 4 is a horizontal section on line *xx* of Fig. 3; and Fig. 5 is a perspective view of the hammer and mechanism controlling the same, taken from the rear, the said hammer being illustrated in the firing position.

In carrying out the invention the staff may be constructed of any suitable or approved material, and is provided with a central bore 11, extending from the top vertically downward a suitable distance, which bore is intersected by a slot 12, produced diametrically or transversely in the outer face of the staff. In the bore 11 a rod 13 is held to revolve, which rod extends from the base-wall of the bore upward, essentially in alignment with the upper and outer end, as best illustrated in Fig. 3, and to one face of the revoluble rod 13 a stud or pin 14 is secured, which pin pro-

jects outward through the transverse or diametrical slot 12 of the staff. In the upper end of the rod 13 an angle or elbow pin 15 is rigidly secured, the angled portion of which pin extends above the upper end of the rod, as best shown in Fig. 3, and is likewise shown in Fig. 4.

Upon the upper end of the staff a sleeve 16, of any desired or approved design, is rigidly secured, the upper end of which sleeve may terminate in a trident 17, as illustrated, or in a spear or battle-ax, or any design that fancy may dictate or occasion demand, and in one side of the sleeve below the ornamental top a longitudinal slot 18 is produced.

Before attaching the sleeve 16 to the staff the firing mechanism A (illustrated in detail in Fig. 5) is introduced, which mechanism consists of a body 19, having a groove 20 in the outer face extending from a point at or near the center to the top, as illustrated in Figs. 3 and 5, and a distance below the said groove a recess 21 is produced in the body, extending from the front to the rear and through the bottom thereof. The metal between the upper groove 20 and the lower recess 21 is adapted for use as a cartridge-holder 22, and to that end is provided with a central vertical bore 23 of sufficient diameter to receive the cartridge to be fired, the said cartridge being entered from beneath and through the recess 21. The firing mechanism is so located in the sleeve that the cartridge-holder 22 will extend transversely across the sleeve slot or opening 18, as best illustrated in Figs. 1 and 2.

The construction of the body 19 of the firing mechanism is completed by forming a vertical channel 24 in the back, which channel extends from the top into the base-recess 21, as best illustrated in Fig. 5.

In the base-recess 21 of the body 19, near the rear edge thereof, a hammer 25 is pivoted, the lower edge of which hammer is preferably cylindrical, as illustrated at 26, and in the back of the hammer at the lower end a recess 27 is formed. The pivotal end of the hammer is bifurcated and provided with a transverse pin 28, to which pin the lower end of a spring 29 is secured; the said spring being carried upward in front of the

pivotal point of the hammer to a connection with the pin 29^a, secured transversely in the rear channel 24 at or near the top. Thus when the hammer is brought to a vertical position and thrown backward beyond the center of its pivotal point the tension of the spring will be exerted to hold the hammer in such position, as illustrated in Figs. 3 and 5.

When the sleeve containing the firing mechanism is secured to the staff, the base of the body 19 is supported upon the upper end of said staff over the revoluble or rocking rod 13, and prior to throwing the hammer down to the firing position (illustrated in Fig. 3) the pin 14, attached to the rod 13, is carried to one end of the staff-slot 12, as shown in Figs. 1 and 3.

When the pin 14, which, for convenience, we denominate a "thumb-pin," is in the position above described, the angle-pin 15, which we denominate a "trip-pin," will engage with or bear upon the base-wall of the hammer-recess 27 at the center thereof.

The cap or cartridge having been introduced into the bore 23 of the cartridge-holder, and it being desired to explode the same, the thumb-pin 14 is carried to the opposite end of the staff-slot 12, whereupon the rod 13 is revolved a sufficient distance to cause the vertical member of the trip-pin 15, which travels in an arc of a circle, to so bear against the end of the hammer 25 at the back as to throw it forward of the center of its pivotal point, whereupon the spring 29, acting, draws the said hammer violently and suddenly upward to a contact with the cartridge or cap, thereby exploding the same.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with a staff provided with a central vertical bore, a rod held to revolve within the said bore, and an angle trip-pin secured in the upper end of the said rod, of a sleeve rigidly attached to the upper end of the staff, a cartridge-holding mechanism secured in said sleeve, and a spring-actuated hammer pivoted beneath the cartridge-holder of said mechanism and adapted for engagement with the trip-pin, all combined for operation substantially as shown and described.

2. The combination, with a staff provided with a central vertical bore, a rod held to revolve in said bore, provided at or near the lower end with a thumb-pin projected out-

ward through the staff, and an angle trip-pin in the upper end, of a sleeve rigidly secured to the upper extremity of the staff, provided with a longitudinal slot or opening, firing mechanism contained within the said sleeve, the cartridge-holder of which is opposite the opening in said sleeve, and a hammer adapted for engagement with the trip-pin when in the firing position, all combined for operation substantially as shown and described.

3. The combination, with a staff provided with a central vertical bore, a rod held to revolve within the said bore, provided at or near the lower end with an attached thumb-pin projected outward through the said staff, and an angle trip-pin rigidly secured in the upper end, of a sleeve securely attached to the upper end of the staff, a firing mechanism held within the said sleeve, provided with a cartridge-holder, and a spring-actuated hammer pivoted beneath the cartridge-holder, provided with a rear recess the base-wall of which is capable of contact with the vertical member of the firing-pin when the said hammer is in the firing position, all combined for operation substantially as shown and described.

4. The combination, with a staff provided with a central vertical bore and a rod held to revolve within said bore, provided at or near the lower end with an attached thumb-pin projected outward through the said staff, of a sleeve rigidly secured to the upper end of the staff, provided with a longitudinal opening in one side and an ornament at the upper end—such as a spear or a trident—a firing mechanism secured within the said sleeve, provided with a cartridge-holder projected outward through an opening in the sleeve, and a spring-actuated hammer pivoted beneath the cartridge-holder, having a recess in the rear face, the base-wall of which recess is capable of contact with the vertical member of the trip-pin when the said hammer is in the firing position, substantially as shown and described.

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FRANCIS E. DRAKE.

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CHARLES E. DRAKE.