C. PALATINI.

SPRING-GUN.

No. 191,998. Patented June 12, 1877.

Fig. 1.

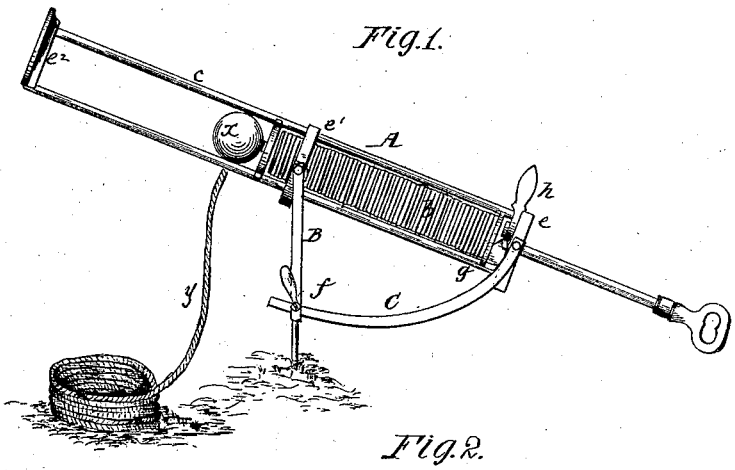


Fig. 2.

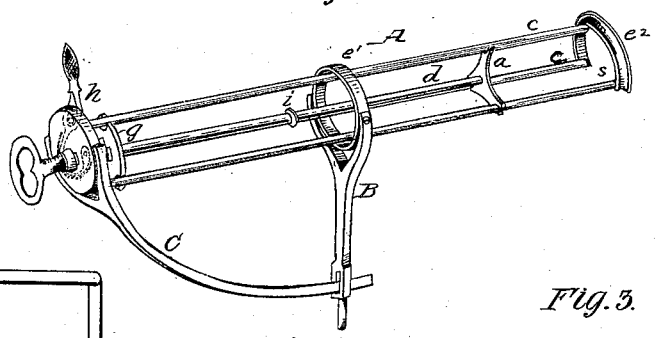


Fig. 7.

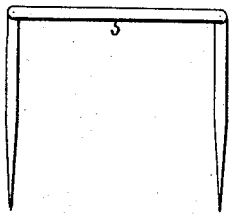


Fig. 6.

Fig. 3.

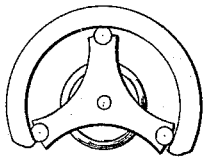


Fig. 4.

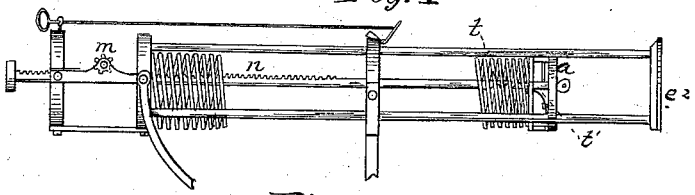
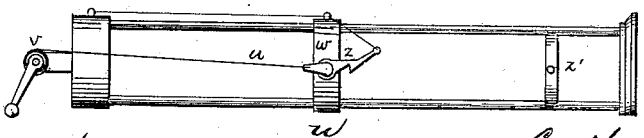


Fig. 5.



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UNITED STATES PATENT OFFICE.

CONSTANTINO PALATINI, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRING-GUNS.

Specification forming part of Letters Patent No. **191,998**, dated June 12, 1877; application filed May 4, 1877.

To all whom it may concern:

Be it known that I, CONSTANTINO PALATINI, of the city, county, and State of New York, have invented an Improved Spring-Gun, of which the following is the specification:

The object of my invention is to effect the escape of persons from parts of a burning building inaccessible by the ordinary means, and to facilitate the extinguishing of fires by a more ready opening of the windows than can be effected in the usual manner; and these objects I attain by the apparatus shown in the accompanying drawing, in which—

Figure 1 is an elevation of my improved apparatus; Fig. 2, a perspective view of part of the same; Fig. 3, an end view, and Figs. 4 to 7, a modification.

The apparatus consists, essentially, of a ball and a rope or chain, and a piston, *a*, a spring or springs, *b*, of rubber or coiled metal wire, suitably arranged to propel the piston forward; suitable guides for regulating the movements of the piston, and devices for maintaining the spring compressed, and releasing the same, the whole constituting a spring-gun.

In the present instance the guides are parallel rods *c c*, connected to rings or plates *e* e^1 e^2, the latter being cut away at the bottom, forming an opening, *s*, as shown in Fig. 3, the whole constituting a light, strong frame, A, which is pivoted between the arms of a forked standard, B, and is provided with a pivoted curved bar, C, which extends through a slot in the standard B, and is secured by a set-screw, *f*, so that the frame may be adjusted to and retained at any suitable angle. A rod, *d*, secured to the piston, extends through the plate *e*, and has a suitable handle at the rear, and the spring *b* is coiled round the rod between the piston and a bearing-plate, *g*, arranged to leave a space in front of the plate *e* for a spring-detent, *h*, which, when the piston is retracted, engages with a lug, *i*, on the rod, and retains it in place.

The standard B may be inserted in the ground, as shown, or it may be adapted to a socket of a fire-engine or truck, or it may be mounted on a suitable carriage or tripod, or otherwise constructed, so as to be quickly transported and readily supported when it is to be used.

By turning the rod B the frame is pointed toward that portion of the building from which egress is desired, and by means of the curved rod and set-screw it is elevated to and maintained at a proper angle. A ball, *x*, to which a rope or chain, *y*, is attached at one end, is then inserted in the frame between the rods *c*, the rope being coiled loosely beneath, so as to uncoil without kinks or tangling, and the piston is retracted by drawing back the rod *d* until the lug *i* is caught by the detent. The detent is then withdrawn from the lug, when the spring will expand, drive the piston quickly forward, and throw the ball toward or over the building, carrying with it the rope, which passes freely through the break *s* of the front ring e^2.

By means of the rope thus thrown those in the building may, if necessary, readily draw up a larger rope or a ladder; but by the use of a small metallic rope of great strength the necessity of a larger rope may, in most instances, be avoided.

By this means it is possible to carry a rope to otherwise inaccessible portions of the highest buildings, the ball being thrown from the ground or from the roof of adjacent buildings. When windows at a great height are to be broken to permit water to be thrown through the same, the apparatus may be employed to discharge balls for this purpose.

It will be seen that the apparatus may be made so light in weight as to be readily carried by one or two men, that it is so inexpensive that every fire-engine carriage or truck may be provided therewith, and that it may be used without the delays incident to erecting and putting in operation fire-escapes of the ordinary constructions. Where a spring of great power is required it is best to provide the apparatus with some means of retracting it, as, for instance, a pinion, *m*, adapted to a rack on the rod *d*, and turned by means of a handle. If the piston on its forward movement should carry the rod with it the pinion would prevent its rapid motion. The rod is therefore provided with a hook, *t*, which engages with a hooked spring-pawl, t^1,

pivoted to the piston, so that when the ball is to be propelled the depressing of the pawl will detach it from the end of the rod and release the piston.

Another means of retracting the piston, which slides in the frame as before, is shown in Fig. 5, in which a ring, *w*, slides on the frame, and is retracted by metal ribbons *u* wound round a windlass, *v*. Spring-catches *z* on the ring engage with pins *z'* on the piston, that it may be carried back with the ring, and are elevated to release the piston, which is then forced forward, as before. By providing a catch or other suitable device to retain the piston at any point to which it may be drawn back, the force employed to discharge the ball may be regulated at pleasure, so as to throw it to the exact distance required. A folding frame, I, Fig. 7, may be used to facilitate escape, a hook, *s*, on the frame serving as a means of securing the end of the rope after it is thrown, the frame being arranged within the room near the window; and instead of making the ball carry one end of the rope, a projectile, Fig. 6, having a heavy head and a stem to carry a coil of cord or wire, may be used.

Without confining myself to the precise construction and arrangement shown,

I claim—

1. A spring-gun consisting of the open frame A, a spring-acted piston and devices, substantially as described, for retracting, holding, and releasing said piston, the whole adapted for use in the manner and for the purpose set forth.

2. In a spring-gun, the barrel, consisting of the rods *c c c* and rings *e e²*, the latter being broken at *s* for the purpose as set forth.

3. The combination of the piston-frame A, the piston and devices for retracting the piston and releasing it at any point, all as set forth.

4. The projectile provided with a stem or receptacle for a coil of cord or wire, as specified.

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

CONSTANTINO PALATINI.

Witnesses:

CHARLES E. FOSTER,

HOWARD ZEVELY.