George H. Snow & Edwin H. Hawley's

= Impt. in =

Air Pistol

No. 118,886. Patented Sep. 12, 1871.

fig. 2

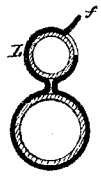


fig. 1

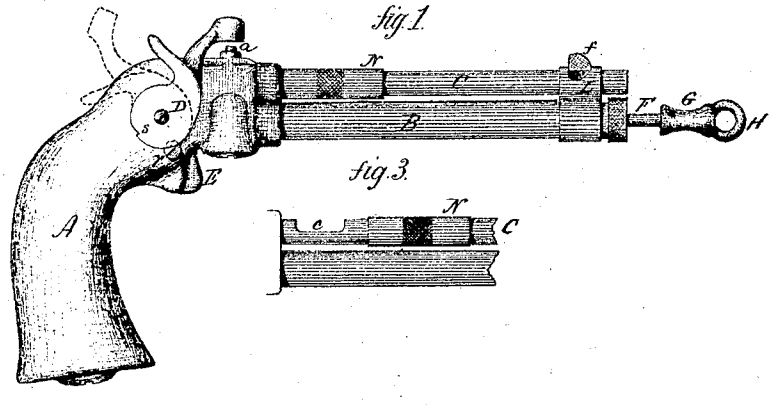


fig. 3

fig. 4

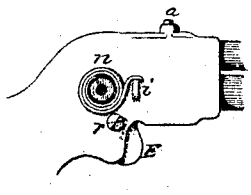


fig. 5

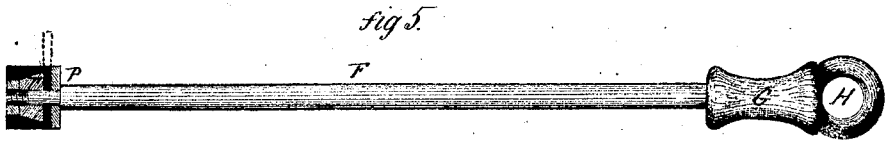
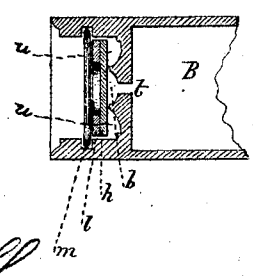


fig. 6



Witnesses,

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A. J. Tibbits

George H. Snow & Edwin H. Hawley

Inventors

By their Attorney.

A. Sno. Earle

UNITED STATES PATENT OFFICE.

GEORGE H. SNOW, OF NEW HAVEN, CONNECTICUT, AND EDWIN H. HAWLEY, OF KALAMAZOO, MICHIGAN, ASSIGNORS TO EDWIN H. HAWLEY.

IMPROVEMENT IN AIR-PISTOLS.

Specification forming part of Letters Patent No. 118,886, dated September 12, 1871; antedated August 25, 1871.

To all whom it may concern:

Be it known that we, GEORGE H. SNOW, of the city and county of New Haven, State of Connecticut, and EDWIN H. HAWLEY, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new Improvement in Air-Pistols; and we do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1, a side view of the pistol complete; Fig. 2, a section through the band; Fig. 3, side view of a portion of the barrel with the charging-chamber open; Fig. 4, a side view of a portion of the frame with the hammer removed; Fig. 5, the piston-rod, with a central section of the piston; and in Fig. 6, a central section through the valve of the air-cylinder.

This invention relates to an improvement in the pistol patented to EDWIN H. HAWLEY and dated June 1, 1869, the object being to overcome difficulties existing in the pistol as heretofore constructed, and also to cheapen the construction; and the invention consists: First, in the construction of the sight by cutting the form from the upper band and turning up the portion cut. Second, in constructing the pivot upon which the trigger is hung so that the said pivot, being fixed and moving with the trigger, serves as a catch for the cocking of the hammer. Third, in the formation of the valve-seat in the air-chamber so that the bearing of the valve is very much larger than the air-passage, whereby the destruction of the valve by "burning" or pressure at the small opening is avoided.

A is the stock which forms the air-chamber; B, the air-pump; C, the barrel; D, the hammer; E, the trigger; *a*, the discharge-valve stem; F, the piston-rod, all of similar construction to the patent before referred to.

To operate the piston for forcing air into the air-chamber considerable power is required, at times more than can be applied by the thumb and finger. To accomplish this we form upon the end of the piston F a head, G, combined with a ring, H, the head serving for the application of the thumb and finger and the ring or eye H for attachment to any convenient device to acquire more power. We form the sight on the upper part L of the double band by cutting partially around a portion, *f*, and then turning the cut portion up, as denoted in Figs. 1 and 2, which construction is much cheaper and more serviceable than soldering or bracing the sight onto the band or barrel. At the rear end of the barrel a portion is cut away, as at *c*, Fig. 3, of sufficient size for the insertion of the thing to be thrown. Over the barrel a slide or sleeve, N, is arranged, which moves axially on the barrel, as from the position in Fig. 1 to that in Fig. 3, to open the charging-chamber, and to return, as in Fig. 1, to close the chamber. As a quick sharp blow is required to strike the valve-stem *a* to admit the charge of air into the barrel, it is necessary that the hammer should leave the stem, or not bear upon it, only during the action of the blow; therefore a little over-motion must be given to the hammer beyond the natural blow of the spring. To make this blow positive and arrest the action of the spring, (the spring being a coil, *n*, as seen in Fig. 4, within the hammer,) we arrange a stop, *i*, upon the frame, so that at the instant before the hammer reaches the valve-stem the spring will strike the stop *i* and its further power be arrested, the momentum of the hammer which has been previously given by the spring being sufficient for the required operation of the valve-stem. To catch the hammer when raised to full cock, we make the pivot *r* of the trigger firm in the trigger and so as to partially rotate by the action of the trigger, as denoted by the broken lines in Fig. 4, and cut away one-half (or about that) of that portion of the pivot which protrudes beyond the frame, and the pivot is placed in such relative position to the hammer (as seen in Fig. 1) that when the hammer is drawn up to full cock the pivot will fall into the notch *s* on the hammer and hold it in that position, as denoted in broken lines, Fig. 1, until released by pulling the trigger. The piston is constructed by placing a disk of leather onto the end of the piston, between a plate, P, and a head, T, as denoted by the broken lines in Fig. 5. The head T is in shape the frustum of a cone, tapering from the base, so that as the leather is gathered up there will be sufficient space around the smaller end of the head for the surplus material. The leather, being in a moist or suitable state, is then pressed up by passing through a tube or otherwise until the edge is contracted around the head, as seen in Fig. 5.

As first constructed the valve-seat in the air-cylinder B was of the same diameter as the opening through the head of the cylinder into the air-chamber, and necessarily small. The result of this was that the small opening and compressed air caused the burning or destruction of the valve after a little use; to avoid which we construct the valve-seat as seen in Fig. 6. *t* is the opening from the air-cylinder into the air-chamber. *h* is the valve, usually formed from a disk of India rubber or other suitable material, with a ring, *l*, set thereon, and held in place by a spring, *m*. Around the opening *t*, next to the valve, we form a chamber, *b*, of considerably larger diameter than that of the opening *t*, so that a large surface of the valve is exposed to the pressure of the inflowing air, whereby the burning or other detrimental effects are removed. We form a chamber, *u*, around the chamber *b*, outside, into which any dirt, sediment, or foreign substance which enters with the air into the cylinder will pass, and thus avoid choking the valve.

We claim as our invention—

1. The sight *f*, formed upon the band L by cutting and turning up the cut portion in the manner described.

2. In combination with the hammer D and trigger E, the pivot *r*, constructed as described, and arranged so as to be operated by the trigger to hold or release the hammer, substantially as set forth.

3. In combination with the cylinder B, with its air-opening *t* and valve *h*, the chambers *b* and *u* around the said opening *t*, as and for the purpose described.

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E. H. HAWLEY.

Witnesses:
A. J. TIBBITS,
JOHN H. SHUMWAY.

NOTE:

Previous maker of the "Kalamazoo" air pistol, located in Kalamazoo, MI about 1870. Probably should be called the "Hawley" after Edwin H. Hawley, its inventor and maker, but it has been affectionally known by the delightfully sounding name of "Kalamazoo". That refers to the location of manufacture, but actually neither name, nor any other markings, appear on the pistol itself! In addition to being delightful both in name and design, this gun has special historical significance: Evidently this is America's first commercial pneumatic pistol. (Lukens and Kunz made pneumatic rifles in Philadelphia area ca. 1800-15 but evidently did not make pistols.). Based on patent #90,749, issued June 1, 1869 to Hawley but built to design advertised in 1870, covered by improved patent #118,886, issued to Edwin Hawley and George Snow on Sept. 12, 1871. A butt-reservoir pneumatic with straight pump affixed under barrel. Hammer suggestive of flintlock hammer with sear mechanism fully visible on bottom curve. Improved patent including making front sight by merely turning up section of front barrel band. Sight arrangement strikingly strange: valve release pin protrudes from top center of receiver, thus rear sight groove has been displaced to right. To sight gun one must tip it about 45 degrees to left (this may be half-way precursor to flat-on-its-side "gangsta" firing stance of 20th century!). Cast iron receiver contains air reservoir in the butt and firing mechanism in forward part. Three large casting holes sealed by pewter/lead or brass plugs. Plug just ahead of trigger allows access to install and repair exhaust valve