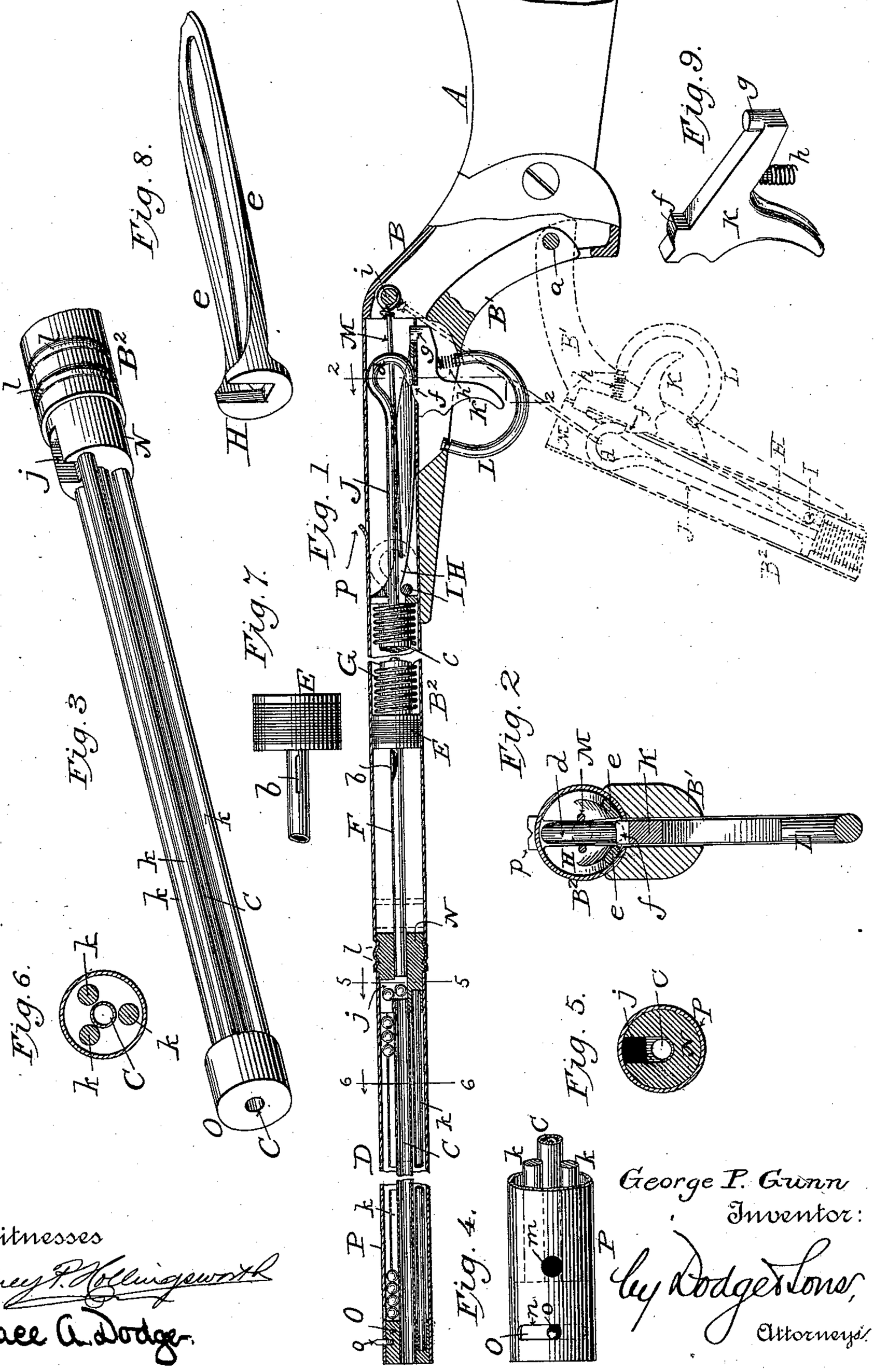
(No Model.)

G. P. GUNN.

AIR GUN.

No. 541,085. Patented June 18, 1895.



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UNITED STATES PATENT OFFICE.

GEORGE PECK GUNN, OF ILION, NEW YORK, ASSIGNOR TO GILBERT W. WARREN, OF SAME PLACE.

AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 541,085, dated June 18, 1895.

Application filed October 5, 1893. Renewed December 14, 1894. Serial No. 531,856. (No model.)

To all whom it may concern:

Be it known that I, GEORGE PECK GUNN, a citizen of the United States, residing at Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Air-Guns, of which the following is a specification.

My invention relates to air guns, and has for its object the cheapening and the strengthening of the construction of the same, as hereinafter set forth and claimed.

The improvements comprise, first, a novel construction of the magazine and the means whereby it is connected to the barrel; second, a novel construction and arrangement of the trigger, and, third, a yoke or casting for guiding the pull-rod.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of my improved gun with the parts shown in position for firing. Fig. 2 is a vertical transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the magazine with its sheath or covering removed; Fig. 4, a top plan view of the forward end of the magazine; Fig. 5, a vertical transverse sectional view on the line 5 5 of Fig. 1; Fig. 6, a vertical transverse sectional view on the line 6 6 of Fig. 1; Fig. 7, a side elevation of the plunger-piston and its tube; Fig. 8, a perspective view of the yoke or frame for guiding the pull-rod, and Fig. 9 a perspective view of the trigger and its supporting-spring.

A indicates a portion of the stock of the gun, and B B′ the frame. The portion B′ is hinged or pivoted to the stock, or to the portion B, upon a pin or bolt *a*, so as to permit the frame portion B′, barrel C, and magazine D, to swing down into the position shown in dotted lines in Fig. 1 for the purpose of cocking the gun.

The portion B′ of the frame is provided with a tubular extension B^2 in which are mounted the plunger or piston E and its tube F,—the latter being provided with a slit or opening *b*, Figs. 1 and 7, through which air enters into the tube F when the plunger and tube are projected forwardly. This forward movement of the plunger or piston is effected by means of a coiled spring G bearing at one end against said plunger or piston, and at the opposite end against the yoke or casting H, as shown in Figs. 1 and 8,—the said yoke or casting being prevented from moving rearwardly by means of a pin I passing transversely through the frame of the gun in rear of the head of the yoke or casting, as clearly shown in Fig. 1. While, therefore, the spring bears directly against the yoke or casting H, the pin forms really the abutment or support against which the spring acts.

In order to keep the spring in proper form it is wrapped about a cylindrical block *c*, as shown in Fig. 1, which block is bored centrally to receive the rod or stem J, whose end is fashioned into a hook *d*, as clearly shown in Fig. 1. This rod or stem J will advisably be made of steel, and its hooked end will work between the separated arms *e e* of the yoke or casting H, which latter prevents the rod or stem from turning axially, thereby insuring the engagement of the end of the hook *d* with the lug or projection *f* of the trigger K. This trigger K, which is shown in detail in Fig. 9, is provided with two lugs *f* and *g*, which project up through suitable openings made in the lower side of the tubular extension B^2 of the frame of the gun,—the forward projection *f* projecting inwardly into the tubular extension a distance sufficient to insure the engagement of the rod or stem with the trigger.

It will be noticed upon reference to Fig. 1 that the trigger is supported solely by means of a coiled spring *h* which bears at one end against the rearwardly-extending arm of the trigger at about the center of the latter, and at its opposite end upon the trigger guard L, which latter comprises merely a bent rod having its ends notched and held in position in the frame by the elasticity of the guard itself. This construction and arrangement is exceedingly simple, cheap, and efficient, avoiding the necessity of drilling the trigger and also avoiding the use of a pivot pin for the latter.

M indicates a loop which is made of a piece of wire bent upon itself and having its rear ends secured to a pin or bolt *i* in the fixed part of the frame B,—the bowed portion of

the loop, when the gun is cocked, lying a distance in advance of the hooked end of the rod or stem J. When, however, the gun is fired, and the plunger E and its rod or stem J move forward as indicated by the dotted lines in Fig. 1, then the crossbar or bow of the loop M will be found to be in engagement, or practically so, with the hooked end *d* of the said rod or stem J preparatory to cocking the gun.

With the parts in the position shown in full lines in Fig. 1, it is only necessary to pull upon the trigger K and throw the lug or projection *f* of the trigger down out of engagement with the hooked end *d* of the rod or stem J, thereby freeing the rod J and allowing the spring G to carry the piston and attached parts forwardly, as is customary in this class of guns.

In order to cock the gun it is only necessary to swing the movable part of the frame B′ with its attached barrel and magazine, downwardly upon the bolt or pivot pin *a*, as indicated by dotted lines in Fig. 1. In thus swinging downward the loop M, swinging from a point *i* considerably above the pin *a*, will draw the rod or stem J with the attached devices rearwardly until the hooked end *d* of the said rod or stem strikes, depresses, and rides over behind the lug or projection *f* of the trigger. As soon as the hooked end of the rod reaches this position, the coiled spring *h* throws the forward lug *f* of the trigger up in front of the hooked rod and thereby holds the parts in position for firing.

As the pull-rod J and the attached piston E are drawn backward as just described, the air passes through plunger F, out through the opening *b* therein, and into that portion of the extension B^2 between the front face of the piston and the block N. When the gun is fired, the rod J, piston E, and plunger F are released and thrown suddenly forward by the spring G; and owing to the fact that the area of the extension B^2 exceeds that of the plunger, the air confined between the piston and the block N will be compressed, and discharged in its compressed state through the plunger.

At the forward end of the tubular extension B^2 of the frame of the gun is a block or plug N, which is provided with a central hole or opening to receive the firing pin or tube F attached to the plunger or piston E, as usual, and also provided with a vertical passage or channel *j* through which the balls or bullets descend from the magazine into line with the barrel, as clearly shown in Figs. 1, 3 and 5.

The magazine comprises a series of two or more rods or bars *k*, arranged at equal distances from each other around and parallel with the barrel C, as shown in Figs. 1, 3, 4 and 6, said barrel and rods being embedded at their rear ends in the block N, and at their forward ends in a similar block O. These blocks N and O may be made of any suitable material, which is molded or cast upon the rods and barrel while the latter are held in proper position.

It will be noticed upon reference to Fig. 1 that the end of the tubular extension B^2 is corrugated circumferentially as at *l*, so that when the molten metal which forms the block N is run into the end of the said tubular extension, it will lock therewith and thereby prevent any accidental or longitudinal movement of the said block N within the tube or extension B^2.

The bars *k k*, located above the axis of the barrel, are separated such a distance from each other as to afford a chamber or channel to receive the bullets or pellets, as clearly shown in Fig. 1, the said bullets or pellets being inserted into this chamber or channel through a hole or opening *m* formed in the rotatable cover or sleeve P of the magazine, as is common in this class of guns. This sleeve or cover P for the magazine is provided at its forward end with a transverse slot *n* through which projects the sight *o*, as shown in Figs. 1 and 4, the construction and arrangement being such that when the magazine is filled with the bullets or pellets, the sleeve or cover P may be turned axially to bring the feed opening *m* therein, out of line with the channel formed between the bars *k k*. The rear sight *p* is formed by cutting a slit or slot in the metal so as to produce a tongue, and then turning the rear or free end of the tongue upward, as clearly indicated in Fig. 1.

The rod *k*, which is immediately beneath the barrel C, may be omitted if desired, as it is added solely for the purpose of giving increased strength to the magazine.

Having thus described my invention, what I claim is—

1. In an air gun, the combination with a barrel; of rods *k k* parallel therewith to form a support for the shot; means for uniting the ends of the rods and barrel; and an encircling sleeve or tube P.

2. In an air gun, the combination with a barrel, of two rods *k k*, parallel therewith to form a support for the shot; blocks O and N cast upon the ends of the rods and barrel; and an encircling sleeve or tube P.

3. In combination with the gun frame having the tubular extension B^2 corrugated as shown, a barrel C, rods *k k* arranged parallel with the barrel, the block O cast upon the outer ends of the barrel and rods, the block N cast upon the inner ends of said barrel and rods and also into the corrugated end of the extension B^2, and the encircling sleeve or tube P.

4. In combination with a gun frame, a trigger K provided with two upwardly-extending lugs or projections *f* and *g*, adapted to enter holes or recesses in said frame, and a spring *h* bearing upon the under side of the trigger and holding the lugs into engagement with the frame, all substantially as shown and de-

scribed, whereby a pivot pin or support for the trigger is rendered unnecessary.

5. In combination with the frame, the piston E and its spring G mounted therein, the pull rod or stem J, the yoke or frame H arranged with its head to form an abutment for the spring, and the pin or rod I secured to the frame and bearing upon the rear face of the head of the yoke or casting H, all substantially as shown and described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE PECK GUNN.

Witnesses:
GEO. WILFERT,
S. W. SKINNER.