

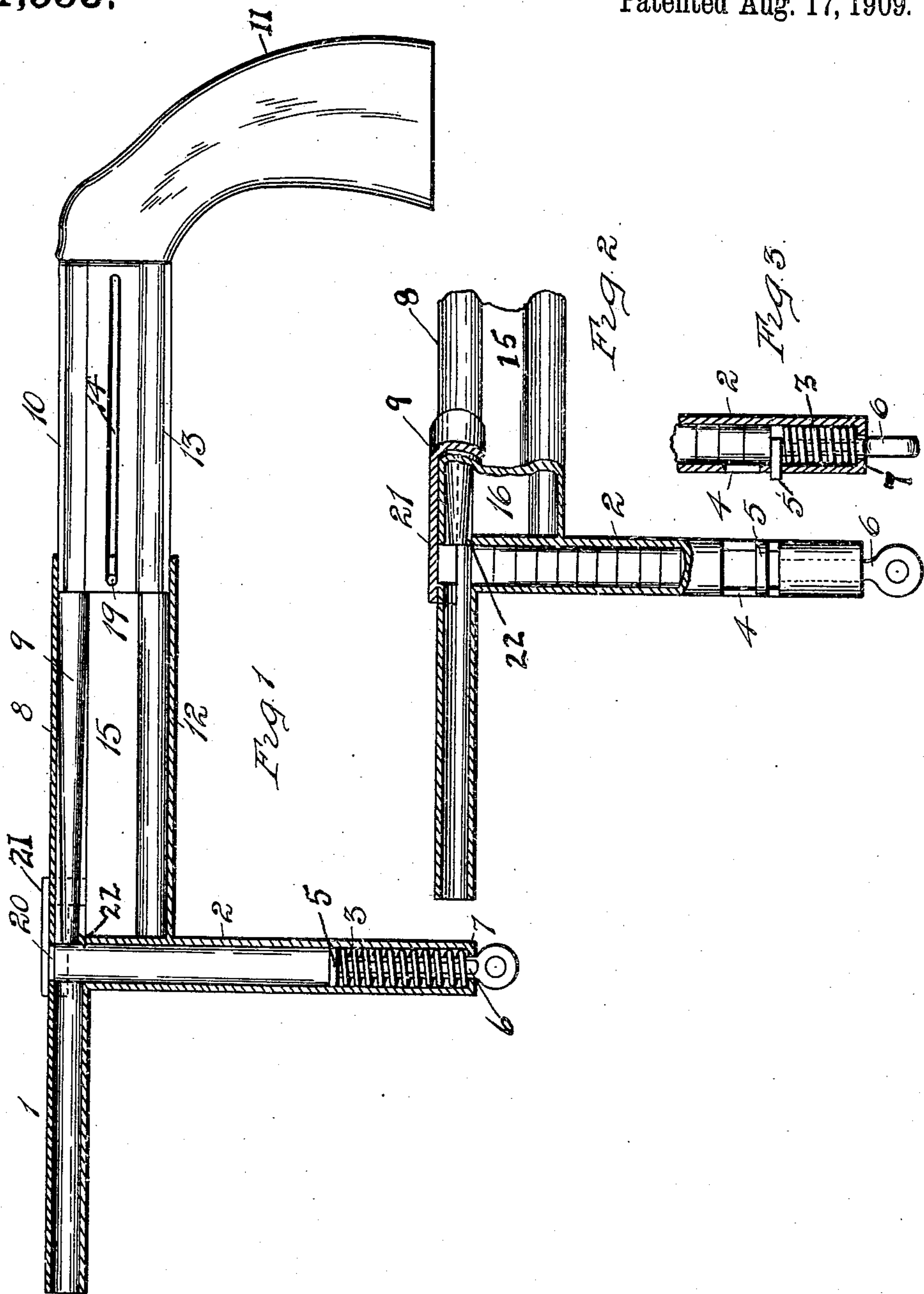
S. T. ALLEN.

TOY AIR GUN.

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931,553.

Patented Aug. 17, 1909.



Witnesses

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SHERMAN T. ALLEN, OF DETROIT, MICHIGAN.

TOY AIR-GUN.

No. 931,553.

Specification of Letters Patent.

Patented Aug. 17, 1909.

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To all whom it may concern:

Be it known that I, SHERMAN T. ALLEN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Toy Air-Guns, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to air guns.

It has for its object an improved toy of the class of air guns commonly known as pop guns, in which a somewhat elastic projectile is driven from the end of the gun by means of compressed air that is contained between the projectile and another similar projectile at the rear of it, which second projectile is driven by a piston plunger, actuated manually.

The main object of the invention is to provide a loading device by means of which a number of elastic projectiles may be stored in a magazine connected with the barrel of the gun, and arranged to be delivered into a chamber in front of the piston in consecutive order.

Another object of the invention is to provide a guide for the piston and to so construct the magazine that it may be utilized as a handle for the barrel of the gun.

In the drawing Figure 1:—is a longitudinal section. Fig. 2, is a section showing the magazine partly in elevation. Fig. 3, is a cross section through the magazine.

The gun barrel 1 is a tubular member, from which, at the rear end of the barrel proper, depends a magazine chamber 2, adapted to receive a number of projectiles for the gun. Near the lower end of the magazine, but sufficiently distant from the extreme lower end to allow for the introduction of a magazine spring 3, is an opening 4, through which small charges may be inserted into the magazine in front of a traveling head 5 of a plunger 6.

The plunger and traveling head 5 are normally driven toward the upper end of the magazine by a spring 3, which is contained between the head 5 of the plunger and the lower face 7 of the magazine. A second opening below the large feed opening serves to catch the head of the plunger and hold it while the projectiles are being introduced

into the magazine. In Fig. 3 the traveling head 5 is shown thus caught and held from upward travel against the resilience of the spring 3. The barrel 1 is continued with a chamber 8 in which is contained the front part of the piston 9. The piston 9 is continued to the rear, with an extension 10 that connects the piston proper with a grip handle 11. Parallel with the chamber 8, and spaced from it, is a guiding cylinder 12, in which travels a parallel bar 13, parallel to the extension 10. The extension 10 and bar 13 are either united as one piece of metal, or are joined after being made, in the first instance, of two separate pieces of metal, and preferably between the extension 10 and bar 13 is a long slot 14, through which engages a pin 19. The pin 19, which holds the plates 15, 16, together, may be utilized as a guide pin for the members 10 and 13. A handle 11 made of suitable material, and in any convenient way, is secured to the members 10 and 13. Preferably though not necessarily there is an opening 20 through the barrel 1, or between the rear of the barrel 1 and the front of the chamber 8, into which a long prism of the projectile material (generally a slice of vegetable material) may be introduced from the upper end, and this opening 20 is arranged to be closed by a slide 21, which is retracted from over the opening, and pushed back to place after the prism of material has been introduced into the magazine. When a long prism of material is used, it is cut into individual projectiles, by cutting lips 22 on the front of the piston. The thin double convex pieces between consecutive charges escape from under the cover 21.

The device is operated as follows:—The prism of vegetable material being forced up into the barrel 1 by the pressure of the spring 3, and across the path of travel of the piston 9, a section of it, corresponding in height to the diameter of the barrel 1, is sliced off by the forward movement of the piston 9, to whose forward end the cutting lip 22 is attached, and is forced thereby well forward toward the outer end of the barrel 1. As soon as, by the subsequent retraction of the piston 9, due to pull upon the handle 11, the piston is drawn to the rearward limit of its travel, the slice of vegetable material is again pushed upwardly by the pressure of the spring 3 against the slide 21, which closes the top of the barrel. The piston 9 is then

forced forward again by pressure upon the handle 11, and the body of air confined between the initially cut off projectile now in the barrel, very near to its mouth, and the
 5 second projectile cut off (which effectually seals this portion of the barrel from the access of air from behind), soon becomes so intense as to force the first projectile from the muzzle with considerable force. The
 10 travel of the piston 9 is continued until the second projectile is pushed forward to the position formerly occupied by the first projectile, when it is retracted into position for slicing off and projecting forward still another projectile, when the first operation is
 15 again gone through with.

What I claim is:—

1. A toy air gun, having in combination a barrel, a magazine depending therefrom,
 20 an extension guide at the rear of said barrel, a piston member adapted to reciprocate within said extension guide and barrel, said member having a depending portion adapted to engage with a complementary portion of
 25 said extension guide to preserve the alinement of said piston member with respect to the extension guide and barrel, and a handle whereby the same may be actuated, substantially as described.

30 2. In a toy air gun, in combination with a barrel, a hollow member hanging from the rear end of the barrel adapted to be utilized both as a magazine and as a handle, a double
 35 chambered guide extending to the rear of said hanger, a piston, and a parallel guide

for said piston moving with it in said double chambered guide, substantially as described.

3. In a toy air gun, in combination with a barrel, a hollow member hanging from the rear end of the barrel adapted to be utilized
 40 both as a magazine and as a handle, a double chambered guide extending to the rear of said hanger, a piston adapted to reciprocate in one of the chambers and into the barrel, a parallel guide for said piston engaging in
 45 the other portion of said double chambered guide, and means to prevent the piston and guide from escaping from said chamber, substantially as described.

4. In a toy air gun, in combination with a
 50 barrel, an extension guide portion located in the rear thereof and in axial alinement therewith, a piston member provided with a severing edge at its forward end, adapted to reciprocate therein, and to coöperate with
 55 a complementary portion of the extension guide in maintaining alinement between the two parts, and a magazine member depending from the rear portion of said barrel, through which a mass of projectile matter
 60 may be fed into the barrel to be cut into individual pieces as desired by the severing edge of said piston, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

SHERMAN T. ALLEN.

Witnesses:

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