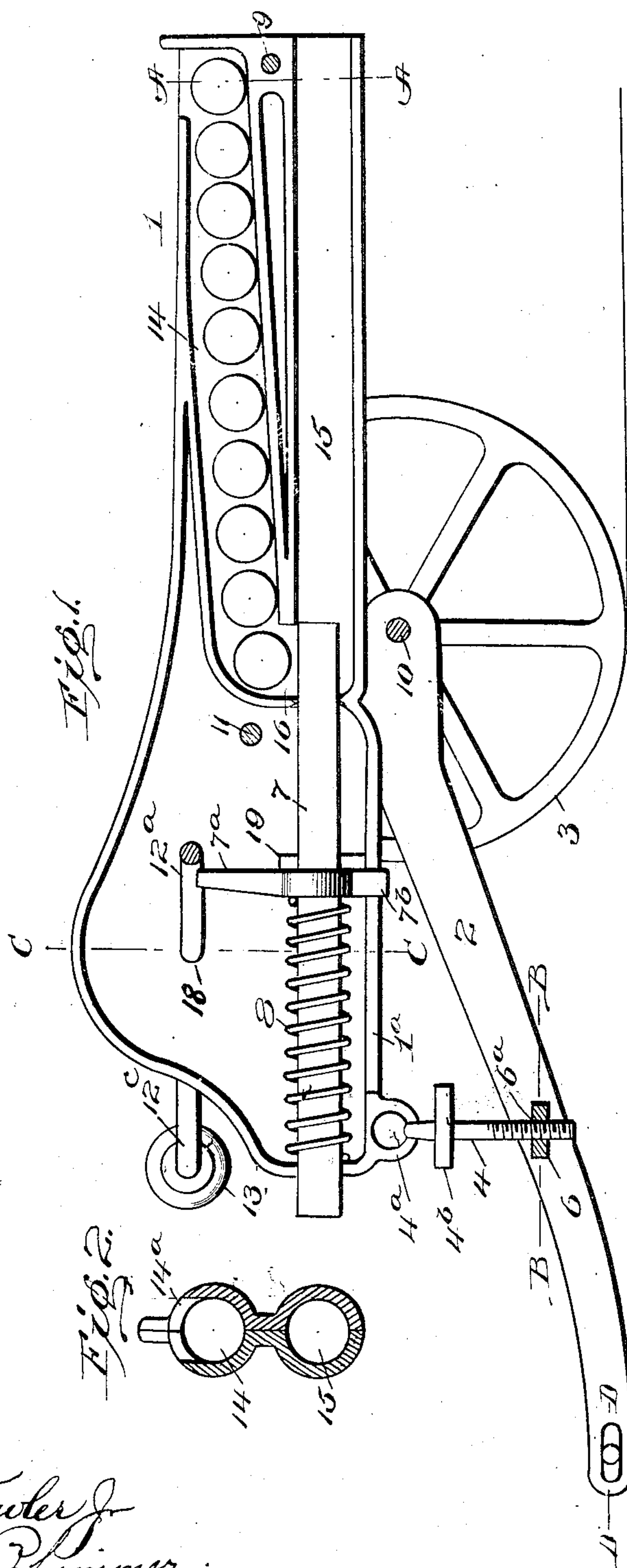


No. 844,994.

PATENTED FEB. 19, 1907.

G. P. CAMPBELL.
TOY RAPID FIRE GUN.
APPLICATION FILED DEC. 11, 1905.

2 SHEETS—SHEET 1.



Witnesses

J. M. Fowler Jr.
Mabel Grimmer.

Inventor

Geo. P. Campbell
by R. A. E. Starr.

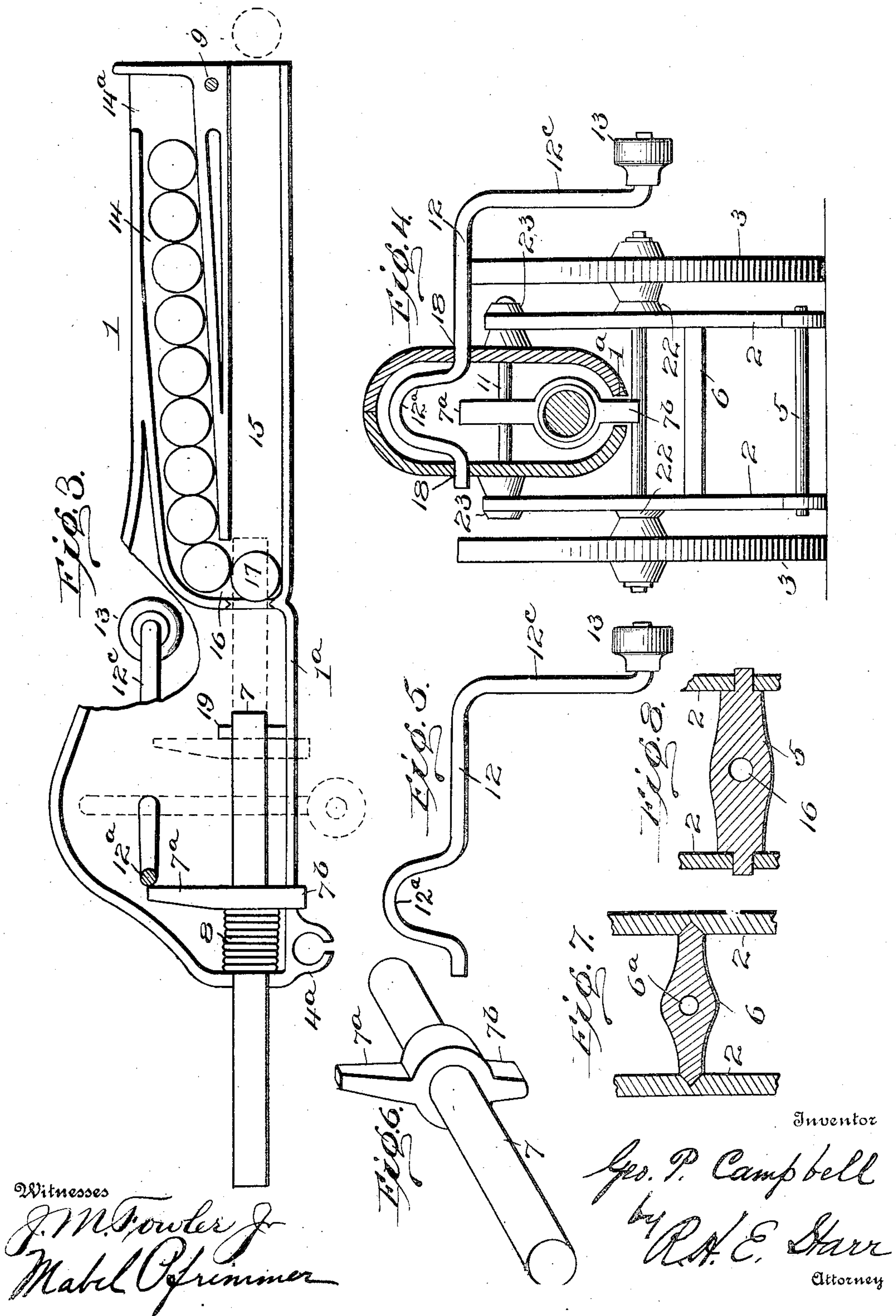
Attorney.

No. 844,994.

PATENTED FEB. 19, 1907.

G. P. CAMPBELL.
TOY RAPID FIRE GUN.
APPLICATION FILED DEC. 11, 1905.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

GEORGE P. CAMPBELL, OF YONKERS, NEW YORK.

TOY RAPID-FIRE GUN.

No. 844,994.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed December 11, 1906. Serial No. 261,293.

To all whom it may concern:

Be it known that I, GEORGE P. CAMPBELL, of the city of Yonkers, county of Westchester, and State of New York, have invented a new and Improved Toy or Rapid-Fire Gun, of which the following is a full, clear, and exact description.

My invention relates to toys, and more particularly to that class of toys known as "miniature or toy rapid-fire guns or cannons," to which projectiles may be delivered and from which they may be discharged with ease, safety, and rapidity and by the use of which I provide an innocent, amusing, and interesting pastime.

A preferred form of my invention is illustrated in the accompanying drawings, forming a part of this specification, in which similar reference characters designate corresponding parts, and in which—

Figure 1 is a vertical longitudinal section of a construction embodying the proposed form of my invention. Fig. 2 is a transverse section on the line A A of Fig. 1. Fig. 3 is a similar view to that shown in Fig. 1, of the gun only, suowing the projecting mechanism in a different position and one of the projectiles in position to be discharged. Fig. 4 is a rear end view partly in section. Fig. 5 is a detail view of the crank and crank-shaft. Fig. 6 is a perspective view of the plunger and its projecting lugs. Figs. 7 and 8 are sectional details, respectively, on the lines B B and D D of Fig. 1.

The carriage comprises two sides or pieces 2 2, each having a projecting portion 22, and the axle 10 extends through the side pieces and projections. Preferably the axle will be fixed and the wheels 3 will be mounted on the ends of the axle to turn thereon and may be held on the axle by any suitable means. The hubs of the wheels abut against the projections 22 and keep the wheels clear of the sides of the carriage and the gun mounted thereon. Between the axle and the rear ends of the side pieces I provide a spacing-brace 6, which may be connected to the side pieces 2 in any suitable manner. As shown, the ends of the brace are beveled and fit in correspondingly-shaped recesses in the side pieces. The rear ends of the side pieces are connected together by a tie-bar 5, having shouldered and reduced ends. The ends extend through openings in the side pieces, and the shoulders abut against the inner faces thereof.

The ends may be secured in the side pieces by any suitable means—as, for instance, by rivets. The bar 5 is provided with a hole 16, through which a peg may be driven into the ground or other support to prevent recoil of the carriage, or it may receive a cord by means of which the carriage may be pulled.

Near the front ends the side pieces are provided with upward extensions, each having a reinforced or thickened portion 23 to form bearings for the trunnions of the gun. A bolt or rivet 11 passes through the reinforced parts 23 and the trunnions and securely holds the several parts together at this point.

The gun or cannon is indicated as a whole by numeral 1 and comprises a barrel, a magazine, and a housing or casing for the projecting mechanism. As shown in Figs. 2 and 4, the gun is made of two similar sections meeting on a vertical longitudinal plane, and the two sections are secured together by the bolt 11 and screws or similar securing devices 9. As shown, the magazine-casing and barrel are parallel to each other, or, in other words, the upper surface of the magazine-casing is parallel with the lower surface of the barrel through substantially their entire length, and they are also substantially coextensive in length and both merge in the housing for the projecting mechanism in substantially the same vertical plane. This imparts to the gun a general outward configuration or form closely resembling that of an ordinary cannon.

The magazine-casing is provided with a bore or passage 14, inclining slightly downward from its front to its rear end, where it terminates in a short vertical passage 16, leading into the rear end of the bore 15 of the barrel. The front end of the passage is closed, and an opening 14" is formed in the upper wall of the magazine-casing through which the projectiles in the form of balls may be inserted into the passage 14, down which they will by gravitation roll to the rear end. The rear end wall of the bore 15 of the barrel is provided with a central opening of less diameter than the bore through which a plunger 7 normally projects below the passage 16 and serves as a support for the rearmost projectile in the magazine. The rear end of the plunger extends through an opening 21 in the rear wall of the casing which incloses the projecting mechanism, and a coiled spring 8

surrounds the rear portion of the plunger, one end of which abuts against said rear wall and the other end against two arms 7^a and 7^b, extending in opposite directions from the plunger. The arm 7^b extends through a longitudinally-extending slot 1^a in the bottom wall of said casing and serves as a guide for the plunger 7 in its longitudinal movement and prevents it from turning. Journaled in holes 18 in the opposite sides of said casing, is a crank-shaft 12, provided with U-shaped portion 12^a within the casing adapted in its revolution to engage the arm 7^a and force the plunger 7 in a rearward direction against the tension of the spring 8. The crank-handle is provided with a knob 13, connected to it in any suitable manner. The crank-handle and knob are outside the vertical plane of the wheel, as shown in Fig. 4. Suitable guides 19 for the plunger are formed within the casing, which guides serve also to limit the forward movement of the plunger when engaged by the arms 7^a and 7^b. On the lower wall of the said casing a socket 4^a is formed, which receives the ball-shaped head of a screw 4, which screw fits in a threaded opening 6^a in the spacing-bar 6. This screw is provided with a collar 4^b, which serves as a finger-hold for turning the screw, and by turning the screw to move up or down the elevation of the gun may be adjusted as desired. The parts are arranged, however, so that the muzzle of the gun cannot be depressed to such an extent as to prevent the balls 17 from rolling by gravity from the front to the rear end of the magazine.

The operation is as follows, all the parts being in normal position, as illustrated in Fig. 1, where it will be seen that the forward end of the plunger 7 extends below the passage 16 and supports the rearmost ball in the magazine. If now the crank-shaft is turned in its bearings, the U-shaped portion will engage the arm 7^a on the plunger and force it with the plunger in a rearward direction, as indicated in Fig. 3, the crank-shaft making one-half revolution to effect this movement. Further movement of the crank-shaft will release the U-shaped portion 12^a from the arm 7, and the spring 8 will then drive the plunger 7 forward and cause it to strike the ball 17, which is then lying at the rear end of the barrel, and project said ball from the gun. The plunger 7 will then again occupy the position shown in full lines in Fig. 1 and by dotted lines in Fig. 3 and act as a support for the rearmost ball in the magazine.

The sections of which the gun is formed will preferably be of metal, and the passage in the magazine-casing and the bore of the gun will be formed by making semicircular grooves in each section. The rear portion of each section is enlarged and concaved, and these rear portions together form the housing for the projecting mechanism. The project-

iles will preferably be in the form of balls, as illustrated, and they may be made of any suitable material, preferably of soft rubber, in order that they may not injure any one or anything when projected.

While the crank-shaft and its handle may be formed in any suitable manner, I prefer to form them from a single piece of wire. The crank-shaft 12 is bent near one end to form the U-shaped crank 12^a, which is of such width as to extend substantially the full width of the inclosing casing, and thereby prevent undue movement longitudinally, and no pins, collars, or other devices are necessary to hold the crank in central position within the casing. The wire is also bent to substantially a right angle to the shaft to form the lever 12^c and again at a right angle to form a support for the knob or handle 13.

Having described my invention, I claim—

1. A toy rapid-fire gun or cannon comprising two similar sections meeting on a vertical longitudinal plane; each section having formed therein two grooves one directly above the other which together form the bore of the gun and its magazine, and the latter being inclined with respect to the former, and means for securing the sections to each other.

2. A toy rapid-fire gun or cannon comprising two similar sections meeting on a vertical longitudinal plane, each section having formed in the front portion thereof two grooves, one directly above the other, and its rear portion being enlarged and concaved, the grooves of said sections together forming the bore of the gun and its magazine, the latter being inclined with respect to the former, and said rear, enlarged concaved portions together forming a housing for the propelling mechanism, and means for securing the sections to each other.

3. A toy rapid-fire gun comprising two similar sections meeting on a vertical longitudinal plane, the front portions of said sections forming the barrel and magazine of the gun and the rear portions thereof forming a housing for projecting mechanism, the front portion of each section having two semicircular grooves formed therein one directly above the other and communicating with each other at their rear ends, and the upper groove in each section inclining downwardly with respect to the lower groove from its front to its rear end, means for securing the sections to each other, and projecting mechanism supported in the said housing.

4. A toy rapid-fire gun or cannon comprising a barrel and a magazine-casing substantially parallel to each other, the latter having a passage therein extending at an angle downwardly from its front to its rear end and communicating at its rear end with the bore of the barrel, said passage being closed at its extreme forward end and the casing

having an opening in its upper wall adjacent to its front end through which projectiles may be inserted into said passage.

5 In a toy rapid-fire gun, the combination with the barrel and a casing at its rear end, said casing having a longitudinally-extending slot in its lower wall, of a spring-actuated plunger supported in the casing, arms extending from the plunger in opposite directions,

one of said arms projecting into said slot, and a U-shaped crank supported within the casing to engage the other arm, and means exterior of the casing for turning the crank. 10

GEORGE P. CAMPBELL.

Witnesses:

W. H. DONLON,

MARY E. SCHOLDING.