

R. HAZELRIGG

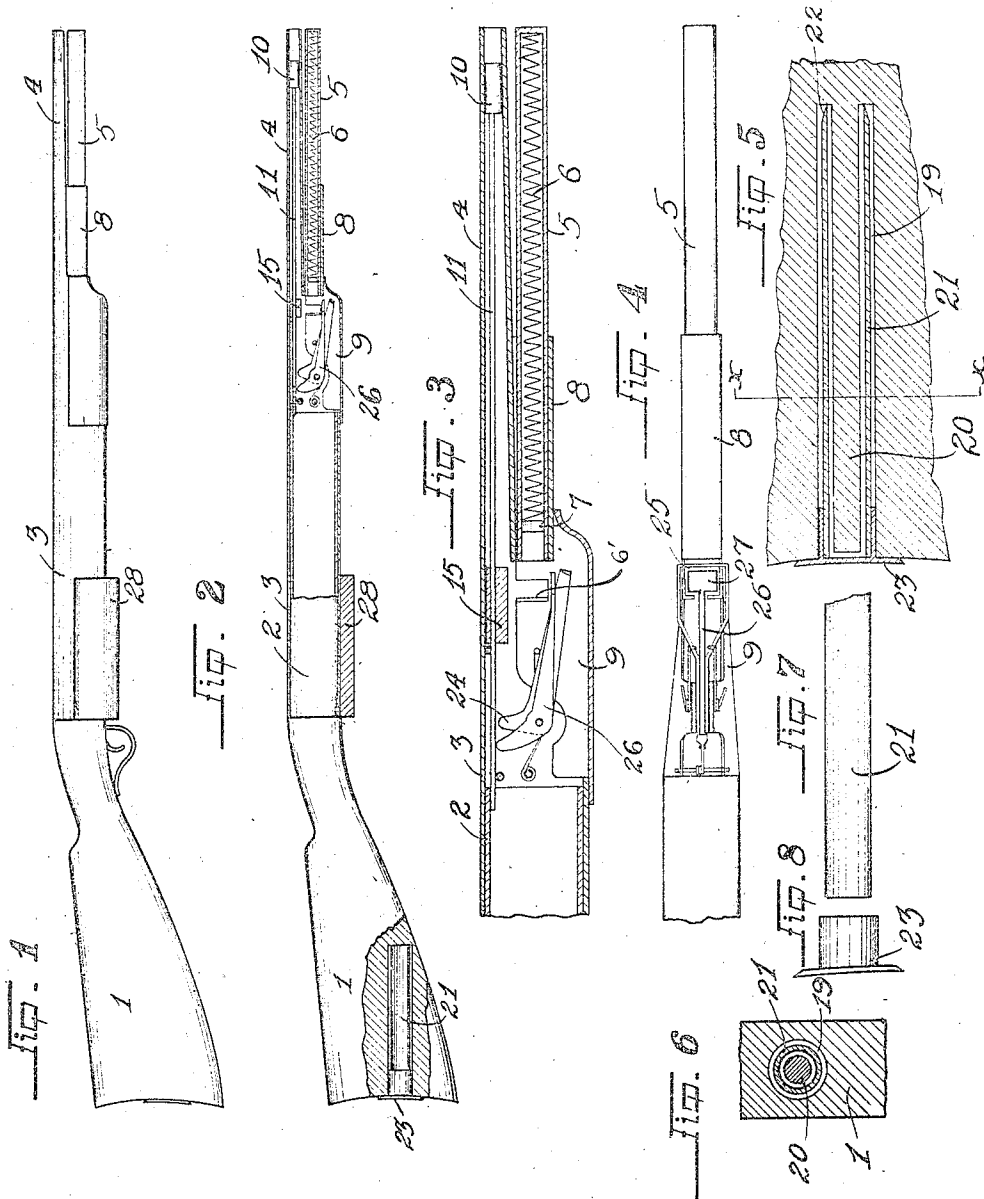
GUN.

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981,418.

Patented Jan. 10, 1911

2 SHEETS-SHEET 1.



WITNESSES:

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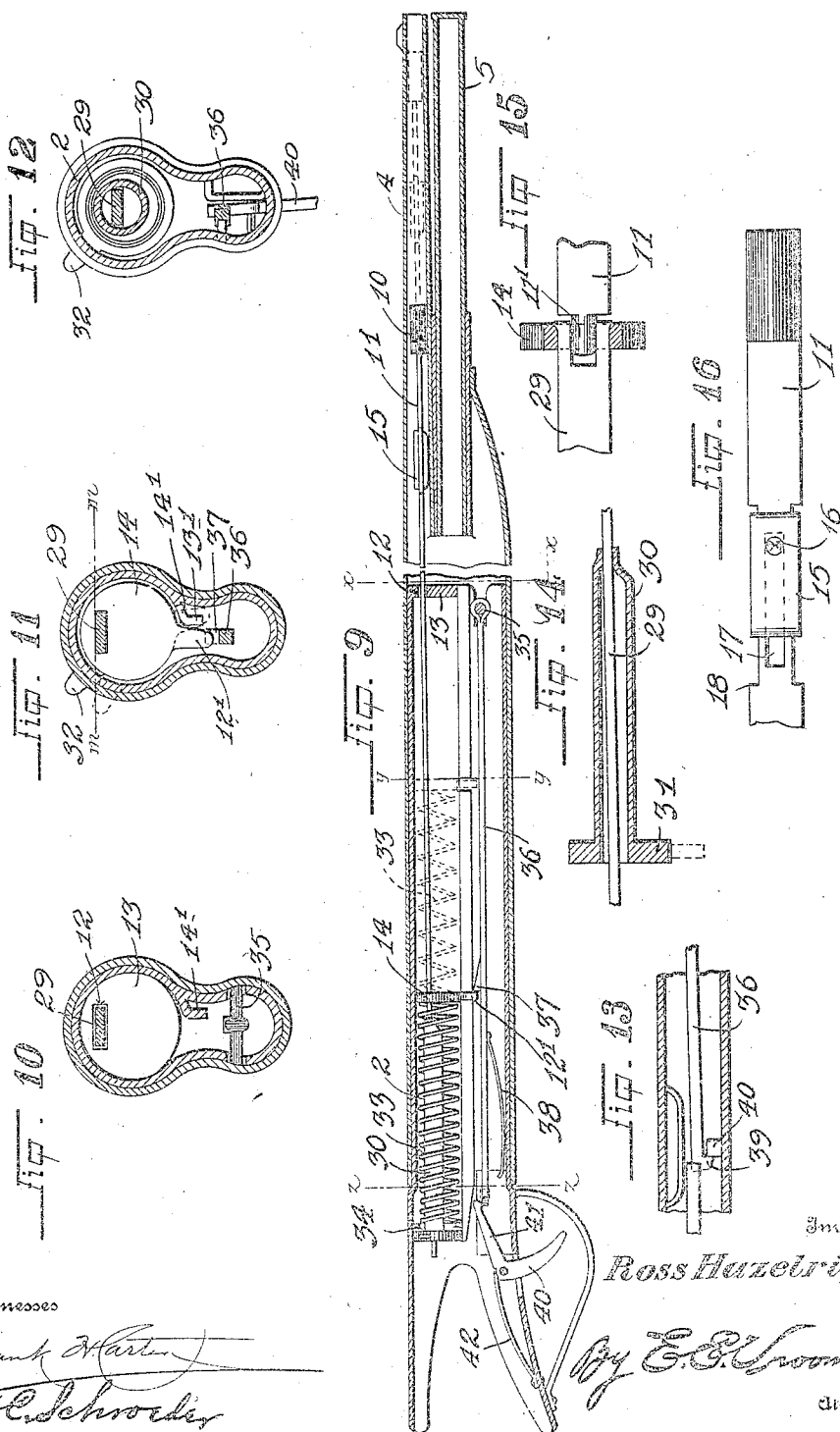
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GUN.

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2 SHEETS--SHEET 2.

981,418.



Witnesses

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GUN.

981,418.

Specification of Letters Patent.

Patented Jan. 10, 1911.

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To all whom it may concern:

Be it known that I, ROSS HAZELRIGG, citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Guns, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to toy guns, and has especial reference to two classes of toy guns, namely,—that class termed pop guns in which a cylinder, piston and piston rod with a handle are used, with a cork inserted in one end of the cylinder, whereby when the piston is pushed into the cylinder, the air compressed thereby causes the cork to fly out of the mouth of the cylinder. The other class of toy guns to which this invention relates is that class in which a gun stock and barrel are provided with a rod actuated by a spring, said spring-actuated rod being controlled by a trigger, and when set is adapted to discharge from the barrel of the gun a stick or short rod by releasing the trigger.

This invention has for its object to provide an improved toy gun, combining both of the constructions referred to in said two classes of toy guns, and which may be used either as a pop gun or as a spring gun controlled by a trigger.

This invention further has for its object to provide a combined pop gun and spring-actuated trigger gun which is so constructed as to simulate a pumping, repeating magazine rifle, and to provide a mechanism by means of which the missiles are prepared by the action of the gun and fed into the barrel of the gun.

Other objects and advantages of this invention will appear in the course of the following specification.

Referring to the accompanying drawings, Figure 1 is a side view of a toy gun constructed in accordance with this invention. Fig. 2 is a similar view, partly in longitudinal section, and partly broken away. Fig. 3 is a detailed view of a portion of a gun in longitudinal section, showing the firing barrel, the cartridge feed reservoir and the mechanism for forming the cartridges and moving them into the firing barrel. Fig. 4 is a bottom view of the parts shown in Fig. 3 with the cartridge preparing and feed mechanism disclosed. Fig. 5 is an enlarged,

detailed view, in longitudinal section, of a portion of the gun stock, showing a device for preparing the core from which the cartridges are made. Fig. 6 is an end view thereof, in vertical section, on the line $x-x$, of Fig. 5. Fig. 7 is a side view with one end broken off of the cylinder shown in Fig. 5 for preparing the core. Fig. 8 is a cap adapted to close the structure shown in Fig. 5. Fig. 9 is an enlarged view, in longitudinal section, of a gun constructed in accordance with this invention, with the stock removed, showing the spring mechanism and trigger for operating the piston. Fig. 10 is an end view, in transverse section, taken on the line $z-z$, Fig. 9. Fig. 11 is an end view, in transverse section, taken on the line $y-y$, Fig. 9. Fig. 12 is an end view, in transverse section, taken on the line $x-x$, Fig. 9. Fig. 13 is a detailed view, in longitudinal section, showing a portion of the trigger tripping mechanism. Fig. 14 is a detailed view, in longitudinal section, showing a portion of the spring-actuated mechanism. Fig. 15 is a detailed view showing the piston rod connection. Fig. 16 is a bottom view showing a movable cam on the piston.

In carrying out the invention, the gun is formed with a stock 1, on which is suitably mounted a cylinder 2 which projects into and telescopes with a cylinder 3 provided with a discharge barrel 4 tapering inwardly toward its forward end. Beneath the barrel 4 is located a detachable cartridge feed reservoir 5 which is open at its inner end and contains a compressible coil spring 6 having a head 7 at its inner end. The cartridge feed reservoir 5 has its inner end mounted in a cylindrical projection 8 of the gun. The inner end of said cylinder 8 and the inner end of the reservoir 5 coinciding with each other project into a chamber 9 located beneath the rear end portion of the gun barrel 4. Mounted in said gun barrel 4 is a piston 10 having a flat piston rod 11 extending through said barrel and through an opening 12 in a partition 13 in the forward end of the cylinder 2, said rod 11 being connected at its rear end to a disk 14 in the cylinder 2. Mounted on the rod 11 is a cam 15 which has a limited slidable movement thereon by means of a pin 16 extending through a slot 17 in the rod 11, the latter being formed with shoulders 18 which serve to

limit the movement of the cam 15 in either direction.

In using the gun, lozenge-shaped missiles are preferably employed and may be made from potato. In order to provide the potato ammunition, the stock of the gun is formed in its rear end with a longitudinal, cylindrical slot 19 in which is located a central, fixed rod 20 which serves as a receptacle for a tube 21 having at one end a sharp edge 22, said tube 21 being adapted to be housed in the cylindrical slot 19 and inclosed by a cap 23 which is adapted to be fitted into the outer end of the slot 19. The tube 21 is used to form a core of potato by pressing it into the potato. The core or potato so formed is then inserted into the reservoir 5 and pushed into the same against the spring 6, compressing the latter. The reservoir 5 being set in place in the cylinder 8, one end of the potato core will always project beyond the inner end of the reservoir 5, the spring 6 continually feeding the core forward about the size of the lozenge-shaped missile 7 against stops 6', as shown in Fig. 3.

In order to cut off the lozenge-shaped missiles or disks one at a time, and feed them to the firing barrel, the following means is provided: Within the chamber 9 are located a pair of bell crank levers 24 which are connected at their outer ends with a cross piece 25 serving as a knife and movable across the inner end of the reservoir 5. Between the bell crank levers 24 is pivoted a bell crank lever 26 which has at its outer end a plate 27 located beneath the knife 25. When the telescoping members of the gun are drawn apart, the piston 10 and the piston rod 11 will be drawn back in the firing barrel 4, the rod 11 carrying with it the cam 15 until it is stopped by the stop 18, when it will engage the bell crank levers 24 and cause them to tilt, thereby raising the knife 25 and cutting off a projecting end of the potato core in the reservoir 5. The cam 15 moving still farther engages the bell crank lever 26, and thereby tilts it, raising the plate 27 and on it the piece of potato core cut off by the knife 25 and sending it into the barrel 4 and through the action of the sliding cam holding it in front of the piston 10. The front end of the barrel 4, in the first instance, has inserted therein a lozenge-shaped piece of potato core, and when the telescoping sections of the gun are pushed together, the air compressed between the potato cartridge and the piston 10, and the potato missile in the outer end of the barrel, causes the latter to fly out, and the potato missile next to the piston 10 to be brought to the mouth of the barrel by the forward movement of the piston. In the next operation of loading the gun, as the piston 10 is drawn back to receive a fresh potato missile moved up in front of it, there will

be a potato missile at the front end of the barrel and a second potato missile in front of the piston 10; therefore, as a fresh potato missile is repeatedly fed to the barrel, there will always be a potato missile left in the mouth of the barrel after the gun has been fired. The gun is fired by the rearward movement of the cylinder 3.

Twenty-eight (28) is a hand-hold, preferably of wood, which is secured at the under side of the rear end of the outer telescoping cylinder of the gun.

The feed mechanism and arrangement of parts are employed in connection with the piston 10 and the piston rod 11.

Located in the inner cylinder 2 is a rod 29, shown in Figs. 14 and 15, which is a continuation of the rod 11, one end of the said rod 29 being mounted in the disk 14, as shown in Fig. 15, to cause said disk to turn when the rod is turned and also to permit the disk 14 to move longitudinally on said rod. The inner end of the rod 11 is swiveled to the disk 14 by means of a pin 11', said disk 14 having depending therefrom a projection 12' shown in Fig. 11, which is adapted to move into and out of engagement with a slot 13' in a projection 14' (see Fig. 10) on the inner telescoping cylinder. The rod 29 projects through the tube 30, said tube being closed at its forward end about the rod 29 so as to permit longitudinal but not transverse relative movement. The rear end of the tube 30 is formed with a disk portion 31, which is mounted in the inner cylinder 2 and has a lug 32 projecting through a slot in the cylinder 2, as shown in Figs. 11 and 12. Between the disk-shaped portion 31 and the disk 14 is located a coil spring 33, surrounding the casing 30 and the rod 29, and secured at the point 34 to the cylinder 2.

Hinged to the outer portion of the cylinder 3 by means of a pivot pin 35 is a rod 36 which is provided with a lug or projection 37 adapted to engage with the lug 12' of the disk 14, and is held in engagement therewith by a spring 38. The rear end of the rod 36 is formed with a projection 39 which is adapted to engage a projection 40 on the inner side of the cylinder 2. The arm 41 of a trigger 40 controlled by a spring 42 bears upon the end of the rod 36, and, by pulling on the trigger is adapted to push the projection 39 and the end of the rod 36 out of engagement with the projection 40, and thereby also move the lug 37 out of engagement with the projection 12' of the disk 14, thereby permitting the spring 33 to react and drive the disk 14 forward, as shown by dotted lines in Fig. 9, which movement of the disk 14 causes the piston rod 11 and piston 10 to be snapped forward and expel the projectile from the barrel 4.

When it is desired to use the gun as a

spring trigger actuated gun, the disk 14 is moved by means of the projection 32 to engage the lug 37 and the spring 33 is compressed by the pumping or telescopic action of the cylindrical portions of the gun. When it is desired to use the gun as a pop gun, by engaging the projection 12' of the disk 14 in the slot 13' of the projection 14', the gun may be used as a pop gun.

What I claim is:—

1. A toy gun of the character described, comprising a stock and telescoping cylinders, a barrel forming a part of one of said cylinders, a piston in said barrel and piston rod in said barrel and cylinders and means for moving said piston rod into and out of connection with one of said cylinders against longitudinal movement in said cylinder, a spring for operating said piston rod, means for moving said rod into and out of operative connection with the inner cylinder, and a tripping device and trigger for releasing said spring.

2. In a toy gun of the character described, a stock and telescoping cylinders, a barrel forming a part of one of said cylinders, and a piston in said barrel and piston rod in said barrel and cylinders and means for moving said piston rod into and out of connection with one of said cylinders against longitudinal movement in said cylinder.

3. In a toy gun of the character described, a stock and telescoping cylinders, a barrel tapering toward its muzzle forming a part of one of said cylinders, and a piston in said barrel and piston rod in said barrel and cylinders and means for moving said piston rod into and out of connection with one of said cylinders against longitudinal movement in said cylinder.

4. A toy gun of the character described, comprising a stock and telescoping cylinders, a barrel forming a part of one of said cylinders, a piston in said barrel and piston rod in said barrel and cylinders and means for moving said piston rod into and out of connection with one of said cylinders against longitudinal movement in said cylinder, a spring for operating said piston rod, means for moving said rod into and out of operative connection with the inner cylinder, a tripping device and trigger for releasing said spring, a disk feed reservoir, and means for feeding disks to said gun.

5. A toy gun of the character described comprising a stock and telescoping cylinders, a barrel forming a part of one of said cylinders, a piston in said barrel and piston rod in said barrel and cylinders, a spring for operating said piston rod, means for moving said rod into and out of operative connection with the inner cylinder, a tripping device and trigger for releasing said spring, a reservoir adapted to receive a core, means in said reservoir for gradually feed-

ing the core forward, means for cutting off the disk at the end of said core, and means for moving said disk into the barrel.

6. A toy gun of the character described, comprising a stock and telescoping cylinders, a barrel forming a part of one of said cylinders, a piston in said barrel and piston rod in said barrel and cylinders, a spring for operating said piston rod, means for moving said rod into and out of operative connection with the inner cylinder, a tripping device and trigger for releasing said spring, a reservoir adapted to receive a core, means in said reservoir for feeding said core gradually forward, a bell crank lever device having a knife movable across the mouth of said reservoir, a bell crank lever having a shelf movable across the mouth of said reservoir and adapted to carry a cut disk into the barrel, said bell crank levers being successively operated by a cam on the piston rod.

7. In a toy gun of the character described, a stock and telescoping cylinders, a barrel forming a part of the outer telescoping cylinder, a piston and piston rod in said barrel, said piston rod extending into the inner telescoping cylinder means for connecting and disconnecting said rod with the inner cylinder, a spring adapted to be compressed for operating said piston rod, a tripping device for holding said spring in a compressed position, and a trigger for releasing said tripping device.

8. In a toy gun of the character described, a stock and telescoping cylinders, a barrel forming a part of the outer telescoping cylinder, a piston and piston rod in said barrel, said piston rod extending into the inner telescoping cylinder, a tripping device slidably mounted on said piston rod, a reservoir adapted to receive a core, means in said reservoir for gradually feeding said core forward, a bell crank lever device having a knife adapted to be actuated by said slidable tripping device on the piston rod to raise the knife, cutting off a disk from the core, a second bell crank lever device adapted to receive said disk and move it into the barrel, said second bell crank lever being adapted to be acted upon by said tripping device.

9. In a toy gun of the character described, a stock and telescoping cylinders, a barrel forming a part of the outer cylinder, a piston and piston rod in said barrel, said piston rod extending into the inner cylinder, a disk rotatably connected with said piston rod and having a projection adapted to engage the inner cylinder, a coil spring adjacent to said disk and adapted to be compressed thereby when said disk is not in engagement with the inner cylinder, means for moving said disk into and out of engagement with the inner cylinder, a hinge device adapted to

engage said disk and lock it in position when the spring is compressed, and a trigger adapted to release the locking device from the disk and permit the spring to operate
5 said piston rod.

10. In a toy gun of the character described, a stock and telescoping cylinders, a barrel forming a part of the outer cylinder, a piston in said barrel and piston rod in said
10 barrel and extending into the inner cylinder, a disk in said inner cylinder and rotatably connected with said rod and having a lateral projection adapted to be moved into and out of engagement with the inner
15 cylinder, a rod rigidly connected with said disk, a casing fastened to said rod and hav-

ing a disk shaped portion at one end and a lateral projection extending through the gun for rotating said rod and casing, a coil spring mounted on said casing, a hinged rod
20 having a projection adapted to engage the first mentioned lateral projection and lock the same when the spring is compressed, and a trigger for releasing said locking arm
25 from the disk.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

ROSS HAZELRIGG.

Witnesses:

H. C. SCHROEDER,
F. P. SCHROEDER.