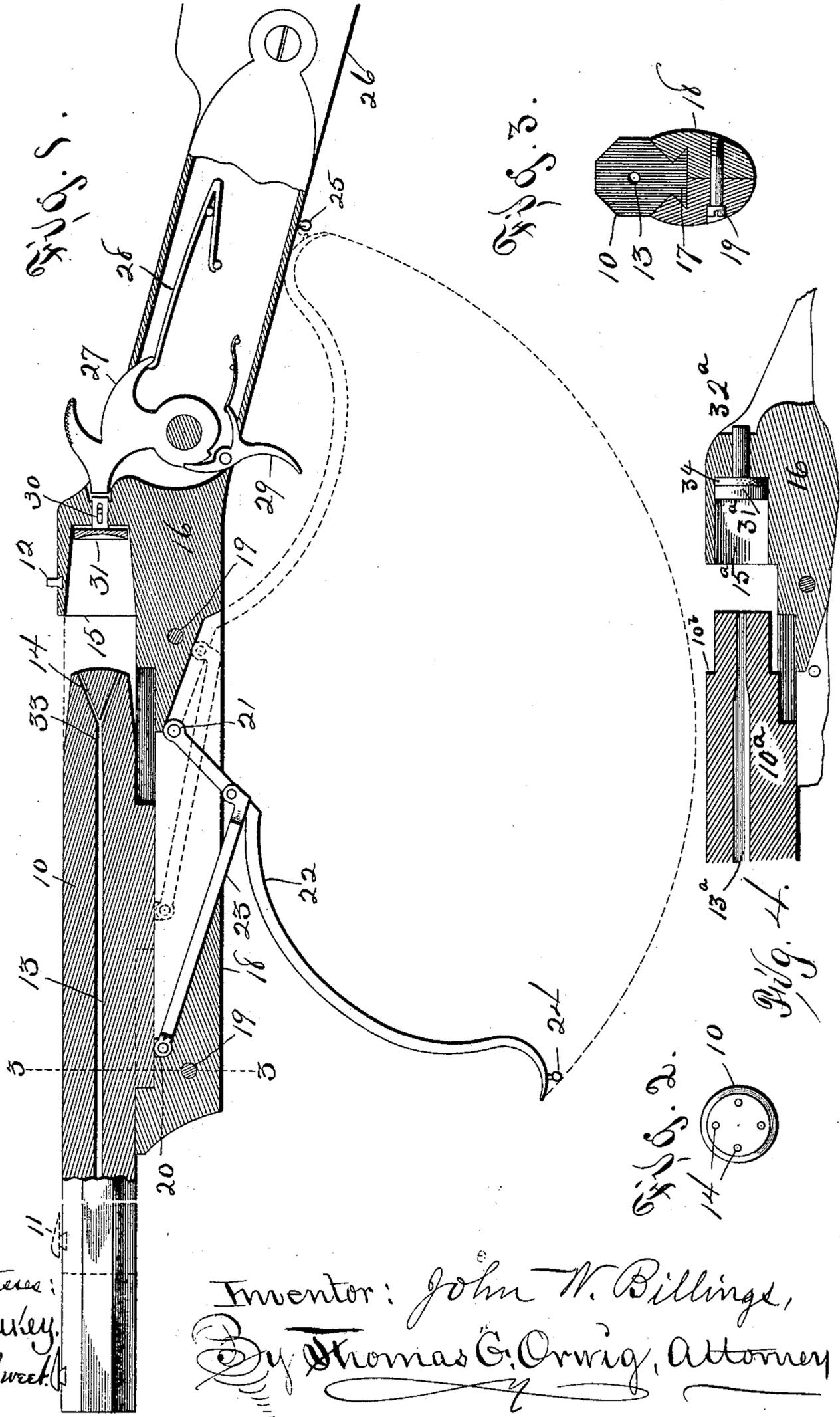


(No Model.)

J. W. BILLINGS.  
TOY GUN.

No. 591,090.

Patented Oct. 5, 1897.



Witnesses:  
H. J. Sawyer,  
S. C. Sweet.

Inventor: John W. Billings,  
By Thomas G. Orwig, Attorney

# UNITED STATES PATENT OFFICE.

JOHN W. BILLINGS, OF GRINNELL, IOWA.

## TOY GUN.

SPECIFICATION forming part of Letters Patent No. 591,090, dated October 5, 1897.

Application filed October 17, 1896. Serial No. 609,258. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. BILLINGS, a citizen of the United States of America, and a resident of Grinnell, in the county of Poweshiek and State of Iowa, have invented a new and useful Toy Gun, of which the following is a specification.

The object of this invention is to provide improved means whereby the explosive force of a wafer cap may be utilized in the propulsion of a projectile.

This invention consists in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, showing the gun with its parts in position to be loaded, the dotted lines indicating the positions of the parts when the gun is prepared for discharge of the shot. Fig. 2 is a rear elevation of the barrel. Fig. 3 is a cross-section of the barrel and fore-end on the indicated line 3 3 of Fig. 1. Fig. 4 is a sectional elevation showing a modification of the gun.

In the construction of the device as shown the numeral 10 designates a barrel provided with sights 11 12 and a bore 13, the rear end of which bore is slightly reduced in size at a point interior of the barrel and branches into four ports 14, arranged in a row concentric to the axis of the barrel and emanating at the rear end thereof. The rear end portion of the barrel 10 is tapered slightly and is arranged to fit at times, as shown by dotted lines, in a socket 15, formed in the breech 16 of the gun. A dovetail rib 17 is formed on the lower portion of the barrel 10 and extends longitudinally thereof, which rib fits and is slidingly mounted in a dovetail groove formed in the center of the upper portion of a fore-end 18, which fore-end is formed in sections and joined by transversely-positioned screws 19. A slot is formed in and longitudinally of the fore-end 18, and an ear 20, or ears, projects from an integral jointure to the barrel 10 downwardly into said groove. An operating-lever 22 is fulcrumed at its upper end to a pin 21, transversely seated in the fore-end 18, and traverses the slot in said fore-end. The lever 22 is connected at a point near its fulcrum and within the groove in the fore-end

to a rod 23, the opposite end of which rod is pivotally connected to the ear or ears 20 on the barrel. The major portion of the operating-lever 22 is bent or flexed to form a guard in contour, location, and appearance resembling the trigger-guard of an ordinary hand firearm, and a stud 24 on the extremity of said lever yieldingly engages a similar stud 25, located on the stock 26 of the device when the device is in position to discharge its projectile. The breech 16 overlaps the rear end of the fore-end 18 and is secured rigidly thereto and also overlaps the forward end of and is secured rigidly to the stock 26. Pivoted within the breech 16 is a hammer 27, spring-pressed in one direction by the lock-spring 28 and held against the resilience of the spring at times and tripped by a trigger 29, also fulcrumed in the breech. The rear end portion of the socket 15 is horizontally apertured, and a needle 30 is slidingly mounted therein, which needle is provided with a concussion-head 31, arranged for engagement with the rear end of the barrel 10 at times. The needle 30 is slotted and a pin 32 traverses said slot and is seated in the rear portion of the socket and limits the reciprocation of said needle. A recess is formed in the socket-piece at the rear end of the needle and is designed to admit a projecting end portion of the hammer 27 into engagement with said needle. In Fig. 4 an asbestos packing 34 is placed in the socket 15.

In practical operation the parts are positioned, as shown in Fig. 1, by manual oscillation of the lever 22 and consequent reciprocation of the barrel 10 relative to the fore-end through the medium of the rod 23, traveling longitudinally in the slot in the fore-end. A shot is inserted from the muzzle into the barrel and lodges in the contracted end portion of the bore 13 approximately at the point designated as 33. A wafer cap is positioned on the face of the head 31 within the socket 15. The hammer 27 is drawn back into the position shown by dotted lines (the device being held muzzle upward) and the needle moved rearwardly by gravity. The barrel 10 is moved rearwardly until the reduced end portion thereof enters and fits snugly within the socket 15, through the manual actuation or movement of the lever 22, into the position

shown by dotted lines. The stud 24 engages the stud 25 and locks the lever 22, rod 23, and barrel 10 in position, and the trigger 29 is manually actuated to release the hammer and permit said hammer to engage the needle and forcibly impact the head 31 with the rear end of the barrel. By this means the wafer cap is exploded and the force thereof discharged through the ports 14 into the bore of the barrel, the said force being sufficient to discharge the shot from the barrel.

In the modification shown in Fig. 4 the barrel 10<sup>a</sup> has a shoulder 10<sup>b</sup>, formed by reducing the diameter of the rear end portion of the barrel instead of tapering the same, as in the other figures, and the socket 15<sup>a</sup> is cylindrical rather than frustum-shaped. In this form of device the concussion-head 31<sup>a</sup> is backed up by a disk 34 of asbestos, mounted on the pin 32<sup>a</sup> in the rear portion of the socket 15<sup>a</sup>. In this form of device the bore 13<sup>a</sup> does not branch at its rear end.

I claim as my invention—

1. In a toy gun, a socket arranged to receive a wafer cap, a barrel slidingly mounted and having a bore reduced in diameter at its rear end arranged to contain a shot in communication with said cap, said bore branching at the rear of the reduced portion and means for exploding the cap and communicating the force thereof to the shot.

2. A toy gun comprising a slidingly-mounted barrel having a bore reduced in diameter at its rear end to receive and retain a shot and branching at the rear of the reduced portion, a breech having a socket arranged to con-

tain a wafer cap in communication with the branching portions of the bore of the barrel a needle arranged to impact said cap against the rear end of the barrel, a hammer arranged to engage said needle, a trigger controlling said hammer and means for reciprocating said barrel as set forth.

3. A toy gun comprising a stock, a breech carried by said stock, lock mechanism carried by said breech, a needle carried by said breech and arranged to be engaged by the lock, a fore-end carried by the breech and vertically slotted, a barrel slidingly connected to said fore-end and formed with a reduced rear end portion arranged to enter a socket in the breech, a lever fulcrumed in the slot of the fore-end and connected with said barrel and means for temporarily locking said lever to the stock, the barrel being provided with a bore having a reduced rear portion and branching at the rear of the reduced portion thereof.

4. In a gun, the combination of a needle having a concussion-head corresponding in size with the diameter of the bore of a chamber or socket at the end of the barrel, a gun-barrel having a bore of less diameter than said chamber or socket, and a socket at the rear end of the barrel having a small bore at its rear end and center to admit the needle having a concussion-head, for the purposes stated.

JOHN W. BILLINGS.

Witnesses:

S. J. POOLEY,  
H. F. LANPHERE.